

Charles University in Prague
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Dissertation

2008

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DISSERTATION

The Financial Crisis In Russia in 1998: Why Was Ruble
Devaluation?

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Academic year: 2007/2008

Declaration

By this I declare that this thesis I have written by myself. All segments of the work and results that have been obtained from other sources are fully referenced.

Date 25.6.2008

Signature

Acknowledgement

I would like to express a deep gratitude to my consultants RNDr. Miron Tegze CSc. and Mgr. Tomáš Holub Ph.D., whose professional advices, stimulating suggestions and encouragement helped me in all the time of research and writing of this thesis.

ABSTRACT

This thesis aims to analyze the financial crisis in Russia in 1998, which combined a currency crisis, a debt crisis and a banking crisis. The main purpose of the work is to analyze the main reasons that lead up to the crisis.

I argue that the mainstream theoretical models of currency crisis do not capture every aspect of the whole magnitude of the events in Russian economic system by August 1998. In order to explain the whole complexity of Russian financial turmoil it is absolutely necessary to analyze the origins that stood behind the crisis, which I consider to be found in country's economic structure, institutional environment and political processes.

The first chapter of my work is focused on the analysis of the political situation, institutional background and the process of economic transformation with the emphasis on the privatization program, which I consider to be the its essential point.

Next chapter aims to investigate the macroeconomic fundamentals and financial sector development in the pre-crisis period. Then, I am about to illustrate the August 1998 crisis itself.

In the forth chapter I turn my attention towards the existing theoretical background of the currency crises. These models are grouped into three generations, each of which is intended to explain specific aspects that results in a financial crisis.

The following chapter aims to analyze the application of the mainstream theories of currency crises on the Russian economy.

The last chapter identifies the specific features of Russian economic system, that are to be incorporated into theoretical models, in order to explain the whole complexity of political and economic processes that finally lead up to the financial crisis of August 1998.

In conclusion, I will present the main results of my analysis and the direction for my future research.

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1. INTRODUCTION

On August 17, 1998 the Russian government announced emergency measures including the devaluation of the ruble, a unilateral restructuring of its ruble-denominated public debt, and a 90-day moratorium on the repayment of external debt incurred by commercial entities.

The domestic currency has lost more than half of its value. The depreciation was from the pre-crisis rate of 6.2 rubles per dollar to over 20 rubles per dollar in September.

Within three months after the crisis the consumer price index increased by 50% and GDP fell by about 6%. A sovereign debt took place.

Totally around \$30 billion of foreign reserves (about one-six of GDP) were lost in defending the fixed exchange rate before the ruble was floated on September 2, 1998.

Total capital of Russian banks dropped by 36% in nominal terms. Total losses of the banking system (direct and indirect) and the costs of its restructuring were estimated at more than 11% of GDP.

The reformist government headed by Prime Minister Sergey Kirienko was dismissed. And the crisis also had substantial social costs.

Thus, the Russian financial turmoil incorporated three dimensions in its manifestation – the currency, sovereign debt and banking crises. This explains the absence of unanimity of views on the driving forces and the primary cause of the dramatic event.

1.1. Research Problems and Objectives

The key purpose of my work is to analyse the financial meltdown that heated Russian economic system in August 1998. The main goal of the thesis is to investigate the reasons that caused the financial crisis.

The main objectives of my thesis are the following:

- To analyze the origins of the financial crisis of 1998, that are to be found in the country's economic structure, institutional environment and political processes that had developed in Russian economic system during 1990s and lied in the background of the crisis;
- to investigate the political situation and institutional background in terms of the economic reforms with the emphasis on privatization process;

- to provide a detailed analysis of the macroeconomic fundamentals and financial sector development in the pre-crisis period;
- to illustrate the August 17, 1998 crisis itself;
- to present a traditional theoretical models of currency crisis, namely first-, second- and third generation models;
- to analyse the application of the mainstream theories of currency crisis on the Russian economy in 1998;
- to proof that fitting one of the theoretical models remains questionable and the specific features of Russian economic system in 1990s has to be incorporated into the theoretical background.

2. THE ORIGINS OF THE RUSSIAN FINANCIAL CRISIS

In August 1998, Russian economy experienced the deepest financial crisis, which combined a currency crisis, a banking crisis and a debt crisis. The extraordinary economic situation that developed in Russia by 1998 was the result of the internal situation and the external shocks.

External reasons, like the Asian crisis and the decrease of the prices for the Russian key export commodities were serious burdens for Russian economy. However, the origins of the Russian „boom“ lied inside the country. Policy failures and abortive reform efforts during the 1990s left the country extremely vulnerable to the external risks.

In order to analyze the reasons behind the crisis it is absolutely necessarily to investigate the overall situation that had developed in Russian society by 1998. Thus, the financial crisis in Russia must be seen in the context of transition from centrally planned into market economy. This extremely difficult process created a fundamentally “sick” environment in Russian economic system, and to a large extent contributed to the financial crisis in 1998.

The conversion of the world's largest state-controlled economy into a market-oriented economy was an extraordinary difficult process for several reasons.

Russia had the longest and deepest experience of communism and the centrally planned economy. It was the first country to fall under communist rule and install a state-controlled economy (as a result of the October revolution in 1917 and subsequent Stalinist ‘revolution’ at the end of the 1920s and beginning of the 1930s) and lived under both for the next more than seventy years.

Further, the political economy of Russia’s transition turned out to be extremely difficult. Many ordinary Russians and a significant part of the political elite were upset by the loss of the Soviet empire and attributed this unfortunate event to democratic and market reforms. As such, ‘patriotism’ in Russian politics came to be mostly closely associated with opposition to market-oriented reforms and weakened the support of Russian society to the reforms

Moreover, in contrast to other Central and Eastern European nations (including the Baltic ones), Russian society has had no living memory of a market economy, democracy and civil society. Even before the Bolshevik revolution Russia represented a case of immature capitalism (compared to Western Europe or the US) and had almost no experience of a democratic system and rule of law. Thus, in the 1990s Russia had to go through a ‘dual’ transition, building both a market economy and democracy virtually from scratch.

In the case of post-communist countries, which had to go through a “dual” transition, i.e., had to change simultaneously and fundamentally both political and economic systems. The nature of transition consists of very deep and far-reaching changes in all basic institutions.

Changes in economic and political institutions are strongly interrelated. In the case of Russia it would be particularly interesting to analyze how the imperfect outcomes of the policies in the first stage of the economic transition helped so-called 'early winners' to 'capture' key state institutions and after contributed to the significant distortion of the economic system, which finally led in August meltdown in 1998.

Thus, the origins of the Russian crisis of 1998 are to be found in the country's economic structure, institutional environment and political processes.

2.1. Political And Institutional Background

According to Stiglitz¹ the political process can be viewed in a dynamic context. Actions taken by policymakers at one period may affect in future the outcome of the whole transformation. Thus, the political environment in Russia in the early 1990s to a large extent effected the economic development till 1998 and contributed to the financial crisis.

The dramatic events of 1991 – the political collapse of the USSR and severe macroeconomic crisis – created the foundations for the democratic and market transition in Russia. Prior to the dissolution of the Soviet Union, Boris Yeltsin had been elected President of Russia in June 1991 in the first direct presidential election in Russian history. In October 1991, Russia became to be independent.

The first post-communist government, headed formally by President Boris Yeltsin and with an economic team led by Yegor Gaidar and Anatoliy Chubais, prepared a comprehensive program for market transition, including price liberalization, macroeconomic stabilization and mass voucher-type privatization. The policies chosen for this difficult transition were based on the neoliberal "Washington Consensus" of the IMF, World Bank, and U.S. Treasury Department.

Following the dissolution of the Soviet Union, the radical economic reforms became one of the main priorities of Yeltsin's government. The key elements of the reforms were enacted by presidential decree. There were no space given for the parliamentary bargaining about the nature and direction of economic program. In fact, the Supreme Soviet (the standing legislature) and Congress of People's Deputies (the country's highest legislative body) were disregarded from the decision making process, which actually had very high social value. This important issue finally ends up in the fact that political support for market reforms in Russia turned out to be weaker and more fragile than in more successful transition countries.

During 1992, opposition to president's transition program substantially increased. Certain political leaders started quickly to spet aside from the reform program. Russia's vice president, Alexander Rutskoy, denounced the Yeltsin program as "economic genocide." Leaders of oil-rich

¹ Joseph Stiglitz: Reflection on the theory and practice of reform, 1998

republics such as Tatarstan and Bashkiria called for full independence from Russia. In 1992 the speaker of the Russian Supreme Soviet, Ruslan Khasbulatov in the opposition block, despite claiming to support the overall goals of the reforms.

The political confrontation between Yeltsin on the one side, and the opposition to radical economic reform on the other, became centered in the two branches. Both camps accused each other of corruption².

In many respects, reforms advocates appeared to be politically isolated in the first few months of transition. They were forced to accept many compromises, to form political alliances not based on program principles and accept second- and third-best choices in order to be able to move forward. The result was obvious: a slow pace of reform and non-transparent implementation, with many shortcomings, which later determined the weak political support for reform program.

The main issue in Russian political history in the 1990s was the conflict between economic reformers and those adversary to the new direction towards capitalism. The fight for the center of power and mostly for the nature of the economic reforms finally ended up in in political crisis and bloodshed in the fall of 1993.

On September 28, Moscow saw the first bloody clashes between the special police and anti-Yeltsin demonstrators. Between October 2-4, the position of the army was the deciding factor. The military equivocated for several hours about how to respond to Yeltsin's call for action. By this time dozens of people had been killed and hundreds had been wounded.

By sunrise, on October 4, the Russian army encircled the parliament building, and a few hours later army tanks began to shell the White House. By noon, troops entered the White House and began to occupy it, floor by floor. Many in the building, including Rutskoy and Khasbulatov, were taken away in the end in buses. By mid-afternoon, popular resistance in the streets was completely suppressed, barring an occasional sniper's fire.

Crushing the "second October Revolution," which, as mentioned, saw the deadliest street fighting in Moscow since 1917, cost hundreds of lives. Police said, on October 8, that 187 had died in the conflict and 437 had been wounded. Unofficial sources named much higher numbers, up to 1500 dead, mostly inside the White House. Yeltsin owed his victory to the military, the former KGB, and the Ministry of Interior, not to support from the regions or a popular base of support.

In 1993, a majority of Russians considered the events of September 21 – October 4 as an attempt of Communist revanche or as a result of Rutskoy and Khasbulatov seeking personal power. Ten years thereafter, it became more common to see the cause of those events in the resolution of Yeltsin's government to implement the privatization program, which gave large pieces of national

² Aleksandr Rutskoy, head of an anti-corruption committee, claimed to collect "eleven suitcases" of documents that demonstrated the criminal activity of Yeltsin's close associates. In response, Yeltsin fired Aleksandr Rutskoy and accused Rutskoy himself of corruption and having a Swiss bank account.

property to a limited number of tycoons (later called “oligarchs”), and to which the old Parliament (Supreme Soviet) was the main obstacle.

On December 12, Yeltsin managed to push through his new Constitution, creating a strong presidency and giving the president sweeping powers to issue decrees Baturin J. (2003)³. Although Russia would emerge as a dual presidential-parliamentary system in theory, substantial power would rest in the president's hands.

Radical privatization state property went ahead. It was a very significant event. Privatization was advertised as part of the struggle against the forces that wanted to restore communism in the country.

Despite efforts to "improve" the government, the network of Russian government institutions remained almost as extensive as during the Soviet era. It harbored myriads of bureaucrats heavily involved in bribery and corruption.

Generally, Yeltsin's presidency can be characterized by numerous weaknesses, such as the lack of a stable and well-organized proreform political camp, capricious and unpredictable personal policy, a strong populist bias in many decisions and significant fluctuation in his public activeness Baturin J. (2003).

Summary

Political economy considerations should be put forward as central feature for the transition to market economy. Market-oriented reforms should not be involved just in economic sphere, but in political process as well. Achieving political credibility and sustainability is a central issue in this context. However, this goal was far from being attained in Russia.

During his presidency, Yelcin had dismissed his entire cabinet four times. Furthermore, the constitutional crisis was a strong example of the problems of executive-legislative balance in Russia's presidential system, and, moreover, it was a conflict of a zero-sum character with the absence of obvious mechanisms to resolve it. In the end, this was a battle of competing legitimacy of the executive and the legislature, won by the side that could attain the support of the ultimate instruments of coercion

And finally, despite efforts to "improve" the government, the network of Russian government institutions remained almost as extensive as during the Soviet era. In spite of its pro-democratic and pro-market character the new constitution failed, however, to increase the political influence of the reform camp because communist and other anti-market parties dominated the State Duma (lower house of parliament) until 1999. Only the general pro-reform orientation of President Yeltsin, his determination to avoid a communist restoration and his political skills in retaining a hold on political

³ Baturin, J.,(2003):*Jelcinova epocha 1988-2000: Od Gorbačova k Putinovi*. Praha: Knižní klub., ISBN 80-242-1084-3. s. 419-473.

power and rotating reform-minded politicians in subsequent governments, kept the limited pro-reform momentum going over the entire decade

However, laws and regulations that perfectly fit into a well-developed market economy might bring unexpected outcomes when transplanted to an emerging market such as Russia. The performance of legal rules depends upon the environment in which they are applied. Powerful actors who have political influence can subvert enforcement and application of legal rules. In addition, law enforcers themselves may have their own career concerns or preferences for fairness and social justice that dictate them to apply the law differentially.

The reform process in Russia didn't contribute to the stop of public rent seeking and didn't limit the role of the interest groups. But, unfortunately generate the exactly opposite process. All these facts lead to the extremely low level of confidence of the nation towards policymakers.

The above-mentioned unfavorable and highly instable political situation, in my opinion, created the fundament for the further development in Russian society, what later appeared to be the deepest financial crisis. The institutional environment, in which the economic development takes place was extremely "unhealthy" from its basis and could not be characterized as democratic. Under such detrimental political conditions, that are not able to the effective enforcement of law, that could not guarantee the stable political atmosphere makes the whole economic system extremely weak and vulnerable to the external shocks.

2.2. Economic Reforms and Privatization Program

The unfavorable political conditions described in the previous session did not prevent Boris Yeltsin and his economic team, including reform economist Yegor Gaidar to introduce a program of radical economic reforms.

The policies that marked the transition from central planning to a market-based economy were (1) privatization, (2) liberalization, and (3) stabilization.

Privatization required establishing the commercial, legal, and institutional entities — banks, private property, and commercial legal codes— that permit the economy to operate efficiently. The later entailed implementing fiscal and monetary policies that promote economic growth in an environment of stable prices and exchange rates.

Opening domestic markets to foreign trade and investment, thus linking the economy with the rest of the world, was an important aid in reaching these goals. The program was ambitious, and the record to date indicates that the goals for macroeconomic stabilization and economic restructuring programs may have been unrealistically high.

For the main purpose of this chapter - to analyze the origins of the financial crisis in 1998 – it worthy mentioning that the crucial point in this context is the economic and social consequences of privatization efforts. I am deeply convinced that the Russian privatization to a large extent determined economic, social and political conditions in the whole economic system not only during the contemporary transitional period but also far into the future.

This session aims to investigate the institutional background in terms of the economic reforms with the emphasis on privatization process. After the brief outline of the liberalization and macroeconomic stabilization the emphasis will be put on the privatization ideology in Russia and its goals, the problems associated with the its implementation and the consequences of the privatization process for the Russian economy in terms of created institutional environment.

2.2.1. Liberalization and Macroeconomic Stabilization

The programs of liberalization and stabilization were designed by Yeltsin's deputy prime minister Yegor Gaidar, a 35-year-old liberal economist inclined toward radical reform, and widely known as an advocate of "shock therapy".

Shock therapy began days after the dissolution of the Soviet Union, when on January 2, 1992, Russian President Boris Yeltsin ordered the liberalization of foreign trade, prices, and currency.

Immediately after the dissolution of the Soviet Union was announced, the Government lifted price controls on 90% of consumer goods and 80% of intermediate goods. It raised, but still controlled, prices on energy and food staples such as bread, sugar, and dairy products.

These measures were to establish a realistic relationship between production and consumption that had been lacking in the central planning system.

This entailed removing Soviet-era price controls in order to lure goods back into understocked Russian stores, removing legal barriers to private trade and manufacture, and cutting subsidies to state farms and industries while allowing foreign imports into the Russian market in order to break the power of state-owned local monopolies.

With inflation at double-digit rates per month as a result of printing, macroeconomic stabilization was enacted to curb this trend. The program laid out a number of macroeconomic policy measures to achieve stabilization.

It called for sharp reductions in government spending, targeting outlays for public investment projects, defense, and producer and consumer subsidies. The program aimed at reducing the government budget deficit from its 1991 level of 20% of GDP to 9% of GDP by the second half of 1992 and to 3% by 1993. The government imposed new taxes, and tax collection was to be upgraded to increase state revenues⁴.

To encourage the development of the private sector, fundamental changes were made in the tax system, including introduction of a value-added tax (VAT) of 28% on most transactions, a progressive income tax, and a tax on business income; revisions in the system of import tariffs and export taxes; new taxes on domestic energy use to encourage conservation (a necessary step because energy prices were still controlled); and new taxes on oil and natural gas exports to narrow the gap between subsidized domestic prices and world prices and to prevent domestic energy shortages.

A fixed exchange rate was to be established for the ruble, which then would become convertible. Many restrictions on foreign trade and investment also were to be lifted to expose Russia to the discipline of world prices.

In the monetary sphere, the economic program required the Central Bank of Russia (CBR) to cut subsidized credits to enterprises and to restrict money supply growth. The program called for the shrinkage of inflation from 12% per month in 1991 to 3% per month in mid-1993. Under the stabilization program, the government let most prices float, raised interest rates to record highs, raised heavy new taxes, sharply cut back on government subsidies to industry and construction, and made massive cuts in state welfare spending.

These policies caused widespread hardship as many state enterprises found themselves without orders or financing. A deep credit crunch shut down many industries and brought about a protracted depression (Popov V. (1998c).

⁴ Popov, V. (1998c), *Economic Outcomes of Transformation: The Impact of Initial Conditions and Economic Policy*, *Voprosy Ekonomiky*, No.7, 1998 (in Russian).

Removing the causes of chronic inflation, the reform architects argued, was a precondition for all other reforms: Hyperinflation would wreck both democracy and economic progress, they argued; they also argued that only by stabilizing the state budget could the government proceed to dismantle the Soviet planned economy and create a new capitalist Russia.

Popov V. (1998) stated *“Elimination of most foreign exchange restrictions and unifying the ruble exchange rate in summer 1992 led to a reduction in explicit and implicit import subsidies. Opening up the economy was as important as domestic price liberalization as it stimulated, within a short period of time, a substantial inflow of consumer imports and provided a market solution to the problem of chronic product shortages and the poor quality of the consumer market”*.

Elimination of export restrictions took more time (until 1994), creating serious distortions and sources of rent extraction. Domestic energy and oil prices were never adjusted to the international level, although they reached their highest level just before the August 1998 crisis.

It is important to point out that the stabilization effort was not underpinned by deep structural and institutional reforms. Russia inherited from the past an over industrialized economy, dominated by highly inefficient heavy industry (including the military-industrial complex). The liberalization of prices and the discontinuation of subsidies resulted de facto in the destruction of a large share of the existing capital stock. Restructuring these industries is a daunting policy task: simply closing down the large number of non-viable or inefficient enterprises would not be socially and politically tolerable, while their active restructuring would require - if it is possible at all - new investment of a magnitude which, when compared with Russia's absorptive capacity, was simply implausible even in the medium run.

2.2.2. The Russian privatization

The essential point of economic restructuring, and a crucial reasoning for foreign loans and investments in Russia's economy, was the privatization program. In many respects, between 1992 and 1995 Russia was abreast with or even went beyond the initial privatization program of October 1991.

Mass privatization was the institutional background of the original economic reform program, which was launched with huge enthusiasm and very quickly, however, at the expense of substantial compromises given to influential lobbying groups.

It is important to mention the dominant method of privatization in Russia. In comparison to other transition countries, where the privatization “fashion” was the subject of a long intellectual and political debate, in Russia everything was decided within just a few months. The choice was made in favor of voucher privatization, which had been started before only in the Czech Republic, the first country trying out this method. That idea was based on the proposition that the Russian people had participated in the creation of national wealth, including all productive assets, during previous decades and therefore was entitled to share in the nation's material assets. To achieve citizen ownership, advocates proposed the creation of privatization accounts or privatization checks or vouchers.

The principal economic disadvantage of the voucher privatization was that it did not create any economic incentives for the accumulation of capital and new investments. Furthermore, it was not ideal from the social point of view. Even if each person formally received an equal share in privatized property in the form of a voucher, no effective mechanism existed for the use of these vouchers. That situation ended up in mass disappointment among citizens who expected to receive real ownership, dividends, and a visible improvement in living standards from their vouchers. Anyhow, the designed privatization program at least made an effort to take social factors into account in the whole distribution of capital, which seems to be one of the major reasons why this approach was ultimately accepted.

Despite the continuous criticism of this privatization approach (Stiglitz, 1999; Ellerman and Stiglitz, 2000), the decision taken at that time seems now to have been the most appropriate. Firstly, other methods of privatization would not have brought fast ownership changes in big enterprises for technical reasons. Secondly, this was the only politically feasible method at that time.

Privatization program in Russia has encouraged solid changes in the economic system of the country, including fundamental shifts in society, capital, and political power. The main goals of this process were a productivity gains, structural changes in the economy, and investment growth, which together promise to accelerate the rate of economic expansion. Considering the social goals the first privatization program aimed to distribute former state-owned property on a basis of social justice and

create a solid middle class based on private ownership, which was widely perceived as necessary for economic and political stability.

In spite of the serious differences of opinion between the executive and legislative branches, a majority of deputies in the Supreme Soviet adopted the government privatization program on 11 June 1992. The draft law declared six crucial goals⁵:

- To encourage private owners who would contribute to the creation of a market oriented economy.
- To increase the effectiveness of enterprises.
- To promote a social protection and a new social infrastructure based on personal income derived from privatization.
- To enhance financial stability.
- To create of a market environment through demonopolizing the national economy.
- To attract foreign investments.

Moreover, the privatization program necessitate several points that were not readily obvious, however quite substantial. One of the latent political aims of privatization was to limit the decision-making rights of ministries and other governmental bodies by transferring much of their previous authority directly to the companies. And finally, the goal of the privatization program was to establish a set of rules on the ongoing process of spontaneous privatization.

On 1 October 1992, vouchers, each with a nominal value of 10,000 rubles (about US\$63), were distributed to 144 million Russian citizens for purchase of shares in medium-sized and large enterprises that were had designated for this type of privatization. Furthermore, voucher holders also could sell the vouchers, whose cash value varied according to the economic and political conditions in the country, or they could invest them in voucher funds.

By the end of June 1994, the voucher privatization program had completed its first stage. It succeeded in transferring ownership of 70% of Russia's large and medium-sized enterprises to private hands and in privatizing about 90% of small enterprises. By that time, 96% of the vouchers issued in 1992 had been used by their owners to buy shares in firms directly, invest in investment funds, or sell on the secondary markets. According to the organizers of the voucher system, some 14,000 firms employing about two-thirds of the industrial labor force had moved into private hands.

⁵ IEPTP (Institute of the Economic Problems of the Transition Period) (1999) "The Crisis of the Financial System in Russia", *Voprosy ekonomiki*, 1998, No.11, pp.36-64)

Shortcomings in implementation

It is important to stress the fact, that reforms of such a fundamental nature require substantial time so that society as a whole can understand the reforms psychologically and what must be accomplished for successful implementation.

However, the first stage of privatization process in Russia was determined by rather opposite factors. Firstly, the extraordinary speed of the reforms should be mentioned. Yet the process was initiated in late 1991, and completed to a substantial degree a mere three years later. Secondly, the absence of solid legislative support and public understanding.

For general public, the transition reforms to market economy reform were simply associated with privatization, with no understanding of the necessary infrastructure required. There was no time for social adaptation and integration of privatization ideas, and for most of the population, privatization meant nothing more than that enterprise administrators were given almost immediate possession and control of enterprise assets following the disintegration of the Soviet Union.

No changes were observed in the methods and style of corporate governance, and nothing changed in the organizational and managerial structures of most enterprises or in the mentality of the administrators. Moreover, no serious changes occurred in worker motivation.

The core stones of Russian industry - the oil companies, metal companies, energy and telecommunications giants - were kept entirely out of the voucher privatization. And when some of these assets were later privatized through the loans-for-shares program and otherwise, they sold for a fraction of their real value

Additional distortions came from the unfavorable macroeconomic and microeconomic environments in which privatization had to be conducted: very high inflation, incomplete liberalization and lack of a proper legal and regulatory environment, including law enforcement.

Marshall Goldman⁶ (the critic of Russia's implementation of privatization) has argued that it should have extended property ownership to land, facilitated the formation of new companies, reformed the currency, liberalized prices, scrapped taxes on wages, brought fiscal policy under control, and moved toward convertibility of the exchange rate before implementing the process of privatization.

Next, a substantial share of state-owned assets were sold to managers and workers, or "insiders," compared to the former Czechoslovakia, Hungary, and Poland. In this sense, it is more precise to describe Russia's first stage privatization as "insider privatization", and thus distinct from the general pattern of privatization in other, more successful countries in Eastern Europe.

⁶ *Marshall I. Goldman: The Privatization of Russia: Russian Reform Goes Awry, 2003.*

Many have therefore argued that it would be more accurate to say that real economic reform was never tried, given that it was quickly subverted by actors outside the government's control, such as the Central Bank, ministries, regional governments, and industrial managers⁷.

Loans-for-shares program

As mentioned above, the voucher privatization has apparent defects: it neither contributes to the inflow of new investments nor encourage the accumulation of capital. During the first phase of privatization, it quickly became obvious that many companies opposed voucher privatization by outsiders and preferred instead to sell their shares for cash.

The most significant characteristic of the post-voucher privatization program, or money stage, was its emphasis on increased economic effectiveness primarily by attracting investment from abroad and by creating a group of "strategic" private owners.

The core stone of the second phase of the privatization program was a direct cash sales of shares in remaining state firms. Banks provided loans to state enterprises in return for "privatization" shares in those companies. With regard to this type of transactions this stage of privatization became to be known as loans-for-shares privatization.

In spite of the fact, that formal law declared the protection of stockholders' rights, the initial incentive was the economic goals. Like the first stage privatization, the loans-for-shares program paid absolutely no attention to employers' motivation, the implementation of economic democracy, or participatory management (Popov V. (1998)). The crucial aim of this phase was to finish the transfer of state firms and collect the government revenues.

It is important to stress the fact, that this program met a strong opposition in the State Duma. But finally was implemented by presidential decree in July 1994. And the political inconsistency surrounding this process was quite interesting to be discussed.

In October 1994, the president Yeltsin dismissed Anatolii Chubays from his position as head of the State Committee for the Management of State Property and replaced him with little-known official Vladimir Polevanov. Polevanov surprised privatization advocates by suggesting renationalization of some critical companies. The president's reaction was obvious. Boris Yeltsin dismissed Polevanov with Petr Mostovoy, a Chubays ally. Moreover, in the following eighteen months, president made two more changes in the chairmanship position (Baturin J. (2003)).

⁷ Stiglitz, Joseph (1998). More Instruments and Broader Goals: Moving Toward the Post-Washington Consensus. WIDER Annual Lecture.

The only possible implication of such political instability regarding the privatization (being the fundamental issue for the whole economic system) is obvious. Political inconsistency hamper the privatization process and blemished the privatization's public "image". The slang word "prikhvatizatsiya" (engl. grabification.) substituted the word "privatizatsiya" (engl. privatization) for general public.

This fact underlines that among citizens it was believed that the privatization process is nothing else than the control transfer from state to groups of individuals with inside connections in the government. Distrust of the privatization process was part of an increasing public cynicism about the country's political and economic leaders, fueled by the seeming failure of Yeltsin's highly touted reform to improve the living standards of the average person.

The loans-for-shares privatization program was almost finished by the end of the first quarter of 1996. However, the Government failed to collect expected revenues. Since the time this program was launched, banks had provided the government badly needed cash based on the collateral of companies' shares that banks supposedly would be able to sell later. But most of the twenty-nine state firms designed to participate withdrew, and the banks appeared to be in a conflict of interest based on their role in setting the rules of the bidding procedure (Popov V. (1998)).

As a result banks joined the opponents of privatization in attacking the loans-for-shares program, and in 1996 the government agreeded that the program had been implemented with shortcomings.

Moreover, at that time, was implemented a presidential decree, which substantially limited the entry of foreign banks into Russia. This installed the beginning of unfavorable conditions in the Russian banking sector, lacking in proper competition, and eventually contributed to the 1998-banking crisis.

Real outcome of the privatization program

The quantitative outcome of privatization in Russian was quite fascinating. By the end of privatization process more than 140,000 previously state-owned companies (out of a total of 267,000 nonagricultural enterprises) were transferred to the private ownership. The privatized companies use more than 60 % of the productive capital in manufacturing, produce 75 % of the Russian GDP, and employ about 80 % of the national labor force⁸.

It worthy mentioning the results of so called "small privatization" in the service industry, where the share of private-owned firms was more than 80 %. Management changes took place there, the bureaucratic staff was reduced, and new motivational incentives were introduced.

⁸ IEPTP (Institute of the Economic Problems of the Transition Period) (1999) "The Crisis of the Financial System in Russia", *Voprosy ekonomiki*, 1998, No.11, pp.36-64

However, not just the quantitative results are important in this context. The economic and social consequences of Russian privatization are the crucial point while analyzing the origins of the financial crisis in 1998.

In accordance with the established goals of privatization - increased economic effectiveness, enhanced financial stability, a competitive environment, and attraction of foreign investments – the actual outcome was somewhat misleading. Generally speaking, the key purpose of privatization program was far from being targeted.

During the first phase of privatization process the main aims could not be reached due to the fact, that it did not include a real increase in capital or real investments. Thus, virtually no real economic benefits were yielded from the voucher privatization.

The second phase of privatization process did not provide any substantial reasons for optimistic expectations. The loans-for-shares program aimed to attract foreign investments and thus to enhance economic effectiveness. However, several political and economic conditions did not enable to reach the expected targets and resulted in slowdown of the privatization process and low levels of investment. Among them were political instability (frightening both foreign and national investors), faulty legislation, general economic slowdown, and relatively high inflation during most of the 1990s.

As was already mentioned above, the government's efforts focused mainly (in contrast of the established goals) on the reduction of budget deficits at the price of privatization rather than pursue a strategic vision of economic transition. However, even these attempts failed to collect the expected revenues. In 1995 the income from privatization accounted for 3.8 trillion rubles, which was equivalent to one half of the initially expected value. The securities auctions conducted in 1995 earned an additional 4 trillion rubles. In 1996 revenue from privatization were 3.2 trillion rubles.

In 1996 the Accounting Office of the Russian parliament declared that income from privatization program that year was about 280 times less than it could have been; if it were properly implemented, privatization could bring about 70 trillion additional rubles to the budget.

Summarizing the results of the privatization process several important points should be stressed. The federal budget lost potential revenues, due to the fact, that the most attractive assets were sold far below their potential market price. The overall privatization program helped to build strong financial-industrial groups controlling Russia's economic and political life over the next years. The public legitimization of the privatization process was seriously undercut because most of population started to consider it as just 'stealing' the national assets.

2.3. *Summary*

The whole process of Russian transition was non-transparent and, thus, brought a number of negative consequences, which influenced the whole economic system far into the future and left the country extremely vulnerable and unsustainable. Thus the origins of the Russian crisis of 1998 are to be found in the country's economic structure, institutional environment and political processes.

The progress in institutional and legislative reforms in Russia in the 1990s has thus been modest and the emerging market infrastructure in the country has been extremely feeble. This is especially so in the areas of commercial and corporate law and, indeed, in the establishment of the rule of law in general. Contractual agreements are among the basic foundations of market relations but an adequate legal framework in Russia has never supported them: their execution most often relies on the goodwill of the parties, while contract enforcement is often impossible by legal means.

Very little was done to reform the functioning of Russian public administration whose lack of transparency and irregular practices is well known. This omission gave birth to widespread rent seeking which even in the early phases of the reform process (when the country's assets, including the control of mineral resources, were being privatized) resulted in the de facto concentration of wealth in a relatively small group. The latter in turn used its newly acquired economic power to pressure the legislative and regulatory bodies for new concessions. This distorted the socio-political and institutional environment, and the presence of a deliberately malfunctioning public administration has created a vicious circle that is a major obstacle to reforms and to social justice.

Important issue in this context was the fact, that huge amounts of capital left Russia and were spent on investment in real estate or just placed in safe havens instead of being put to productive use within the country. The unprecedented rapid stratification of society and the public perception of a lack of social justice in the process of policy development eroded initial public support for the reforms and strengthened the revival of a conservative opposition to the reform process.

The Russian privatization resulted in most cases in the concentration of effective property rights in the hands of insiders (company managers) who had neither the incentives nor the capital to perform the necessary deep restructuring of the enterprises. The newly emerging system of private ownership was not conducive to effective corporate governance and was in fact another obstacle to the process of enterprise restructuring. Moreover, the loopholes in regulation and perverse incentives seem to have incited a continued stripping of the assets of the privatized enterprises rather than their market-oriented restructuring.

In addition, the unhealthy privatization process negatively influenced the Russian securities market. It appears to be not as a mechanism of raising capital, but as an instrument to redistribute property among the new entrepreneurial class. Most newly privatized enterprises were not interested

in issuing shares on the open market to attract new investors and investment funds, but rather initially motivated by a desire to retain control.

Furthermore, two dominant components of a macroeconomic situation in Russia - banking system and the state budgetary system - were highly unsustainable and weak, as a result of the economic reform program. These negative conditions seriously undermine the development of the Russian financial sector, which later in August 1998 appears to be in the deepest crisis.

While speaking about the institutional background of the Russian economic system at the pre-crisis period, it is important to underline, that Russia was left with Soviet-era institutions. The legal structures of a market economy that govern private property, oversee the financial market, and enforce taxation were not functional.

Complex market economy requires strong contract enforcement, accepted customs and practices, and financial and regulatory institutions account for the bulk of economic output. However, in case of Russian the situation was rather opposite. Mass distrust towards transformation reforms, weak law enforcement, highly instable political environment, poorly implemented privatization program and lack of financial institutions to provide capital necessary to revitalize privatized companies.

The emphasis was put on just privatizing state-owned enterprises, rather than enhancing competition. According to Stiglitz, the main economic shortcomings of the transition were the emphasis on privatization over competition and the emphasis on restructuring of the existing companies over creation of new jobs and new revitalised and effective enterprises.

In conclusion, the attention paid to the institutional infrastructure - from legal structures that enforce contracts to regulatory structures that make a financial system work - that would allow a market economy to flourish was insufficient and poor and finally led the country down a path where economic collapse was almost inevitable.

Thus the origins and conditions for financial crisis in were set in the early stages of Russian independence.

3. ECONOMIC AND FINANCIAL SECTOR DEVELOPMENT IN THE PRE-CRISIS PERIOD

The process of economic transformation in Russia has been marked by a prolonged transitional depression and macroeconomic instability: seven years of continuing economic depression resulted in a total slump of GDP by more than 40% between 1989 and 1996; in that period there were also several explosions of near- hyperinflation.

By late 1994 the most important economic issue for Russian economic policy was high and variable rate of inflation with ten-to-thirty percent monthly price increases during 1991-1995. It was one of the basic infections of the whole economy: declining production, dropping investments, increasing income differences and the appearance of a poverty problems. After experiencing high inflation during the period immediately following the deregulation of prices on January 2, 1992, Russia finally opted for the program of the exchange-rate-based price stabilization. The first radical effort to tackle inflation was the IMF-supported stabilization program of 1995.

The main goal of this program were to reduce the rates of the growth of money supply and thus to curb inflation. In focuses on measures to contain within reasonable limits of the government budget deficit and to find non-inflationary ways for its financing. Moreover, the program aims to push economic growth through stimulating investments and real personal income.

The stabilization program was launched in July 1995 with tight monetary control and nominal exchange rate targets. Subsequently, direct central bank financing of the fiscal budget was discontinued and the exchange rate was placed under control: a fixed rate foreign exchange policy was used as a nominal anchor, which stabilize the real exchange rate in 1995-1997.

Since 1996 Russian monetary authorities established a wide sloping “corridor” of 12-14% around the fixed rate within which the exchange rate was allowed to fluctuate. As a result, the rate of currency depreciation was seriously reduced. Due to high dependence of inflation rate on the rate of currency depreciation, associated with a high dollarization of economy (the prices of significant number of goods and services were denominated in US dollars), inflation was narrowed in a few months.

In the years that followed, Russia made marked progress towards price and exchange rate stability (figures below) and this prompted positive expectations in the West and a widespread - but in the event deceptive - perception that the country was pursuing the right course of reforms. An implementation of the financial stabilization program since April 1995 resulted in a radical change of the political, economic and financial situation. By mid-1996, the results were mixed.

Until 1995, the federal deficit was mainly financed by the CBR. However in April 1995 the CB law legally forbade this. It worthy mentioning the fact, that also in an attempt to battle the hyperinflation the Russian government shifted away from printing rubles as a source of financing government deficit. Because prices were still rising rapidly, and the overall economic situation was extremely shaky, investors were only willing to accept government obligations with very short maturity (mostly known by acronym GKO). The GKO system had to substitute money printing as a source of budget deficit financing.

3.1. *The GKO-OFZ Market: Asset Structure and Participants*

The government debt market was established in order to provide domestic financing for the fiscal deficit. Market financing was considered a source of non-inflationary financing as an alternative to direct credits from the CBR. The first bonds that were issued in May 1993 in a form of zero coupon bonds that promised to pay a predetermined (face) value on a fixed date. These bonds were called government credit obligations (GKO). The maturity of the first issues was three months.

In 1995 the Ministry of Finance (MinFin) started to issue federal variable coupon bonds (OFZ-PK) with maturity of more than one year. During the period of circulation, the MinFin paid coupons according to the prevailing market level of interest rates. In 1996 the MinFin issued fixed coupon bonds (OFZ-PD) to restructure its debt to the CBR that had been accumulated during 1992–1994. These bonds began to be quoted in the market only in June 1997. By the time of the crisis, short-term bonds (GKOs) composed the largest share of the government bond market (see Table 1).

Table 1. Structure of GKO-OFZ market (October 31, 1997)⁹.

	Definition	Maturity	Market Share¹⁰
GKO	Zero coupon bonds	Up to 1 year	81%
OFZ-PK	Variable coupon bonds	2 years	12%
OFZ-PD	Fixed coupon bonds	2 - 7 years	7%

Regularly on Wednesday the MinFin redeemed bonds and issue of new ones. The issuing content was announced in advanced. The pricing of new bonds was done by means of a primary American-type auction. The participants of the auction submitted two types of orders: competitive, that included price and quantity; and non-competitive, that is an intention to buy a stated volume of securities at the average auction price. The MinFin determined the cut price and accepted orders with bidding prices higher than the cut price.

⁹ Helmenstein, C. and Krylova, E. (1998) The Russian GKO market: Anatomy of Crisis. East European Chronicle No.4/August 1998. Erste Bank.

¹⁰ Market value, CBR not included

Apart from primary auctions, there existed a secondary market for government securities in which trade was fully computerized and carried out in the Moscow Interbank Currency Exchange (MICEX). Due to the paperless nature of the state bonds, the only way to buy or sell securities was to participate in the secondary market, that is, in the MICEX. In this secondary market, buy/sell orders were of two types; however, there existed certain restrictions that will be mentioned below.

All the participants in the GKO-OFZ market can be divided into the following four major categories: the state (CBR and the MinFin), nonresidents, dealers, and other residents. Direct participants in trading were dealers - financial institutions (mostly banks) that had signed a special agreement with the CBR and thereby were permitted to directly participate in trading sessions. Some dealers signed another special agreement with the CBR and were called primary dealers. The division between primary and other dealers began in 1996. The aim of singling out primary dealers was to establish a two-level mechanism of market regulation in which the CBR controls only a relatively small number of key market participants.

Primary dealers had significant advantages over the others including the exclusive right to submit orders with lasting terms, access to additional refinancing facilities, and the right to take limited short positions. Primary dealers had additional obligations according to their role as market regulators. Primary dealers were requested to participate in auctions buying out certain volumes of new issues and in the secondary market to maintain the liquidity of some securities or the market as a whole. Officially this took the form of an obligation to keep a certain bid/ask spread, to maintain a minimum volume of selling and buying orders, and to recover executed orders in time. In mid 1997, out of about 300 dealers in the GKO-OFZ market, 43 were primary dealers.

As was already mentioned, the CBR and the MinFin represented the state in the secondary market. The MinFin occasionally used the secondary market to sell additional papers and buy out previous issues if it was deemed to be optimal. The CBR took active part in secondary trading, smoothing the yield curve according to its short-term objectives, intervened to maintain long-term liquidity. The CBR was also responsible for monitoring and regulating the activity of GKO-OFZ market participants. At the same time the CBR also financed the deficit through the secondary markets.

It is important to point out the role of Sberbank (the savings bank) - the largest state-owned bank, which alone accounted for about a quarter of all bank assets. The CBR was not legally able to participate in primary auctions; however, Sberbank fulfilled this task. The market value of Sberbank's portfolio was larger than the portfolio value of all the other dealers as a whole. At times, it owned up to 40 % of the GKO stock. Three quarters of household ruble savings went into the Sberbank. These saving were not channeled into investment; they were used for financing the public sector deficit.

Dealers, excluding Sberbank, held 25% of the market portfolio. Russian banks were important buyer of ruble denominated state bonds. In 1997 30 % of the banking sector revenue was derived from government securities, though by 1998 the share was down to about 15 % (Dmitriyev and Surkov, 1999). The larger Moscow-based banks dominated the market.

Some two thirds of the total number of banks had less than 2 % of their assets in GKO's (Dmitriyev et al, 1998). The share of other residents was less than 20%. However, they amounted over 40,000.

Another important participants of the GKO-OFZ market were non-residents. According to the official definition, non-residents were individuals having permanent residence abroad or institutions that were created in accordance with foreign legislation. However, this definition is not entirely appropriate since in practice not all non-residents were 100% foreign-owned companies. Russian companies had opportunities to establish daughter companies in other countries (offshore) in order to minimize their tax burden. About half of all non-residents who invested in GKO- OFZ market were either residents of Cyprus or residents of republics of the former Soviet Union¹¹.

It worthy mentioning that as much as one third of the short-term bonds was held by foreign investors attracted by high interest rates and short-term commitments. Non-residents were not allowed to invest in state bonds under the same conditions as residents until 1998. In order to lower the cost of borrowings the Russian government facilitated the entrance to the GKO market for non-residents since the fall of 1996.

In 1996, as a result of IMF insistence, the GKO-OFZ market was opened to non- residents. It was admitted to purchase securities only in primary auctions where they settled non-competitive orders and they had no right to participate in secondary trading. In fall 1996, non-residents were admitted to the secondary market. Until the end of 1997, certain restrictions existed on non-residents' capital flows in and out of the market.

A non-resident willing to invest in the GKO had to exchange a certain fraction of invested funds directly via the CBR. If the non-resident intended to withdraw funds from the market, he was requested to inform the CBR in advance and to make a forward deal with the CBR to exchange a certain share of withdrawn money at a forward exchange rate¹². The forward exchange rate was determined in such a way that the dollar yield on government bonds was set at a targeted level. In 1996, the share of non-residents' funds subject to forward transactions was 100%; however, it was gradually lowered, as were minimum terms.

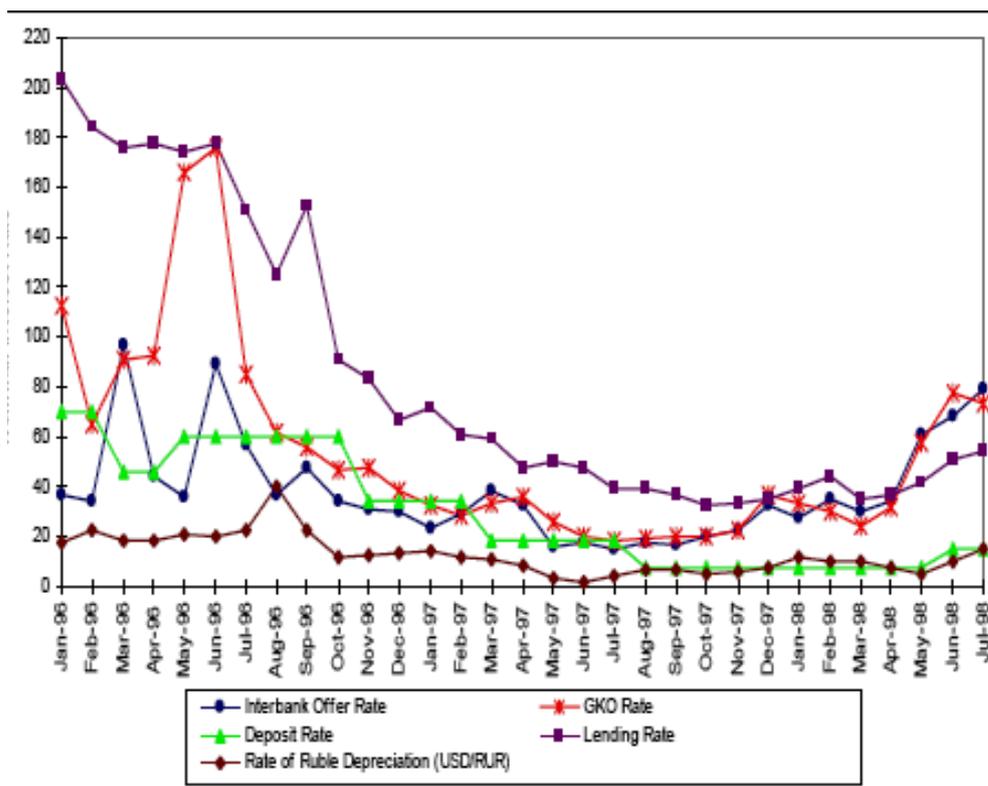
¹¹ Medvedev, A. and Kolodyazhny G. (2001) "Financial Crises in Russia: The Behaviour of Non-Residents", EERC Working Paper No 2K/12

¹² The minimum term between the time of informing authorities about the intention to withdraw funds and the time of the actual withdrawal was determined by the CBR.

An alternative way was to establish a branch institution in Russia, which according to the law could be dealer or even primary dealer. For instance, Credit Suisse First Boston had a daughter company that was a primary dealer in the GKO-OFZ market. Despite the fact that non-dealers could not directly participate in trading sessions, large clients however through different channels still had direct access to secondary trading. By the beginning of the crisis, the share of non-residents in the GKO-OFZ market had grown to 40% (not including the CBR).

In order to make the GKO's more attractive, the government was forced to offer high interest rates to the investors. High interest rates and fixed exchange rate, which seemed to insure investors against exchange rate risk, generated massive capital inflow (\$19 bln. or 10.7% of GDP in the first half of 1997). As a return on GKO was high and considered as risk-free, the bank-lending rate went up too, and became prohibitively high for most of the enterprises. This resulted in reduction of the demand for loans, and the share of bad loans boosted due to adverse selection.

Figure 4. Rates of return on the major financial instruments in Ruble (January 1996 – July 1998)



Source: Central Bank of Russia.

This massive capital inflow also resulted in a rapid growth in the share of non-residents in the domestic-currency debt outstanding and made them the main creditors of the government, excluding the Bank of Russia.

According to Entov (1999) a share of non-residents in the GKO market increased from 2-3% in the spring of 1996 to 30-35% in the mid-summer of 1998. The volume of state bonds owned by the foreign investors became two times higher than Russia's international reserves by 1998.

As a result of large-scale capital inflow and the dependence of Russian financial assets' prices on the conditions of the international capital market grew significantly. This conclusion is confirmed by the results of statistical tests. In January 1996 – July 1998 the correlation of return on GKO obligations with return on US T-bills and the rate of ruble depreciation were 0.6 and 0.79 respectively (Shpringel, 2000).

By early 1998 the stock of securities equaled or was higher than the ruble money stock. Non-residents were officially allowed to the market in early 1996, and by summer 1998 they directly held 30 % of GKO debt, equivalent to about \$70 billion. Moscow analysts assume that the actual share held by non-residents may have been as high as one half (Malleret et al, 1999). Thus, non-residents held some \$25-35 billion worth of GKO debt in a country with the official reserves of \$16 bln. at the end of July. This was a fragile situation, made worse by privately held short-term foreign debt. By early 1998, no limitations on outward capital flight were in place. Therefore, Russia was very vulnerable to a sudden turnaround in investor confidence.

3.2. *Fiscal Deficit Problems*

There is wide agreement that problems with fiscal deficit in the pre-crisis period and the overall situation on the government debt market was the direct reason of the Russian financial turmoil in August 1998. However, to my view, the fiscal crisis in Russia itself can be seen as an expression of the overall crisis of the Russian transformation.

While monetary policies were tight, fiscal budget remained in deficit. Since 1993, the enlarged government deficit varied between 5 to 10 % of GDP, and no any clear decreasing trend could be observed.

Fundamental institutional reforms of both taxation and expenditure have been persistently set back by political conflicts and government mismanagement. None of the governmental trials to stabilize the imbalance has succeeded in reducing deficits to sustainable level. The principal change has been simply in the method of financing the gap, the major shift from the inflation tax to state bonds financing occurring in 1995. Taking into account the high real interest rates to service domestic debt, a sustainable level of the fiscal deficit in relation to GDP could have been attained only if there had been more successful efforts to increase government revenue and economic growth.

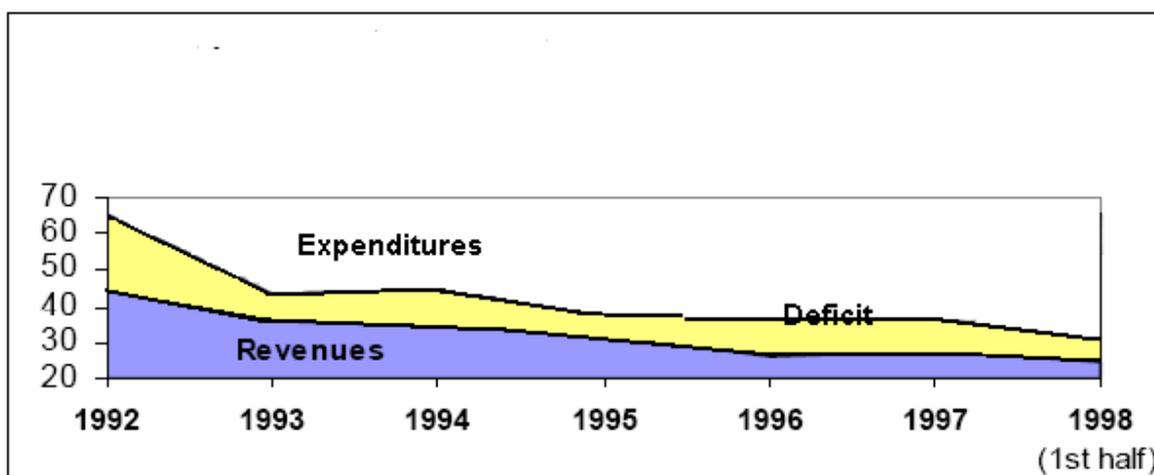
However, the Russian government was unable to collect taxes. The fiscal budget revenues as a share of GDP have declined from about 43 % in 1992 to about 28 % in 1997. Continual campaigns to increase tax revenue have conducted to some of the worst deviations of the Russian economy:

system: tax evasion, capital flight, growth of the informal sector, squeezing of new private entities, corruption and demonetization.

It is important to mention in this context the following problems on the revenue side of the fiscal budget. Firstly, the overall tax system was deficient. Personal taxation is of little importance, corporate taxation has irrationalities and exemptions and other aspects of negotiated taxation are rife. Furthermore, the share of regional tax revenue increased at the cost of federal revenue without a consistent fiscal federalist solution. And finally, as was already mentioned, not all tax revenues were cash payments. Non-cash fiscal flows debar the efficiency of fiscal policy. The short-lived Kirienko government presented in mid-1998 a fiscal package that might have helped, but the government had almost no political support in the Duma.

However, the state budget problems were not only on the revenue side. Despite the reduction of non-interest government expenditure - like military procurement – so its share in GDP has dropped significantly, the weight of debt-servicing cost raised rapidly.

Figure 5. Consolidated government revenues and expenditures, % of GDP



Source: *Russian Economy. The Month in Review, 1998.*
 Bank of Finland, Institute for Economies in Transition.

Since the government had serious troubles collecting taxes, the support of the GKO system relied on its own reproduction, thus creating the danger of a financial pyramid. The financial resources to pay off the previous GKO obligations were coming from the issue of new GKO's. The burden of interest payments grew year by year. In 1995 while Russian official statistics records the budget deficit at around 3 % of GDP, interest payments on the growing stock of GKO's were actually adding nearly the same amount in order to service the debt costs. Interest payments equaled 5.9% of GDP in 1996, 4.6% in 1997, and 5% in the first quarter of 1998. Even more, the debt burden continued to rise as the government budget continued in deficit even excluding interest payments – by 2.5% of GDP in 1996 and 2.8% in 1997. The statistical data are summarized in the table below.

Table 2: Government deficit, 1995-1998

Year	Primary Deficit (Percent of GDP)	Interest Payments		Government Debt ¹³	
		Percent of GDP	Percent of revenues	\$ US billion	Percent of GDP
1995	2.2	3.6	28	170	50
1996	2.5	5.9	47	201	48
1997	2.8	4.6	38	218	53
1998 (1 st quarter)	1.3	5	43	242	75

Source: Ministry of Finance and IMF reports

As table below represents, while the original inflation targets were largely met for 1996 and 1997, actual fiscal deficits far exceeded their original targets. This explains why nominal debt levels rose in table #, but the riddle of the constant debt/GDP ratio remains, especially as growth was either negative or negligible.

Table 3: Targeted and Actual Inflation and Fiscal Deficit, 1995--98

Year	12-month Inflation Rate (Percent a year)		Fiscal Deficit (Percent of GDP)	
	Target ¹⁴	Actual	Target ⁷	Actual
1995	63	131	6.0	5.7
1996	25	22	4.2	8.4
1997	9	11	3.2	7.0
1998 (1 st quarter)	6	84	2.2	5.9 ¹⁵

Source: Ministry of Finance and IMF reports.

Discontinuing the unorganized emissions of money was a very important issue, however in result, the government's dependence on ruble-denominated debt with less than one year maturities made it to constantly refinance that debt, a finally the burden of debt service increased rapidly.

In order to avoid a debt spiral, any program adopted then would have had to assume an economic growth, a stable exchange rate, rising world commodity prices, a government able to manage progress towards a primary budget surplus by means of a major fiscal reform, and the willingness of initial bond holders to roll over and increase their holdings.

¹³ Domestic plus foreign

¹⁴ Targets for 1995 were set by the Stand-By-Arrangement with the IMF. Targets for 1996--98 were set as part of a three-year Extended Fund Facility credit.

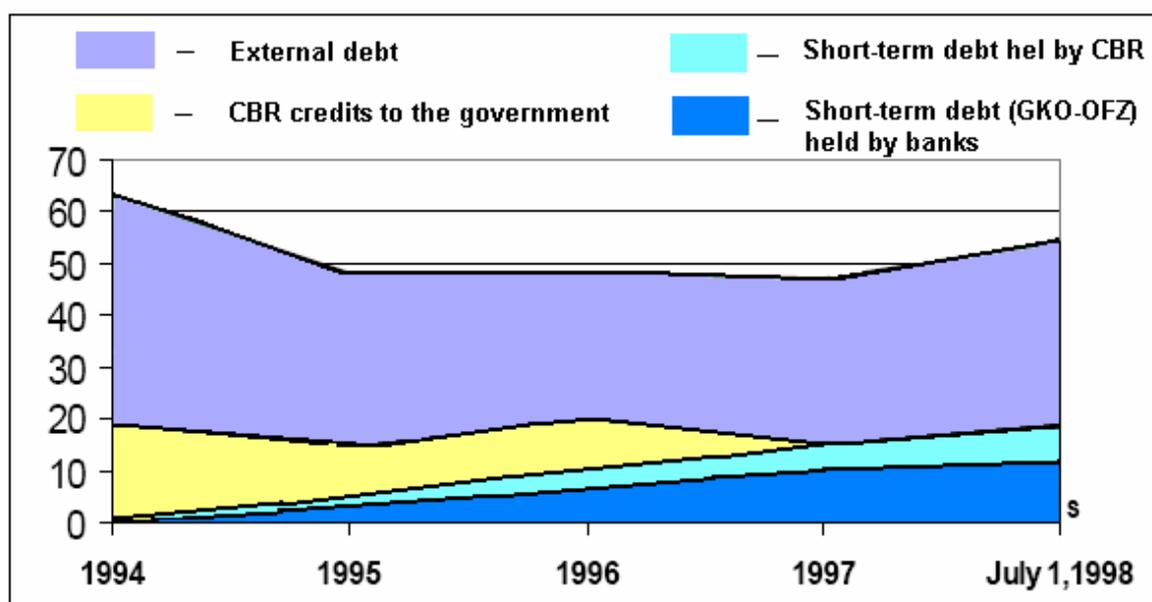
¹⁵ Excludes overdue interest on GKO and OFZs.

However, these conditions turned out for the most part to be mutually inconsistent or unattainable. A rise in world oil prices in 1995 and 1996 initially masked this impossibility.

Though the domestic-currency debt was not large – approximately 20% of GDP by 1998 – the situation with its servicing was tense. Due to positive real interest rates and the necessity to finance primary budget deficit (it was about 2-3% of GDP in 1996-1997), domestic-currency debt and debt servicing payments proliferated. The ratio of internal debt to nominal GDP continued to grow even in 1997¹⁶, when interest rates were at their minimum and the rate of real output growth was close to zero.

Russia also had foreign currency denominated debt. Net inflows to the federal government were \$2 billion in 1996, \$15 billion in 1997 and finally \$ 7.7 billion in 1998. In addition, local governments, banks and companies were able to access the international markets so that in late 1998 non-sovereign debt amounted to \$31.7 billion. Corporations often financed their domestic activities with dollar-denominated liabilities. Banks more usually both borrowed and lent in foreign currencies, but the quality of domestic currency loans was very low, as bank clients were weak and often had a currency mismatch. There was also a maturity mismatch, as foreign borrowing was often short-term, domestic lending longer-term.

Figure 6. Government debt, % of GDP



Source: *Russian Economy. The Month in Review, 1998.*
 Bank of Finland, Institute for Economies in Transition.

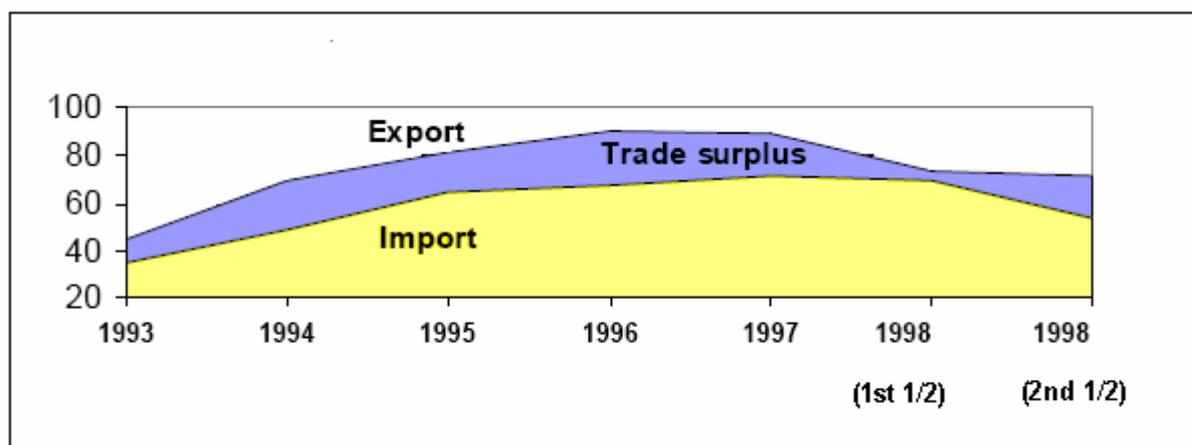
¹⁶ The domestic-currency debt to GDP ratio rose from 17% in January 1997 to 20% in November 1997.

3.3. The Balance Of Payment

The macroeconomic stabilization program of 1995, was based on a weak foundation of the overvalued exchange rate of the ruble and on the policy of the CBR to keep the real exchange rate intact, i.e. to proceed with the devaluation of the nominal rate in line with the ongoing inflation.

As a result, the unsustainable situation developed in Russia, since 1995, when the exchange rate of the ruble approached some 70% of the purchasing power parity (PPP) and stayed at this level until the August crisis. The previously high export growth rates slowed down substantially (from 20% in 1995 to 8% in 1996 - for total exports, and from 25% to 9% respectively - for exports to non-CIS states). In 1997 total exports fell for the first time since 1992. Needless to say, it was Russia's already weak export of manufactured goods that was most affected by the appreciation of real exchange rate.

Figure 7. Russia's foreign trade, \$ US billion



Source: EBRD, 1996, 1997, and 1998.

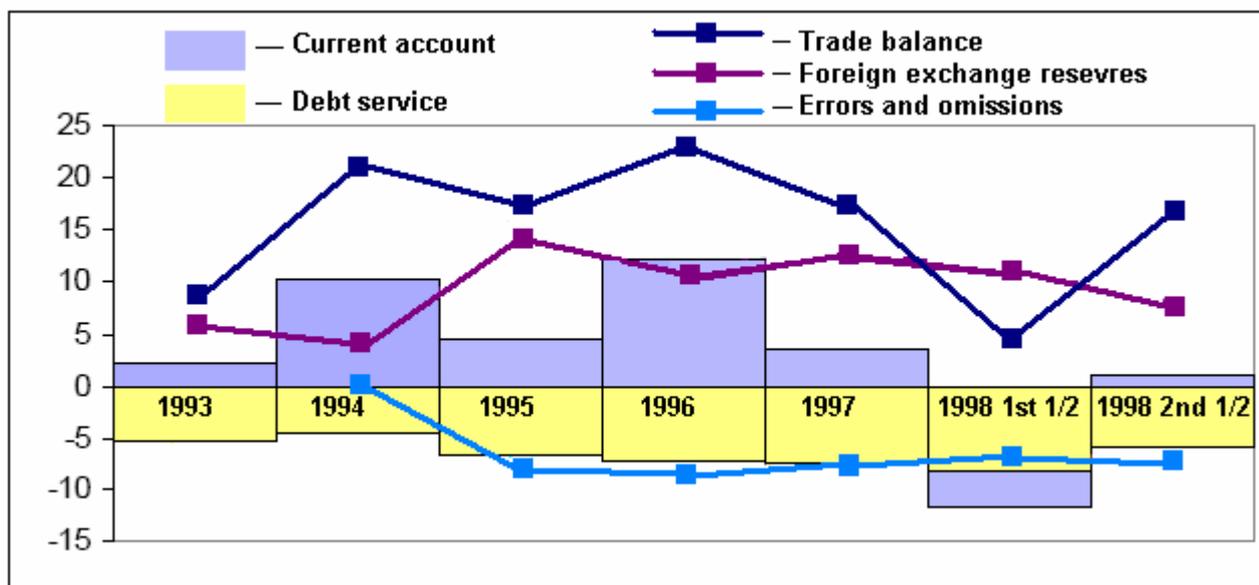
It is important to stress the fact that commodities account for the bulk of Russia's merchandise trade. By the first half of 1998, the share was 77 %. Russia's terms of trade had improved by 16.5 % from October 1995 to January 1997. Then the terms of trade declined by 37 % by December 1998. Oil price peaked at about USD 24 per barrel (North Sea Brent) at the turn of 1996-1997 but then declined, as demand lagged due to the Asian crisis, to USD 12 and even 10 in 1998. Other raw material prices followed slightly later. The decrease in the oil prices in the world market in 1997-98 added insult to injury: the reduction of export accelerated in the first half of 1998, which together with still rising import.

Imports continued to increase rapidly in spite of the GDP decline. This hit Russia's trade balance, even turning the current account position negative in the second quarter of 1998, for the first time since the beginning of reforms. Given the need to service the debt and the continuation of the capital flight (which is partly captured in the "errors and omissions" in the balance of payments statistics, the negative current account was the sure recipe for disaster.

Concerns about the stability of the ruble increased, in particular as the Moscow stock exchange started to decline since October 1997.

Energy companies account almost half of the market capitalization. As low commodity prices cut into export profits, tax revenue deteriorated. And because a number of major banks had acquired shares in commodity producers, the position of the banks also deteriorated.

Figure 8. Russia's balance of payments and foreign exchange reserves¹⁷, billion dollars



Source: EBRD, 1996, 1997, and 1998.

Despite the progress in disinflation, the climate for productive investment in Russia remained hostile, mostly due to the negative impact of this political and economic environment. Owing to the persistent lack of investor confidence which changed little after 1995, the dramatic fall of investment in productive assets continued, leading to further decapitalization of the economy and undermining the sources of future growth. In real terms, gross fixed investment in 1997 was a mere quarter of its 1991 level. Hence the long-awaited recovery failed to materialize and the modest economic upturn in 1997 turned out to be short-lived.

In the absence of a coherent and consistent policy mix, the considerable tightening of monetary policy after 1995 had a marked negative impact on economic activity. The combined effect of tight monetary policy and the large public-sector borrowing requirement was exceptionally high interest rates. But, as was already mentioned above, the Russian financial markets were dominated by lucrative speculative operations, and the banks had no incentive to engage in normal lending. As a result, after 1994, total credit to the non-government sector declined as a share of GDP and stayed at a very low level, and the corporate sector's access to bank finance was extremely limited.

¹⁷ Excluding golden reserves

The prolonged financial squeeze on enterprises provoked an acute credit crunch and the emergence of various monetary surrogates (acting as payment substitutes) and widespread barter (closely related to the diffusion of loss-making activity), which eroded further the tax base. Wage arrears kept mounting not only in the public domain but also in the corporate sector: in 1996-1997 the latter was responsible, on average, for about 85% of outstanding wage commitments.

4. THE AUGUST 1998 CRISIS

The situation in the Russian financial market seriously worsened in the fall of 1997, when the Russian economy started to feel the spillover effect from the Asian financial crisis. Due to the large losses on investment in the Asian financial markets international investors became more cautious about transactions on the emerging markets. As a result the required return on GKO rose from 14% in September 1997 to 28% in November 1997, when, in fact, the first crisis took place.

The CBR stopped supporting the GKO- OFZ market and the main priority for the monetary policy during the crisis in November 1997 was the stability of the exchange rate. The governmental resolve to keep the currency stable was setup by several factors. Firstly, the stability of the exchange rate was a very important political issue. It happened to be one of the few economic achievements the Yeltsin government could argue.

Then, it is important to point out, that both private Russian banks and the fiscal budget had significant currency debts, and a drop in the value of the ruble would make that debt - servicing costs much higher. Taking into account the fragility of the most Russian banks, stability of the exchange rate helped keep the system functioning.

Despite depleting a third of its foreign reserves, the CBR succeeded in defending the currency in November 1997, the time of the first Asian crisis.

However, after the 'tenuous' success in November 1997, the situation worsened again in the beginning of 1998. As was already mentioned above, Russian economy hardly depended on exports of energy resources and other primary commodities, which counted up to 80% of Russian total exports. Right after the Asian crisis the world demand dropped down, as East Asia was a rapidly growing region with a high demand for oil, gas and metals. As a result the prices of oil and other primary commodities decreased. Thus, the exporting revenues declined rapidly, by around 11% in the first half of 1998 and terms of trade deteriorated seriously. Due to the fact that oil-extracting companies were the main taxpayers, fiscal revenues declined as well.

For the first half of 1998, the consolidated budget deficit (federal, regional and local), according to the lowest Russian State Statistical Committee (Goskomstat) accounted to 4.8% of GDP. However, the overall situation was substantially worse, the major extra-budgetary fund, the Pension Fund, is reportedly also was in an exceptionally large deficit. In addition payments and wage commitments throughout all sectors of the economy continued to grow.

Since the government received less revenues and the cost of borrowing rose, debt-servicing problems began to mount. The ratio of debt services to tax revenues grew steadily. As a result the overall deficit revealed the debt spiral: debt-servicing costs were almost one-third of fiscal expenditures in the first quarter of 1998.

Monthly debt-servicing payments were two times higher than the tax revenues of the federal budget in the mid-summer of 1998. In July 1998 the inflow of purchases minus the interest payments and principal repayments became a net negative of \$1 billion each week. This tenseness was an additional factor undermining confidence in the ability of the Russian government to improve the situation.

It worthy mentioning one more important aspect of East Asian crisis: apparently foreign investors lost confidence in emerging markets, risk aversion started to increase causing a withdrawal from emerging markets, not just Russia. As news about the Asian economies failed to improve and even Japan was in a slump, on the Russian financial markets fewer and fewer investors were willing to buy even state obligations. Some economists claim that without these external shocks Russian economic system would have sustained (Buchs (1999)).

A governmental package signed by president Yeltsin on 26 May was intended to revive investors' confidence in Russian markets. The government tried to restore the situation by combating tax evasion and extending the tax base (a tax administration program was submitted to the parliament in May 1998) but it could hardly affect the market participants' expectations since it was believed that the government would need far too much time to realize this program. Moreover, the failure of the government to attract any bids for a 75% stake in Rosneft, the last major state-owned oil company, strengthen the worries considering the government revenue projects. A majority of investors realized that the government had no funds to pay off the debt and began to withdraw capital. In July the government-owned Sberbank declined to roll over its holdings of maturing short-term treasury bills (GKO), a remarkable indicator of the fragility of the situation.

Foreign investors also started to withdraw from the Russian financial markets. In the fall of 1997 they were estimated to hold around 10% of the shares in the booming Russian stock market whose capitalization exceeded \$100 billion. Already until mid 1998 - in just about 9 months - the stock prices in dollar terms fell by over 80% to the lowest level since 1994. From February 1998 the total amount of securities held by the non-residents started to overcome the value of the country's foreign exchange reserves¹⁸ - just like in Mexico since June 1994 the value of dollar denominated Tesobonos exceeded total reserves (Griffith-Jones, (1997)). The decision of the CBR to extend slightly the width of the exchange rate band from the beginning of 1998 was a 'cosmetic' attempt and has not remunerated much space for room for the maneuver.

In mid-June, the International Monetary Fund delayed a \$670 million installment of its \$9 billion credit to Russian economy because of the government's problems in meeting fiscal conditions for the loan.

¹⁸ Astapovich E.A. (1999): Survey on Economic Policy in Russia in 1998, Buro Economicheskogo Analiza (in Russian).

As a result of the last month's development and the growing loss of confidence in Russian financial markets, the government asked for substantial new loan from the IMF and other Western lenders, totally in amount of \$10-15 billion.

An additional anti-crisis package of tax measures, reported late in June, has not improved the situation with investors' confidence, however, did move the IMF to deliver the delayed credit. The first installment of \$4.8 billion provided by IMF went directly to the CBR to fill up the depleting foreign exchange reserves, but even this fact has not restored the situation in investors' behavior.

In the beginning of July the situation deteriorated due to coal miners strikes and blockades of key railroad links. As a result the financial markets dropped further as political uncertainty increased. On 13 July, in response to loss of confidence about the solvency of the Russian government, the IMF approve a further \$17 billion over two years to improve the situation on the financial markets and keep the government afloat. Accompanying credit brought the total to over \$22 billion.

It is important to point out the fact that the IMF approved the loan to Russia under certain conditions. They contained a major cut in the fiscal deficit from 5% of GDP to 2.8%, a more remarkable increases in tax revenues, and an overall shift in the tax burden from corporations to individuals due to the fact, that the existing tax policy put nearly all the tax burden on companies, resulting in low compliance.

The IMF credit and the government's agreement to such stiff conditions seemed to be productive. The new tax policy package contained new sales and land taxes, increases in property taxes and import duties, and extending the coverage of the VAT. It worthy mentioning, that the markets reaction towards these changes was quite optimistic. However, the conservative Duma blocked the most of the proposals. And this is widely considered as a major politics' failure right before the crisis.

During the May-June 1998 the pressure on the exchange rate became too heavy. The CBR's main priority was keeping the ruble stable. The withdrawal of funds from Russian financial markets threatened to force the ruble out of its official trading band in the absence of intervention. In addition to interest rate increases and the central bank was increasingly forced to dip into its foreign exchange reserves to defend the ruble.

In order to prevent the capital outflow the CBR adopted a restrictive monetary policy. The interest rate increased two-fold from 30% to 60% (150% in the period from 28 of May till June) to prevent capital from fleeing at a rate of about \$0.5 billion a week at a time when international reserves were at level of about \$15 billion only. The IMF consultants, who believed that pegged exchange policy was the only way to prevent hyperinflation scenario of the early 1990s, inspired this strategy.

Later the refinancing rate was lowered, but yields on government securities remained at a level of nearly 50% in real terms and then again grew to over 100% in August when worries began to mount. Interest rate increases resulted in the growth in debt-servicing costs for the government and the cost of borrowing for the commercial banks.

On the one hand, the CBR would need to finance a huge government debt at much higher interest rates, substantially increasing pressure on the budget. On the other hand, increases in yields on existing securities signified that their market value decreased significantly. Due to the fact, that the private banks had substantial maturity mismatches and heavily invested in the attractive GKO-OFZ market, the interest rates hike inflicted high losses on them. As a result the many commercial banks which had used those bonds as collateral for credits, which they used to speculate in the GKO market, found themselves vulnerable to margin calls - demands from their creditors to show they had enough collateral. In addition, the prices on government obligations decreased causing the default and collapse of the banking system.

Given all the uncertainty, capital run rapidly out of the country. When it became clear that the default on the debt and devaluation are unavoidable, everyone started to get rid of Russian currency in exchange for the foreign currency. Both Russian and international investors were moving their funds to more stable markets. This basically was a speculative attack on the exchange rate.

By mid-August, the situation had worsened enough that US financier George Soros suggested in a newspaper column that Russia consider a modest devaluation and the creation of a currency board, which would fix the ruble to the dollar or a basket of currencies and remove the swings of the market.

The CBR and the Russian government, however, were adhered to the policy of stable ruble up to the very last moment, maintaining incredibly high interest rates, that, in fact, eliminated any perspective for economic recovery, and negotiating a support package with the IMF. In a sense this was a policy designed to maintain consumption and imports, to avoid export-oriented restructuring and to continue to live beyond the means.

Russian officials rejected any talks of devaluation; statements about the stability of the ruble, including that of president Yeltsin made 3 days before default, had only the opposite effect, if any. When capital outflow became irrevocable Russian markets plunged on 17 August.

Russian economic system experienced the deepest financial crisis, which combined a currency crisis, a banking crisis and a debt crisis. On August 17, the Russian government announced emergency measures including the devaluation of the ruble, a unilateral restructuring of its ruble-denominated debt, and a 90-day moratorium on the repayment of external debt caused by commercial entities.

The CBR had reported that its foreign exchange reserves fell by \$1.4 billion, to \$17 billion, in the first two weeks of August. Later, the central bank would admit that it spent the entire first installment of the new IMF support loan, \$4.8 billion, in order to defend the ruble

Figure 9: Ruble exchange rate development in 1998

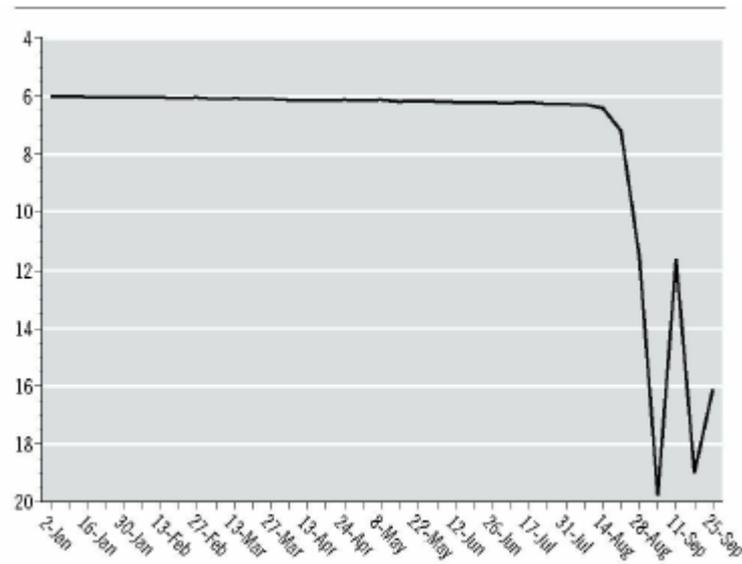


Figure 10: Real GDP in 1996–1998, (1995=100; seasonally adjusted)

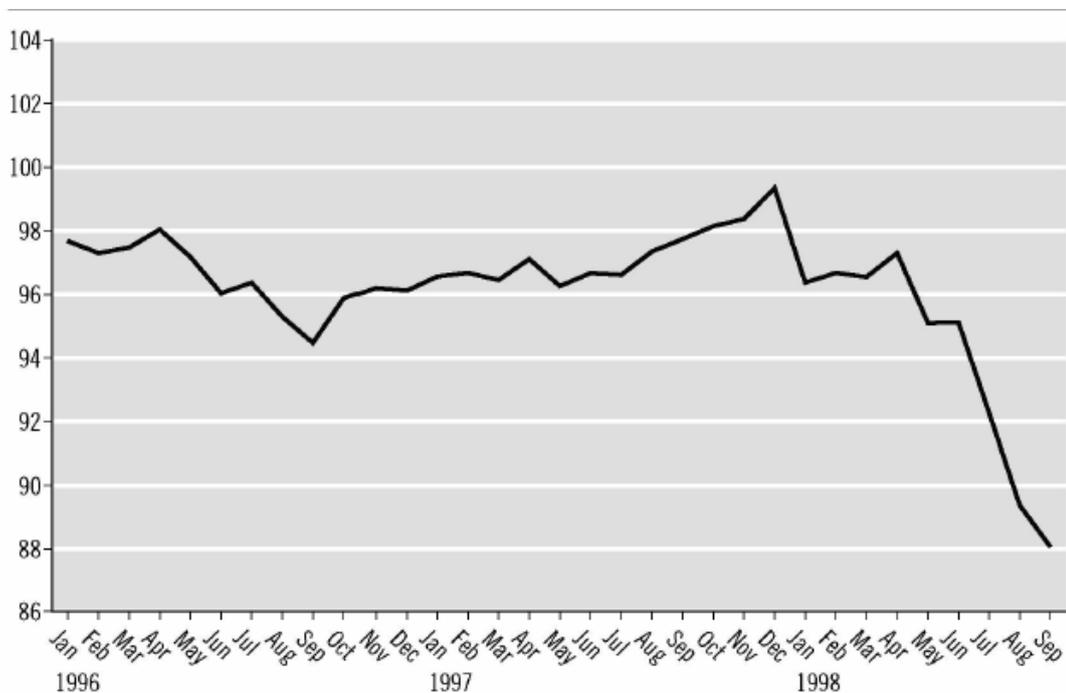
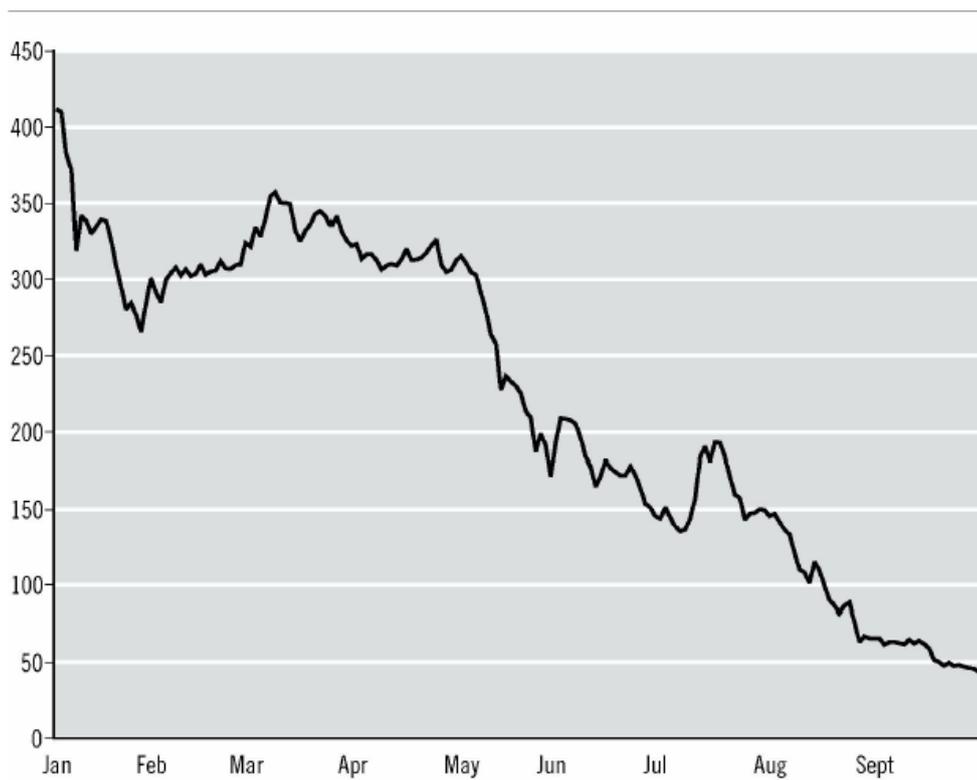


Figure 10: Stock Market Performance in 1998, Russian Trading System (RTS) index



Source: Astapovich E.A. (1999): *Survey on Economic Policy in Russia in 1998*, Buro *Economicheskogo Analiza* (in Russian).

After detailed analysis of the macroeconomic fundamentals and financial sector development in Russia in the pre-crisis period it is absolutely necessary to turn attention to the theoretical background of the financial crises that might provide my research of the crucial reasons behind the Russian turmoil with the valuable findings.

Next chapter aims to present the dominant theoretical models of currency crises.

5. THEORETICAL BACKGROUND

Although the history of financial crises is long, almost as long as the history of currencies themselves, the theoretical literature on this issue was launched with the pivotal paper of Paul Krugman in the 1970s. Broad interest towards financial crisis came back during the 1990s, starting a wave of new models and explanations of financial crises. This decade had witnessed the whole series of crises: the crisis of the European Exchange Rate Mechanism in 1992-93, the Latin America's so-called "tequila crisis" erupted in 1994-95, then East Asian exchange rate and banking crises in 1997-98 accompanied with crises in East European transition economies 1996-97, followed by Russian boom in 1998, and the Brazilian crisis in 1998-99.

Generally the reasons for such a large number of financial crises during 1990s are seen in increased capital mobility on the global market, financial liberalization unadjusted to economic reforms, the emergence of many new market-oriented transition economies, and the weakening of the international monetary system due to the abandonment of the international exchange rate system pegged to the US dollar at the beginning of 1970s and the establishment of a vaguely defined floating exchange rate regime.

The macroeconomic theory applied by Mundell (1963) and Fleming (1962) is not sufficient in explaining financial crises. According to their theory under the fixed exchange rate regime with perfect capital mobility, the decrease of interest rates leads to the capital outflow and vice-a-verse if central bank increases interest rates it results in capital inflow. In other words, the efforts of the monetary authority to change the interest rate are undone by the private sector.

Under the flexible exchange rate regime, the central bank does not intervene in the foreign exchange market and all balance of payment surpluses or deficits must be financed by capital outflows or inflows, respectively.

The theoretical literature differentiates three types of financial crises: currency, debt and banking crisis¹⁹. A currency crisis occurs when, as a result of a speculative attack on the currency, the central bank is forced to devalue or depreciate the exchange rate substantially, or to defend the currency by selling large amounts of foreign reserves or by rising interest rates. Devaluation takes place when there is a market pressure to increase the exchange rate (as measured by domestic currency over foreign currency) because the country cannot bear the cost of supporting its currency.

In attempt to maintain a lower exchange rate peg, the central bank increases the demand for local currency by buying it with foreign reserves. If the central bank's international reserves run out, the monetary authorities allow the exchange rate to float - devaluation of the currency takes place. As a result domestic goods and services becomes cheaper relative to foreign goods and services.

¹⁹ The definitions are taken from IMF (1998).

The devaluation of the domestic currency associated with a successful speculative attack can cause a decrease in output, possible inflation, and a disruption in both domestic and foreign financial markets.

A debt crisis (applied to sovereign or private debt) reflects an unexpected breakdown in the credit relationship: the borrower's inability or unwillingness to serve repayment obligations or the lenders' loss of confidence on the borrower's ability to pay. The term includes cases of unilateral default, a debt restructuring, or exceptional bail out by the international financial organizations to avoid a default.

Finally, a banking crisis is characterized by suspending the internal convertibility of banks' liabilities or preventive compelled government assistance on a large scale in the occurrence or in the prospect of bank runs or failures.

It worthy mentioning that the three types of crises classified above are not mutually exclusive. Current account and capital account liberalization played a crucial role in creating the environment where one type of crisis can easily develop into the others. With significantly increased interaction between the domestic and international financial systems, recent financial turmoil tended to combine the features of currency, debt and banking crises simultaneously, which is also reflected in the theoretical literature that has developed from the models explaining solely speculative attacks and currency collapses to comprehensive theories of financial sector crisis.

The necessity to explain the nature of a financial crisis has originated the number of theoretical models developed to incorporate fiscal deficits, expectations, and financial markets into models with purchasing power parity. These models can be grouped into three generations, each of which is intended to explain specific aspects that results in a financial crisis.

Literature on financial crises is categorized into three mainstream models, namely first-generation models, second-generation models, and third-generation models. In the "first-generation" models Krugman (1979)²⁰ and Flood and Garber (1984)²¹, a government with persistent money-financed budget deficits is assumed to use a limited stock of reserves to peg its exchange rate and the attempts of investors to anticipate the inevitable collapse generates a speculative attack on the currency when reserves fall to some critical level.

²⁰ Krugman, P. (1979): A Model of Balance-of-Payment Crisis. *Journal of Money, Credit and Banking*, Vol. 11, No. 3, August 1979, pp. 311-325.

²¹ Flood, R. and Garber, P. (1984): Collapsing Exchange-Rate Regimes; Some liner examples. *Journal of International Economics*. Vol. 17/1984.

In "second-generation" models launched with Obstfeld (1994), (1996)²² policy is less mechanical: a government chooses whether or not to defend a pegged exchange rate by making a tradeoff between short-run macroeconomic flexibility and longer-term credibility. The crisis then arises from the fact that defending parity is more expensive as it requires higher interest rates.

Should the market believe that defense will ultimately fail, a speculative attack on a currency develops either as a result of a predicted future deterioration in macro fundamentals, or purely through self-fulfilling prediction.

The need for third generation models became apparent in 1990s with Mexican Tequila crisis of 1994 and the East Asian crisis of 1997. A number of new approaches have emerged to explain how these crises evolved and how they spread from country to country.

5.1. *First-Generation Models*

The first-generation models of a currency crisis designed by P. Krugman (1979) and Flood and Garber (1984) arise from inconsistent government policies, in particular, monetization of fiscal deficits together with fixed exchange rates. The crucial assumptions of Krugman's model are fixed exchange rate regime and inability of the government to control the budget. The key reason of speculations and pressures on domestic currency are adverse movements in some of the fundamental macroeconomic variables.

The first-generation models stand that a speculative attack on the domestic currency occurs as a result of an increasing current account deficit or an expected monetization of the fiscal deficit.

It worthy mentioning that Krugman's model argues, that a fixed exchange rate regime is a potential target for speculators. According to the model a speculative attack is inevitable. The monetary authorities must defend the established exchange rate peg with its store of foreign currency. In order to avert speculative attacks the central bank runs out of its international reserves. The crisis is triggered when speculators expect the central bank to abandon the fixed exchange rate. Therefore, it is possible to predict a currency crisis through negative development in the macroeconomic fundamentals.

The model itself is based on three equations²³:

1. Money demand:

$$m_t - p_t = \varphi \cdot y_t - \eta \cdot i_{t+1} \quad (1)$$

²² Obstfeld, M. (1994): "The Logic of Currency Crises." *Cashiers Économiques et Monétaires* 43, pp. 189-213.

Obstfeld, M. (1996a): "Models of Currency Crises with Self-fulfilling Features," *European Economic Review*, vol. 40 (April), pp. 1037-48.

²³ The notation of the model is used from Obstfeld, M., Rogoff, K.: *Foundations of International Macroeconomics*. MIT Press, 1996.

- where m is a natural logarithm of money, p is a natural logarithm of price level, i is logarithm of nominal interest rate (either of t or $t+1$ period depending on the formation of expectations), and y is a natural logarithm of the real GDP²⁴. The coefficients φ and η stand for constant income elasticity and constant interest elasticity of money demand, respectively.

2. Purchasing power parity (PPP) is assumed to determine the exchange rate:

$$P_t = \varepsilon \cdot P_t^* \Leftrightarrow p_t = e_t + p_t^* \quad (2)$$

- where P is the domestic price level, P^* the international price level²⁵, ε the nominal exchange rate, e a logarithm of the exchange rate, and p and p^* logarithms of domestic and international price level, respectively.

3. Uncovered interest parity (UIP) is assumed to determine the relation between interest and exchange rate, assuming a perfect capital mobility:

$$i_{t+1} = i_{t+1}^* + E_t(e_{t+1}) - e_t \quad (3)$$

- where E represents the expectation operator, i and i^* represent logarithms of domestic and international interest rates.

Substituting equations (2) and (3) into (1) we get:

$$m_t - (e_t + p_t^*) = \varphi \cdot y_t - \eta \cdot (i_{t+1}^* + E_t e_{t+1} - e_t) \quad (4)$$

The starting point in discussing the currency crisis model under a fixed exchange rate is the approximation of the above equation. Normalizing $y_t = p_t^* = i_{t+1}^* = 0$ and substituting into (4) results:

$$m_t - e_t = -\eta \cdot (E_t e_{t+1} - e_t) \quad (5)$$

Assuming perfect foresight $E_t e_{t+1} - e_t = \dot{e}_t$, and under the fixed exchange rate regime $\dot{e}_t = 0 \Rightarrow \bar{m} = \bar{e}$, which means that fixed parity of the exchange rate that is being defended determines monetary policy, which becomes the function of the exchange rate.

Monetary base equals money supply, according to a more narrow definition ($M1$), in order to simplify the model the impact of the money multiplier is disregarded²⁶. Monetary base or money supply is composed of a domestic and foreign part (according to the central bank's balance sheet):

$$M_t = B_{H,t} + \varepsilon \cdot B_{F,t} \quad (6)$$

According to the first-generation models source of disequilibrium arises from a budget deficit that grows at rate μ and monetizes through the growth of government bonds.

²⁴ Logarithms of variables will be written in lowercase.

²⁵ Variables in superscript * denote international variables.

²⁶ The multiplier is assumed to equal one

$$\frac{\dot{B}_H}{B_H} = \dot{b}_H = \mu$$

Thus, μ denotes the growth rate of governments bonds or the domestic components of the monetary base. Under the fixed exchange rate regime, in order to maintain the exchange rate, the central bank intervenes by selling foreign reserves B_F till their complete depletion.

At that moment, the established fixed parity can no longer be defended and eventually a collapse of the fixed exchange rate regime occurs.

But, even before the foreign reserves run out, speculators being a fully rational agents will reckon the developments of the fundamental macroeconomic variables (growth rate of money supply) and in order not to lose when inevitable devaluation occurs, start to exchange domestic currency for foreign. This behavior results in a speculative attack on the domestic currency and a more rapid depletion of foreign reserves, leading to an even earlier devaluation.

P. Krugman started the first-generation models of currency crisis, which attempted to determine the time when a speculative attack occurs. The instant of a speculative attack in Krugman's model is determined by establishing the "shadow exchange rate", i.e. the market exchange rate that would be obtained when the reserves are exhausted, or the market rate at which a central bank can no longer defend the exchange rate.

With $B_F = 0$ the equation (6) expressed in logarithms yields:

$$m_t = b_{H,t}$$

which, when substituted into the equation (5) results:

$$b_{H,t} - e = -\eta \cdot \dot{e}_t$$

Since there are no foreign reserves left, μ is also the depreciation rate of the shadow exchange rate, then the equation for the "shadow exchange rate" is derived:

$$\tilde{e} = b_{H,t} + \eta \cdot \mu \quad (7)$$

It should also be taken into account that the rate of change of the domestic part of the monetary base is the opposite of the rate of change of the foreign part of the monetary base.

$$e \cdot \dot{B}_F = -\dot{B}_H$$

Speculative attack occurs when the shadow exchange rate becomes equal to the fixed peg, since losses and profits from intertemporal arbitrage (selling domestic currencies for foreign currencies in the beginning, in order to do the opposite later) are equal.

The growth path of domestic credit is:

$$b_{H,t} = b_{H,0} + \mu \cdot t \quad (8)$$

Since the actual exchange rate equals the shadow rate at the moment of a speculative attack, and by substituting equation (8) into (7) we get:

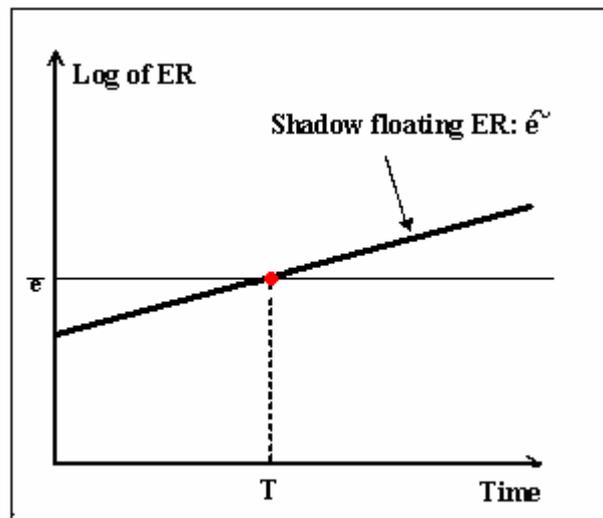
$$\bar{e} = \tilde{e} \Rightarrow \tilde{e} = b_{H,0} + \mu \cdot t + \eta \cdot \mu$$

- where the moment of change of the exchange rate regime is also the equation of a speculative attack.

$$t = \frac{\bar{e} - b_{H,0} - \eta \cdot \mu}{\mu}$$

The equation shows that the time of a speculative attack depends on the developments in fundamental macroeconomic variables (here, budget deficit growth rates according to the initial assumption). The situation is presented in the following figure²⁷.

Figure 11: The Timing Of Speculative Attack



The first-generation models explain currency crisis as a result of unsustainable developments in fundamental macroeconomic variables – typically, balance-of-payments problems with gradual depletion of foreign exchange reserves. This approach stands that macroeconomic imbalances such as excessively expansionary monetary policy, significant currency depreciation in real terms, excessive investments in risky and low-profit projects, as well as deficiencies in regulation and banking and financial system supervision, lie at the root of a crisis.

All this widens the discrepancy between the proclaimed goals of the monetary authorities, on the one hand, and keeping these promises on the other, which determines the central bank's credibility and can cause a currency crisis. Under the assumption that expectations are formed rationally and allow anticipation, the exact point of attack on a currency can be determined, according to the first-generation model.

²⁷ Source: Obstfeld, M., Rogoff, K.: Foundations of International Macroeconomics. MIT Press, 1996.

Expecting the devaluation, agents shift their portfolios from domestic to foreign currency by buying foreign currency from the central bank's reserves. The central bank's reserves fall until they reach the critical point when a peg is no longer sustainable and the exchange rate regime collapses.

One of the main contributions of the first-generation model is its identification of the relation between domestic fiscal policy and the fixed exchange rate regime.

The empirical implications of the original model and its modifications point out the following indicators of a looming crisis: persistent fiscal deficits, excessive credit growth, inflation rate or excess real money balances, increasingly appreciating real exchange rate, deterioration of the trade and current account, and gradual decline in international reserves.

The model fitted well those crises in Latin America (Mexico 1973-1982 and Argentina 1978-1981), where the extremely expansive fiscal policies and large debt burden led to the breakdown of the fixed-rates regimes. However, it failed to explain speculative attacks in Europe in the 1990s, since they were not necessarily connected to worsening in fundamentals predicted by the first-generation models.

While the first-generation models help explain some of the fundamentals that cause currency crises, they are lacking in two important aspects. First, the standard first-generation model requires agents to suddenly increase their estimates of the likelihood of a devaluation (perhaps through an increase in expected inflation). Second, they do not explain so called contagion effect of a currency crisis, why the currency crises spread to other countries. The theoretical ground for these episodes was developed as second-generation models of currency crises that capture self-fulfilling features of speculative attacks.

5.2. *Second-Generation Models of Currency Crisis*

(Self-Fulfilling Speculative Attacks (M. Obstfeld, (1994; 1996))

Second-generation models evolved after the ERM crisis in 1992-1993, where no negative developments in the fundamental macroeconomic variables could be observed. A newer generation of crisis model argues that even sustainable economy may experience currency crisis. The emphasis is put on the central bank's evaluation of the benefits from abandoning the exchange rate versus defending it. The crucial point in these models argues that central banks face a trade-off between maintaining the fixed rate and pursuing other policy targets. While the net benefits from the fixed peg policy are lower than the costs of fending off speculative attacks on a currency, the central banks stops defending the peg.

Therefore, the underlying sources of vulnerability to the second generation crises are the internal imbalances rather than external ones: rising unemployment, domestic recession, bank weakness or large government debt, which will make the defense of the peg by raising the interest rates unbearably costly and thus provide the temptation to devalue the currency when attacked.

In first-generation models of currency crisis the government follows an exogenous rule to decide when to abandon the fixed exchange rate regime. In second-generation models the central bank maximizes an explicit objective function. This maximization problem dictates if and when the government will abandon the peg. Second-generation models generally exhibit multiple equilibria so that speculative attacks can occur because of self-fulfilling expectations.

The government decides whether to keep the exchange rate fixed or not. Suppose agents expect the currency to devalue and inflation to ensue. If the government does not devalue then inflation will be unexpectedly low. As a consequence output will be below its natural rate. Therefore the government pays a high price, in terms of lost output, in order to defend the currency. If the costs associated with devaluing (lost reputation or inflation volatility) are sufficiently low, the government will rationalize agents' expectations. In contrast, if agents expect the exchange rate to remain fixed, it can be optimal for the government to validate agents' expectations if the output gains from an unexpected devaluation are not too large. Depending on the costs and benefits of the government's actions, and on agents' expectations, there can be more than one equilibrium.

The Obstfeld's models (1994; 1996)²⁸ examine the central bank's motivation to change its exchange rate policy. The government pursues its exchange rate policy by minimizing the quadratic loss function that depends on current inflation and on the deviation of output from its natural rate²⁹.

$$\Lambda_t = \chi\pi_t^2 + [y_t - y^{**}]^2 \quad (1)$$

²⁸ The notation of the model is used from Holub T.(2003): Importing low inflation via pegged exchange rates, currency boards and monetary unions.

²⁹ viz Barro and Gordon (1983) for a discussion of this type of loss function

- where y is a natural logarithm of GDP, y^{**} is the optimal level of output, π the rate of inflation, and χ is the weight put on inflation in the central bank's loss function.

The level of output is determined by an expectations-augmented Phillips curve.

$$y_t = y^* + (\pi_t - \pi_t^E) - z_t \quad (2)$$

- where y^* the long-run equilibrium level of GDP, π^E the expected inflation and z is a white-noise supply-side shock (a positive z means an adverse shock)

The assumption of the dynamic inconsistency is given by the following equation:

$$k \equiv y^{**} - y^* > 0 \quad (3)$$

- where k measures the inflationary bias, or central bank's credibility deficit. The logic of dynamic inconsistency is the following: central bank wants to stabilise inflation and to achieve higher output. So, the optimal level of GDP targeted by the monetary authorities exceeds the long-run equilibrium level.

Substituting equations (2) and (3) into (1) and solving the minimization problem we get the central bank's reaction function.

$$\pi_t = \frac{\pi_t^E + k + z_t}{1 + \chi} \quad (4)$$

According to this equation the inflation rate is not equal to zero, and in order to exclude the inflationary bias monetary authorities use fixed peg rate, to overcome it.

And the model has a unique (Nash) equilibrium at $\pi_t^E = \frac{k}{\chi}$.

In order to eliminate the inflationary bias, and to sustain to supply-side shocks the optimal policy rule would have to be the following:

$$\pi_t = \frac{z_t}{1 + \chi} \quad (5)$$

The second-generation model also reflects the credibility of the monetary policy. The central bank is considered to be credible regarding its exchange rate policy if it maintains a fixed exchange rate. Accordingly, the government may maintain the exchange rate rule (i.e. defend the fixed exchange rate), or abandon it and make a discretionary move when the situation deteriorates (when the value of the fundamental variables begins to compromise the pre-set level of the fixed exchange rate).

The government decides whether to keep the exchange rate fixed or not.

$$\begin{aligned}\tilde{\Lambda}_t &= \Lambda_t + C; \quad C = \bar{c} \quad \text{if devaluation} \\ &= \underline{c} \quad \text{if revaluation} \\ &= 0 \quad \text{otherwise}\end{aligned}\quad (6)$$

- where Λ_t is the standard loss function defined in (1), and C denotes the credibility loss of central bank in case it abandons the fixed exchange rate. C is equal to \bar{c} for devaluation and \underline{c} for a revaluation.

Under the fixed exchange rate rule the central bank's loss function is:

$$\Lambda_t^{fix} = [k + \pi_t^E + z_t]^2 \quad (7)$$

Under the assumption that to defend the peg is too costly and central bank chooses to abandon the fixed parity its loss function modifies to:

$$\tilde{\Lambda}_t^{float} = \Lambda_t^{float} + C(\pi_t); \quad \Lambda_t^{float} = \frac{\chi}{1 + \chi} [k + \pi_t^E + z_t]^2 \quad (8)$$

which contains standard loss function depending on inflation from equation (4) and the credibility loss C from abandoning the fixed rate.

Accordingly, if there is a negative supply-side shock, and the loss arising from maintaining the fixed regime exceeds the sum of losses caused by discretionary policy and credibility loss, the central bank being a rational economic agent will devalue.

$$\Lambda_t^{fix} - \Lambda_t^{float} > \bar{c} \Leftrightarrow \frac{1}{1 + \chi} [k + \pi_t^E + z_t]^2 > \bar{c}$$

In order to find the critical level of negative supply-side shock z_t , above which the central bank will abandon the fixed parity we can solve the previous equation and get:

$$\bar{z}_t = \sqrt{\bar{c}(1 + \chi)} - k - \pi_t^E \quad (9)$$

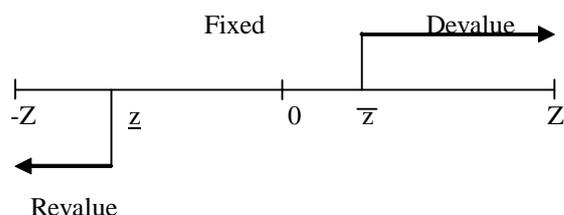
On the other side if there is a positive supply-side shock, and the loss arising from maintaining the fixed regime exceeds the sum of losses caused by discretionary policy and credibility loss, the central bank being a rational economic agent will revalue.

$$\Lambda_t^{fix} - \Lambda_t^{float} > \underline{c} \Leftrightarrow \frac{1}{1 + \chi} [k + \pi_t^E + z_t]^2 > \underline{c}$$

And, the critical level for z_t , below which central bank will abandon the fixed exchange rate regime is:

$$\underline{z}_t = -\sqrt{c(1+\chi)} - k - \pi_t^E$$

Obstfeld (1996a) illustrated³⁰ a closed interval where the supply-side shocks are uniformly distributed.



One of the most important issues in the second-generation models is a self-fulfilling element of a crisis, which implies that speculators attack a currency only when they expect the central bank to shift to other policy targets and to abandon the fixed parity under the growing social costs of maintaining it.

Fundamental macroeconomic variables reflect the current economic policy of the central bank, its economic goals and its methods for achieving these goals. The exchange rate regime is usually publicly announced and legalized for longer time periods, especially for fixed regimes. The greater the deviation of the current economic policy from the optimum policy consistent with maintaining the stability of the announced exchange rate regime (e.g. fixed exchange rate), the greater the probability of currency attack and currency crisis.

Speculators, being rational economic agents form their expectations of inflation development $\pi_t^E = E(\pi_t)$, which depends on the critical levels of supply-side shocks identified above. Moreover, these critical levels of \bar{z}_t and \underline{z}_t themselves depend on the level of inflation expected by the economic agents.

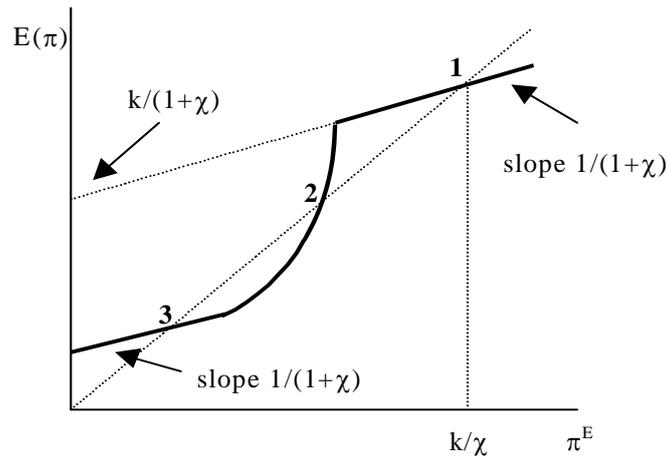
$$E(\pi_t) = E\{\pi_t / z_t < \underline{z}_t\}P\{z_t < \underline{z}_t\} + E\{\pi_t / z_t > \bar{z}_t\}P\{z_t > \bar{z}_t\}$$

- where E denotes mathematical expectations and P is probability.

This can potentially lead to multiple equilibria and self-fulfilling currency crises. Obstfeld (1996a) demonstrates the “expectations schedule» may have the shape illustrated in figure below.

³⁰Source: Obstfeld, M., Rogoff, K.: Foundations of International Macroeconomics. MIT Press, 1996

Figure 12: The Expectations Schedule³¹



Fundamental macroeconomic variables reflect the current economic policy of the central bank, its economic goals and its methods for achieving these goals. The exchange rate regime is usually publicly announced and legalized for longer time periods, especially for fixed regimes. The greater the deviation of the current economic policy from the optimum policy consistent with maintaining the stability of the announced exchange rate regime (e.g. fixed exchange rate), the greater the probability of currency attack and currency crisis.

In this context, devaluation can be seen in the central bank and market's interactions, through a number of taken measures and market responses to them. Under the assumption that, the pessimism prevails in the market regarding the central bank willingness to prop up the established exchange rate peg and pressure on the foreign exchange market leads to devaluation. A currency crisis is disclosed as soon as the monetary policy has begun to deviate from the proclaimed policy for maintaining the fixed exchange rate. This causes due to different macroeconomic frictions, such as transaction costs, difficulties in arranging credit lines for currency attacks, and the fact that many indicators of the monetary policy are available only after a certain delay and are subject to reviews.

One of the most important features of the second-generation models is the influence of self-fulfilling expectations and the impact of speculators behavior that initiate market panics, shifts the expectations and corresponds to the consequent investors' behavior, which will cause a devaluation by their actions in the financial market.

Self-fulfilling expectations depend on multiple equilibria in the equations of exchange rate and monetary policy (as well as other policies) and different negative political and economic events such as negative official statistical reports on the economic activities, political scandals or an oil price shock, that is common to a geographical area or a group of trading partners can influence these countries' economic development to a substantial level.

³¹ Source: Holub T.(2003): Importing low inflation via pegged exchange rates, currency boards and monetary unions.

The second-generation models suggested by Eichengreen, Rose, and Wyplosz (1996)³², and others are focused on explaining the self-fulfilling contagious currency crises. The occurrence of contagion is based on the spillover effect of a currency crisis to other countries in the region where it originally appeared, due mainly to trade and financial channels or a regional approach of big investors on the emerging markets.

The spread from one currency crisis into neighboring countries can be seen as a result of various scenarios. Any combination of scenarios can explain the international linkages that are responsible for the spillover of speculative attacks from one country to another.

One possible development suggested by these models considers devaluation in one country affecting the price level (and therefore the demand for money) or the current account by a decrease of exports in neighboring countries. Under this setting, according to these models, the probability of devaluation in a neighboring country increases.

This logic is justified for economies that are linked commercially, financially or because they have similar macroeconomic policies or conditions (e.g., high unemployment or high government debt). Then a currency crisis in one country definitely negatively influences fundamental macroeconomic variables in another country, thus raise expectations of the likelihood of devaluation in other country. Since the crises are self-fulfilling, these expectations make the likelihood of devaluation increase as well. In addition, devaluation can be transmitted via world financial markets to other susceptible countries.

Eichengreen, Rose, and Wyplosz (1996) find that a correlation exists between the probabilities of currency crisis across countries. They estimate that a speculative attack somewhere in the world increases the likelihood of a domestic currency crisis by about 8 %.

Gerlach and Smets (1994)³³ present a two-country version of Krugman (1979) classic speculative attack model that combines the story described above with monetary sphere and show that trade contagion makes currency crisis possible even in bilateral trade as well as the competition on the world markets the country with otherwise sustainable domestic policy.

The literature on contagious currency crises has helped clarify the spread of devaluations and their magnitudes. However, first and second generation models failed to explain the economic weakness and vulnerability to currency crises, which lay in financial sphere with a bubble of assets prices and the financial intermediaries playing a crucial role in the East Asian meltdown. This important issue motivated the development of the third generation models to deal with financial sector crises rather than with speculative attacks or currency crises by itself.

³² Eichengreen, Rose and Wyplosz (1997): "Contagious currency crises", NBER working paper 5681.

³³ Gerlach, S. and Smets, F. (1994) Contagious Speculative Attacks. CEPR Discussion Paper No. 1055.

5.3. *Third-Generation Models of Currency Crisis*

The models of this generation were developed after the East Asian turmoil in 1997. The main emphasis is put on the overall problems in the banking and financial sector and its relation to currency crises. The third generation models were inspired on the experience of these countries. In this context a new term – “banking crisis” appears. Which is a crises through a fragile financial sector within which both currency and banking crises occur.

It is not a widely agreed what constitutes the “third generation”, this group incorporate alternative models focusing on different sectors of the economy and, contrary to the first- and second-generation, there is no uniquely determined representative model of third-generation.

However, in this generation of models the emphasis is put on the role of the financial sector in causing currency crises and propagating their effects. This group of models stresses the balance-sheet effects associated with currency devaluations. The crucial idea is that “*banks in emerging market countries have explicit currency mismatches on their balance sheets*”³⁴ due to the fact that they borrow in foreign currency and lend in local currency. Banks and firms are also exposed to liquidity shocks because they finance long-term projects with short-term borrowing.

Thus, the third generation models focus on the fragility in the banking and financial sectors, suggesting financial leverage (debt-to-equity ratios), liquidity (short-term debt over working capital), and non-performing loans to be the key susceptibility of the economic systems towards financial crisis.

The models also address the role of financial liberalization in amplification the influence of adverse implication of moral hazard on macroeconomic stability. Moreover, it emphasizes the role of excessive external debt among financial crisis factors. External indicators of crisis predisposition incorporate the structure and reversibility of capital flows such as the ratio of foreign debt, the ratio of short-term debt in total foreign debt; and external liquidity (the ratios of short-term external debt to reserves, of broad money to reserves, of reserves to imports).

The important point that differs the third generation models from the first is seen in identifying the timing of attack. According to the third generation models the speculators observe not the steady decrease in foreign reserves per se, but the continuous increase in the liabilities with its critical level given by the level of international reserves.

³⁴ Eichengreen, B. and Hausmann, R. 1999. Exchange rates and financial fragility. Working Paper No. 7418. Cambridge, MA: NBER.

Different economists responded to the Asian crisis. One of the main approaches was developed by McKinnon and Pill³⁵ (1996); Krugman³⁶ (1998); Corsetti, Pesenti, Roubini³⁷ (1998) with over-borrowing syndrome models emphasized the role of moral-hazard-driven lending by unregulated banks and financial institutions. According to this view, a rational agent can expect the government rescue operation of any large bank or corporation with good political connections in case it had solvency problem.

Generally, most models emphasize the relevance of the moral hazard problem. In this context, under the implicit government guarantee borrowers and creditors are inclined to lenders are intended to dispraise the risk, and this finally results in over-borrowing and over-investment. This creates domestic asset price bubbles, the decisive burst of which discloses the insolvency of the financial institutions and causes massive capital outflow with the following default in the external value of the currency.

Moreover, third generation models focuses on market imperfections, bailout guarantees and over lending problems to explain currency crises. In this models its argued that moral hazard leads banks to take unhedged foreign exchange positions in order to fulfill the domestic over borrowing demands stimulated by the recovery phase of business cycle. The banks implicitly transfer most of the currency risk to the government through the deposit insurance scheme. Despite the lack of an explicit deposit insurance scheme, banks expect the national government or international organizations to bail them out in the event of crisis. This process usually ends with a currency crisis because lenders refuse to rollover the debt.

McKinnon and Pill (1999)³⁸ analyze the role of the exchange-rate regime in a simple Fisherian model of the over borrowing syndrome. *“Where domestic banks are subject to moral hazard, the choice of exchange-rate regime may have important implications for the macroeconomic stability of the economy. Banks that enjoy government guarantees have an incentive to increase foreign borrowing and incur foreign-exchange risks that are underwritten by the deposit insurance system. In the absence of capital controls, this increases the magnitude of over borrowing and leaves the economy both more vulnerable to speculative attack and more exposed to the real economic consequences of such an attack”*.

The paper by P. Krugman (1998)³⁹ analyses *“an investment bubble and the bursting of this bubble – a breakdown in the securities market”*. The Krugman ‘s model (1998) does not deal with

³⁵ McKinnon, R.. and Pill, H. (1998) International Overborrowing. A Decomposition of Credit and Currency Risks. Unpublished Paper. February 1998.

³⁶ Krugman, P. (1998b): *What Happened to Asia?*, January 1998, <http://web.mit.edu/krugman/www/DISINTER.html>.

³⁷ Corsetti, G.; Pesenti, P. and Roubini, N. (1998) What caused the Asian Currency and Financial Crisis?

³⁸ McKinnon, R.I. and Pill, H. (1999): Exchange-rate regimes for emerging markets: moral hazard and international over borrowing, *Oxford Review of Economic Policy*, Autumn 1999, v. 15, iss. 3, pp. 19-38

³⁹ Krugman, P. (1998): *What Happened to Asia?*, January 1998, <http://web.mit.edu/krugman/www/DISINTER.html>.

the currencies, but it focuses on the problems of foreign indebtedness in order to explain the financial crises in East Asian countries in 1997. It put emphasis on asset price bubbles in order to explain the cases excluded by the first generation models.

The government is seen as an explicit and implicit guarantee of bank investments in overvalued company shares since they do not have hard budget constraints. Financial institutions borrow money in the international capital market in order to extend loans to companies in the domestic market.

In an attempt to attract foreign investments and maintain the financial system the government issues implicit or explicit concessions. However, due to the fact that the government does not consolidate its control and regulation of the financial intermediaries the problems of moral hazard arise.

Financial agents borrow money in the international markets and lend them to companies for the purchase of capital equipment. In case when the return rate exceeds the international rate financial intermediaries' receives a profit.

With the government guarantees the credit market does not clear: interest rates rise, but not enough to compensate investors for the increase in perceived default risk. In order to buy out all the needed capital with guarantees the price of capital will be induced to rise. And the growing capital prices soon reach the profitability margin for the positions taken, i.e. guaranteed losses.

Increasing the domestic interest rate, then, does not raise the supply of domestic lending in the normal fashion. Moral hazard, a companies' ability to take its output and default on its loan, forces banks to restrict lending. Therefore, increasing the interest rate reduces the amount of loans as it increases firms' incentive to default.

The losses, which the government is willing to cover, are implicitly or explicitly announced. At the moment, when the maximum quantity of guaranteed losses has been reached, new losses are no more guaranteed. Banks thus are driven to take credits abroad in order to and extend credits to companies. Any negative shock can results in excess of losses beyond the maximum quantity of government guaranteed losses. At that point the market becomes conscious of banks' jeopardy to uncovered losses. These models argue that fragility in the banking and financial sector reduces the amount of credit available to firms and increases the likelihood of a crisis.

These third-generation models offer a role for monetary policy (aside from the decision to abandon the exchange rate peg) through a binding credit constraint in an imperfect financial market. If firms' leverage in the domestic market is substantially reduced, they may be forced to accumulate a large amount of foreign-denominated debt.

When, in domestic markets, the amount of available lending depends on the nominal interest rate, the central bank can deepen a crisis by further reducing firms' ability to invest. The typical prescription for a currency crisis is to raise interest rates and raise the demand for domestic currency.

However, in the third-generation models, an interest rate increase can greatly affect the amount of lending and further restrict firms' access to financial capital. In cases where lending is highly sensitive to the interest rate, an increase in the nominal interest rate can be detrimental, altering the productive capacity of the economy by stifling investment. The perceived drop in output puts additional pressure on the exchange rate, perhaps through actual or expected tax revenue, exacerbating the crisis. In this situation, an alternative strategy for the central bank is warranted: it is actually beneficial to lower the interest rate to spur investment.

Logically financial intermediaries that invested in companies require repayment of their credits. The foreign banks that had lent their capital start to withdraw the funds from the country, thus causing a banking and financial crisis.

In the words of Paul Krugman (1998), the currency crises in Asia "*were only part of a broader financial crisis, which had very little to do with currencies or even monetary issues per se. Nor did the crisis have much to do with the traditional fiscal issues*", but rather was related to issues "*normally neglected in the currency crisis analysis: the role of financial intermediaries (and the moral hazard associated with such intermediaries when they are poorly regulated), and the prices of real assets such as capital and land. The Asian story is not a problem brought up by fiscal deficits, as in "first generation models", nor is one brought on by macroeconomic temptation, as in "second generation models". It is really a story of a bubble in and subsequent collapse of asset values in general, with the currency crises more a symptom than a cause of this underlying real malady*".

Another dominant approach of third-generation models was launched with Chang, Velasco (1998) model explaining the Asian currency crisis as a product of a bank run modeled as in Diamond and Dybvig (1983), where liquidity exposure leads to the self-fulfilling loss of confidence that forces financial intermediaries to liquidate, thus creates a bank run

The model based on the fact that a financial crisis in emerging markets occurs when domestic banks are internationally illiquid. Chang and Velasco argue that international illiquidity of the domestic financial system is at the center of the problem. Illiquid banks are a necessary and a sufficient condition for financial crises to occur. Domestic financial liberalization and capital flows from abroad (especially if short term) can aggravate the illiquidity of banks and increase their vulnerability to exogenous shocks and shifts in expectations.

Such intermediaries then become vulnerable to self-fulfilling panics, in which fear of losses leads investors to demand immediate payment, forcing destructive liquidation of long-run assets that validates these fears.

A bank collapse multiplies the harmful effects of an initial shock, as a credit squeeze and costly liquidation of investment projects cause real output drops and collapses in asset prices. In a closed economy the central bank can protect against such panics by acting as a lender of last resort; Chang and Velasco argue that in an open economy with a fixed exchange rate, the limited size of the central bank's reserves may prevent it from playing the same role.

The Chang and Velasco model is based on the maturity of external debt of domestic banks and their level of foreign reserves. Speculative attack on domestic deposits interacts with foreign investors panics, depending on the maturity of the foreign debt and the possibility of international default. *“If the probability of a run is sufficiently small, banks will deliberately choose an illiquid asset-liability position and expose themselves to a run. In that case, short-term debt will be cheaper than long-term debt, and the maturity structure of foreign debt will depend on attitudes towards risk”*.

In this model, international investors face a choice between short-term investments with a low rate of return and long-run investments with a higher rate of return; unfortunately, the long-run investments yield relatively little if they must be liquidated prematurely, and investors are assumed to be unsure ex ante about when they will want to consume.

Building on this discussion, Krugman (1999)⁴⁰ stated *“I have found myself increasingly skeptical about whether either a moral-hazard or a Diamond-Dybvig story can really get at the essential nature of what went wrong”*.

Krugman then elaborated a model concentrating on of exchange rate mismatch of firms. This paper sketches another candidate for third-generation crisis modeling - one that emphasizes two facts that have been omitted from formal models to date - the role of companies' balance sheets in determining their ability to invest, and that of capital flows in affecting the real exchange rate.

The model stressed the role of balance sheet difficulties in constraining investment by firms, and the impact of the real exchange rate on those balance sheets. The deterioration of these balance sheets played a key role in the crisis itself. Moreover, the model attempts to consider both fundamental factors and multiply equilibria in the market behavior.

The presented above approaches do not fully covers the whole magnitude of the third-generation literature, but illustrate the dominant views regarding this group of models.

Several other authors significantly contributed to the theoretical framework of third-generation models. Among them DeLong (2001)⁴¹ with the modified IS curve model; Rothig,

⁴⁰ Krugman, P (1999: Balance Sheets, the Transfer Problem, and Financial Crises, *International Tax and Public Finance*, November 1999, v. 6, iss. 4, pp. 459-72.

⁴¹ DeLong, j. B., (2001): “The International Crises of the 1990s: Analytics”
Availability: <http://www.j-bradford-delong.net>

Semmler, Flaschel, (2007)⁴²; Nag, Narayan (2007)⁴³ and others. Different models are based on the different problems in the banking and financial sector and its relation to currency crises.

After the review of the existing theoretical background of the currency crisis models and analysis of the main ideas and reasons behind financial crisis in each generation, I suggest to turn our attention towards the application of traditional currency crisis models on the Russian economic system in 1990s.

The next section of my thesis aims to analyze the main reasons of the Russian financial turmoil in August 198 considering the traditional currency crisis models and attempts to answer the following questions: Which of the aforementioned mechanisms best describes the Russian crisis? Can be the Russian crisis described purely on the basis of any generation from the mainstream theoretical models?

⁴²Rothig, Semmler, Flaschel, (2007): Hedging, Speculation, and Investment in Balance-Sheet Triggered Currency Crises. Availability: <http://www.blackwellpublishing.com/journal.asp?ref=0004-900X>

⁴³ Nag, Narayan (2007): Currency Crisis and Stabilization Programme: A Third Generation Approach. Availability: <http://www2.sejong.ac.kr/~cie/>

6. HOW DO THE THEORIES EXPLAIN THE RUSSIAN CRISIS?

The overall macroeconomic situation that developed in Russian economic system by 1997 looked ambiguous. However, regarding the attained goals of stabilization program of 1995 the results were quite positive. For the first time since launching the market-oriented reforms the growth rate of GDP turned positive; program seemed to succeed in achieving single-digit inflation. The slight economic recovery had induced enormous interest for foreign investments. The amount of foreign capital inflows grew rapidly, in the year 1997 the Russian stock exchange market, increased alone by three times in dollar terms and became the world best performing stock market for that year.

However, only half a year later, in August 1998, the Russian economic system experienced the deepest financial crisis, which combined a currency crisis, a banking crisis and a debt crisis. On August 17, the Russian government announced emergency measures including the devaluation of the ruble, a unilateral restructuring of its ruble-denominated public debt, and a 90-day moratorium on the repayment of external debt incurred by commercial entities.

The ruble that had been relatively stable during the previous 3 years lost more than half of its value. The depreciation was from the pre-crisis rate of 6.2 rubles per dollar to over 20 rubles per dollar in September.

Despite all optimistic expectations of the year before, within three months after the crisis the consumer price index increased by 50% and GDP fell by about 6%. A sovereign debt default (first, only on ruble-denominated short-term treasury bills maturing up to the end of 1999, but later also on Soviet era external debt) took place.

Totally around \$30 billion of foreign reserves (about one-six of GDP) were lost in defending the fixed exchange rate before the ruble was floated on September 2, 1998. Restrictive monetary policy with increased interest rate and sequential problems with servicing short-term debt ruined the banking system. Total capital of Russian banks dropped by 36% in nominal terms. Total losses of the banking system (direct and indirect) and the costs of its restructuring were estimated at more than 11% of GDP. The reformist government headed by Prime Minister Sergey Kirienko was dismissed. And the crisis also had substantial social costs.

Thus, the Russian financial turmoil incorporated three dimensions in its manifestation – the currency, sovereign debt and banking crises. This explains the absence of unanimity of views on the driving forces and the primary cause of the dramatic event.

The existing explanations either focus on one of mentioned above theories considering the fixed exchange rate regime, inconsistent government policies, contagion effect from the Asian crisis or on the fragility in the banking and financial sectors.

The goal of this session is to estimate what was at the root of the Russian meltdown in 1998. I argue, that the Russian financial crisis was very complex issue that hardly can be explained purely on the basis of any from mainstream theoretical modes of currency crisis. To my view, the Russian collapse grew from the combination of several reasons that developed in the political and economic spheres by the 1998.

I argue that an understanding of all three generations of models is necessary to evaluate the reasons that provoke Russian devaluation. Krugman's (1979) first generation model explains the factors that made Russia susceptible to a currency crisis. The second-generation models show how contagion and other factors can change investors' expectations to cause the crisis. The third generation models present how the fragility in the banking and financial sectors can result in default.

6.1. *Does first-generation model fitted well?*

Increasing government debt and falling revenues in Russian economy contributed significantly to its predisposition to a speculative attack. Russia's tax revenues were low due to declining output and the opportunistic practice of local governments. In addition, the decrease in the price of oil in the world markets to a large extent contributed to decline in output, further reducing Russia's ability to generate tax revenue. As a result federal revenues were lower than expected, making the ruble attractive for a speculators. Moreover, a large amount of short-term foreign debt during 1998 made fiscal deficit problem even more drastic.

First-generation model argues that a government finances fiscal deficit by printing money or depleting its stock of international reserves. Under the fixed exchange rate regime, however, monetary authorities were unable to finance through seigniorage. Russia's fiscal deficit problems combined with low revenue collection, and increasing mounting interest payments put pressure on the exchange rate. Printing rubles would only have encourage this pressure due to the fact that private sector would still have been able to trade rubles for foreign currency at the fixed rate. Thus, the only choice under the exchange rate peg was to deplete foreign reserves in order to prop up the ruble.

Taking into account the role of fiscal imbalance in provoking a currency crisis, Entov (1999) and Montes and Popov (1999)⁴⁴ tried to explain the Russian currency crisis by a canonical Krugman's model (1979).

According to Krugman's model fixed exchange rate regime is a potential target for speculators. The monetary authorities must defend the established exchange rate peg with its store of foreign reserves.

Even before the turmoil itself in August 1998 Russian ruble was subject to two speculative attacks in November 1997 and June 1998. CBR defended the currency instead of letting it float. The defense was successful in November 1997 but got left in the summer of 1998. The real exchange rate did not vary much during 1997. However, in an attempt to defend the ruble Russia's foreign reserves depleted. As a result, government had no other choice but to announce the devaluation on August 17, 1998.

The proponents of purely currency nature of the Russian meltdown argues that its origins lay in the real appreciation of the ruble, which followed by the exchange-rate-based price stabilization that was implemented in July 1995, using fixed exchange rate as a "nominal anchor" to fight inflation.

⁴⁴ Montes M.F., Popov V.V. (1999): The theory and history of currency crises in Russia and other countries, Moscow: Delo

“The overvaluation of the ruble is justified in undermining the export competitiveness with the following declining of the trade surplus. Together with the injury from falling oil prices in the world market, the switch of the current account balance from positive to negative in the first half of 1998 is seen as a major symptom of a pure balance of payments crisis. Thus, the August collapse is described in the context of the first generation models where the unsustainable exchange rate led to a balance of payments crisis, and accumulation of the excessive government debt as a consequence of the budget deficit”⁴⁵.

The problem is that high rates of real appreciation are unlikely to be sustainable and could eventually produce a crash. For Russia, the stability in the public debt/GDP outcomes between 1995 and 1997 was not due to sound fundamentals, but to one-shot gains from a real appreciation that could not be expected to continue, and that disguised the rise in nominal debt.

By the beginning of 1998, with inflation approaching single-digit levels and the real exchange rate flattening out, public debt dynamics began reflecting their true determinants: namely, high primary deficits and real interest rates, and weak economic growth. By mid-May 1998, the marginal real interest rate was 27 % under the macroeconomic program assumptions, compared to zero growth expectations, and public debt was on an explosive path.

Moreover, from this point of view, the default on the government debt was not necessary, the debt crisis and the run on the banks were induced by inconsistent fiscal and monetary policies.

However, there are several shortages in the explanation of Russian crisis purely on the first generation model basis. Firstly, according to Krugman’s model domestic-currency interest rate is subject to international arbitrage condition. Forward foreign exchange rates should have been based on interest rate parity to prevent the arbitrage opportunity. But this was not the case in Russia where the forward exchange rate differed much from the parity due to high probability of sovereign default.

Moreover, the exchange rate regime in the pre-crisis period cannot be considered as a purely fixed peg. In July 1995 Russian monetary authorities established a wide sloping “corridor” of 12-14% around the baseline rate within which the ruble-dollar rate was allowed to fluctuate. And generally an investor makes the decision comparing the expected returns of investment in government’ securities of developed countries and emerging markets independently on the exchange rate regime applied by monetary authorities.

An important issue to be noticed is that first generation currency crisis theories start with the weak country fundamentals, expansionary monetary and fiscal policy, which is then unsustainable with a currency peg. However, the stabilization program launched in July 1995 in Russia was based on tight monetary policy in order to curb inflation.

⁴⁵ Popov, V. (1999): Lessons from the Currency Crises in Russia and in Other Countries. - *Voprosy Ekonomiky*, No. 6, 1999.

Krugman's model stands that growing budget expenditures results in accumulating the growth in domestic credit. Whereas in Russia the persistent budget deficit combined with the restrictive monetary policy laid at the root of the financial crisis, generating rapid debt accumulation and an unsustainable increase in the debt servicing payments. The choice of a restrictive monetary policy in spring-summer 1998 was counterproductive, taking into account unsustainable economic situation, flimsiness of the banking system and huge fiscal imbalances. Growing exchange rate risks made investors at first stop the transfer of funds and then run from Russia.

Furthermore, according to Krugman's model, sovereign default is generated by the sharp exchange rate depreciation. However in Russia, currency depreciation was to a higher extend a result of the government insolvency.

Krugman argues that the critical level of foreign reserves determines the timing for the speculative attack and currency crisis, which is the level at which, in mind of the investors, the speculative attack can succeed.

In the Russian case, there was not a sudden speculative attack, which then would have ruined the foreign reserves of the central bank. The currency, GKO and equity - markets were just exhausted and ruined during the spring and summer of 1998. The first fall of the ruble in August occurred before any new emissions were made by the CBR. The monetary policy was not unsustainable with the fixed rate of the ruble before the crisis. But the government finances were unsustainable. The government budget deficit and debt burden augmented expectations of future money creation and depreciation of the ruble.

6.2. Does Russian crisis can be explained purely on the basis of second-generation models?

The second-generation model developed by Obstfeld (1996), which as described above explain crises as the result of a conflict between a fixed exchange rate and the desire to pursue a more expansionary monetary policy; when investors begin to suspect that the government will choose to let the parity go, the resulting pressure on interest rates can itself push the government over the edge.

It puts its emphasis on the central bank's evaluation of the benefits from abandoning the exchange rate versus defending it. The crucial point in these models argues that central banks face a trade-off between maintaining the fixed rate and pursuing other policy targets.

However, in this context it's important to point out that the main priority for the monetary policy from the first speculative attack in November 1997 was the stability of the exchange rate. As was already identified above, the stability of Russian ruble was a very important political issue. It was one of the few economic achievements during the stabilization process.

Furthermore, that both private Russian banks and the fiscal budget had significant currency debts, and a drop in the value of the ruble would make that debt - servicing costs much higher. Taking into account the fragility of the most Russian banks, stability of the exchange rate helped keep the system functioning.

The CBR and the Russian government were adhered to the policy of stable ruble up to the very last moment. In a sense this was a policy designed to maintain consumption and imports, to avoid export-oriented restructuring and to continue to live beyond the means.

Russian officials rejected any talks of devaluation; statements about the stability of the ruble, including that of president Yeltsin made 3 days before Russian default.

From these facts, it can be stated that Russian crisis was not inline with that of second-generation model designed by Obstfeld (1986). However, the second-generation models show how contagion and other factors can change investors' expectations to trigger the crisis.

Three components fueled the expectations of Russia's impending devaluation and default. First, the Asian crisis made investors more conscious of the possibility of a Russian default. Second, public relations errors, such as the publicized statement to government ministers by the CBR and Kiriyenko's refusal to grant Lawrence Summers an audience, perpetuated agents' perceptions of a political crisis within the Russian government. Third, the revenue shortfall signaled the possible reduction of the public debt burden via an increase in the money supply.

This monetization of the debt can be associated with a depreciation either indirectly through an increase in expected inflation or directly in order to reduce the burden of ruble-denominated debt.

Each of these three components acted to push the Russian economy from a stable equilibrium to one vulnerable to speculative attack.

It is important to stress the fact that beside overall problems with fiscal situation and political instability some of macroeconomic fundamentals in 1994-98 did not show the signs of an approaching crisis. The inflation rate was at the low level of 10% in 1997 and 5.39% in annual terms in the first half of 1998 and, as was already mentioned, the output growth rate turned to positive in 1997. In this context it is quite understandable to justify a view that the Russian financial turmoil resulted from the spillover effect of the Asian crisis, which might seem probable taking into account the timing of Russian crisis.

Buchs (1999)⁴⁶ is an example of explaining the Russian crisis through emphasizing the crucial role of spillover effect from Asia. The main conclusion is that “*the Russian financial disaster is a typical example of crisis contagion*”, “*without the Asian crisis, there was no obvious reason investors should have left Russia in great haste at that particular time*”. But the study acknowledges that although the timing and the speed of the Russian crisis was definitely linked to the Asian events, the underlying vulnerability of the fiscal situation and of the banking system was a serious problem which no investor could ignore.

However, in my opinion the spillover effect from East Asian crisis alone are not sufficient for inducing the financial crisis in Russia. The definition of contagion effect is used in the same sense as in Eichengreen, Rose and Wyplosz (1997): ... *an increase in the probability of a speculative attack on the domestic currency which stems not from domestic fundamentals, but from the existence of a (not necessarily successful) speculative attack elsewhere in the world*”.

The existing theoretical literature on the channels of contagion emphasizes two main channels of the contagion transmission: via trade flows and via financial flows. It is useful in this context to investigate these channels separately to see whether the contagion could be transmitted from Asia to Russia.

⁴⁶ Buchs, Thierry D. (1999) “Financial Crisis in the Russian Federation – Are the Russians Learning to Tango?” *Economics of Transition*, Vol. 7 (3), 687-715

6.2.1. International trade channel

Bilateral trade is the one way of trade channel transmission of crisis spillover across countries. The currency crisis in one country raises its export and thus results in increasing imports of its trade partner. In response, the trade partner country faces a current account deficit that will put the pressure on its currency. Under the assumption of fixed exchange rate the central bank starts depleting its foreign reserves and the currency will eventually crash.

However, in 1997 imports from East Asia to Russia accounted for only 3.28% of total Russian imports (add source). Tacking this fact into account it obvious that East Asian crisis is unlikely to create substantial trade deficit to put enough pressure on Russian ruble.

Another way of contagion via trade channel is transmission through the competition on the world markets. The currency crisis in one country leads to the fact, that its export becomes more competitive as the domestic currency depreciated. In case that another country export structure is similar, it will suffer either from the decline in the export prices or from the decrease of its market share. In response, the export revenues will decline and therefore a decrease in foreign currency inflow will be observed, again triggering the pressure on exchange rate.

Indeed, a decline in Russian exports occurs. However, it came out even before East Asian turmoil, in January 1997. About 30% of Russian export is oil and natural gas and the world price of oil fell in January-May 1997 by 27% from \$23 per barrel to \$17 per barrel and then again in November 1997 - March 1998 by 45% from \$19 per barrel to \$11 per barrel. As a result, Russian trade balance decreased substantially for the first time in June 1985 (figures presented above).

However, to my mind, the effect of Asian crisis on world oil prices is unclear and even overestimated. Perhaps the more important fact, in this context, should be attributed to the OPEC 10% increase of the oil export quota.

According to US EIA (1999), January- May 1997 price drop resulted from UN Security Council Resolution 986 under which Iraq began to export oil, the November 1997 - March 1998 price drop was due to the increase in world oil supply by 2.25 million barrels per day (mostly due to the increase in the OPEC production ceiling). OPEC countries anticipated higher demand for oil and the main purpose beside the increasing export quota was to expand OPEC market share (Baikov, 1999)⁴⁷.

However there was no increase in the demand for oil for two reasons. Firstly East Asian turmoil prevented the usual growth of Asian oil demand. And, secondly, two unusually warm winters decreased world demand for oil. Its more appropriate view is that the Russian dependence on a single world price is rather Russian domestic problem then the contagion. To conclude this part, it is unlikely that contagion spread from Asia to Russia via international trade channel.

⁴⁷ Baikov, N.M. (1999): Nearest and medium-term perspectives for oil and gas market development, *Economica i Pravo* (In Russian), February.

6.2.2. Financial channel

The financial channel of contagion transmission occurs through the behavior of speculators. There are two ways in which financial crisis in one economy can incite international investors to withdraw funds from another economy. One important issue is that Russia is a part of the emerging markets group. Thus, foreign investors might be worried that financial crisis can hit other emerging markets as well or that authorities in the other countries will impose capital controls to protect their countries from the crisis. This created the expectations of devaluation that can lead to a speculative attack. However, as was already mentioned, Russian economic system does not seem to be similar to East Asian countries from a macroeconomic point of view.

Another fact to be noticed is hedge funds that had their money in East Asian economies. When financial crisis took place in Asia, due to currency devaluation hedge funds lost their money and had to sell some of their assets to satisfy margin calls. In order to cover the margins, hedge funds started withdraw their most risky assets first – from other emerging markets, in particular Russia - since they have to maintain a certain risk/assets ratio and because they re-valued the risks as mentioned above.

Under this assumptions, it worthy mentioning, that both these factors would pressure the price of Russian assets down and the interest rates up, thus, causing debt payments harder and harder to service. Moreover, as foreign investors start to withdraw their funds from Russian, thus, putting pressure on domestic currency, which resulted in depletion of central bank's international reserves and eventually cause currency crisis.

Indeed, after East Asian turmoil apparently foreign investors lost confidence in emerging markets, risk aversion started to increase causing a withdrawal from emerging markets, not just Russia. However, to blame Russian crisis purely on financial channel of contagion transmission from Asia more detailed and deep analysis is needed. If crises in Asian countries made international investors sell Russian assets (in particular, Russian government debt instruments), we would see a negative effect of "bad news" from Asia on the price of Russian securities.

In context of Russian economy with its fundamentally "sick" political and institutional environment, inconsistent government policies the importance of expectations and triggers in setting off the wave of pessimism and coherent expectations in the market that results in currency devaluation is overestimated.

The evidence suggests that blaming Russian financial crisis purely on Asian contagion is a superficial view. There were not enough possibilities for Asian boom to spread to Russia. The trade between Asian countries and Russia is not that significant to substantially influence Russian trade balance. Moreover, Russian economic system does not seem to be similar to Asian countries in macroeconomic sense.

And, finally taking into account the overall problems in Russia before August 1998, investors did not seem to have been withdrawing their money from Russian state debt instrument just due to “bad news” came from Asia.

External reasons, like the Asian crisis and the decrease of the prices for the Russian key export commodities are serious burdens for any economy. But, if the Russian economy was fundamentally „healthy“, it would recover during a short period and the consequences of these shocks wouldn't be so drastic.

I argue, that Asian meltdown must be seen as a complementary reason that indeed worsen the overall economic and political development in the pre-crisis period; as negative fact that eventually contributed to Russian crisis; and did undermine investors' lost of confidence towards emerging markets, particularly Russia. However, to my mind, the Asian crisis cannot be seen as a direct cause of Russian boom in August 1998.

Therefore one should look deeper inside Russian economy to search for the reasons of Russian financial crisis.

6.3. Russian banking crisis analysis

The models of third generation put emphasis on the overall problems in the banking and financial sector and its relation to currency crises. Generally, most models stress the relevance of the moral hazard problem and the insolvency of the financial institutions, which in response trigger massive capital outflow with the following default in the external value of the currency.

A study on the origins of the banking crisis, provided by RECEP (Russian European Center for Economic Reform) in 1998, identifies the causes of the banking sector problems in the moral hazard line, consistent with the emphases of the third generation models.

Analyzing the banking crisis in Russia, it worthy mentioning the fact that vulnerable and extremely volatile macroeconomic situation in Russian economic system during the 1990s would have made banking very difficult even for a “grown up” banking sector.

In Russia, the number of commercial banks increased from fewer than 100 in 1988 to about 2,400 in 1994 and 2,500 in 1998. Although the number of banks has increased dramatically, the Russian banking sector is still quite concentrated. In 1997, the top five banks accounted for 36 %, and the top 50 banks for 71%. And it is important to point out, that large firms owned many of those banks.

Table#: Number of credit institutions and revoked licenses during 1995-1998

.	1995	1996	1997	1998
Registered by CBR	n.a.	2589	2562	2481
Change	n.a.	n.a.	-27	-81
Revoked Licenses	216	275	329	227
Liquidated	n.a.	n.a.	52	73

Source: IMF (2002) and Central Bank of Russia, Bulletin of Banking Statistics

Furthermore, property rights and legal structure remained undeveloped making lending to private firms difficult and risky. In response, Russian banks only marginally fitted into normal financial intermediation between savers and investors. Instead, banks widely used the opportunity to capture resources from the state without any incentives for banks to develop financial intermediation and to invest in better governance. Under these conditions it is not surprising that banking sector in Russian could not develop in a normal fashion.

Despite the expansion in the number of banks and their cross holdings in the real sector, banks failed to lend to companies, and banks' credit to the real sector even decreased significantly between 1997 and first quarter 1998. For example, in real terms, Russian bank credits to the real sector declined by almost 60 %, while the ruble loan interest rates were very high. In nominal terms ruble loans to the real sector declined by 31.7 percent, from 180 billion rubles to 123 billion rubles (viz Table # below)

Table #: Bank Credit to the Real Sector (in billions of rubles)

	1996	1997	1st quarter 1998
Total Loan	247	310	422
Foreign Currency	117	130	298
Ruble Loan	130	180	123
Interest Rate⁴⁸	146.8	32.0	41.8
Inflation Rate⁴⁹	47.5	14.7	27.6

Source: IMF (2002) and Central Bank of Russia, Bulletin of Banking Statistics Fund.

In this context two questions arise.

Why did commercial banks wave aside lending to private firms? Most companies outside the industrial groups that owned these commercial banks did not have access to credit. Those, which gained credit paid enormous mark-ups. Undeveloped institutional background and peculiar relationship between commercial banks, government and industrial groups, in fact, generated a “gold mine” of rents. In a situation of asymmetric information, the extremely high interest rates created a classical adverse selection problem, as became evident during the crisis.

Where did commercial banks invest instead? As was already mentioned above, their investments were placed in attractive government securities. By the end of 1997, private banks invested about three-quarters of its domestic currency deposits in federal government bonds⁵⁰.

“In fact, Russian banks are among the worst performers in transition countries in terms of mobilizing savings and allocating credit to the private sector, and they are a key factor underlying the surge of nonbank finance, including trade credit and barter trade, in these economies”⁵¹.

One more interesting fact is, that even industrial companies being private banks’ owners in Russia had chosen nonbank financing for their production and trade and let these commercial bank to acquire credits from the themselves and then invest in lucrative state bonds.

⁴⁸ 3-months lending rates in %.

⁴⁹ CPI in %.

⁵⁰ OECD Economic Surveys: Russian Federation 1997, Paris, 1997-1998.

⁵¹ IMF working paper. Monetary and Financial Systems Department: Financial Crisis, Economic Recovery, and Banking Development in Russia, Ukraine and Other FSU Countries; June 2004

Generally, Russian economic system experienced a continued decrease in the scale of banking activities towards real sector. After the massive privatization program, the ratio of commercial bank's credit to the private sector to total assets down trended from 12 % of GDP in 1994 to 8 % in 1997. And around three-quarters of all household deposits were addressed to Sberbank⁵².

It worthy mentioning the fact, that Sberbank's dominance of the Russian deposits market was, in fact, damaging for the whole banking sector. It dispossesses commercial banks of deposits as a source of funding. As private banks can borrow from each other, the banking sector as a whole can borrow from government and the central bank and from the domestic or international capital markets.

Indeed, borrowing from government took place. However, it cannot be a regular source of funding. Even funding through the central bank, at that time massive, cannot be a continuous and increasing source. And the interbanks relations were not developed. What have left were the capital markets. The domestic capital market is however not developed enough to provide substantial resources. Thus, the banks' borrowed in foreign currency in external capital markets or from international banks.

Under these circumstances developed during 1990s in Russian economic system it is not surprising that the depriving of commercial banks from the deposit market through the privileged position of Sberbank combined with the lack of regulatory controls towards foreign currency exposures, in response, generated the situation in Russian banking sector extremely vulnerable to the banking crisis.

According to the third generation models the speculators observe not the steady decrease in foreign reserves per se, but the continuous increase in the liabilities with its critical level given by the level of international reserves.

Indeed, there is statistical evidence of increased jeopardy of the commercial banks to the foreign debt: the share of foreign liabilities in the assets jumped from 7 % in 1994 to 17 % in 1997, so from the beginning of 1998 about 30%⁵³ of all foreign liabilities of commercial banks were not covered with assets.

Following the collapse of the East Asian financial markets, the jeopardy regarding the possibility of Russia suffering the same destiny as Thailand or Indonesia had spread over the international investors. In order to escape the crisis, the CBR intervened by decreasing the growth of the money supply and twice increasing the lending rate to banks, raising it from 30 to 150 %. Both rate hikes occurred in May 1998, the same month in which the Russian stock market lost 39 % of its value.

⁵² *Central Bank of Russia, Bulletin of Banking Statistics*

⁵³ Russian Economic Trends database

The enormous interest rates increase resulted in two effects. Firstly, restrictive monetary policy deteriorated Russia's fiscal problems. Its debt grew rapidly as interest payments increased. This put pressure on the exchange rate because investors feared that Russia would devalue to finance its non-denominated debt.

Secondly, high government debt precluded companies from gaining credits for new capital and increasing the interest rate did not raise the supply of lending capital available to firms. At the same time, foreign reserves held by the CBR were so low that the government could no longer defend the fixed exchange rate by buying rubles.

The situation with government debt spiral was sentenced to collapse and eventually collapsed. Taking into account the fact, that the returns on the short-term government bonds (GKO) were scandalously high, much higher than in the real sector, and that such a policy was driving away resources from the real sector into purely financial speculations in the market for government debt and the stock market.

Long-term finance has been unavailable in Russia, while being a standard practice in developing financial markets. Most credits had maturities of less than a year with uncertain rollover prospects combined with the liquidity shortening of maturities. In addition, due to moral hazard opportunities there were no incentives for bankers to lobby for more transparent institutional regulations.

It is not surprising that Russian financial prosperity was not based on the foundations of the healthy real economy and could not survive and finally ended up in the form of the overall crisis.

First signs of approaching banking crisis were disclosed in May 1998, when Tokobank (one of top twenty Russian banks) went bankrupt. CBR reacted by putting itself in the dangerous position, trying to save failing banks by the debt exchange program of 15 July 1998, where the CBR started to offered to exchange short-term ruble T-bills (GKO, on which Russian government defaulted a couple of months later) for 7 or 20 year dollar Eurobonds in order to reduce the volume of short-term debt. This debt exchange was seen as a main component of a credit agreement with the IMF and the World Bank

Foreign investors started to withdraw their funds in favor of high quality securities. Russian government and monetary authorities faced increasing difficulties in servicing its debt and in defending the exchange rate. In August 1998 it gave up on the fixed peg rate and froze GKO operations.

The developments in Russian banking sector were such that the approaching crisis was quite obvious. Sberbank being a quasi-monopoly in the deposit market crowded out commercial banks, thus, forcing them to borrowed abroad. In July 1998, 75 % of the foreign currency liabilities were concentrated in the 20 largest banks where they represented 20 % of total liabilities.

Foreign currency assets were much less. In addition to a currency mismatch there was a maturity imbalance as banks borrowed foreign currency short-term to be rolled-over (as long as that was possible) and lent longer-term.

By August 1998, foreign liabilities of Russian banks exceeded foreign assets by more than 30%. In this situation, the devaluation of national currency was deadly to the banks that had foreign liabilities but mostly domestic assets.

Thus, the crucial factors of the Russian banking sector fragility can be identified as large amount of non-performing enterprise loans, increasing imbalances of foreign currency assets and liabilities, significant amount of unhedged off-balance sheet forward contracts, and substantial ratio of government securities in banks' assets.

Under these circumstances, the freezing of the sovereign debt and the fall in the equity markets on August 1998 responded in a deep depreciation of private banks' assets and following liquidity problems.

The hardest situation after the crisis appeared in largest private banks, excluding Sberbank. Large banks suffered losses mostly from: positions on foreign exchange forward contracts⁵⁴; the losses on the GKO portfolios; liquidity shortages due to the outflow of retail deposits⁵⁵; and defaults on margin calls.

Large private banks had lost between 14 % and 45 % of their client deposits. Sberbank, which kept the large majority of its ruble-denominated accounts, was an exception. However, it happened to lose over 30 % of its USD-denominated accounts⁵⁶.

In order to protect savers, CBR offered to transfer savings from insolvent banks to Sberbank, since deposits at Sberbank were insured. Also dollar accounts were transferred to Sberbank at a rate of 9 rubles per dollar much below the market rate, so that customers lost an estimated half of the value of their dollar deposits (Steinherr A. (2004)).

It is important to stress the fact, that most analysts share the view that the impact of the banking crisis on the Russian economic system was quite limited. Due to the fact, that banks' credits to the private sector was underdeveloped and accounted less than 10% of GDP, the temporary breakdown of financial intermediation could not be a big loss for companies.

Moreover, industrial groups were able to shift their deposits before retail account holders as they had bargaining power over the banks⁵⁷. For example, Rossiisky Kredit, Inkombank lost between 50 % and 70 % of their deposits between August and September.

⁵⁴ Only large banks could enter into such deals

⁵⁵ small banks had virtually no deposits

⁵⁶ Steinherr A. (2004): Russian banking since the crisis of 1998, European Investment Bank

⁵⁷ Vladimir Potanin, head of Oneximbank, stated in an interview that bankers knew by 14 August that the government would devalue on 17 August. Also most large banks took advantage of the debt exchange program of 15 July 1998.

Furthermore, the loss on GKO portfolios was not, contrary to an often-considered view, a major source of banking crisis. Losses on GKO investments were, in fact, marginal. The main reasons were foreign exchange exposures, bad lending with limited risk diversification, and bad management. Indeed, banks had significantly decreased their GKO investments before the default, and converted proceeds in dollar securities due to debt exchange program of 15 July 1998. By the time the GKO default occurred, banks had less than 10 % of their assets invested in GKOs ((Steinherr A. (2004)).

In the end, losses from non-payment of government securities accounted around 18 % of banks' losses, whilst 82 % were accounted for by foreign exchange losses and losses from bad loans. The total number of bank licenses revoked in 1998 was 229 compared to 334 in 1997(viz table above) was, in fact, not that drastic.

The CBR and the Russian government treated the crisis as if it were only a liquidity crisis, although the IMF more realistically argued that the banking sector was largely insolvent.

In conclusion, it's useful to point out, that inadequate risk and liquidity management at commercial banks, adverse selection problems and moral hazard opportunities, inefficient institutional background and undeveloped regulatory controls and clearing systems, poor monitoring by the CBR and excessive confidence in the CBR's ability to defend the fixed exchange rate sharpen excessive risks.

The major reasons for the banking crisis were the high concentration of assets among highly leveraged and badly managed banks, extraordinary exposure to foreign exchange risk and the loss of client confidence.

Moreover, the debt model of the Russian economic development determined the system of financial crises in August 1998, which governed the crisis of the national banking system and led to bankruptcy of the some biggest commercial banks.

The crisis in August 1998 in Russia was the system financial crisis by its nature, including the foreign debt payments, foreign currencies, banking and financial markets crises. As the result the payments on the public and private external debts had been temporary frozen, the sharp devaluation of the ruble rate was observed, the biggest national commercial banks faced the liquidity problems, the turnovers and liquidity of the circulated financial instruments drastically dropped.

6.4. Composite Explanation

Since the crisis in its manifestation pertained to several financial spheres, the abundance of composite explanations that stress several reasons to cause it is not surprising.

For example, Desai P. (2000)⁵⁸ argues that “*the Russian malaise combined elements of the first- and third-generation currency-crisis models: Russian policymakers’ attempts to maintain a stable ruble in the midst of a government-borrowing-financed budget deficit were overwhelmed by plummeting values of government GKO’s as external shocks hit Russia’s balance of payments*”.

Another example of the composite explanations of the August crisis in Russian is Kharas, Pinto, and Ulatov (2001)⁵⁹. The study admits the view that the Russian meltdown is best explained by an inconsistency between the fiscal imbalances and the fixed exchange rate band along the lines of the first generation models. The crisis is said to be attributed to three factors: fiscal deficits, an unfavorable maturity structure of public debt, and contagion effect from the Asian crisis combined with a decline in oil and gas prices.

In the attempt to formalize the transmission mechanism of external shocks into the currency collapse in Russia, Kirsanova and Vines (2002)⁶⁰ develop a model of the government. Among the studies of this line not presented here are EBRD (1998), Fries (1999), Pinto (2004), with choice towards the second-generation models, with the sudden capital outflow due to unanticipated shock to the world oil prices and the public knowledge of the government’s trade-off between maintaining the peg and bearing the increasing cost of debt servicing, shift in expectations results in self-fulfilling crisis. According to this logic, the Russian crisis was not a consequence of the domestic debt growing out of control (the ratio of the domestic debt to GDP was relatively low); instead it was a logical outcome of the policy trade-off under the exogenous shock.

Chiodo and Owyang (2002)⁶¹ argue that “*an understanding of all three generations of models is necessary to evaluate the Russian devaluation*”: the first-generation models explain the factors that made Russia vulnerable to the crisis (high government debt and increasing fiscal deficit); the second-generation models show that expectations of Russia’s impending devaluation (with investors’ sensitivity raised after the Asian crisis and political perturbations fueling the fears) had a role in triggering the crisis; the third-generation models address the financial sector fragility as an essential component of the Russian crisis.

⁵⁸ Desai, P. (2000) “Why Did the Ruble Collapse in August 1998?” American Economic Review, Vol.90, No.2, 48-

⁵⁹ Kharas, Pinto, and Ulatov (2001) “An analysis of Russia’s 1998 Meltdown: Fundamentals and Market Signals” Brookings Papers on Economic Activity, 1, pp. 1-68

⁶⁰ Kirsanova, and Vines (2002) “Government Budget, Oil Prices and Currency Crises in Russia” (<http://www.ex.ac.uk/~kirsano/KirsanovaVines.pdf>)

⁶¹ Chiodo and Owyang (2002) “A Case Study of a Currency Crisis: The Russian Default of 1998” Review (Federal Reserve Bank of Saint Louis), Vol.84, No.6, pp.7-17

7. SPECIFIC FEATURES OF RUSSIAN ECONOMIC SYSTEM

The different studies shows that the mainstream currency crisis models are still relevant, but to some extent they fall short in explaining the overall complexity of the Russian crisis, which had features of currency, debt and banking crises.

The above interpretations of the Russian crisis reveal a set of factors suspected in the ruble crash, but show no unanimity about the relative importance of these factors in the onset of the crisis. Each explanation has some evidence in support when the pre-crisis behavior of the stressed economic indicator is considered. The nature of the crisis seems to be ambiguous due to its complex manifestation on August 17, and fitting one of the theoretical models remains questionable.

Looking at individual indicators of the Russian crisis does not clear its primary reason – all of the aforementioned factors seem to be relevant: the real appreciation under the nominal peg “corridor” system and worsening of the trade balance, the federal budget imbalances and growing government debt, weakness of the banking sector and increasing share of foreign liabilities, the fall in the world energy prices and contagion effect from the Asian financial markets. For an unbiased analysis the methodology that allows for evaluating numerous factors simultaneously is needed. An empirical test, based on the statistical evidence, along the lines of those undertaken to explain the European, Latin American and Asian crises can be helpful in assessing the role of each factor of the crisis while controlling for the effects of the other factors simultaneously.

I argue, that in order to understand the unique vulnerability of the Russian economy in the summer of 1998, some of the basic weaknesses and characteristics of the Russian economy has to be taken into account. Apart from theoretical framework there is a need to incorporate certain peculiarities of the Russian economic system, including incoherent economic policy with excessive public sector debt; the failure to shape and enforce a tax structure that worked; the ineffectiveness at encouraging enterprise reform; insider ownership, as a result of mass privatization; and generally the failure to hammer out a politically acceptable economic program. Although these weaknesses are not the acute reasons for the crisis, they are - most likely - behind the crisis. However, I am deeply convinced that these factors contributed to the August crisis to a large extend.

In this context, after detailed analysis of the economic development in Russia in the pre-crisis period together with the application of traditional theoretical currency crisis model on the Russian economy, it worthy to remind the first chapter of my thesis.

To my mind, in order to understand the complexity of the economic and political processes behind the crisis, together with the all three theoretical foundations it is absolutely necessary to take into account the institutional background that had developed in Russian economic system before the crisis.

The above-described unfavorable and highly instable political situation, in my opinion, created the fundament for the further development in Russian society, which later appeared to be involved in the deep financial crisis. Under such detrimental political conditions, that are not able to the effective enforcement of law, that could not guarantee the stable political atmosphere makes the whole economic system extremely weak and vulnerable to the external shocks.

The institutional environment, in which the economic development takes place was extremely “unhealthy” from its basis and could not be characterized as democratic. The progress in institutional and legislative reforms in Russia in the 1990s has thus been modest and the emerging market infrastructure in the country has been extremely feeble.

In this context it is important to stress the fact that Russia was left with Soviet-era institutions. The legal structures of a market economy that govern private property, oversee the financial market, and enforce taxation were not functional.

Generally speaking, the transition of the government, being an important reform towards prosperous market economy, was missing in Russia. The transition or change does not mean only the federal government, but politicians and officials in all level in the public administration. They are responsible for building the institutions for the enterprises and citizens to operate.

In comparison, in Poland and the Czech Republic the structure of the public administration has changed rapidly and deeply. In Russia, we can observe little more than some ministerial job rotation. Because of the absence of political transformation, no efficient public institutions have been created. The lack of institutions enables all these weaknesses of the Russian economy.

One more additional basic weakness of the Russian economic system should be mentioned. Russia was a demonetized and a multi-currency economy. The ratio of M2 to GDP has been only around 12-17% in 1997-98⁶². The markets are not primarily coordinated via rubles. The low use of the domestic currency makes the economy inefficient. Dollars are much used, with the value of the dollar stock even before devaluation probably greater than the value of the ruble stock.

Moreover, additional specific feature of Russian economic system to be considered is the wide use of barter in business-to-business transactions. Approximately half of the industrial production was exchanged through barter. According to the Russian Economic Barometer survey time-series, the share of barter in industrial output has risen almost monotonously from about 5 % in early 1992 to about 46 % in early 1998 and peaked at about 53 % in late 1998, to come back to 43 % in April 1999. Finally, enterprises use various substitutes, like promissory notes, in paying their bills, e.g. taxes. All these substitutes for rubles harm the operation of the enterprises and hamper tax policy.

⁶² RECEP (Russian-European Center for Economic Reform) (1998) “Resolving the Banking crisis” Russian Economic Trends, Monthly Update, 11 November 1998 (available at <http://www.recep.ru/phase4/en/ret/retm.htm>)

Gaddy and Ickes (1998)⁶³ have formulated the expression “virtual economy” in order to explain the specific features of the Russian economic system. Their model is based on the non-payment arrears. The enterprises don’t pay their suppliers, their workers, and their taxes. And if they do, it is with cash substitutes. By June 1998, the total arrears in the Russian economy had grown to around 45% compared to the GDP⁶⁴. These arrears create “virtual” revenues, “virtual” fiscal obligations and “virtual” prices. The existence of this “virtual economy” means that the Russian economy is actually smaller than what Goskomstat reports.

In this context several important conclusions must be made, that directly affect economic development in Russia, and together with analyzed above factors ended up in financial crisis. Firstly, non-monetary exchange tended to emphasize the role of personal ties and trust, but also of paternalism and arbitrariness, as against the anonymity and trust in institutions more typical for money based economies. Secondly, the usually multilateral exchange chains created appeared to be not efficient. The true costs and productivity of the economy are difficult to judge.

Moreover, tax collection appeared to be extremely difficult. In addition, a large part of revenue collected was not in cash. This resulted in the fact that the effectiveness of fiscal policy happened to be lower than in a money-based economy. The parallel conclusions are also valid for monetary policy, as money demand may be unstable and anyway connected only with a certain part of the Russian economy.

Lastly, the Russian economy based on non-monetary cash was not well suited to generate savings and investment. An abnormally large part of banks assets were invested to government bonds paper not in non-financial private enterprises. Thus, little capital Russian banks were heavily invested in financing the public deficit, not in urgently needed private investments.

The official savings rate has been around 25%, but studies with reasonable adjustments by RECEP (1996) estimate the real savings rate to be around 10-12%⁶⁵ This was a quite low level compared to other transition countries where the savings rate was around 18% or even 20-30% in Asian countries.

There were several reasons for such low savings rate. Firstly, the hyperinflation history in 1992-1995 when the ruble savings were lost. The low inflation policy by the CBR had not yet earned the credibility among the population. Secondly, the governments used banks as a tax collectors so enterprises to avoid keeping accounts in Russian banks. And finally, the bankruptcies of different financial institutions in during 1990s reduced the trust towards banking system as a whole.

⁶³ Gaddy, C.G. and Ickes, B. W. (1998) Russia’s Virtual Economy. Foreign Affairs September/October 1998. Vol. 77. No. 5.

⁶⁴ RECEP 1998.

⁶⁵ The Goskomstat does not adjust its savings rate figure by household sales of hard currency, currency purchases to pay shuttle import and hard currency spent abroad.

By 1998 the banking sector was still the weakest link of the Russian economy. Trust in the system was low and the transfer of capital between sectors was undeveloped. Richard Hainsworth, banking analyst at Renaissance Capital, reported: "*Russia has 1,300 banks and almost no banking system. There is little co-operation between the banks and they find it difficult to trust each other.*" While large natural resource companies have used retained earnings to fund further expansion, small and medium-sized companies have struggled to get credits. This has led to further concentration of assets and capital in the hands of a few large industrial groups. Andrei Kozlov, deputy head of the CBR, said: "*Russian economic growth has been driven by export earnings of natural resource companies rather than by banking credits.*"

In conclusion, it is worthy mentioning the fact of insider ownership, as a result of privatization program. Transition reforms in Russia were simply associated with privatization, with no understanding of the necessary infrastructure required. There was no time for social adaptation and integration of privatization ideas. The fast privatization method used resulted in an ownership structure, where insiders - employees and especially managers - own the majority in most of the Russian enterprises.

Lacking earlier experience and a well-developed theoretical framework, speculation on the impact of predominant insider ownership is uncertain. However, there are several reasons why insider ownership structure appeared to be inefficient in the Russian case.

The lack of capital by the insiders themselves, their unwillingness to sell the majority stake of their enterprises and to give information to outside investors have been major reasons for the lack of investments and economic growth in the Russian economy. Moreover, insiders often see their ownership role more as a matter of implicit employment guarantee or power than as a matter of asset management.

Further, these insider managers have inherited a Soviet style of management that most likely is not appropriate to the market economy. As a result, an insider ownership of the Russian economy clearly contributed to the fact, that Russia had small financial and equity markets and relatively little investment and structural change. In 1997, the overall capital investments in the production sectors (industry, agriculture, transportation and communication) were only 17% of the level in 1990 (Gaddy - Ickes 1998).

There is hardly any doubt that Russian state institutions were degrading and that the weakening of the state institutions is the main long-term factor explaining the poor performance of the Russian economy that finally resulted in deep financial crisis.

8. CONCLUSION

In this thesis I investigated Russian financial crisis in 1998, the emphasis was put on the crucial reasons that lead up to a currency crisis, debt default and the banking crisis. The existing theoretical background of currency crisis models, where each generation explains some factor that has been hypothesized to cause a crisis, do not capture every aspect of the whole magnitude of the events in Russian economic system by August 1998.

The main conclusions of my thesis are the following:

The whole process of Russian transition was non-transparent and, thus, brought a number of negative consequences, which influenced the whole economic system far into the future and left the country extremely vulnerable and unsustainable. Thus the origins of the Russian crisis of 1998 are to be found in the country's economic structure, institutional environment and political processes.

Nevertheless, even though the institutional weakness is the single most important long-term factor that contributed to the extreme magnitude of the Russian development, it is not linked directly with the collapse of the ruble and the failure of macroeconomic stabilization program. It must be seen as a crucial factor that stood behind the crisis.

The three generations of currency crisis models suggest three groups of factors that influenced the onset and magnitude of a currency crisis.

- I. Rising fiscal deficits that the government cannot control; falling government revenue; fixed an exchange rate regime and a central bank willingness to defend it with a foreign reserves, being at a low level.
- II. Increasing expectations of devaluation among international investors due to the external reasons, like the Asian crisis and the decrease of the prices for the Russian key export commodities.
- III. Central bank control of the interest rate in undeveloped and fragile financial markets; domestic borrowing constraints with the relevance of the moral hazard problem.

Thus, the genesis of the Russian financial turmoil could be presented as follows. High return on government debt obligations, needed to finance a large budget deficit, accompanied by restrictive monetary policy, together generated a massive capital inflow, on the one hand, and stimulated rapid debt accumulation, on the other hand.

Capital inflow caused ruble overvaluation relative to the level compatible with long-term solvency of the government. Given that money supply and the interest rates are set at their target values, the inflation rate depends mostly on the rate of currency depreciation.

When international investors estimated the Russian government debt as too high to service (this corresponded to an increase in the expected rate of default probability), they began to withdraw funds since the expected return on investment in Russian government debt obligations became less than return on bonds of the developed countries.

The growth of the international investors' fears about the emerging markets associated with the East Asian crisis added much to the process. As a result of massive capital outflow the rate of currency depreciation jumped up and the government was compelled to freeze its debt servicing payments.

From his point of view, the collapse of the ruble in August 1998 resulted from the interaction of inherited institutional weakness that made Russian economy vulnerable to large external shocks with the inconsistent economic policies (excessive fiscal and restrictive monetary policies).

To incorporate the peculiarities of Russian economic system with its institutional weaknesses into the theoretical background of all three generation together might be the subject for my future research.

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