

ABSTRACT

The Economic Causes of the Collapse of the USSR

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The economic causes of collapse of the Soviet Empire are one of the actual and controversial topics of the modern economics. Over the last 20 years there were made a lot of works and researches in this subject. The purpose of this thesis is detection and learning the main economic reasons of the dissolution of the Soviet Union. We develop our analysis in the three main directions. The first direction describes the work of Soviet economic policies, which was based on the administrative- command type of economic system. The main economic policies of the USSR were War Communism, New Economic Policy and Democratic Centralism. Each of these economic policies has its own characteristics. The second direction is related to the analysis of the Soviet economy, which encompassed the period from Stalin to Brezhnev epoch. This long-lasting period will be inspected based on the analysis of the soviet industrial, agricultural, financial and transport system. In this part we will concentrated on such economic reforms as industrialization and collectivization, reforms of Khrushchev, Kosygin's reforms and the process of intensification. The paper has recognized that the problems pertained to the Soviet economy is tensely connected with the agricultural sector, the shortage of Scientific Technical Progress in economy, super-industrialization and militarization of the economy and etc. The third part of the thesis examines the main economic causes of collapse of the USSR. During the research we found the four main factors of breakdown. Firstly, the Cold War characterizes the enormous defense expenditures of the Soviet economy, which adversely affected development of the other spheres of the economy. The second factor was the oil crisis of 1985 year which swiped by the budget and incomes of the Soviet government and led to the deep budget deficit and hard currency shortage in the country. The third factor is repressed inflation which gave push to such problems as shortage of goods, savings, input hoarding, supply diversion and hyperinflation. The last factor of the breakdown was Gorbachev's Perestroika (Restructuring). It was a series of laws aimed for the shifting of the economy to the market socialism. However these reforms were failed. All these factors forced the USSR in a deep economic, social and political crisis, from which it was unable to exit.

Key Words: dissolution of the USSR, economic policies, analysis of the Soviet economy, the main factors of breakdown

ÖZ

Sovyetler Birliği'nin Çöküşünün İktisadi Nedenleri

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Sovyet İmparatorluğu'nun çöküşünün ekonomik nedenleri modern ekonomide aktüel ve tartışılan konulardan biridir. Son 20 yılda bu konu üzerinde bir çok çalışma ve araştırmalar yapılmıştır. Bu tezin amacı Sovyetler Birliği'nin çöküşünün temel ekonomik nedenlerinin araştırılması ve öğrenilmesidir. Analizimizi üç önemli yönde geliştireceiz. Birinci bölümde, idari-komuta ekonomik sistem tipi ile yönetilen Sovyet ekonomik politikalarının çalışma prensipi tanımlanacak. SSCB'nin temel ekonomik politikaları şunlardır: Savaş Komünizmi, Yeni İktisat Politikası ve Demokratik Merkezizetçilik. Bu ekonomik politikalarının her birinin kendi özellikleri vardır. İkinci bölüm Sovyetlerin Stalin çağından Brejnev çağına kadar olan dönemin analizidir. Ayrıntılı olarak Sovyetlerin sanayi, ziraat, finans ve ulaşım sisteminin analizi yapılcaktır. Buna ek olarak sanayileşme ve kollektifleştirme, Kruşçev reformları, Kosigin reformları ve yoğunlaşma süreci gibi ekonomik reformlar üzerinde konsantre olucaz. Analiz sürecinde Sovyet ekonomisinde ziraat sektörü ile, ekonomide Bilimsel Teknik İlerlemenin eksikliği ile ve aşırı sanayileşme ve askerileştirme ile ilgili sorunlar tespit edilmiştir. Tezin üçüncü bölümünde Sovyetler Birliği'nin çöküşünün temel ekonomik nedenleri inceleniyor. Konu araştırmasında çöküşün dört en önemli faktörü tespit edilmiştir. İlk faktör, ekonominin diğer alanlarının gelişmesini engeleyen ve büyük savunma harcamaları ile finanse edilen Soğuk Savaştır. İkinci faktör, Sovyet hükümetinin bütçe ve gelirlerinin düşüren ve ülkede derin bütçe açığı ve sabit para akımı sıkıntılarına neden olan 1985 yılının petrol krizidir. Üçüncü faktör, Sovyet ekonomisinde mal kıtlığına, tassaruf azlığına, istifçilik, ve hiperenflasyon gibi sorunlara yol açan bastırılmış enflasyondur. Çöküşün son faktörü ise Gorbaçev tarafından yapılan Perestroyka (Yeniden Yapılanma) politikasıydı. Bu reform “piyasa sosyalizmi” ne geçi mümkün kılan kanunlardan oluşuyordu. Fakat bu yasalar istenilen başarılar elde edilemedi. Sonuç olarak tüm bu faktörler, Sovyetler Birliğinde bir ekonomik, sosyal ve siyasi bir krize yol açtı.

Anahtar Kelimeler: SSBC'nin çöküşü, iktisat politikaları, Sovyet ekonomisinin analizi, çöküşün temel faktörleri

PREFACE

It is a genuine pleasure for me to see my graduate (master) thesis, *The Economic Causes of the Collapse of the USSR?* I decided to write my work in English because most sources used in my thesis were in English and Russian.

This thesis was thoroughly examined by Prof.Dr.Nevin Coshar, my advisor. Firstly, I am grateful to her for his research sources and advice, and her continuous help. Her comments, instructions and contributions always motivated me in my work.

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ABBREVIATIONS

CIA	: Central Intelligence Agency
CMEA	: Council for Mutual Economic Assistance
COMERCON	: Council for Mutual Economic Assistance
CPSU	: Communist Party of the Soviet Union
DE	: Defense Expenditure
EZ	: Ekonomika I Zhizn (Economy and Life)
FS	: Food Subsidies
FH	: Fish Subsidies
GDP	: Gross Domestic Product
GNP	: Gross National Product
GOERLO	: State Commission for Electrification of Russia (Государственная Комиссия по Электрификации России)
GOSCOMITTEE	: State Committee on Science and Technology (Государственный Комитет по Науки и Технологии)
GOSKOMTSEN	: State Committee of Prices (Государственный Комитет Цен)
GOSOGROPROM	: State Agro-industrial Committee (Государственный Агропромышленный Комитет)
GOSPLAN	: State Planning Committees (Государственный Плановый Комитет СССР)
GOSSNAB	: State Committee on Material Supplies (Государственный Комитет по Материально-техническому Снабжению)
GR	: Grain Subsidies
HPS	: Hydroelectric Power Station
ICBM	: Intercontinental Ballistic Missiles
IP	: Input Subsidies
KGB	: Committee for State Security (Комитет Государственной Безопасности)
LP	: Livestock & Poulling
MIC	: Military Industrial Complex
MIC	: Military Industrial Commission
MK	: Milk Subsidies
MTS	: Machinery Tractor Stations
NATO	: the North Atlantic Treaty Organizations
NEP	: New Economic Policy
NPS	: Nuclear Power Station
NSDT	: National Security Decision Directives
OECD	: Organization for Economic Cooperation and Development
OP	: Other Procurement Subsidies

PV	: Potatoes & Vegetable Subsidies
РАПО	: Regional Agro-industrial Associations (Районное Агропромышленное Объединение)
RSDWP	: Russian Socialist Democratic Workers Party
SCAM	: Soviet Computerized Accounting Model
SDB	: Soviet Defense Burden
SDI	: Strategic Defense Initiative
SDS	: Share of Direct Subsidies
SME	: Soviet Military Expenditure
STES	: Share of Total Subsidies
TES	: Total Explicit Subsidies
TOZ	: Association for Joint Cultivation of Land (Товарищество по Совместной Обработке Земли)
TP	: Total Procurement Subsidies
TPA	: Topcon Precision Agriculture
TPC	: Territorial Production Complexes
TPS	: Thermal Power Station
USA	: United States of America
USSR	: The Union of Soviet Socialist Republics
VSNKH	: Supreme Soviet of the National Economy
WF	: Weak Farm Subsidies
ZSNG	: Western Siberian Oil and Gas Province (Западно-Сибирская нефтегазовая провинция)

INTRODUCTION

Collapse of the USSR and communism is one of the most important events of the XX century. Recently, the president of the Russian Federation Vladimir Vladimirovich Putin referred to the collapse of the USSR as the biggest geopolitical catastrophe of the century. This means that despite of the past twenty years, the topic has not lost its relevance, importance and vitality in the modern world, conversely acquired a new coloring and form. Over the last twenty years in this field were carried out the large-scale works and researches, were written thousands scientific books and articles, both by Western and Russian specialist. Declassification of documents from the CIA and from the Soviet archives for the last ten-fifteen years brought clarity, accuracy and made a great contribution in the process of analysis and scientific research of the scientists.

Conducted researches have revealed a number of serious issues that caused the collapse of the Soviet Union in the early of 1990s. Of course, these problems may relate to the internal and external policy of the country, but they are all also closely related to the economy of the country, and it is one of the reasons that many economists and scientists in their works and papers made a great accent of the “economic factor” of the collapse of the USSR. On this basis, our main task and purpose in this paper will be detection and analysis the main economic factors and causes, which had negatively impact to the economic system of the USSR and led to its dissolution. In order to understand the negative aspects of the dissolution more clearly and deeply we will develop our analysis in three main directions: 1) the history of the Soviet economic policies, 2) the analysis of the Soviet economy and 3) the analysis of the main causes of collapse of the USSR. Moreover, during the research, we intend to find answers to the following questions: How had the Soviet economy developed? Which negative factors were detected in the Soviet economic system? How did they affect the economy? Which economic aspects and reforms have led to the dissolution of the USSR?

In Chapter 1 we intend to give the brief information about the process of establishment of communism in Russia. We will discuss the process of foundation of communism and economic changes which have occurred in Russia during this period.

In Chapter 2 we will give information about the Soviet economic policies. In the economic history of the USSR were three types of economic policies: 1) War Communism, 2) New Economic Policy (NEP), 3) Democratic Centralism. Each of these economic policies had its own laws and regulations, which differently affected the social and economic life of the Soviet Union.

Moreover, in order to, more clearly understand the principle of operation of the Soviet economy; in Chapter 3 we will analyze the Soviet economic system, between 1925-1982 years. Our analysis is divided into three main parts: 1) Stalin era (1925-1953), 2) Khrushchev era (1955-1964) and 3) Brezhnev era (1965-1982). In each of these periods we will present and analyze the important economic indicators of the industrial, agricultural, financial and transport system of the USSR.

The Chapter 4 of the thesis has a particular importance, as in it will analyze the main economic causes of collapse of the USSR. In this Chapter we identify the four main reasons of breakdown: 1) Cold War, 2) Oil Crisis in the Soviet economy, 3) Repressed inflation in the USSR and 4) Perestroika (Restructuring) in the Soviet economy. Each of these causes had left a deep and negative pace in the social, political and economic life of the Soviet Union and plays significant role in the dissolution of the USSR.

In these work, we will extensively use the figures and tables, which will help us to understand the essence of the upcoming problems more accurately and clearly.

1. ESTABLISHMENT OF COMMUNISM IN RUSSIA.WAR COMMUNISM

1.1. Russian Economy: At the beginning of the 20th century

Before the First World War, Russia was an underdeveloped agrarian country. Despite of that in the early of the XX century the economy of the Russian Empire was in the process of the rapid alter, in one hand industrialization was making a good progress, in the other hand agriculture also had started changing and growing. According to the Goldsmith between the 1891-1900 years industrial production of Russian Empire increased twice with a perceptible advance in heavy industry.

If we compare industrial figures of the Russian Empire with the European countries we can see that during the period 1860-1910 the world's industrial production increased by six, Great Britain's by 2.5, Germany's by 6 and Russian by 10.5 (Polyansky, 1992, p.3). Agricultural sector of the Russia also increased and developed in the first years of the XX century. The main role in this process played the reform which was carried out by the Stolypin between 1906-1911 years. According to Stolypin agrarian reform, peasants were now free to leave their communities, to consolidate their holdings as their property, to buy land or to sell it, to move to town or to migrate (Nove, 1992, p.13). This reform very positively affected the agricultural sector of the country, the net income of agriculture increased by 88.6 percent, export of grain in the empire increased to the 50 percent between 1911-1913 years, the membership of rural credit cooperatives also dramatically grew from 181 000 to 7 million, during the 1905-1914 years (Nove, 1992, p.14-16). However, in spite of the fast growing tempo, the progress in the Russian Empire was uneven and gave rise to the social and political stress, which in turn caused unrest in the cities along with land-hunger and rioting in the villages (Nove, 1992, p.17).

1.1.1. Revolution: New Economic and Political System

The beginning of the First World War (1914-1918) strongly deepened the crisis in the country, especially in the industrial and agricultural sectors. The socio-economic pattern of the Russian Empire in this period distinguished by the fact, that the newest highly-advanced forms of monopoly and backward peasant economy existed side by side and, what is more, were closely interlinked (Podkolzin, 1968, p.86). The Provisional Government which came to power after the abdication of Czar Nikolas from the Russian throne in March 1917 year couldn't pulled out the country from the crisis and depression. It created very favorable conditions for the changing power in the country in October 1917 year. Socialist Revolutionaries, which also known as the Bolsheviks led by Vladimir Lenin overthrow the members of the Provisional government and seized the authority in the country. Secondly, Russian Congress which was established in Petrograd (Saint Petersburg) on 25 October 1917 year declared that it had taken power into its hands. This event also known in the history as the Great October Revolution. The October Socialist Revolution ushered in a new era in human history, the era of removal of all form of exploitation of people, the era of triumph of communism throughout the world (Podkolzin, 1968, p.89).

Socialist Revolutionaries or Communist started to be organized in Russia since the late 1800s years. In 1898 year the group of intellectuals, renowned as "legal Marxist" met in Minsk and formed the Russian Social Democratic Workers Party (RSDWP) (Darraj, 2010, p.27). Before the stepped down of Czar Nikolas, socialists in Russia split into two fractions: the Mensheviks (Minority) and the Bolsheviks (Majority). The Bolsheviks led by Lenin argued for a socialist movement that was densely controlled until their revolution could be assumed, the Mensheviks which led by Martov wanted to keep the movement broad and open to everyone and to allow the socialist fever to evolve gradually within Russian society (Darraj, 2010, p.32). Their philosophy was inspired by the Communist Manifesto; a political tract published in 1848 by German philosophers Karl Marx and Friedrich Engels, which argued that a state controlled by the workers would be far more beneficial than any capitalistic society (Darraj, 2010, p.26). Karl Marx viewed capitalism as an unjust and unfair way to attain

the wealth. He always affirmed that a collision between proletariat (industrial working class) and bourgeoisie was impendent and unavoidable. The last goal of Marx's sight was Communism. Marx consider Communism a "higher" or more extreme form of socialism where all people are equal and are supported equally, regardless of their contribution to the economy or society.

So, after the Great October Revolution it began the process of the building the socialist society in the Russian Empire. This process was accompanied by the policy of 'War Communism' or administrative command economy of war-time. This system involved the introduction of a command economy in which the government controlled all aspects of production and distribution (Thompson, 2009). Along with this it started the Civil War in empire between the armed forces of Bolsheviks (Red Army) and White Movement (White Army). White Movement was the right confederation of Anti-Communist forces which were composed mostly from officers, priests, bureaucrats, bourgeoisie, intellectuals and landowners the majority of which was the recurrence of lost power and socio-economic rights and privileges. Finally, as a result of Russian Civil War the Red Army clobbered the White army and consolidated power in all parts of the Russian Empire. During the period of 1919-1920 the Soviet power strengthened in Russian, Ukraine, Belorussia and Transcaucasia.

Leader of Bolsheviks, Vladimir Lenin was the fervent follower of Marx's ideas. However, many economists and historians consider that Lenin changed many of Marx's principles to suit Russian context. Karl Marx supposed that after the social revolution the nation would be governed by a 'dictatorship of the proletariat' or by the working class (Darraj, 2010, p.28). Nevertheless, Lenin announced that the nation will be ruled by both the peasant class and the proletariat. This theory was famous as the Marxism-Leninism. Marxist-Leninism is a communist ideology and political philosophy, officially based upon the theories of Karl Marx, Friedrich Engels and Vladimir Lenin, that promoted the creation and development of an international communist society through the leadership of a vanguard party presiding over a revolutionary socialist state that represents a dictatorship of proletariat (Albert, 1981, p.24-25). Lenin lacked the following basic tasks in planning a socialist economy the rules and conditions which had

been established by Marx decades before: a) establish the social needs of the people and strive to achieve them, b) know how to allocate resources effectively to their most efficient use, c) strive for economic growth relatively to the growth of output and consumption, d) balance the various sectors in the economy in an appropriate ratio to each other, e) maintain the best conditions for economic, political and technological stability (Lauritzen, 2011, p.6-7).

1.1.2. War Communism: First Economic Policy

Lenin and Bolsheviks began the policy of War Communism, with the deep economic reconstruction of the country. Bolsheviks published a number of edicts which have been made to improve the economic situation in the country and helped to strengthen socialism in Russia. The first pace was, the Decree on Peace, which called all combating nations and government to the democratic peace. As the result of this decree, Russia withdrew from the World War I and in March 1918 year signed the peace treaty of Brest-Litovsk. The second was the Decree on Land which was adopted in 8 November 1917 year and envisaged the annulment of landed estates without any compensation and their transfer (including church, monastery and crown land) to the Soviets of Peasants' Deputies. Land was nationalized, and the right to use it belonged to the peasants (Nove, 1992, p.41). Private ownership of land was canceled for ever. The enormous significance in the social life of the country played the publication of the Declaration of the Rights of the Peoples of Russia. The declaration gave people the right to self-determination and the laws on the establishment of an eight-hour working day, on female and adolescent labor, insurance against unemployment, sickness benefits, and so forth (Podkolzin, 1968, p.88). The other significant law of the War Communism policy was "workers control", which was established in November 1917 year. The main task of "worker controls" before the revolution was to keep production going and to struggle the sabotage and overthrow attempts of the capitalist, however after the October Revolution the crucial aim was to execute socialist transformation in the economy. Worker's control bodies supervised the economic activity of the owners and the organization of production (Podkolzin, 1968, p.93). In November 1917 year "workers control" was established in all agricultural, industrial and commercial cooperatives and enterprises.

The following step of the Soviet government was the process of Nationalization of Industry. The Nationalization of Industry was unavoidable, as the metallurgical plants, coal, oil mines and other heavy industry factories had an important role for the state. The big role in the process of Nationalization of Industry played the Supreme Council of National Economy which was known by its initial letters VSNKH (Supreme Soviet of the National Economy). VSNKH also had its own regional councils who controlled the economy on the local level. In December 1917 the Soviet government nationalized the State Bank and all private joint stock banks and combined them into the People's Bank of the Russian Republic. In April 1918 the Bolsheviks established state monopoly over foreign trade. Private trade in a broad variety of consumer goods was forbidden. In June 1918 year the Soviet authorities fully completed the nationalization of all large-scale industries. The nationalization of large-scale industry, land, finance and banking system, transport, foreign trade and the formation of economic administrative bodies gave the young Soviet Republic the strong position in the country's economy, and it began to introduce new socialist relationships in production (Podkolzin, 1968, p.96).

Introducing the policy of War communism and its decrees and acts very negatively affected the country and deepened crisis in the Soviet economy in the early of 1920s years. The main reasons of the failure of the policy of War Communism were the Russian Civil War (1918-1921) and the process of nationalization of the economy. Civil War very negatively affected the socio-economic life of the country, infrastructure, social and economic system of the empire was completely destroyed. Moreover, the transformation of the economy from the capitalist system to the socialist also had negative consequences for the country. As the result of nationalization and abolition of private property, it began the shortage of goods and labor force in the country. It resulted that there was dramatically decrease in the indicators of the industrial and agricultural sectors.

Table 1: The Performance of the Russian Economy during 1913-1921

	1913	1920	1921
Gross output (in million pre-war rubles)	5 621	818	-
Gross output per worker per year	2 251	669	-
Coal (million tons)	29	8.6	3.8
Electricity (million kWhs)	2 039	-	520
Steel (million tons)	4.3	0.194	0.2
Oil (million tons)	9.2	3.8	3.8
Pig iron(million tons)	4.2	0.116	0.1
Agricultural production (index)	100	-	60
Large-scale industry (index)	100	-	21
Import (1913 rubles)	1 374	-	208
Export (1913 rubles)	1 520	-	20

Source: Alec Nove, page 62, 1992; A.Podkolzin, page 96-102, 1968

The table 1 displays comprehensive information of the Soviet economy between the pre-revolution and post-revolution periods. From the table we can see that the all economics figures of the country sharply decreased from 1913 to 1921 year. For example, in the 1920 gross industrial output decreased by 8.57 percent; the number of workers declined by 45 percent and annual productivity per worker fell over 75 percent (Podkolzin, 1968, p.97). Also it also was sharp decrease in the production of oil, cotton, iron, and steel. One of the main problems was shortage of food. From 1917 to 1920 the cultivated areas in the country was reduced from 86.7 million to 68.8 million hectares (Podkolzin, 1968, p.108). For the improvement of the situation in the agricultural sector in January 1919 the government accepted the surplus-requisitioning system which stated that each of the peasant household was ordered to deliver its supplies to the state. Surplus-requisitioning system helped to the state to meet its immediate demands for grain. The situation in financial sector was also critical. After the Revolution there was the shortage of money in the market and for the solution of this problem the Soviet government started issuing money. The amount of money in circulation was increased by 43 times from 27 000 million rubles in January 1918 to 1 169 000 million in January 1921 (Podkolzin, 1968, p.114). Economists estimated that by the end of 1920 the actual value of paper money had dropped to 1/13 000 part of 1913 (Podkolzin, 1968, p.114). The vast amount of money provoked the high level of inflation in the country.

So, the policy of War Communism led to the deepening and strengthening of the crisis in the Russia. Along with this, the introduction of policy of War Communism strengthened the hard dictatorship of Communist Party that led to the restriction of democracy and increase in public dissatisfaction. Nevertheless, the Bolsheviks were able to introduce the principles of socialism in Soviet economic system and established control over the economic and political system of the country.

2. THE SOVIET ECONOMIC POLICIES

In this Chapter we will analyze the economic policies which were implemented in the Soviet economic system during the time between 1921-1991 years. Generally, in the history of the USSR were three main economic policies: 1) “War Communism” was adopted in the period of Russian Civil War during the 1917-1921 years; 2) New Economic Policy (NEP) or “state capitalism” which encompassed the period 1924-1928; and 3) “Democratic Centralism” which covers the long period during the 1929-1991.

However, how did these systems work? Which laws and decrees were adopted in each of them? How did they affect the Soviet economic and social life? Our main task in Chapter 2 will elaborate the essence and the principle of operations, the main economic goals and indicators of these policies.

2.1. The New Economic Policy (NEP)

So, in the end of the 1920 year, in the last days of Civil War the workers and peasants of Russian Communist Party which were led by Lenin smashed the Whiteguards and defended the world’s first socialist state. The authority of the Soviet’s Bolsheviks was strengthened and fixed in the country. As we have already mentioned in Chapter 1, despite of the shining victory in the war internal situation in the Soviet Russian was in the lamentable condition. Economically, the Russia had been thrown back to the level of Tsarist Russia of the mid 19th century. Many enterprises, mines, factories were destroyed or looted. The level of production and labor force in the industrial sector of the country sharply decreased. The number of the workers in industrial sector declined from 2.4 million in 1913 to 1.27 million in 1920 year (Podkolzin, 1968, p.117). It began the spread of inflation, shortage of food, fuel, raw materials in the country. In many regions of the Empire (Kuban, Siberia, Don) began

rebellions and walkouts. The most prominent among them was Kronstadt revolt in Petrograd.

The significant role in the destruction of socio-economic life of the country played the Soviet economic policy “War Communism”. The policy of “War Communism” nationalized all enterprises, canceled private trade and production, centralized all decision-making and was disastrous for the economy. Based on Lenin opinion, War Communism which had played a historical role during the Civil War began to lag the economic task of building socialism (Berkhin, 1970, p.88). It was imperative to find new grounds for economic cooperation between the peasants and the working class, new forms of maintaining the alliance between these two principal classes of the new society (Podkolzin, 1968, p.118).

Therefore, in March 1921 Tenth Party Congress of the All-Russian Communist Party adopted the New Economic Policy (NEP). New Economic Policy also called as Economic Rehabilitation or “state capitalism” encompassed the period from 1921 to 1928 years. As it was stated by Lenin, the principal purpose of NEP was to strengthen the economic and political coalition between the working class and the peasants, rehabilitate the wrecked economy by the effort of these two laboring classes and then create socialist economy. The adoption of NEP gave birth to the elements of capitalism in the Russian economy. However, the “regulating mechanism” by which private property relation could be limited was in the ruling circle of the proletariat state (Volkov, 1979, p.159). Lenin announced that Communist Party should not be afraid of these elements of capitalism as: 1) all commanding political altitude is in the hands of the working class; 2) all the basic remedies of production are in the hand of the working class; 3) the socialist sector grew very rapidly and started to dominate in the economy of the country. Lenin understood that it was impossible to reestablish the ruined economy of the country without the elements of capitalism. The Bolsheviks used private capital as an ancillary means for bringing the country back from the ruins with all possible speed and for laying the foundation of the socialist economy (Podkolzin, 1968, p.120).

The first decree of New Economic Policy was adopted on 21 March 1921 year by the All-Russian Central Executive Committee and provided substitution of the

surplus-requisitioning system by a tax in kind. The tax in kind amounted to about one-half of the grain turned over under the surplus requisition system. The peasants could sell their excess produce in the market and it's gave the peasants stimulus to rise the output of farm produce and provided circumstances for quickly rehabilitating the rural economy. Also as the result of the new decree, the poor peasants didn't paid the tax, the middle peasants paid the moderate tax, "kulaks" (rich peasants) and thriving peasants were taxed more strongly.

Resurgence of peasant's agriculture and the stock piling of excess produce stimulated the development of trade. The important measure was removal of the ban on private trade, which gave the peasants opportunity to sell their surpluses. There were revival of money circulation and open market sales in the country. Also the lifting of the ban on private trade was the resolute step to expand state and cooperative trade. State and cooperative trade of the government were organized in such way that people would prefer to buy in a state rather than a private shop (Berkhin, 1970, p.90). The increasing of market relationships stimulated to accumulate the considerable resources in the private sector, by the beginning of 1923 year 83.3 percent of retail trade was in private hands (Nove, 1992, p.92). However the private capital was excluded from foreign trade, large-scale industry and the banking system. With the commanding heights in economy and the tax and credit system in its hands, the proletariat state held the growth of capitalist elements in check and abolished them altogether (Podkolzin, 1968, p.120).

New Economic Policy covered mostly the recovery and renewal in the agriculture, industry, trade and the financial system of the Soviet Russia. Now we will analyze and explore the changes and developments of these sectors in the period of NEP.

2.1.1. Agricultural Sector during the NEP

One of the major tasks of the Soviet government in the period of Economic Rehabilitation was restoring of agriculture. As the result of substituting of the surplus-requisitioning system by a tax in kind, the lifting of ban on private trade sector, establishment of a stable monetary system, the agricultural sector of the country began rapidly improving. In 1925 the total sown area land increased to 104.3 million hectares

and had reached the pre-war level, also growth by 14 million hectares as compared with 1921 (Podkolzin, 1968, p.123).

Table 2: The Performance of the Soviet Agricultural Sector, 1921-1926

	1921	1922	1923	1924	1925	1926
Sown area (million ha.)	90.3	77.7	91.7	98.1	104.3	110.3
Grain harvest (million tons)	37.61	50.3	56.6	51.4	72.5	76.8
Cotton (million centners)	0.2	0.2	1.4	3.4	5.4	-
Sugar (million centners)	4.2	18.9	28.4	34.9	90.7	-

Source: Alec Nove, page 89, 1992; A.Podkolzin, page 123, 1968

The table 2 displays information about the performance of the Soviet agriculture during New Economic Policy. From the table we see how slightly grew the indicators of the Soviet agriculture. The main role in the increasing productivity of the agricultural sector was also the increasing in the output of farm machines, especially tractors. Moreover the state began the extension of credits to the agriculture through the Central Agricultural Bank. Between 1923-1925 years the total sums of loans granted to the peasants increased from 8.1 million to 657.6 million rubles (Table 3).

Table 3: Credits Extended by the Central Agricultural Bank

Million rubles	October 1923	October 1924	October 1925
Total credits	8.1	237.7	657.6
Credit for production purposes	3.5	212.2	542.6
Credit for financing sales	4.6	25.5	115.0

Source: A.Podkolzin, page 125, 1968

The table 3 displays the amount of credits extended by the Central Agricultural Bank during the 1923-1925 to the agricultural sector of the Soviet Russia. The table shows how drastically increased the credits for the agriculture after 1923 year.

During the New Economic Policy there was also increase in the number of cooperative farms in the agriculture. For the increase of the production, the government reorganized the small individual economies in large mechanized cooperative farms. In 1925 in agriculture cooperatives were united around 6.6 million peasant households (Podkolzin, 1968, p.126). The number of agricultural cooperatives sharply increased from 22 021 in 1922 year to 54 813 in 1925 year (Podkolzin, 1968, p.126). The

significant role in the agricultural sector along with cooperatives played the state farms. State farms were the large-scale socialist agricultural enterprises and they supplied the state with the big amounts of food stuffs and agricultural raw materials. So, the process of rehabilitation of the agriculture of the USSR brought to the end the famine and improved the economic activity of the people and country.

2.1.2. Industrial Sector during the NEP

In the period of the NEP the Soviet government and public bodies concentrated their attention to the restoration of industry, as it was the material basis of socialism. In the beginning of the 1921 year the industrial sector of the Russia had big problems and needed rehabilitation. There were the following problems: 1) the bulk of the fixed assets were wrecked; 2) the raw-material and food base were extremely weak; 3) there was a shortage of workers and intellectuals (Podkolzin, 1968, p.128). Primarily all efforts of the Soviet government were focused on the rehabilitation of the industries and the largest enterprises. The rehabilitation of the manufacturing process, improvements of working conditions of the Soviet large-scale industry was the cause of unexampled growth of production. In 1921 year industrial production increased by 42.1 percent, in 1922 by 30.7 percent, in 1923 by 52.9 percent, in 1924 by 16.4 and in 1925 by 66.1 percent, the average annual increase in industrial output between 1920 and 1925 years summed to approximately 41 percent (Joffe, 1957, p.56).

Table 4: Performance of the Soviet Industrial Sector during 1920-1928

Million tons	1920	1921	1922	1923	1924	1925	1926	1928
Industrial production	1 410	2 004	2 619	4 005	4 660	7 739	11 083	-
Coal	8.7	8.9	9.5	13.7	16.1	18.1	27.6	35.5
Steel	-	183	392	709	1 140	2 135	3 141	4 300
Oil	3.8	3.8	4.7	5.3	6.1	7.1	-	11.6
Electricity (million kWhs)	-	520	775	1 146	1 562	2 925	3 508	5 000
Pig iron	-	116	188	309	755	1 535	2 441	3 300

Source: Alec Nove, page 89, 1992; A.Podkolzin, page 130, 1968

The table 4 gives information about the performance of the Soviet agricultural sector during the 1920-1928 years. The figures of all main branches of industry sharply grew more than three-five times.

Table 5: Development of Industry in the USSR, 1920-1925

Year		In 1926/27 prices (million rubles)		Fixed Assets	Average annual number of workers
		Total industrial output	Production of means of production		
1913		10 251	4 177	6 074	2 592 000
1920		1 410	655	745	-
1921		2 004	876	1 128	1 298 000
1922		2 619	1 173	1 446	1 199 000
1923		4 005	1 925	2 080	1 480 000
1924		4 660	2 109	2 551	1 698 000
1925		7 739	3 356	4 383	2 119 000

Source: P.Lyashchenko, page 165, 1956

The table 5 displays the comparative analysis of the industrial development of the Soviet Russian during New Economic Policy and pre-soviet time. Industrial production in 1925 was 75.5 percent of the 1913 level, when the output of the production was 80.3 percent, out of which 72.2 percent was consumer goods (Podkolzin, 1968, p.130). In contrast, the output of electric power in 1925 was 41 percent greater than in 1913 year, the coal industry produced 600 000 tons more than in year of 1913 (Podkolzin, 1968, p.130).

The high rates of growth industry and production in the period of NEP also was linked with the construction of new factories, the restoration of the old industrial enterprises, and installation of new equipment. Moreover, the restoration of the railway at the end of 1925 dramatically increased the rates of fuel, iron and steel industries in the country. Likewise the significance role in the development of the industry during the period of rehabilitation played the subotniks (work day in Saturday) and voskresniks (work day in Sunday). It was form of mass voluntary participation of the people in socialist construction.

In the period of New Economic Policy the share of private capital in industry was low in contrast with the other sectors, since the industry was one of the main material basis of socialism. The proportion of the private capitalist sector was high only in the light and food industries. In 1926-27 private capitalist owned 19.9 percent of all flour mills, 9.6 percent of the starch and treacle factories and 29.2 percent of tobacco (Podkolzin, 1968, p.131). However, in later periods the private capitalists sector was displaced from all branches of industry.

One of the most significant factors of industrial rehabilitation was the increasing productivity of labor and wages. In 1920 average annual output per worker was estimated at 669 pre-war rubles, in 1923 it came to 1 637 rubles and in the 1925/26 financial year to 2 437 pre-war rubles (Lyashchenko, 1956, p. 170). Wages were based on the socialist principle; they were fixed according to the quantity and quality of work (Berkhin, 1970, p.93). Furthermore, the state had spent a large amount of money for the social and cultural requirements, medical services and annual paid holidays of the workers. All these changes increased the people's cultural and material level.

The transition of NEP called for changes in the reorganization of management. Management in the economy was conducted through the system of trusts, syndicates and gubernias. Trusts were production association of enterprises and were the main part of the new system of industrial organization and management. They functioned on self-supporting basis and were answerable for a direct governance of the work of their enterprises. To ensure planned turnover of their production they provided their enterprises with raw materials the trust for the different branches of industry were amalgamated into syndicates (Berkhin, 1970, p.95). The syndicates played the important role in regulating state industry. The gubernia economic council was the biggest units of this system and controlled a large number of industrial enterprises and local trusts.

2.1.3. Financial System and Trade

The development of trade, industry and agriculture in the period of the NEP called for the establishment of a stable monetary system in the Soviet Russia. Lenin announced that the stabilization of the ruble played a key role for effective economic

development. Before New Economic Policy the financial system of Russian was in the bad condition, budget revenues of the country were small. In 1920 the budget deficit reached the enormous sum of 1 055 000 million rubles (Podkolzin, 1968, p.136). In this situation, the first pace of the government for the normalizing the financial system was the reestablishment of the State Bank in October 1922 year. After this, there was start for the establishment of savings banks and credit cooperative societies. By the end of 1922 the financial situation in the country stabilized. Expanding goods circulation and stockpiling of currency reserves resulted in development of the stable currency. The other large action of the government was the monetary reform in 1922-1924 years. In 11 October 1922 year the state began issuing ten-rubles banknotes (chervontsi), each of them was equal in value to 7.74 grams of gold (Podkolzin, 1968, p.137). In this period the “chervontsi” became more and more widespread and gradually ousted the old banknotes “sovznaki” (Podkolzin, 1968, p.137). The monetary reform finalized in 1924 and gave the country a hard monetary unit. The monetary reform had the enormous political and economic importance for the country. The stable currency helped to complete elimination of the budget deficit and strengthened the country’s finance. Also the development of a money commodity relationship stimulated the growth of productive forces and promoted socialist construction (Berkhin, 1970, p.192)

The basic link of New Economic policy was trade. The main slogan of Lenin in the period of NEP was the “Learn to Trade”, because the organization of Soviet trade became a vital task of economic construction. Trade helped to revive and strengthen the economic ties between town and country. In the first phase the Soviet government reorganized the internal trade. All trades in the country were controlled by the Supreme Economic Council and the People’s Commissariat for Food. However in 1924 this commission was reorganized into the independent People’s Commissariat for Internal Trade. As we have already mentioned in the beginning of the Chapter the system of trade enterprises included state cooperative and private establishment. In wholesale sphere the main role was played by the state organizations, private sector accounted only 5 percent, but in the retail trade the main place was occupied by the private trade (Podkolzin, 1968, p.134). In the rehabilitation period foreign trade which was a state monopoly also strengthened its position. In 1925 the Commissariat for Foreign Trade

had signed arguments with European countries and many other states (Podkolzin, 1968, p.134). Foreign trade had two major objectives: a) to assist and stimulate to the maximum the development of the country's productive forces; b) to protect the rising socialist economy against the economic offensive of the capitalist powers (CPSU, 1954, p.174).

So, we analyzed the important branches of the economy and can argue that NEP played the enormous positive role in the economic life of the country. As the result of introducing of "state capitalism", the national income of the country increased by 18 % in one year, industrial growth of the country increased by 30%, the material welfare of the people went up, the national currency became stable, population of the country rose by 6.5 %, grew the volume of production in agricultural sector that eliminated the famine and food shortage, improved a strong alliance between town and country (www.albest.ru). Moreover, NEP created an important economic prerequisite for the revival of the national economy, for the rehabilitation of agriculture, industry, transport, trade and for the electrification of the country (Berkhin, 1970, p.105). The main role in the rehabilitation process played also the structure of capitalist-oriented economy which encourage the Soviet economy and gave to it a new power.

Despite of the fact that New Economic Policy was quite successful for the Soviet economic and social system, in the end of 1928 year the policy of New Economic Policy began to de-escalate. The significant role in this process played the new Soviet leader Joseph Stalin. Stalin officially came to the authority in 1925 year after the death of Lenin (21 January 1924). There were many reasons for the elimination of NEP by Stalin: magnification of private owners, social differentiation around the peasant in the villages, disproportional development of the major industrial sectors of the economy, the active financing of heavy industry which was the result of financial crisis and inflation. However, the main aim of Stalin was the change of the principle of the governance from the capitalist-oriented to the administrative-command type of the economic system. It helped to Stalin increased state power over the population and country. Stalin began the process of elimination all market forces and private enterprises from the Soviet

economy. In 1929 year the USSR changed the economic policy from NEP to Democratic Centralism. In the Soviet Union began the period of Stalinism.

2.2. Democratic Centralism: Five Year Plan

In the 1928 year in the Soviet economy and life began the new era. This new era called “Democratic Centralism” and was the most decisive turn point in the history of the Soviet Union. As we have already mentioned earlier this policy changed the New Economic Policy which became unsuitable for the Soviet socialist system. The policy of “democratic centralism” or administrative command economy of peacetime standing at the heart of Leninist-Marxism was adopted by the Communist Party of the Soviet Union (CPSU) and presumed to combine two opposing forms of party leadership democracy which permitted for free and open discussion and central control which ensured party unity and discipline (www.global.britanica.com). A characteristic feature of the Democratic Centralism was the system of planning. Democratic Centralism was the underlying principle of the organization of economic planning in the Soviet Union which assumes and implies the combination of centralized planned guidance and growing independence and initiative on the part of local authorities, amalgamated and single enterprises, and organized production work forces (Berri, 1977, p.22). Democratic Centralism essentially allowed independent, local enterprises to grow under management planning of the state and combined centralized planning of state production in accordance with the general population (Lauritzen, 2011, p.11). The principles of the Democratic Centralism were developed by Marx and Engels and the first was established in the Soviet Union. This policy encompassed a very long period in the Soviet history from 1928 to 1991 year.

However, the history of the Soviet planning system begins with GOERLO (State Commission for Electrification of Russia). The GOERLO was the first Soviet general long-term economic plan for the electrification of Russian which was adopted by the Eight All-Russian Congress of Soviet in December 1920 year. This plan created by a special GOERLO commission, which led by Vladimir Lenin. The GOERLO plan was reckon for the construction of major power capacities and extension of all sectors of the economy on the basis of electrification and fully met the requirements of economic

construction in the rehabilitation period. The plan provided the building of 30 district power stations with capacity of 1500 Mw in all, and brought within 15 years the capacity of all district power stations up to 1750 Mw (Efremov, 1965, p.15). The GOERLO plan, give an enormous impulse to the growth of the national economy of the USSR.

Beginning from the 1928 year the Soviet economy began to develop under the five-year plan. The question of planning was discussed at the Party's Fifteenth Congress in 1927, where the Central Committee characterized the first five year plan of the Soviet Union, which encompassed 1928-1932 years. In the history of the USSR there were twelve five-year plans. The timespan of the plans we can see in the table 6.

Table 6: The USSR Plan History

First Five Year Plan	1928-1932	Sixth Five Year Plan	1956-1960	12 Year Plan 1986-1991
Second Five Year Plan	1933-1937	Seven Five Year Plan	1961-1965	
Third Five Year Plan	1938-1941	Eight Five Year Plan	1966-1970	
Great Patriotic War	1941-1945	Nine Five Year Plan	1971-1975	
Fourth Five Year Plan	1946-1950	Ten Five Year Plan	1976-1980	
Fifth Five Year Plan	1951-1955	Eleven Five Year Plan	1981-1985	

The decision that the plan be extended over five years was taken because this period was considered most suitable, and it was long enough not only to build modern industrial enterprises, power stations, railways and other large projects but also to re-equip whole branches of the economy (Podkolzin, 1968, p.1968). In March 1929 year the Fifth Congress of Soviets officially confirmed planning law. The main political and economic targets of the five-year plan were: industrialization of the economy which included construction of modern, highly developed industry enterprises, intensification of the defense capacity of the USSR, reorganization of the small individual peasant economy into the large-scale collective which helped to increase the growth of agricultural production, reinforced the socialist elements in the USSR's economy, removed capitalist elements from all branches of economy, cultural revolution and etc.

However, it's very interesting why the Soviet authorities wanted to modernized the Soviet Union. We emphasized the five main aims of the Soviet modernization: 1)

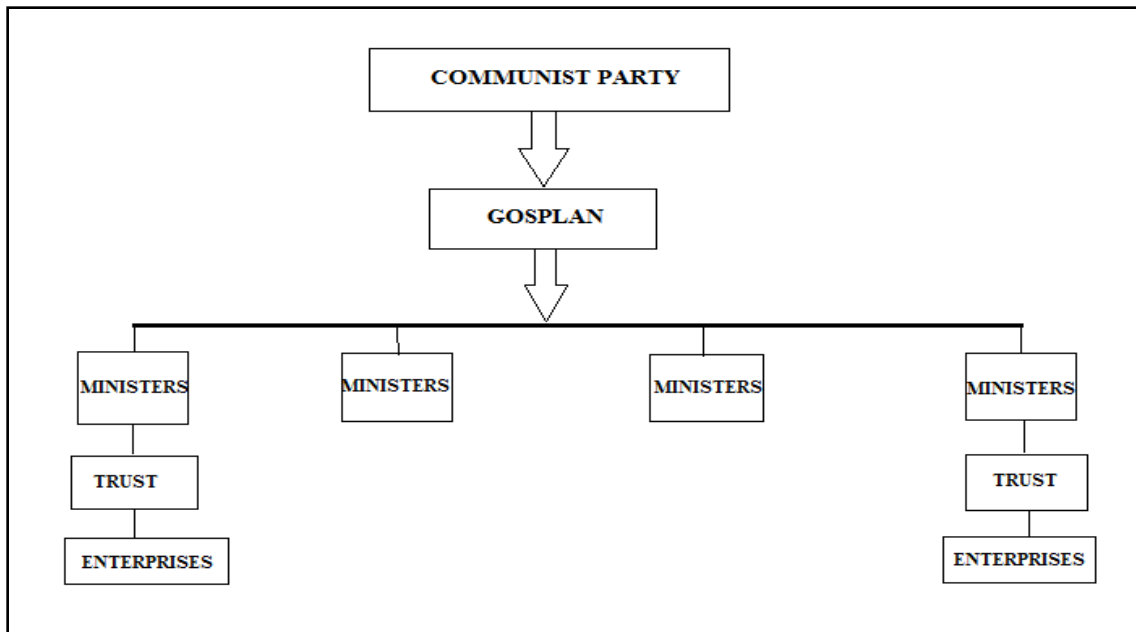
Soviet leaders wanted to demonstrate the supremacy of communism under the capitalism; 2) to transform the USSR into modern world power with large population, with immense land area and huge resources; 3) to improve the living standards of all Soviet peoples to amend the situation in agricultural and industrial sectors; 4) to make the Soviet Union self-sufficient and decrease the dependency of the Soviet economy on Western technology and goods; 5) to defend the security of the Soviet Union from the foreign threat.

The main features of planning Stalinist Revolution was a revolution “from above”, it means that the Soviet planners started from the premise that macro-proportions can only be established “from above” on the basis of full information about the state of the economy as a whole (Berri, 1977, p.23).

Now we will analyze the structure of the planning system and try to answer to the question, how planning was organized in the USSR. Economic planning in the Soviet Union was done by suitable governmental authorities which responsible for the different sectors of economy. We can separate these economic planning bodies into four groups: 1) the State Planning Committees (State USSR Gosplan); 2) the State Planning Committees (Gosplan) of the Council of Ministers of Union republic; 3) the State Planning Commissions of the Councils of Ministers of autonomous republics; 4) the planning Commission of the administrative committees of the Soviet of the various local government areas (Berry, 1977, p.90). All these planning bodies constituted a single system planning bodies united by the national wide planning Central USSR Gosplan, which worked under the general direction of the Central Committee of the Communist Party and the Soviet government (Berry, 1977, p.92). The Constitution of the Soviet Union stated that the USSR Supreme Soviet and Republican Supreme Soviets are responsible for the general direction of planning in the country and in autonomous republics. The central planning organ in the Soviet Union was the State Planning Commission (Central USSR Gosplan) which occupies a significant position in the system of planned management. A major task of the Central Gosplan of the USSR was the coordination of the plans for development of the national economy of the Soviet Union (Efimov, 1965, p.32). The State Gosplan of the USSR also had two departments:

consolidated and sectorial departments. Consolidated department of the macro-economic plan, combined the work of all Gosplan's departments and consolidated all the departments' drafts into a single draft plan for the economy and on the other hand, sectorial department composed plans for developing particular sectors of the economy (Berry, 1977, p.92). USSR Gosplan included also the State Appraisal Commission and interdepartmental Commission. State Appraisal Commission examined general schemes for the development of industries and the sitting of enterprises, for the specialization and overall balanced development of economic regions, and the drafts of major integrated programs (Berry, 1977, p.93). Interdepartmental Commission directed the work on studying and generalizing experience of application of the new system of planning and economic stimulation and improving it (Berry, 1977, p.93). State Gosplan USSR also had a Research Institute, The planning and Standards Research Institute and a Council for Study of the Production Forces of the Soviet Union. All these commissions and institutes occupied a significant place in Gosplan and played an important role in the organization of planning. In the Soviet structure of the planning each economic planning bodies compiled its plan for the development of the economy. For example, USSR Gosplan drew up the state plan for the development of the whole economy, USSR Ministers and Departments constituted the plan for the development of particular economic sectors of industry, and finally the Gosplan of autonomous republics and the planning commissions of territories, regions, districts and towns came up with plans for the integrated economic development of their own particular area and dovetail them in with the plans for those areas of economic activity on their territory that came under all Union and republican ministries (Berry, 1977, p.96). All these economic planning bodies highly correlated with one another and constituted the inextricable chain. The picture 1 shows the structure of the planning in the USSR.

Picture 1: Structure of Planning in the USSR



The State Gosplan of the USSR had to have enough information for the following criteria to generate five year plans: 1) the volume of personal purchasing power; 2) the structure of production of consumer goods, trade and the stock levels of those within economy; 3) the impact of increase in income of certain goods and individual demand schedules; 4) the supply and demand shifters and how they influence price and quantity; 5) the cycle of Normal/Interior goods and substitute complements of the goods (Lauritzen, 2011, p.22).

According to analyze, we can say that the planning in the USSR was the complex and long process which played the significant role in the distribution, development and achievement of the economic targets. However in the planning system which was implemented in the Soviet Union there were more deficiencies than advantages. The main positive features of the planned economy in the USSR were the absence of unemployment, minimal social stratification and the minimal level of inflation. In contrast, the negative sides of plan system were the following factors: the low quality of products due to the lack of market competition, lack of incentives of workers and producers, chronic shortage of goods and services due to the neglect the needs of the population, shortcoming of scientific- technical progress in the economy

and “extensive” development of the economy. The planning system of the USSR was more focused on the achievement of political goals rather than consumer interests. All these adverse factors led to the number of problems which hampered the development of the Soviet economy.

2.2.1. Industrialization

During the initial period of Democratic Centralism the Soviet authority began one of the main and scale projects in the history of the Soviet Union, industrialization and collectivization, which was aimed to strengthen the principles of Democratic Centralism policy. A very important role in the process of socialist construction in the country played 14th Congress; the Communist Party of the USSR announced its industrialization program in December 1925 year. Industrialization was the main aim of the Party and the primary goal of the state’s economic policy. However the process of the industrialization in the USSR had the coercive nature. There were two aspects: first, the USSR was the world’s first and only socialist country and was surrounded by hostile capitalist countries. Therefore, for the security of the country the USSR had to devote more investment funds to industrial development, especially in heavy and military industry. It was necessary quickly and efficiently to fit the army of the USSR with guns, tanks, planes and other modern weapons. Secondly, the fast industrialization and modernization of the heavy industry helped the USSR to solve the economic problems associated with the transport, light and food industries. However in the early periods there were many obstacles standing in the way of industrialization. The greatest difficulty was that the USSR was hard pressed for those times (Podkolzin, 1968, p.141). Also concentration of the government on building up the heavy industry dramatically restricted the production of many essential consumer goods. Another major difficulty connected with the process of industrialization was the underdeveloped level of the transport and engineering industry. In the industry was a shortage of engineers and technicians. Despite of all these problems the Soviet government continued to go to its goals for the building of the strong socialist state.

In the USSR along with the problems were also many positive aspects which helped in the process of fast industrialization. The first among them was the process of

Nationalizing in the USSR. Nationalizing the land, industry, transport and the banks, canceling exorbitant pre-revolutionary interest payments, establishing a state monopoly on foreign-trade, organizing state and cooperative commerce, a centralized state credit system and a strong state budget could offer socialist industrialization the steady financial backing it needed (Borodin, 1980, p.31). Savings bank and state bonds also were a significant source of industrialization funds. Moreover, the main role in the industrialization played the foreign trade, which was a socialist state monopoly and supplied funds for industrialization. Revenues from this sector were allocated, via the state budget, to heavy industry. In the process and development of the industrialization also the main role played the human factor. In the industrialization period the Soviet people made considerable sacrifices. The people's had worked many hours in a day for the achievement of the goals of plan. The Soviet governments made the Soviet workforce work hard to achieve the goals using the high wages, awards and titles, propaganda and punishment. All these reasons and aspects helped the Soviet Union speed up the process of industrialization and gave a big push for the development of the economy.

However it's very interesting that the process of industrialization was very different in capitalism and socialism. Capitalist industrialization began with the development of light industry. Mass production of consumer goods makes it possible to accumulate capital for building heavy industry (Podkolzin, 1968, p.143). In contrast, socialist industrialization gave priority to heavy industry. Rapid construction of heavy industry enterprises accelerated the attenuation of the foundation of all other branches of the economy.

Industrialization in the Soviet Union encompassed the long period from 1928 to 1938 years. We can divide the process of industrialization into two phases: 1) from 1928 to 1932 year; 2) from 1933 to 1938 year. The first phase achieved such a dramatic increase in heavy industry production that it accounted for three-fifths of the USSR gross national product in 1932 (Borodin, 1980, p.65). Capitalist elements of industrial organization were completely eliminated. In the end of the first five-year plan the share of the private sector in the economy of the USSR dramatically decreased from 10.5

percent in 1929 year to 0.5 percent in 1932 year (Podkolzin, 1968, p.156). The second phase proceeded from the heavy industrial base built during the first modernize the national economy through the technical re-equipment of its leading branches (Borodin, 1980, p.65). The Soviet industry was divided into two classes: class A industries included producer goods, such as iron, coal, machine-building, class B included consumer goods. The Soviet government gave more priority for the development of class A.

The first phase of industrialization in the USSR included gorgeous projects. There were the building of the White Sea Canal which connected the White Sea to the Baltic Sea, the building of new industrial centers at Magnitogorsk and Novosibirsk, the construction of the Moscow-Volga Canal, the building of the Dnieprostoj Dam on the Dnieper River and the construction of the underground in the Moscow. The first-five year plan began with capital construction. Over 1500 new industrial enterprises went up in the USSR, and it started reconstruction work in the old factories. During the industrialization priority was given to the development of key branches of industry (Podkolzin, 1968, p.153). The engineering industry became the core of the industrialization. In the USSR it began the construction of the country's biggest iron and steel works in Kerch and Zlatovst. In Baku, Grozny and Tuapse were erected oil refineries and several chemical factories. In Saratov, Rostov and Volgograd were built farm machinery factories. It increased the number of tractors in agriculture. The Urashy Pytivlovets factory in Leningrad and Plants in Stalingrad, Kharkov and Chelabinsk also began producing tractors on a mass scale. The 50 000 tractors were produced only in 1932 year (Borodin, 1980, p.45).

It began also the development of all forms of transport, especially railways. The most important new railways built in period of 1927-1932 were the Turkestan-Siberia railway (about 1500 km), the Borovoye-Akmolinsk-Karaganda line and the railway linking Moscow and the Donetsk Basin. During the first five year plan the Soviet government constructed more than 5500 kilometer of new railways (Podkolzin, 1968, p.154). Rail freightage in this period dramatically increased to 80 percent and consisted

169 300 million tons and the USSR became a leading railway power: first in the world in passenger traffic and second in freightage (Podkolzin, 1968, p.154).

Light industry also occupied an important place in the industrialization process. Many light industry enterprises and power stations were built in Dushanbe, Bishkek, Samarkand, Tashkent and other Central Asian towns. In the period of the first five-year plan there were constructed 3 knitting, 11 tanning mills, 3 linen, 4 shoes and 13 cotton factories related to the light industry (Borodin, 1980, p.44).

With very fast tempo developed the chemical industry. The chemical products as acid, soda and superphosphate increased more than 150 percent (Podkolzin, 1968, p.154). The main chemical centers of the Soviet Union were Moscow, Leningrad, Baku, and Kharkov. The effort of the Soviet authorities also was concentrating on electrification and power engineering. Before the first five-year plan the Soviet Union had no electric stations of 100 000 kw. After the building of the Dnieper, Kashira, Shterovka, Zuyevka and Red October hydropower stations the total capacity of the Soviet power stations rose from 1 905 000 kw to 4.696 000 kw (Podkolzin, 1968, p.153).

Likewise was the improvement in metallurgy. The government decided the problems in metallurgy with two ways: by building new factories and enterprises and by reconstruction of the old factories which situated especially in Ural and Ukraine. There were founded important branches as instrument manufacturing and optical system engineering. In whole the Soviet government spent 91 600 million rubles on the program under the first five-year plan (Borodin, 1980, p.33).

First five-year plan (first phase of industrialization) over fulfilled the schedule, industrial output in the 1932 was three times greater than produced in 1913 and twice than in 1928 year (Borodin, 1980, p.46). During this period there were developed aviation, chemical, tractor, motor, aluminum industries and were established ferro-alloy, electro-metallurgy and super-hard alloy sector. The first phase of industrialization was carried out in condition characterized by the growth and strengthening of socialism in both in the country itself and on a world scale (Borodin, 1980, p.46).

Table 7: The Indicators of Industrial Sector in the First Phase of Industrialization

	1928	1932	1932(in percent 1928)
Steel (million ton)	4.3	5.9	139
Coal (million ton)	35.5	64.4	181
Electric power (thous. Mil. Kw)	5.0	13.5	170
Metal-cutting lathes	2 000	19 700	900
Oil (million ton)	11.6	21.4	184
Automobiles (thousand)	800	23 900	2 800
Tractors (thousand)	1 800	50 800	2 700

Source: A.Podkolzin, page 152, 1968

From the table 7 we can see how improved the industrial figures of USSR in the first year of industrialization program.

The second and final phase of socialist industrialization began in 1933 year. The first five-year plan set up all the necessary parameters for final phase of industrialization, where the entire national economy would be re-built on up-to-date technology (Borodin, 1980, p.47). We can say that the second phase of industrialization was aimed to the modernization of the national economy through the technical re-equipment. The labor productivity in this period in the USSR rose by 82 percent (Borodin, 1980, p.49). The engineering industry developed with very fast tempo which covered almost all branches of economy. A shining example was the opening of the Uralmash factory in 1933, and the Nara-Kramatorsk plant in 1934 year. In Moscow, Kiev, Grozny and Kharkov started operating the machine-tool factories. During this period in 23 towns of the USSR were constructed the tramway lines. Iron and still works were initiated in Novo-Lipetsk, Krivoy-Rog, and Zaporozhy, namely in the Chelyabinsk tractor and in the Kharkov turbine plants. For the second phase of industrialization it was allocated 133 400 million rubles for capital constructions (Podkolzin, 1968, p.168). From this sum, 69 500 million rubles were invested in industry, 15 200 million in agriculture and 26 300 million rubles in transport, industrial output had increased by over 100 percent, gaining by an average of 16.5 percent in a year (Podkolzin, 1968, p.168). In total, the second five-year plan and final phase of industrialization gave to the Soviet Union 4500 new factories, mines and power stations, or advance by three times over the achievement of the previous plan period.

Table 8: The Growth of Industry in the USSR during the Second Phase of Industrialization

	1932	1937
National income (million rubles)	45 500	96 300
Gross industrial production (million rubles)	43 000	95 500
Steel (million tons)	6.2	14.5
Oil (million tons)	21.4	28.5
Pig iron (million tons)	6.2	14.5
Electricity (billion kWhs)	13.4	36.2
Coal (million tons)	64.4	128.0
Tractors (thousand)	51.6	66.5
Machine tools (thousands)	15.0	45.5

Sources: Alec Nove, page 228, 1992; A.Podkolzin, page 173, 1968

The table 8 displays information about the performance of the Soviet industry during the second phase of industrialization. From the table we see that during 1932-1937 the indicators of some branches of industry increased more than two times.

The process of industrialization in the USSR encompassed a long period between 1928-1938 years. During this period the Soviet economy amended its internal and external position in the economy. One of the main achievements of the industrialization and socialism was the elimination of unemployment. In other words every Soviet citizen was guaranteed the right to work. The rapid pace of industrialization created a tremendous work market, particularly in the construction sphere. It had created a universal demand for highly-skilled labor, but in those periods there was a shortage of highly-skill labor. The Soviet government saw a solution of this problem in the increasing of the level of education in the country. In the cities and towns of the Soviet Union were opened hundreds of technical schools, universities, institutions of higher education. During the 1928 and 1933 the number of higher education establishment increased from 16 to 270, and the students' population from 48 900 to 233 500 (Borodin, 1980, p 56).

Industrialization changed the industrial-agrarian balance in the USSR. The Soviet Union transformed from an agrarian country into an Industrial power. The share of industry in the gross national product increased from 34.2 percent in 1913 to 54

percent in 1937 year (Borodin, 1980, p.67). Industry now dominated both in the material production sphere and the entire national economy. Moreover, in the last year of the industrialization process, transformation in the labor class structure had occurred. Now industrial and white collar workers constituted 50.2 percent, and the peasants only 47.2 percent (Borodin, 1980, p.72). Industrialization created a new socialist intelligencia (intellectuals) from the rank of the working people (Borodin, 1980, p.73). As the result of the industrialization the Soviet Union became a first-rate industrial power in technology and second power after the USA for gross national product.

Thus, the socialist industrialization gave the Soviet Union dynamic modern industry needed to back its economic independence and defense capacities (Borodin, 1980, p.65). From the other hand, industrialization also has the negative factors, which led to the disproportional development of the Soviet economy. As the result of wrong industrialization such problems as slowing the production of consumer goods, militarization of industry, stimulation of the extensive development of the economy and reduction of investment in social sphere had started in the Soviet economy. These problems adversely affected the economic and social life of the USSR throughout its history.

2.2.2. Collectivization

Another important policy of the Stalin in the initial periods of “Democratic Centralism” was the process of combination and reconstruction of small individual peasant farms into large-scale collective farms. However, why did Stalin decide to get together the Soviet agricultural sector? According to Podkolzin, we can state that in the middle of the 1920 year in the Soviet Economy was low level of agricultural production. Podkolzin relates this failure in the agricultural sector with the existence of small scattered peasant farms and rich peasant kulaks. Before the revolution big landowners and kulaks accounted for nearly 71.6 percent of farms (Podkolzin, 1968, p.142). The flow of labor forces from agriculture to industry also negatively affected the agriculture, as the result of industrialization. The other reasons of collectivization of agricultural sector by the Soviet authorities were the following: 1) collective farming made easier to introduce new technology, especially tractors in the agriculture; 2) communist ideology,

rural socialism (collective farming) were more reasonable for the communist authority than rural capitalism (individual farms); 3) the process of collecting grain from the collective farms was easier and more reliable than from the individual farmers (www.wikispaces.com).

In December 1927 years the Fifteenth Party Congress decided to begin the process of extensive collectivization of agriculture. The collective farms in the Soviet Union were divided into two major categories: the kolkhozes (collective farm) and sovkhozes (state farm). Kolkhozes combined one village and were the most common type of collective farm. In kolkhozes the land ownership was held in common by all members of the collective and all property was communally owned. All members of kolkhozes worked collectively and gave their share of the farm's output to the state and to the MTS (Machinery Tractor Stations). MTS was the state organization where the government concentrated the agricultural machinery for the kolkhozes. The first MTS in the USSR was established in Odessa region by Shevchenko State Farm. The Soviet authorities decided not to distribute agricultural machinery among the collective farms but to concentrate them in MTS, what facilitated the process of centralization and control. So, after the organization of the MTS the state received from the kolkhozes two shares of harvest: 1) first was general procurement, which had to pay every collective farm; 2) payment for the labor rendered (Kenez, 2006, p.97).

The kolkhozes in the USSR also were divided into three groups: TOZ (Association for Joint Cultivation of Land), artel and commune. The loosest form was the so-called TOZ, in which some of the agricultural work was carried out in common, but livestock and even most farm implementation remained as private property, in the artel, the field work and implementations were collectivized, as was most of the livestock, and finally the commune where everything, including buildings was common property (Kenez, 2006, p.98). In 1929 in the Soviet Union, artels consist 33.6%, TOZ 60.2% and communes 6.2% of all kolkhozes (www.slovari.yandex.ru).

Sovkhozes, as we have already pointed out were the state farms and paid a wage to the peasants. After the private cultivations were confiscated the number of sovkhoz-cultivated lands jumped from 3.6 million hectares in 1928 to 93.5 million in 1935 year

(Kenez, 2006, p.97). The Soviet government always invested a lot of capital for the development of sovkhozes.

Table 9: Collectivization in 1929-1932 years

	1929	1930	1931	1932
Collective farms (thousand)	57	85.6	211.1	211.05
Peasant household (million)	1	6	13	14.9
Percentage of collective peasant houses	3.3	23.6	52.7	61.5

Source: A.Podkolzin, page 160, 1968

The table 9 shows information about the level of collectivization in the USSR during 1929-1932 years. The number of collective farms in this period dramatically increased from 3.3 percent in 1929 to 61.5 percent in 1932 (Table 9).

One of the integral parts of the collectivization process was the elimination of the kulak class or dekulakisation. Stalin announced that kulaks had to be liquidated, as they opposed to the modernization of the Soviet Union. Kulaks that refused to join a collective farm were deported to the Siberia or to labor camps. Kulak property was passed to the collective farm or became the property of the state; their houses were turned into to schools, hospitals and other cultural and educational institutions (Podkolzin, 1968, p.159). Kulaks were completely eliminated from the agriculture in the middle of the 1930s years.

Despite of the fast tempo of the collectivization, the first phase of the process was very weak and ineffective as the result of peasant resistance to collectivization and poor harvest in 1931-1932 years. Around 5-6 million of people died as the result of famine in the early of 1930s. However under the forced collectivization, the situation in the Soviet agriculture significantly changed. As the result of collectivization and massive propaganda the number of peasants on collective farm dramatically increased from 2 percent in 1929 to 90 percent in 1936 year. Table 10 shows how sharply increased the number of peasants in collective farms between 1929-1932 years.

Table 10: Number of Peasants in Collective Farms

Date	% of peasants on Collective farm
July 1929	2%
July 1930	24%
July 1931	53%
July 1932	90%

Source: Stalin Economic Policies, 1928-1941, page 19

Also in 1935 year the Soviet authorities passed the Collective Farm Charter Law. This Law allowed to the peasants in the kolkhozes cultivate a small private land (1/2 and 1/4 hectar in the European part and 1 hectar in Asia regions) and softened the harsh of forced collectivization. Collectivization was completely finished in the 1936 year (www.wikispaces.com).

Of course, in the one hand the process of collectivization was very traumatic for the Soviet economy. Famine, forced collectivization, repressions, deportations very negatively affected to social and living standard of the people, but from the other hand it helped to the Soviet government strengthened its power over the economy and society.

Table 11: The Growth of Agriculture during the Collectivization

	1928	1932	1937
Crop area (million hectare)	113.0	134.4	135.5
Gross yield of grain (million cent)	733.2	698.7	1.209
Yields of grain crop (cent per hectare)	7.9	7.0	11.5

Source: A.Podkolzin, page 179, 1968

Table 11 displays information about the performance of agriculture during the collectivization process. From the table we see how increased crop area and gross yield of grain during 1928-1937 years.

After the analysis of the initial phase of the policy “Democratic Centralism” we can say that it was the complex process which had its positive and negative sides. Introduction of planning system helped the Soviet government increased and strengthen its authority on economic, political and public level. As the result of industrialization and collectivization process the Soviet Union increased its power in all spheres of the economy and became a modern world power. Also in the USSR began the process of

creation of urban labor force. During the 1928-1932 the total number of employed increased from 11.5 million to 24 million, and the size of the industrial labor force from three to six million (Kenez, 2006, p.93). The Soviet government removed the unemployment from the economy of the country. From the other hands, the policy of “Democratic Centralism” also had its negative sides too. The main negative aspect of this policy was restriction of the democracy. The Soviet authorities forced the people to work in the farms, factories, liquidated their property and lands. Many people were murdered as the result of deportations and repressions. The other problems of “Democratic Centralism” policy was that some managers reduced the quality of their goods in order to increase their output, also managers inflated their production figures for meet their production targets, production targets were not met as they were set too high. Moreover introduction of planning system in the Soviet economy led to the shortage of products and services, fall of incentives of workers and peasants, development of the economy on the “extensive” basis and reduction the level of scientific-technical progress in the economy.

3. THE ANALYSIS OF THE SOVIET ECONOMY

In the Chapter 3 we will analyze the Soviet Economy in the period between 1926-1982 years. We divided our analysis into the three main parts: Stalin era (1926-1954), Khrushchev era (1955-1964) and Brezjnev era (1964-1982). Each of these periods has its own specific political and economic views, principles reforms and laws. Our main task in Chapter 3 is to analyze the performance of the Soviet economy in the main economic sectors, such as: industry, agriculture, financial and transport systems. Also we intend to analyze the main economic reforms and laws which were adopted in each of these periods and find out how they affected the Soviet social and economic system.

3.1. Stalinism: Stalin Era in the Soviet Economy

In this chapter we analyze the Soviet economy in the period of Joseph Stalin (Vissarionovich Junugashvili). Joseph Stalin was born in 1879 year in small town in Georgia and was one of the most influential and powerful Soviet leaders. He was an ardent believer Lenin's ideas and in the concept of a strong, authoritarian central government (Darraj, 2010, p.38). The period of his reign from 1922 to 1953 was very changeable and was renowned as "Stalinist Terror". "Stalinist Terror" was a series of anests, killing, purge, deportations during of Stalin regime which were directed against the people who opposed to his regime and his policies. Thousands intellectuals, writers, military men and scientists were arrested and killed in the "Stalinist Terror". We still don't know the exact figures of death, but many historians assume than it was around 1.5 million people. Using terror, anests and deportations Stalin could put power into his hands and established a hard dictatorship in the USSR. The period of Stalin regime

characterized as the totalitarianism, which was aimed to the decreasing of democracy and human rights. Also this period famous in history as Stalinism.

We can divide the Stalin era in the Soviet economic history into three phases. First phase was the period of industrialization and collectivization which encompassed the period from 1928 to 1940 years, the second phase was the period of Great Patriotic War, which covered the period during 1941-1945 years. The final third period in Stalin era was the period of post-war reconstruction and rehabilitation, this period encompassed the period during from 1945 to 1953 years.

The first period of industrialization and collectivization we discussed and analyzed in the Chapter 2.2. We began our analysis with second phase of the Great Patriotic War.

3.1.1. The Great Patriotic War (1941-1945)

The Great Patriotic War of the Soviet Union against the Nazi Germany was one of the bright and tragic periods in the history of the USSR. This war we can divide also in two parts. The first part from 1941 to 1942 was the weak phase and began on 22 June 1941 year, when without declaring the war, Germany invaded the Soviet Union (Podkolzin, 1968, p.189). On the eve of war there was going the large-scale construction in the USSR, were built 9000 new large industrial enterprises, increased the total length of railways from 58 500 km to 106 000 km, also radically changed the living standards of population (Podkolzin, 1968, p. 190). Despite of this, the initial period of war was unfavorable for the USSR. In the first year of war Germans captured around 20 percent, which constituted 4.8 million km² Soviet areas. In the territory occupied by the Germans before the war lived around 45 percent of country's population, produced 58 percent of steel, 63 percent of coal, 60 percent of aluminum, also cultivated around 38 percent of grain and 84 percent of sugar belt, it also were destroyed 40 percent (65 000 km) of railways, 1710 cities and towns, around 70 000 villages and over 100 000 collective and state farms by Germans (Voznesensky, 1948, p.42). It was a big financial blow for the Soviet economic and social life. All economic reconstructions and losses sustained by the Soviet economy amounted to approximately 2 600 000 million rubles (in pre-war

prices) (Podkolzin, 1968, p 212). During the 1940-1942 years the industrial output of the USSR dramatically decreased to 50 percent (Podkolzin, 1968). The first phase of war had lamentable consequences for the Soviet economy and life. Individual consumption of population was reduced from 42 percent in 1940 to 38 percent in 1942; accumulation was curtailed from 11 percent in 1940 to 2 percent in 1942, productive consumption remained at 43 percent of the total in both 1940 and 1942 year (Voznesensky, 1965, p.56). The structure of national income between 1940-1942 years also changed, the share of accumulation was curtailed from 19 percent in the 1940 year to 4 percent in the 1942, consumption was curtailed from 74 percent in 1940 to 67 percent in 1942 and the share of war expenditures increased from 7 percent in 1940 to 29 percent in 1942 year (Voznesensky, 1965, p.58).

The second part of the war encompassed the period from 1942 to 1945 and was the strong phase. In this phase, as the result of increasing and strengthening industrial sector, labor force, agricultural sector the Soviet government could change course of war in its benefit. The second phase of war began on 19 November 1942, when the Soviet forces began to encircle 330 000 strong German army at Stalingrad. The Soviet authorities reorganized the work of industrial enterprises, agricultural farms and work forces which helped to increase the output of the Soviet economy. In 1943 the USSR's social product increased by 32 billion rubles relatively to 1942 year, also in 1943 the fixed capital funds of socialist enterprises increased by 63 billion rubles in comparison with the previous year (Voznesensky, 1965, p.57). The second phase of war finished in May 1945 when the Red Army completely crushed the Germans in Berlin. Let's analyze branches of the Soviet economy during the war and see how they developed during the war period. For the clear understanding the performance of economy we will make our analysis in the more analytical condition.

The first changes in the economic structure during the Great Patriotic War came from Joseph Stalin. With the beginning of war Stalin changed the plan for peaceful economic development by a military economic plan. The military-economic plan provided the evacuation of industrial enterprises to the East, all-range increase in the war production, radical change in the pattern of the state budget and so forth (Podkolzin,

1968, 134). The USSR Supreme Soviet decided to form the State Defense Committee. So, war industry was reorganized under the authority of the State Committee of Defense, of which Stalin was chairman (Nove, 1992, p.277). The first step of the State Committee of Defense was the removal of industrial enterprises and factories from the Western regions to safety East regions in the Ural, Siberia and Central Asia. Around 1500 industrial enterprises (which included also the Kharkov Tractor Plant, Dnieper Hydropower Station, the Lugansk Locomotive Works) and 18 million people and workers were evacuated to the East. As the result industrial production in the Eastern regions sharply rose in the Ural more than 3.6 times in Siberia in 2.8 times, also all capital investment in heavy industry directed to Ural and Western Siberia rose from 13 percent in 1940 year to nearly 40 percent in 1942 year (Linz, 1984, p.8). The figures of industrial workforce in the Urals between 1940 and 1943 years increased to 65 percent (Linz, 1984, p.6). In the end of war in the Ural war production exceeded the 1940 level more than fivefold in 1942 and six fold in 1943 year, moreover in Western Siberia production in 1942 year was 27 times greater than in 1940, and in 1943, 34 times greater (Voznesensky, 1965, p.67). The gross output of industry in this part country also sharply increased from 39.4 billion rubles in 1940 to 48.1 billion in 1941 year, 74.9 billion in 1942, 85.6 billion in 1943 and 91.2 billion in 1944 year (Voznesensky, 1965, p.66). The Urals and other Eastern regions of the USSR became the main arsenal of the Soviet army during the war.

The second step to improve the economy was the huge investments, especially in industrial sector. For example, in 1943 the Soviet government allocated around 13 000 million rubles for capital construction; in 1944 more than 18 900 million rubles; in 1942, 1943 and 1944 the government investment was about 79 000 million rubles (Podkolzin, 1968, p.196). Also the government in 1943 and 1944 allocated 16 000 million rubles or 30.5 percent of the capital investment in the national economy (Podkolzin, 1968, p.196). Also during the war there were built more than 3500 new enterprises and 7500 damaged one restored.

After the Industrialization investments the heavy industry became much larger than in light industry. It was linked to the militarization of the Soviet economy and with

the presence of the Soviet authorities to the heavy industry. During the war this differences sharply increased. From the table 12 we can see that during the war correlation between heavy and light industry composed 93.3 to 6.7 percent (Table 12). After the war this figure also stayed very high.

Table 12: Distribution of Soviet Industrial Investment by Sectors, 1938-1950

Industrial branches	1938-1941	1941-1945	1946-1950
Heavy Industry	84.5	93.3	87.5
Ferrous metals	7.1	12.0	10.9
Chemicals	4.7	3.6	3.7
Oil and Gas	7.4	7.9	11.5
Coal	6.2	9.8	15.5
Electric Power	7.8	6.3	7.6
Machine-building	33.5	34.4	16.4
Construction and materials	4.6	5.5	9.4
Forestry, paper	3.5	2.5	4.8
Light Industry	15.5	6.7	12.1
Total	100	100	100

Source: Susan Linz, page 7, 1984

During the Great Patriotic War the share of the engineering and metal-working industries increased in the Soviet industrial sector. The share of the engineering and metal-working industries dramatically rose from 36 percent in 1940 to 57 percent in 1942 (Voznesensky, 1965, p.68). Only in Ural steel production it rose from 2.7 to 5.1 million tons, coal from 12 to 257 million tons (Nove, 1992, p.279).

Table 13: Output of Industrial Sector, 1940-1950

Industrial branches	1940	1942	1945	1950
Pig iron (million tons)	14.9	4.8	8.8	19.5
Steel (million tons)	18.3	8.1	12.3	25.4
Rolling mill prod. (million tons)	13.1	5.4	-	-
Coal (million tons)	165.9	75.5	-	250
Oil (million tons)	31.1	22.0	19.4	35.4
Electricity (billion kWhs)	48.3	29.1	43.2	82

Source: Alec Nove, page 278,298, 1992

However, how we see from the table 13 the industrial output in many sectors of industry sharply decreased in the first years of war. It was linked to the military burden

and occupation by the Germans the big industrial centers of the USSR: Ukraine (Donbas, Kharkov, Kiev), Belorussia (Minsk, Gomel) and European part of Russia. However after the 1944 year the share of all industrial sectors in Soviet economy began to grow.

The chemical industry also converted its plan to serve war needs such chemical products as ammonia and nitric acid was an essential material in the manufacture of gun and the explosives, production of which sharply rose from 232 000 tons in 1940 to 342 000 in 1943 (Voznesensky, 1965, p.70).

Many changes happened in the labor productivity. Between 1942 and 1945 labor productivity in industry increased by more than 40 percent, and output per worker in the metalworking industry rose 80 percent (Podkolzin, 1968, p.199). Thanks to the variant effort of the of the Soviet people in the end of war in 1945 year the industrial output of the USSR rose to 92 percent of the prewar 1940 level (Podkolzin, 1968, p.196).

All these innovations and changes in industry helped the Soviet government to strengthen and rearmed the Soviet Army. In December 1942 the USSR increased the production of aircraft more than 230 percent (85 436) relatively to 1941, tanks 100 percent (24 688), sub-machine guns to 440 percent, bombs to 550 percent, moreover in the last three years of war in the Soviet Union were made around 30 000 tanks, 450 000 machine-guns, 100 000 mortars, 40 000 aircrafts and 5 million rifles and submachine guns (Podkolzin, 1968, p.197). All these innovations and weapons helped the Soviet Union to win the war.

Now we will analyze the other main sector of the Soviet economy during the Great Patriotic War agriculture. On the eve of the War in the Soviet Union were 4159 state farms, 235 500 agricultural artels and 7 069 machine and tractor stations (Podkolzin, 1968, p.199). The process of collectivization, new machines, advanced farming methods and socialist labor organization increased grain yields and animal productivity in the Soviet Union in pre-war periods. The grain production grew to 1 838 millions in 1940 years (Podkolzin, 1968, p.200).

The invasion of the USSR by Germany and occupation of a large share of the territory was a serious blow for the Soviet agricultural sector. USSR lost around 40 percent of its sown area, 107 000 collective farms, 3000 machine and tractor stations, also were destroyed nearly 137 000 tractors, 49 000 combines, 20 million pigs and 17 million head of cattle (Podkolzin, 1968, p. 200). All these events played the negative role for the agricultural output and its level was very low during the war. For solving these problems the Soviet government introduced a range of changes and modernization in agriculture. First, during the war the Soviet government began to evacuate and develop farming and stockbreeding in the safety Eastern regions of the country. As the result, the crop area in Central Asia region sharply rose by 5 million hectares in 1942 and by 6.4 million hectares in 1943 year (Podkolzin, 1968, p. 200). The Volga area, Transcaucasia, Central Asia, Ural, the Far East were not occupied by the Germans and the grain production increased in these areas. The areas sown by the collective farms in these regions mounted from 62.6 million hectares in 1940 to 66.3 million hectares in 1942, with grain crops showing an expansion from 51.6 million to 59.9 million hectares (Voznesensky, 1965, p.79). The collective farms of the Soviet Union's eastern areas also planted potatoes and other vegetables. The highest rates of increasing in the area under potatoes and other vegetables in 1942 were registered in Urals 37 per cent, in Siberia 44 percent, in Far East 30 percent and Central Asia 32 percent (Voznesensky, 1965, p.80). Despite of the wartime the collective farms also increased their herds of productive cattle in eastern districts. Beef and dairy cattle increased here from 11.4 million head in the beginning of 1941 to 12.5 million head in the beginning of 1943, sheep and goats from 28 million to 34.2 million (Voznesensky, 1965, p.80). Eastern regions of the USSR became the wet-nurse of the Soviet Union during the Great Patriotic War. Second changes in agricultural sector was the increasing the proportion of women in the agricultural work force. The shortage of labor in the agricultural sector during the war was one of the main problems of the Soviet government. During the war time the men who had joined the armed forces were replaced with women and young people (Podkolzin, 1968, p.208). As the result proportion of women in the total labor force rose from 38% in 1940 year, to 53% in 1942 and reaching 55% in 1945 year (Linz, 1984, p.10). For example, in 1940 the number of tractor drivers' women was 4 percent, in

1942 this figure increased to 45 percent, the percentage of women of combine operators increased from 6 to 43 percent, and the number of women lorry drivers sharply raised from 5 to 36 percent (Podkolzin, 1968, p. 201). Third main changes in the agriculture during the war was introducing of rationing system in the USSR. The first rationing decree was accepted in July 1941 year and affected Moscow, Leningrad and the surrounding provinces and encompassed such products as bread, macaroni, sugar, butter, meat cotton, lines, leather and soap (Linz, 1984, p.12). The Commissariat of Trade supervised the centralized allocations of consumer goods (Linz, 1984, p.12). The rationing system fed around 61 million people in 1941, however in 1944 this index had risen to 76.8 million, and in December 1945 nearly 80.6 million of Soviet people were supplied with bread under this rationing system (Linz, 1984, p.12).

Also the main role in the reorganization of the agriculture during the war played the vast investment of the state. In 1945 year the government allocated 9 200 million rubles for restoring agriculture, or about 33 percent more than in 1944 year, also agricultural sector received 6500 tractors, 9900 lorries and 628 000 tons of mineral fertilizer (Podkolzin, 1968, p.201). As the result of this reorganizations and changes in the last year of war the Soviet agricultural sector improved its positions in economy.

The tables 14 and 15 display information about the performance of Soviet agricultural sector during the Great Patriotic War.

Table 14: Soviet Agriculture during the Great Patriotic War

	1940	1941	1942	1943	1944	1945
Area sown (mil.hectar)	110.5	81.8	67.4	70.7	81.8	85.1
Yield per hectare	8.6	6.9	4.4	4.2	6.0	5.6
Total harvest	95.5	56.3	30.3	30.0	48.7	46.8
State procurements	36.4	24.4	12.4	12.4	21.5	20.0

Source: Alec Nove, page 282, 1992

As we see from the tables the hardest periods for the Soviet agricultural sector was 1942-1943 years. In these periods the figures of harvest and livestock decreased to the lowest level. Of course it was linked with the war in country, with the shortage of labor force and tractors. Despite of the increasing of agricultural figures in the last year

of war the general productivity of agriculture during the Great Patriotic War was very weak.

Table 15: Cattle in the USSR during the Great Patriotic War.

	1940	1942	1943	1945
Cows (million heads)	27.8	13.9	16.4	22.9
Horses (million heads)	21.0	8.2	7.8	10.7
Pigs (million heads)	27.5	6.1	5.5	10.6

Source: Alec Nove, page 282, 1992

The main role in the economy during the war years played the transport system of the USSR. In the prewar time the transport system of the Soviet Union developed with very fast tempo and reached to 105 300 km in 1940 year (Voznesensky, 1965, p.83). But as the result of war a large lines of railways and roads were destroyed. During the war a large proportions of railways situated in the occupied territories. The total length of railways in 1943 year decreased by 40 percent, also since 1941, the number of locomotives demised by 15 percent and that of freight cars by 20 percent (Podkolzin, 1968, p.204). Moreover, in the initial periods of war freight traffic in the USSR sharply decreased to 2.3 times, cargo carriage on the inland waterways dropped to 1.8 times (Voznesensky, 1965, p.85). The transport services began to improve its work in 1943 year. In the middle of 1943 year the Soviet government began a large-scale reconstruction of transport in the country. Nineteen thousands kilometers of railway track were restored in 1945 year (Podkolzin, 1968, p.205). The rolling stock of the USSR was fill out with 56 000 carriages and 200 locomotives, moreover during the war nearly 51 000 of railways were restored and were laid around 19 000 new railways lines (Podkolzin, 1968, p. 205-206). New branches railways lines were built by the Soviet government, such as: Soroka-Obozero, Akmolinsk-Kartaly, Kizlar-Astrakhan, the Moscow Great circuit and etc. All these innovations and restorations improved and increased the level of transport system of the USSR. The transport system of the USSR along with other sectors made an enormous contribution to the victory in the Great Patriotic War.

During the Great Patriotic War many changes happened also in financial system of the USSR. The financial system played an important role in the reorganization of the

USSR's wartime economic activity. With budget allocations, credits and money it ensured the fulfillment of the following tasks: redistribution of the national income in conformity with wartime requirements, redistribution of material resources with a view to the priority development of heavy and defense industries and enforcement of strict control over production and distribution of products (Podkolzin, 1968, p.207).

It is obviously that the leading role in the financial system of the country played the state budget where were concentrated the bulk of national income. The State budget of the USSR during the Great Patriotic War was changing drastically in the condition of wartime economy.

Table 16: Soviet State Budget Revenues and Expenditures, 1940-1945

	1940	1943	1944	1945
Total revenue of which:	180.2	202.7	268.7	302.0
Turnover tax and deduction from profit	127.6	91.1	116.3	140.0
Taxes from the population	9.4	28.6	37.0	39.8
State loans and lotteries	11.5	29.0	32.6	29.0
Total expenditures of which:	174.3	210.0	263.9	298.6
Defense	56.7	125.0	137.7	128.2
National economy	58.3	33.1	53.7	74.4
Social and cultural measures	40.9	37.7	51.3	62.7
Excess of revenue over expenditure	5.9	-	4.8	3.4

Source: A. Podkolzin, page 207, 1968

From the table 16 we see how changed the revenues and expenditure of Soviet economy during the Great Patriotic War. The main revenue of the Soviet budget was the turnover tax and deduction from profit, the main share of the expenditure was defense. All defense expenditures of the USSR during the war amounted to 582 000 million rubles (Podkolzin, 1968, p.208). Each day of the war cost the country over 400 million rubles (Podkolzin, 1968, p.208). At the same time expenditures on financing the national economy decreased from 58.3 billion rubles to 31.6 or from 33 percent to 17 percent, moreover the state budget revenues of the Soviet Union declined from 180 billion rubles in 1940 year to 165 billion in 1942 year, revenues from socialist economy dropping from 158 billion rubles to 108 billion rubles (Voznesensky, 1965, p.109). As the result of these disproportions the deficit appeared in the state budget of the USSR. Deficit in budget

was 3.2 billion rubles in 1940 year, 18.9 billion in 1942 and 7.3 billion rubles in 1943 year (Voznesensky, 1965, p.109). For the improvement of the budget balance it was necessary to mobilize all the material resources and state reserves. The chief sources of revenues in the USSR were government enterprises and organizations which paid the established taxes and deductions (Podkolzin, 1968, p.208).

Table 17: Growth Taxes during the War

	1940	1942	1943	1944	1945
Total revenue of which:	180	165.0	204.4	268.7	302.0
Turnover tax	104	66.4	71.0	94.9	123.1
Profits deductions	22	15.3	20.1	21.4	16.9
Taxes on citizens	9	21.6	28.6	37.0	39.8
Bond sales	11	15.3	25.5	32.6	29.0

Source: Alec Nove, page 290, 1992

Altogether 70 percent of all revenues during the war were raised from the national economy in the form of turnover taxes. From table 17 we can see how increased the taxes revenues during the war from 180 million rubles from 1940 to 302 million rubles in 1945 year. Also the main role in the liquidation of the budget deficit played the credits of the State Bank. In granting credits, the State Bank gave priority to the defense industry, extended a big loans to the enterprises evacuated to the East and financed wartime economic rehabilitation (Podkolzin, 1968, p.209). Also the shortage of currency was covered by additional emission and the amount of banknotes in circulation, during the war increased by approximately 300 percent (Podkolzin, 1968, p.209). All these reorganizations helped to liquidate the budget imbalance in the Soviet economy.

Wages of the workers also increased during the war. Wage level changed considerably during the war-economy period in the connection with the increased productivity of labor and stimulation of the key branches of industry (Voznesensky, 1965, p.97). Primarily the Soviet government increased the wages of the workers, who worked in metals, coal and oil industries. The average monthly wage of industrial workers increased from 375 rubles in 1940 to 573 rubles in 1944 year, moreover the wage of engineers also technicians also significantly raise from 768 rubles in 1940 to 1209 rubles in 1944 year (Nove, 1992, p.285).

Changes also were observed in the trade balance of the Soviet Union. During the Great Patriotic War it was drastically curtailed. The export in the USSR dramatically declined from 1 412 million rubles in 1940 to 399 million rubles in 1942 and 373 million rubles in 1943 year, in contrast the imports of the country during the war increased from 1 446 million rubles in 1940 to 2 756 million rubles in 1942 and 8 460 million rubles in 1943 year (Podkolzin, 1968, p.203). In these years import rose to 400 percent and export fell by nearly 67 percent (Podkolzin, 1968, p.203). The trade disbalance between export and import was associated with the war.

So, we analyzed and discussed the main economic sectors of the Soviet Union during the war and now can make conclusion. Great Patriotic War played the significant role in the economic history of the USSR. This war against Hitler's Germany was a trial and supreme test for the economic system of the Social State (Voznesensky, 1965, p.213). In this war Soviet Union demonstrated its political, military and economic superiority over capitalist Germany. This war had positive and negative sides in the economic and social life of the USSR. This war took more than 20 million lives of Soviet citizens and destroyed about 30 percent of country's national wealth (Podkolzin, 1968, p.212). On the Soviet area which was occupied by the Nazi Germany around 1876 state farms, 2890 MTS, 98 000 collective farms, 31 850 factories, 1710 towns, 70 000 villages, 4100 railway stations, 65 000 km of railways, 6000 hospitals and etc were totally wrecked and sacked (Voznesensky, 1965, p. 131). All in all they plundered and destroyed 679 000 million rubles worth of material values (Podkolzin, 1968, p.212). These losses sustained by the Soviet economy nearly 2 600 000 million rubles (Podkolzin, 1968, p.212). The positive sides of the war connected with economic and industrial growth of the USSR. The USSR became the world's superpower along with the USA and strengthened position of socialism in the world.

3.1.2. Post-war Reconstruction Period (1946-1953)

The final third phase of the Stalin era was the period of post-war reconstruction and rehabilitation, which encompassed the period during the 1946-1953 years. In this period the large scale reconstruction in the political and economic life of the Soviet Union had started. The significant changes happened in the political system of the world. After the independency from the Fashist occupation, in many Eastern European countries such as: East Germany, Romania, Yugoslavia, Bulgaria, Albania, Hungary and Czechoslovakia began the process of the establishment of socialism. In the later periods many countries of Asia and North America such as: North Vietnam, China, North Korea and Cuba also joined to the socialist camp. Before the Second World War the socialist camp accounted only 17 percent of the world's territory and about 9 percent of its population, however after the war these figures growth to 26 percent and almost 35 percent respectively (Podkolzin, 1968, p.211-212). It was a new stage in the development of world socialism.

Another changes in this period happened in the economic system of the USSR. In the Soviet Union began the process of transition from the war economy to peacetime economy. In 4 September 1945 year the State Committee of Defense was abolished and the regular governmental organs had been established in the Soviet government. For the rapidly reorganization of all branches of the economy which were wrecked by the war the USSR Supreme Soviet in 1946 year adopted the fourth five-year plan (1946-1950) of economic development. The plan laid emphasize on the priority rehabilitation and development of heavy industry and transport, which there could be no question of restoring and further developing the economy (Podkolzin, 1968, p.213). According to the plan the national income in 1950 was to increase by 48 700 million rubles, industrial output by 66 500 million rubles, the output of electricity was to increase by about 75 percent as compared with the pre-war level (Podkolzin, 1968, p.213). Indicators of some economic sectors in the fourth five-year plan display in the table 18.

Table 18: The Performance of the Soviet Economy (1940-1950)

	1940	1945	1950 (plan)	1950 (actual)
National Income (1940=100)	100	83	138	164
Gross Industrial Output (1940=100)	100	92	148	173
Gross agricultural production	100	60	127	99
Average wages (per annum)	4 054	5 000	6 000	7 670
Oil (million tons)	31.1	19.4	35.4	37.9
Electricity (billion kWhs)	48.3	43.2	82	91.2
Steel (million tons)	18.3	12.3	25.4	27.3
Pig iron (million tons)	14.9	8.8	19.5	19.2
Grain harvest (million tons)	95.6	47.3	-	81.2

Source: Alec Nove, page 298, 1992

How we can see from the table the output of all economic branches very rapidly grew and surpassed the plan figures of 1950 year.

In the post-war year reconstruction period the industry remained the one of the main sectors of the economy of the USSR. In this period the Soviet industry continued to develop and grow very rapidly and by far surpassed the pre-war level. The industrial production in the USSR in 1947 year rose to 22 percent and in the following year to 27 percent (Podkolzin, 1968, p.216). The total volume of output in 1948 topped the pre-war figure by 18 percent, moreover, one percent of growth in the fourth five-year plan period stood for 32 000-34 000 million rubles of worth of industrial production (Podkolzin, 1968, p.216). This increase in the industry output was the consequences of successful reconversion, retraining, the bringing into operation of damaged mines and factories and very considerable new investments (Nove, 1992, p.300). The tremendous reconstruction work began in Donbas Coal, in Kharkov Tractor Plant, in Serp Molot Machinery Works, Zaporozhye Iron and Steel Works and etc. In 1947 year all these factories and enterprises went into operation. The great Dnieper dam was rebuilt and began to generate electricity as early as March 1947 (Nove, 1992, p.300). During the post-war reconstruction in the Soviet Union were built more than 6000 enterprises and nearly 3000 large industrial projects, especially important was the building very powerful hydroelectric stations on the river Volga, the Dnieper and Angara (Podkolzin, 1968, p.219). Among the largest projects completed after the war was the 101-kilometre

Volga-Don Canal with its numerous dams, sluices and reservoirs (Podkolzin, 1968, p. 219). Also important role in the increasing of industrial output and developing of economy played the cut of the share of military expenditures, in 1946 year military expenditures in the USSR constituted only 23.9 percent (Voznesensky, 1965, p.127).

Table 19: Soviet Industrial Output, 1940-1955

	1940	1950	1955	% increase
Coal (million tons)	165.9	261.1	391.0	136%
Pig iron (million tons)	14.9	19.2	33.3	135%
Steel (million tons)	18.3	27.3	45.3	150%
Oil (million tons)	31.1	37.9	70.8	125%
Electric power (million kWhs)	48.3	91.2	170.1	254%

Source: A.Podkolzin, page 220, 1968

The table 19 represents and compares the figures of some industrial output in pre-war and post-war periods. From the analysis in the table we can see that the main industrial output in the end of post-war reconstruction period growth more than 120-130 percent than in pre-war level.

In spite of the capital investment in light and food industry, during the period from 1940-1953 light industry was very low relatively to the heavy industry. The indicators of light and food industry in the end of post-war reconstruction period also surpassed the pre-war level. From the table 20 we see that the industrial output of main food and light sectors increased nearly 70-100 percent than in pre-war level.

Table 20: Performance of Light and Food Industry of the Soviet Union

	1940	1950	1955	% increase
Woolen fabrics (million meters)	119.7	155.2	251.0	110%
Cotton fabrics (million meters)	3.954	3.899	5.904	49%
Meat (thousand)	1 501	1 556	2 552	70%
Fish (thousands)	1 404	1 755	2 740	95%
Butter (thousands)	226.0	336.0	459.0	103%

Source: A.Podkolzin, page 221, 1968

Unlike industrial sector, the early periods of the post-war reconstruction were very difficult for agriculture. The State couldn't allocate sufficient sums for agriculture so the bulk of its funds were channeled into industry, as a result, agriculture lagged

behind in the early post-war years and it was causing grain shortage in the country (Podkolzin, 1968, p.217). In 1946 the total area of land sown was only 76 percent of that of 1940 year and the grain harvest decreased from 47.3 million tons in 1945 to 39.6 million in 1946 (Nove, 1992, p.303).

Table 21: Soviet Agricultural Performance, 1940-1952

Million tons	1940	1947	1948	1949	1950	1951	1952
Grain harvest claim	119	-	115	124	124	121	130
Grain harvest, real	95.6	65.9	67.2	70.2	81.2	78.7	92.2
Potatoes	76.1	74.5	95.0	89.6	88.6	58.7	69.2
Cotton	2.2	1.7	2.2	2.5	3.5	3.7	3.8
Cows	28.0	23.0	23.8	24.2	24.6	24.3	24.9

Source: Alec Nove, page 311, 1992

The table 21 displays the figures of the Soviet agricultural sector between 1940-1952 years. From the table we can see that the level of the Soviet agriculture was very low in 1946-1949 years. All agricultural figures slightly decreased in these periods.

For the solving the problem in agricultural sector the central Committee of the USSR decided to begin the process of association of the collective farms. The merge of smaller collective farms into bigger units in 1950 was one of the most effective measures which either completely gave away or at least lessened the influence of unfavorable factors on the development of agriculture, moreover it created conditions for a more efficient use of machinery in the fields, improved employment of agriculture specialist, and so forth (Podkolzin, 1968, p.224). Around 250 000 small collective farms were united into 93 000 large farms which had four-five times more lands, hands and cattle (Podkolzin, 1968, p.255). These modernizations helped to improve situation in agricultural sector of the USSR and since 1949 year the figures of agriculture began slightly growth.

Increasing production of consumer goods and expanding commodity circulation made it possible systematically reduce the prices of basic commodities, for example state retail price of all goods were reduced by 17 percent from those prevailing in the last three month of 1947 year (Podkolzin, 1968, p.217-218). Prices in the Soviet Union were cut each spring from 1948 to 1954 and in March 1950 the average reduction in

retail prices was 40 percent, compared with the last quarter of 1947 year (Nove, 1992, p.317). For example, the price of bread sharply fell from 3 000 rubles in 1947 to 1.40 rubles in 1950 year (Nove, 1992, p.317). During the post-war reconstruction period the Soviet government systematically reduced the prices of consumer goods. The retail prices of goods decreased in the following order in 1947-100, 1948-83, 1949-71.1, 1950-57, 1952-50 and 1953-45 consequently they were reduced by 56.5 percent (Podkolzin, 1968, p.228). The food prices during this period also dropped by 61.5 percent (Podkolzin, 1968, p.228).

Transport system of the USSR developed with very fast tempo during the post-war reconstruction years. During the fourth five-year plan the government allocated around 48 100 million rubles for the development of transport; moreover, road freightage in the country grew by around 50 percent (Podkolzin, 1968, p.216). In the rail freightage USSR surpassed USA and became the first in the world. Rapidly increased the construction of oil and gas pipelines. For example, between Moscow and Stavropol was constructed 1300 kilometer gas pipeline (Podkolzin, 1968, p.222). the process of switched railways to electric and diesel traction had been initiated in the last year of fifth five-year plan.

Many changes and innovations happened during the post-war period in the financial sector of the country. The significant changes happened in the monetary system of the USSR. In 1947 year the Soviet government issued new money and withdrew all depreciated old banknotes from circulation. The money in hand was exchanged at the rate of 10 old rubles for one new ruble (Podkolzin, 1968, p.218). The money reform did give away the aftermath of the war in money circulation, gave rise to the purchasing power of people and proved the way for retail trade at uniform prices; also it enhanced the role of money in the national economy, made it possible to raise the real wages of industrial and office workers and the incomes of the rural population and to improve living standards (Podkolzin, 1968, p.218). It also enhanced the budget balance of the USSR, in the first year of the post-war reconstruction state budget revenue topped expenditure by 17 900 million rubles, in 1947 this figure rose to 24 700 million and in 1948 year to 39 600 million rubles (Podkolzin, 1968, p.268). National income of the

USSR in 1950 year was 64 percent, in 1955 181 percent above the pre-war (1940) level (Podkolzin, 1968, p.228).

So, during the third phase the USSR could reorganize its economic and social life. Many factories, enterprises, highway and railway roads were reconstructed and built in the country. USSR increased its industrial, military, social potential and strengthened its positions in the world. Along with the USA, the Soviet Union became the world's superpower.

The Stalin era finished in the USSR in 5 March 1953 year, when died the Soviet leader Joseph Stalin. The period of Stalin's regime played the significant role in economic and social history of the Soviet Union. It was the period of fast and deep innovations, modernizations and changes in all spheres of economy. All three phases of Stalin era had contributed in the development of the USSR. The negative side of regime was the Stalin terror which were mostly related to the forced industrialization and collectivization, repressions and dictatorship.

3.2 Destalinization: Khrushchev Era in the Soviet Economy

After the death of Joseph Stalin in the Soviet Union started the new era, that called Destalinization. Destalinization was the process of eliminating the political policies, methods and personal image of Stalin. Destalinization period began with Khrushchev era which encompassed the Soviet history for a short period during 1953-1964 years. These eleven years renowned in the Soviet economic history as Khrushchev reforms. These reforms were aimed to improve the living standard of the people, the increase of the level of industrial, agricultural, financial sectors of the economy, also to strengthen cultural well-being of the Soviet people. These reorganizations of Khrushchev had positive and negative influences on the Soviet social-economic life.

Nikita Khrushchev came to authority in 1953 after the death of Stalin and began its reform with the process of Destalinization. He saw as one of his tasks the cessation of the Stalin terror and the liquidation of monstrous machinery of terror which Stalin had created (Medvedev, 1983, p.187). The concept of de-Stalinization included a set of

connected yet distinct policies; initially it meant the rehabilitation of at least some of the victims and their return to Soviet Society, but it also came to mean relatively greater openness in treating some historical issues, liberation of economic policies, and at least a small degree of change in the political system (Kenez, 2006, p.121). As the result of the Destalinization many political prisoners were freed, hundreds of forced-labor camps were closed down and was signed an amnesty to many criminals. Also Khrushchev reduced the role of Stalin in history and promoted what he considered to be “return to Leninism” (Suny, 1998, p.406).

3.2.1. Agricultural Reform of Khrushchev

However, the main reforms of the Khrushchev were aimed to the agriculture. In the beginning of the 1950s years the situation in agricultural sector of the USSR was very complicated. There was an acute shortage of grain, sugar, meat. Moreover in 1953 year the government paid to kolkhozes around 80 cents (kopeek) per quintal of grain whereas production cost was nearly six rubles (www.5ballov.qip.ru). In agricultural sector the amount of taxes, purchases and production expenses was very high and they absorbed nearly 68 percent of cash incomes of the collective farms. Also was very costly the services of the MTS which constituted around 1/5 of harvest. The other problem was linked with the economic imbalances. The concentration of the USSR on heavy and military preparedness had resulted in a highly unbalanced economy, and neglect of the production of consumer goods had caused dire poverty (Kenez, 2006, p.195). All these negative factors were the reasons of the crisis in the Soviet agricultural sector. The main aim of Khrushchev was to remove all these negative factors from the agricultural sector of the USSR.

Nikita Khrushchev began the reorganization of agriculture with reduction, and later abolition of a number of taxes which bore too heavily not only on the personal plots of the country folk but also on the collective farms, and substantial increase in the procurement prices paid for agricultural produce all this increased the incomes of the collective farmers and created new economies incentives for the development of farming (Medvedev, 1983, p.188). Also Khrushchev increased investment in the countryside, replaced the system of compulsory fought conservatives, who wanted to maintain

greater autonomy (Sunny, 1998, p.407). The other main of the Khrushchev policy for the improvement situation in the agricultural sector was the colonization of the “virgin lands”, was an attempt to expand the cultivated land outside of the fertile chernozem fields which from the “black soil belt” in the South of Russia (Mazat, 2011, p.11). The next two or three year’s vast areas, especially in the Southern Siberia, South Ural, Central Asia and the Volga area were brought under cultivation. Tens of millions of idle land were cultivated and the virgin land areas became a new major grain-producing region and an important supply base of some of the most essential animal procedure (Podkolzin, 1968, p.225). During 1953-1954 year more than 350 000 young people went for the development virgin-land and turn these places into advanced economic regions.

The other reform in agricultural sector of the USSR was linked with the abolition of the State-owned Machinery-tractor stations (MTS) and sale of all agricultural equipment to the collective farms. This law was accepted in 31 March 1958 by the Supreme Soviet of the USSR. The privileged status of MTS was given to the kolkhozes and sovkhozes. The kolkhozes had to purchase machinery and then maintain it and buy replacements, spare parts, fuel, and to pay the employees of the MTS (Nove, 1992, p.348). This policy had more negative aspects than useful for the agricultural system of the USSR. The other reorganization in the agricultural was accepted in 1957 year and provided the amalgamations of small kolkhozes into giant ones and transformation kolkhozes into state farm (sovkhozes). It created conditions for a more efficient use of machinery in the fields, improved employment of agricultural specialist and so forth. After the fast wave of amalgamation there were 125 000 kolkhozes at the end of 1950, while in 1958 number of kolkhozes fell to 69 100 and in the 1980 year were only 36 000 kolkhozes in the country (Nove, 1992, p.346). The main reason of amalgamation of kolkhozes was a communist belief that large size equaled modernity and progress, for the Khrushchev, the large farms also seemed more socialist than the small ones (Kenez, 2006, p.199). From the point of view of the individual peasant, working on a state farm meant having a more reliable income, but losing the option of keeping a private plot (Kenez, 2006, p.199). The large state farms helped to amend the general situation in the agriculture and increased the agricultural output in the initial phases of reform.

Khrushchev also paid particular attention to animal husbandry. In 1957 year he began widely-proclaimed campaign under the slogan: “Within three of four years, catch up with the USA in production of meat per head of population (Medvedev, 1983, p.188). In the USSR annual meat production per head according to official figures was 38 kg, in contrast in the USA 94 kg (Khlevniuk, 2011, p.172). As the result of reform, in the end of 1959 the output of meat rose by 2.8 million tons, milk by 23.4 million tons (Podkolzin, 1968, p.227).

All these reforms improved the general situation of the Soviet Union in agricultural sector. Between 1953 and 1958 year farm output increased by 85 percent annual and by 51 percent overall, it was due to the opening of new lands and the introduction of incentives (Suny, 1998, p.407). Khrushchev’s agricultural reforms resulted in an increase in agricultural output of 74 percent, in ruble items, from 1953 to 1964 year (Suny, 1998, p.408). Also drastically increased the number of farm machinery equipments, between 1940 and 1958 the number of tractors jumped from 65 000 to 85 000, tractor drills from 186 000 to 262 000, tractor mowers from 76 500 to 122 000 (Podkolzin, 1968, p.244). Also increased the income of kolkhoz peasants, cash distribution rose from a total 12.4 to 47.8 milliard rubles, or farm 1.40 to 4.00 rubles per day, from 1952 to 1957 year, moreover increased the combined income in cash and kind from collective work from 47.5 billion in 1952 to 83.8 billion in 1957 year (Nove, 1992, p.346). In the first phase of the Khrushchev regime there was also the sharp rose in the number of livestock. On January 1941 year the country had owned 54.5 million head of cattle and on January 1959 year, the figure was 70.8 million, in those years the number of pigs increased from 27.5 to 48.5 million, the sheep from 79.9 to 129.6 million (Podkolzin, 1968, p.227). As the result of Khrushchev “meat and milk policy” the output of meat rose by 2.8, milk by 23.4 million ton and eggs by 133 000 million (Podkolzin, 1968, p.277). More detailed information about the initial phase of agricultural reform given in the table 22.

Table 22: Soviet Agricultural Performance, 1953-1958

Million	1953	1954	1955	1956	1957	1958
Total grain harvest	82.5	85.6	103.7	125.0	102.6	134.7
Virgin land areas	26.9	37.2	27.7	63.3	38.1	58.4
Potatoes	72.6	75.0	71.8	96.0	87.8	86.5
Cotton	3.9	4.2	3.9	4.3	4.2	4.4
Meat	5.8	6.3	6.3	6.6	7.4	7.7
Milk	36.5	38.1	43.0	49.1	54.8	58.9
Cows	24.3	25.2	26.4	27.7	29.0	31.4
Pigs	28.5	33.3	30.9	34.0	40.8	44.3
Sheep	94.3	99.8	99.0	103.3	108.2	120.2
Gross agricul. prod.(1957=100)	100	105	107	132	136	151

Source: Alec Nove, page 343, 1992

The increasing of the agricultural production in the USSR during the first period of Khrushchev era we can see in the table 22. Gross agricultural production of the country slightly rose from 100 in 1953 to 151 in 1958 year (Table 22).

Table 23: Total Area Sown and Labor Employer in the USSR.

	1953	1956	1965
Total area sown (million hectare)	18.2	35.3	97.43
Total labor employer (million)	2.6	2.9	8.6

Source: Alec Nove, page 345, 1992

The table 23 displays that the sown area and labor employer in the agriculture of the USSR rapidly increased from 1953 to 1965 year.

Despite of this increase in agriculture the second period of sixth five-year plan which covering the years between 1959-1965 years was very unsuccessful for the Soviet Economy. The reforms previously adopted by Khrushchev, turned into a disaster for the Soviet social and economic life. These reforms had more negative effects for the economy than positive.

The first failure appeared in the virgin lands. The first harvest during 1951-1958 was good, but the next year, a drought year, was disastrous poor in the virgin land (Kenez, 2010, p.197). Despite high level of investments, mechanization and agronomical research of “virgin land”, the increase of crop productivity only could be limited in the

USSR because of severe climatic features and natural conditions (Mazat, 2011, p.11). Also after a few years, as the result of ecological problems, the average yield declined, moreover as the result of incorrect agricultural technique, millions of hectares of land in the virgin-soil regions became subjected to erosion (Medvedev, 1983, p.189). It also was obviously that the grain produced in these lands was a few times more expensive than in the traditional grain producing areas, due to the high cost transportation. The Soviet government paid a very high price for the program of virgin land. However, in spite of this after a few year people began to return in European Russia, and substantial proportion of the newly cultivated lands had to be abandoned (Kenez, 2010, p.197).

The other negative sides of reforms was the hast abolition of the state owned machine tractor stations (MTS) and sale of all agricultural equipment to the collective farms which in most cases only worsened the financial position of the collective farm and collective farmers, while failing to improve the use made of agricultural equipment in USSR (Medvedev, 1983, p.188). This reform was carried out hurriedly, instead of taking a several years, without sufficient planning and preparation, in which the farms could have accumulated enough capital to purchase the necessary machinery the reform was completed within a single year (Kenez, 2010, p.198). It was the cause of deterioration of the financial condition of the farms. In the following years the kolkhozes were not in position to buy new machinery, and the overall output of the Soviet agricultural machine-making industry actually declined (Kenez, 2010, p.200).

The other big mistake of the Khrushchev in agricultural sector was its corn company. Khrushchev believed that the best animal feed was corn. He enthusiastically supported the expansion of the area devoted to corn growing from the beginning of his tenure (Kenez, 2010, p.200). Corn was planted in the North and North East region of the USSR in which the soil and climate were unsuitable, and had unfavorable consequences for Soviet agriculture. The planting of corn required much labor, time machinery, and the result were disappointing. The failure of crop programming was the big hit for the Soviet economy and agricultural sector.

Also the dire consequence for the Soviet agriculture was the widely-proclaimed campaign of Khrushchev under the slogan: “within three or four years, catch up with the

USA in production of meat per head of production”. The Soviet government organized large slaughter in the different areas of the country, for the achievement of the plan targets. In 1960 years this campaign turned into a disaster for the Soviet agriculture. As a result of large slaughter the livestock capita in the USSR sharply decreased to 65 percent, also the productions of meat in the country sharply fall from 150 thousand in 1959 year to around 30 thousand in 1960 year (www.albest.ru). The failure of this campaign was a very severe hit for the peasants, collective farms and soviet government.

So, failure of Khrushchev’s’ reform decreased the figures and output and also deepened the crisis in the Soviet agricultural sector in the early periods of the 1960s years. The production of grain in the USSR was 125.0 in 1956 year, 134.7 million tons of grain in 1958 year, 107.5 million tons in 1963, 152.1 million tons in 1964 and 120.5 million tons in 1965 year (USSR in Figures, 1967, p.67). The low figure of the Soviet grain production also was linked to the extremely unfavorable weather conditions in these years. The bad harvest of grain in 1963 year proved necessity to import large amount of wheat from capitalist countries (Nove, 1992, p.375). It was a heavy blow to the prestige of the USSR and socialist world. As the result of failure in crop and meat campaigns of Khrushchev the total livestock number also fell very rapidly, the numbers of cows fall from 1.9 million in 1958 to 0.9 million in 1960 (Khlevniuk, 2011, p.175). The agricultural failure was one of the contributing factors to Khrushchev’s ultimate political defeat.

3.2.2. Industrial and Transport System during Khrushchev Era

Now we will analyze the industrial sector of the USSR during the regime of Khrushchev. During the Khrushchev era, as before, the industrial sector of the economy performed better than the ever-troubled agricultural sector (Kenez, 2010, p.200). Despite of the serious problems, industrial growth of the Soviet Union continued to impress. In the period 1954-1965 large industrial enterprises and factories were built. About 5500 big industrial enterprises were built and commissioned. Among the major projects created in these years were the world’s biggest hydropower stations at Volgograd, Bratsk, Kremenchug and Kiev (Podkolzin, 1968, p.238). Also in 26 June 1954 the world’s first Nuclear Power Station Obninskaya NPS was opened. Big iron and steel

work were built in Transcaucasia, at Cherepovets and in Siberia. Among the biggest and the most important iron and steel enterprises commissioned during Khrushchev period were the West-Siberian iron and steel works, the Kack-Kanar concentrating mill in the Ural, the powerful concentrating mills at Novo-Kramatorsk, the Southern Combine NO 2 and the Central Ore-Dressing Mill at Krivoi Rog (Podkolzin, 1968, p.238). Soviet metallurgy had significant attainment. The USSR was the first in the world in a number of technical and production indicators. Engineering also had a special place in the soviet industrial production. Together with the metal working industry, engineering held first place in the volume of output, it employed approximately 33 percent of all industrial workers and accounts for about 25 percent of the industrial fixed assets, also during 1958-1965 the output of the engineering and metalworking industries increased by 140 percent (Podkolzin, 1968, p.239). Further, Khrushchev desired to speed growth of the relatively backward chemical industry. The program for acceleration of the development of chemical industry was adopted in May 1958 year and provided increasing investment in chemical industries (by about 100 000 million rubles) expanding the production of highly efficient machinery and apparatus, extending the scope of research, desiring, construction and works (Podkolzin, 1968, p.221). Also during 1958-1965 year the large chemical industry enterprises and factories were built such as: synthetic rubber plants in Omsk and Kuibyshev, Chernigov and Kirovakan semisynthetic and synthetic fibre factories, the Nevinnomyssk Mineral Fertilizer Factory, the Navoi and Cherkassy Chemical mills, the Gomel Superphosphal Factory and etc.

Khrushchev also intended to transform the fuel balance of the USSR, which was too heavily orientated on coal and neglected oil and natural gas, which was available in large quantities and very little used (Nove, 1992, p.363-363). In 1955 solid fuels accounted for 76.5 percent of the country's fuel balance, oil for 21.2 percent and gas for only 2.4 percent (Podkolzin, 1968, p.225). In the following years the share of gas in the industry sharply increased.

With very fast tempo grew the extractive industry. In the USSR in early 1965 year we produced 65-70 million tons of pig iron, 86-91 million tons of steel, 65-70 million rolled metal, 230-240 million tons of oil, 150 000 million cubic meters of gas,

596-609 million tons of coal and 500 000-520 000 million kwh of electricity (Podkolzin, 1968, p.234). The output of aluminum increased by 180-200 percent, refiner cooper by 90 percent, diamonds 1300 percent (Podkolzin, 1968, p.234).

Table 24: Output of the Soviet Industrial Sector, 1950-1965

	1950	1955	1958	1965
Coal (million tons)	261.1	389.9	493	578
Steel (million tons)	27.3	45.3	54.9	91.0
Oil (million tons)	37.9	70.8	113.2	242.9
Electricity (billion kWhs)	91.2	170.2	235	507
Tractors (thousand)	246.1	314.0	220	355
Mineral fertilizer (million ton)	5.5	9.7	12	31.6
Cotton fabrics (million sq. metre)	3.8	5.9	5.79	7.08
Wool fabrics (million sq. metre)	115.2	252.3	303	365
Housing(million sq. metre)	72.4	112.9	71.2	79.2
Working and employees (million)	40.4	56.0	66.5	76.9

Source: Alec Nove, page 349, 363, 1992

The table 24 displays information about the performance of Soviet industrial sector during 1950-1965 years. From the table we see how drastically increased the output of the Soviet industry during the Khrushchev era.

Light industry of the USSR during Khrushchev also changed rapidly. The gross output of light industry rose about 50 percent and the food industry increased its production by 70 percent (Podkolzin, 1968, p.234). In spite of this, the share of consumer goods in industry stayed very low, in 1960 year it was only 27.5 percent (Mazat, 2011, p.10).

Moreover, the output of all essential machines and equipment increased in the different industries. The producing of metal-cutting lathes, for instance rose from 138 000 in 1958 to 185 000 in 1965, looms from 14 400 to 24 300, electric locomotives from 344 to 641, motor cars from 511 100 to 616 400, tractors from 220 000 to 355 000 (USSR in Figures, 1967, p.53-54). All these figures above displayed the growth of industrial production of the USSR during Khrushchev era. During the 1958-1965 year the volume of industrial production increased by 84 percent instead of the planned 80 percent, the fixed production assets increased by 90 percent (Podkolzin, 1968, p.236).

The table 25 shows how sharply increased the Gross Industrial output, National Income and the level of producer and consumer goods between 1958-1965 years.

Table 25: Industrial Growth, 1950-1965

	1958	1965 (plan)	1965(actual)	Average annual growth %
National Income	100	162-165	158	7.2-7.4
Gross industrial output	100	180	184	8.6
Producers good	100	182-185	196	-
Consumers good	100	162-165	160	-

Source: Alec Nove, page 363, 1992

Despite of the intensive growth, the industrial sector of the USSR also had many problems during Khrushchev regime. There were the following negative factors: the output of some items in the chemical industry, engineering and the fuel industry fell short of target, the rate of growth of production and labor productivity somewhat slowed down in the last years of the seven-year period; the efficiency of capital investments dropped, and there were delays in starting new enterprises (Podkolzin, 1968, p.241). One of the main causes of the failure was the reform of industrial management. In 1957 year Nikita Khrushchev introduced a new reform, which abolished the economic ministers and instead of that created 105 local economic councils, which called sovnarkhozy. Before the reform, the system of industrial management had been arranged in the vertical upright, namely each industry had its own ministry. After the reform each sovnarkhoz was in general command of its enterprise, moreover the sovnarkhoz was appointed by and responsible to the republican Councils of Ministry, with the republican Gosplan acting as Coordinators in the four multi-sovnarkhoz republics (Nove, 1992, p.353). The idea of creating the sovnarkhoz appeared because the ministerial system hindered cooperation in the field and therefore the main aim of the reforms was the establishment links between the enterprises in the regions. But as the result, the reform had broken ties within industries. It was the main causes which ruined the reform of sovnarkhozy. Another problem of industry was the soaring expenses of the space and missile programs and the sharp rise in military spending by 30 percent in 1961 year,

which also represented a heavy call on scarce skills and specialist equipment (Nove, 1992, p.371).

During the period of Nikita Khrushchev very impressive performance had been showed by the transport system of the USSR. As the result of intensive construction the total length of railways increased to 112 800 km and the volume of rail freightage also increased to 130 000 million in 1958 (Podkolzin, 1968, p.222). In the last year of 1950s the USSR surpassed the USA in the volume of rail freightage and become the first in the world. The length of electrified railways in the Soviet Union also increased from 20 000 in 1958 to 79 700 km in 1965 year, moreover, freight turnover during 1958-1965 rose from 1 302 000 million to 1 905 000 million ton kilometer and freightage from 1 616 000 to 2 415 300 tons (Podkolzin, 1968, p.240). With very fast tempo developed also the other branches of transport, such as: sea, river, oil pipeline and air transport. In these years the air transport of the USSR took a big step forward, Soviet civil aviation received many giant passenger jets for its domestic and international airlines.

3.2.3. Financial System

Along with other sectors many changes and innovations had happened in the financial system of the USSR. The main aim of Khrushchev policy was the improvement of the living standards of people in the USSR, and therefore the Soviet authority systematic increased the salaries of the workers and peasants. On 1 January 1957 year the wages of workers and employees in the low-paid brackets were raised on an average by 33 percent or by 8000 million rubles on an annual basis (Podkolzin, 1968, p.229). Moreover, the average wages in the USSR growth from 715 rubles a month in 1955 year to 778 rubles in 1958, also by a decree of 8 September 1956 there was adopted a level of minimum wage in the USSR, which consisted 300 rubles per month in towns and 270 rubles in rural areas (Nove, 1992, p.354). Also the average annual wages of factory and office workers rose from 780 rubles in 1958 to 960 rubles in 1965 (Podkolzin, 1968, p.248). Khrushchev improved the standard of living of industrial workers, average wages increased from 670 rubles a month per workers and employees in 1952 to 910 rubles in 1964 (Sunny,1998, p.408). The allowance and benefits received by the population from the public consumption funds (public health, social maintenance

etc) increased from 104 to 128 rubles (Podkolzin, 1968, p.248). In 1964 and 1965 the wages of over 20 million teachers, doctors and people employed in other public service branches were raised by 23-25 percent (Podkolzin, 1968, p.248). The general picture in the wages system during Khrushchev was standard and the wages of the public significantly rose during this period.

The other change in the financial system of the USSR was the monetary reform of 1961 year. In 1961, possibly inspired by de Gaulle's "heavy finance" the Soviet government decided to multiply the internal value of the ruble by ten (Nove, 1992, p.357). New notes were exchanged on a 1:10 basis, but all prices and wages altered proportionate 1000 old rubles became 100 new rubles, also the opportunity was taken to devalue the external value of the ruble while seeming to increase in the rate of 4 rubles=1\$ was altered to 0.90 rubles=1\$, i.e. by much less than internal incomes and prices (Nove, 1992, p.357). New Soviet money had possessed a gold backing. In the gold content of the ruble the Soviet government made a grave mistake. Instead of obtaining the gold content equal to 2.22168 gram of gold, the new Soviet ruble got only 0.987412 gram of gold (www.vedamost.info). Therefore, gold content of the ruble increased not 10, but only 2.25 times, and according to purchasing power of the ruble toward to imported goods also reduced at the same time (www.vedamost.info). Consequences of this reform were disastrous for the Soviet economy. The price of import commodities in the USSR sharply increased. Furthermore, the prices of products in the market drastically increased. It happened because as the result of underestimation of the ruble speculators appeared in the market, which bought products from the stores for purchasers' prices and sold in the market at very high price. As a result, shortage of products began in the Soviet stores, along with dramatical growth of prices in the market. For example, in 1960 the price of potatoes in stores was 10 cents (kopeck) per kilogram, but in the market this price was 33 cent (kopeck) per kilogram (www.vedamost.info). As the result, unrest and demonstrations began in many cities and towns of the USSR. Only Kosygin's reform in the following years helped to amend the situation in the Soviet market system.

However, it's very interesting, why did the Soviet government begin the monetary reform which had so dire consequences for the Soviet economy? The answer for this question lies in the oil sector of the USSR. After the war, in the Soviet Union dramatically rose the extraction of oil from 19 436 million ton in 1945 to 148 million ton in 1960 year (www.vedamost.info). The process of large-scale export of the oil had also started. The old exchange rate of the ruble in this situation was very unprofitable for the export. For the increasing the ruble profitability the Soviet government decided strengthened the position of the Soviet money. This monetary reform of Khrushchev brought two main irreparable harms to the Soviet economy. First, reform increased dependence of the Soviet economy from the oil export; second chronic deficit began in the Soviet market, which was the reason of the distribution of corruption in trade sector of the country. These two woes became subsequently one of the main factors which eventually ruined the USSR.

3.2.4. Social Sphere of the USSR during Khrushchev Era

Despite of the price increase and crisis in financial and agricultural system, the Soviet government with Khrushchev made a great contribution for improving the living standards and cultural level of the Soviet public. Each year the government allocated bigger and bigger sums for providing people with free education and medical service, for the maintenance of kindergartens and nurseries, for social insurance, workers leisure and other social and cultural services (Podkolzin, 1968, p.248). The government expended 21 500 million rubles for this purpose in 1958 and 41 500 rubles, or almost twice as much in 1965 year (Podkolzin, 1968, p.248). The main places around these reforms took up the education. All students were taught for eight years of compulsory schooling after which they would either go to work, to a special technical school or to a school that also offered vocational training (Suny, 1998, p.409). The number of people studying in the USSR increased from 50 million in 1958 year to 71 million in 1965 year, also secondary school enrolments totaled 48 million (Podkolzin, 1968, p.249).

Table 26: Number of People and Teachers in the USSR

	1940-41	1955-56	1958-59	1965-66
Total teachers (thousand)	1 237	1 733	1 900	2 497
Total pupil (thousand)	35 528	30 070	-	48 245
Pupils (15-18 age)	2 558	6 159	4 655	12 682

Source: Alec Nove, page 360, 1992

The table 26 shows information about the total number of people and teachers in the USSR educational system. From the table we see that the number of pupils and teachers slightly increase from 1940 to 1966.

In 1957 year the CPSU Central Committee adopted a decision to expand housing construction in the USSR. The government planned to build 215 million square meters of floor space by the end of 1960 year, moreover at the same time the decision envisaged the building of another 113 millions square meters of floor space by the population with government credit (Podkolzin, 1968, p.230). The housing program was successfully fulfilled in the middle of the 1960s years. Between 1958-1965 years nearly 17 million apartments and detached houses were constructed in the USSR, in other words, the total floor space in these years had increased by about 40 percent over 1958 (Podkolzin, 1968, p.248).

The following step for the improving the living standards of the Soviet people were made in the working sector. The Soviet authority began steadily reducing the working day and hour in a communist society. Marx said, society's wealth would be judged not only by the length of working time but by the amount of free time people would enjoy (Podkolzin, 1968, p.248). In March, 1956, the working day proceeding days-off and holidays were reduced by two hours, on July 1956 young people of 16 to 18 years of age were transferred to a six-hour working day and women granted lager maternity leave (Podkolzin, 1968, p.229). In 1960 year all factory and office workers were transited to six or seven hour working days.

Moreover, such forms of arts as cinema, theatre, sport developed very rapidly. During 1958-1965 the national annual income of the country increased to 5.7 percent, in

1965 was 5.3 percent above 1958, also the real income per capita rose to 3.6 percent annually (Podkolzin, 1968, p.256).

The negatively influence for the living standard of the Soviet people during this period was the disaster in agricultural sector.

On October 1964 year Nikita Khrushchev was dismissed from its post. We can't say that the policies and reforms of Khrushchev completely were awful and wrong. As we have already mentioned in the previous chapter they had positive and negative sides. Khrushchev with the policy of Destalinization could to release the Soviet public from Stalinist terror and dictatorship. During this period the Soviet industry achieved new heights. The Soviet Union launched the first space satellite, called "sputnik" in October 1957 and later in April 1961 the first human in space. Thousands of factories, enterprises were built, appeared new types of production. There was strong improve in cultural level of the people, the educational system and labor wages of the Soviet people increased very fast tempo.

But in the other hand the reforms of Khrushchev in agricultural sector and in the monetary system of the USSR were completely failure and were the main cause of Khrushchev resignation. These reforms strengthened and deepened the economic crisis in the country, decreased the rate of economic growth and were severe blow to the prestige of Khrushchev and the Soviet Union.

3.3. Brezhnevism: Breznev Era in the Soviet Economy

After Khrushchev's resignation in 1964 year Leonid Breznev became the general secretary of the CPSU Central Committee of the USSR. In the Soviet economy began the era of Breznev. The period of board of Breznev had taken a very long time in the Soviet history from 1964 to 1982 year. The time of his regime we can divide into two phases. The first phase from 1964 to 1972 characterized as period of "developed socialism", the second phase after 1972 year was the period of "stagnation". The historian characterized the style of board of Breznev as conservatism. He possessed neither the political nor the vision of the perspective development of economy. Breznev

also was a weak and characterless man and lacked any distinct intellectual capacities (Medvedev, 1983, p.191).

Brezhnev received from Khrushchev weakened and depleted economy and because the new leader thought that the country needs a stable policy both in the political and economic spheres. Therefore Brezhnev began the process of the clotting of Khrushchev's reforms which very negatively impacted to the economic and social life of the country. The Soviet economy lost its effectiveness; there was decline in industrial output per ruble of fixed assets, a disappointing rate of growth in labor productivity, lagged agricultural development and etc. All this had led to the economic reforms of 1965-1968 years. These reforms were designed by the prime minister of the USSR Alexei Kosygin and were named as "Kosygin's reforms". The main essence of the reform was the measures aimed to strengthen the economic levels, increase of the autonomy of enterprises and organizations and update methods of centralized planning.

3.3.1. Developed Socialism: Kosygin Reforms

Kosygin reforms started from the management system of the USSR. The reform began with the liquidation of the sovnarkhozes and recovery of the industrial ministers, the number of which steadily increased and reached to 100 unions and 800 republican in the beginning of the 1980s years (Samohin, 2001, p.296). The Soviet authority eliminated the agricultural TPAs, they were reconstituted to the normal district administrative organs, reappeared the Ministry of Agriculture with its former powers, also was abandoned the division of the party between industrial and agricultural parts, its unity was restored (Nove, 1992, p.378). Also was restored and strengthened the four powerful Committee-Gosplan (State Planning Commission), Gossnab (State Committee on Material Supplies), Goskomtsen (State Committee of Prices) and Goscomittee (State Committee on Science and Technology). Namely, these Committees concentrated in their hands the bulk of the economic management of the national economy. Moreover, in Brezhnev era the Politburo continued to evolve. The foreign minister, the head of the KGB, the minister of defense and of course the premier, who stood at the top of the ministerial structure, were now all members of the Politburo (Kenez, 2010, p.216).

The other side of the “Kosygin reforms” was aimed to the industrial sector of the USSR. The decree about the reform in the industry was adopted in September 1965 year. The first step of the reforms was the extension the economic independence and initiative of enterprises and associations. Decree declared about the increasing managerial powers of the enterprises, reducing considerably the number of compulsory indicators “passed down” from the centre (Nove, 1992, p.382). The number of plan’s targets in industry sharply decreased from 30 to 9. Specifically the index of gross output, previously the principal measures of enterprise success, were replaced by the index of volume sold, moreover, in order to orientate enterprises toward raising efficiency, they also began to use the profit index (Saba, 1974, p.40). Also according to the “reform” only volume of sales, basic assortment of product, total size of wage fund, profit and profitability (rate on capital), and payments into and allocations from the state budget were still to be centrally determined, all other factors including productivity rates, number of personal and level of average wages were now to be set by the enterprise management according to its needs (Saba, 1974, p.40). Moreover, under the new system a large share of profit would stay at the enterprise level for the material incentives of the production. Profit would go into a production development fund out of which management could set up incentive and technological development programs (Saba, 1974, p.40). Enterprises now were interested not only in production but also in selling of their production. All these reorganizations increased the incentive of employees and leadership of the enterprises.

In March 1966 year CPSU of the USSR proclaimed the transfer from administrative to economic measures of management of the national economy. The enterprises were introduced with a system of *khoshrashot* (accounting). Kosygin announced that a sweeping revision of the Soviet price structure would be undertaken with purpose of putting as many firms as possible on a strict cost-accounting (*khoshrashot*) basis: that is on the basis of maximizing profit (Saba, 1974, p.41). This reform was put into effects slowly: in January 19, 1966 year on the cost-accounting system moved the first 704 enterprises and factories, but in the end of the eight five-year plan nearly 90 per cent of all enterprises waked in the principle of cost-accounting (*khoshrashot*) (Table 27). The table 27 shows detail information about the transfer of

industrial enterprises to cost-accounting conditions. The number of enterprises grew from 704 in 1966 to 44 300 in 1970 year (Table 27).

Table 27: Khozrashot Process in the Soviet Economy

Year	Amount of enterprises	% enterprises	Output	Employs	Profit
1966	704	1	8	8	16
1967	7 248	15	37	32	50
1968	26 850	54	72	71	81
1969	36 049	72	84	81	91
1970	44 300	90	92	-	95

Source: Paul Saba, page 42, 1974

The initial period of Brezjneve regime was successful for the Soviet industrial sector. Kosygin reforms in the first phase of Brezjneve period very positively influenced to the economy. During the eight five-year plan (1966-1970) around 1900 large enterprises were built. Industrial outputs of the country increased by 50%, mechanical engineering by 74%, radio electronics and petro chemistry grew by 78% (www.ido.rudn.ru). The world's largest Krasnoyarsk GES and Slavic TPD were built, Karaganda and Western Siberia iron and still works were constructed. With the participation of Italian firms in Togliatti was built Volga Automobile Plant which produced annually about 660 000 of cars.

Kosygin reforms also touched the agricultural sector of the Soviet Union. The agricultural sector of the USSR was in a very deep crisis since Stalin period. In March 1965 year in the March plenum of the Central Committee of the CPSU, program of accelerated development of agricultural sector of the Soviet Union was adopted. The first step of the Soviet authorities was the increasing of investment in agricultural sector of the USSR. Investment in agriculture, both state and collective farm, rose substantially from 1965 to 1975 years (Table 28).

Table 28: Investment in the Agriculture of the USSR, 1961-1975 (in million rubles)

	1961-1965	1966-1970	1971-1975
Total investment	247.6	353.8	501.6
of which agriculture	48.6	82.2	131.4
percent of total	19.6	23.2	26.2

Source: Alec Nove, page 379, 1992

The table 28 shows that the share of capital investment in agriculture grew steadily from the early of 1950s to the early of 1980s years. Investment in agriculture increased markedly during the 1970s, in those ten years agriculture received nearly 230 billion rubles of investment more than in all the previous five year plan periods put together (Medvedev, 1983, p.194).

The other main change in agriculture was the written of the state debts from the kolkhozes and sovkhozes. Also in 1960-1970s years the Soviet authority was adopted a large-scale program of amelioration and construction of irrigations channels in the Soviet Union. During this year they put into operations Great Stavropol Channel, North Crimean Channel, Karakum Channel and etc. The table 29 shows information about the USSR investment in soil amelioration in 1971-1985 years.

Table 29: USSR Investment in Soil Amelioration in 1971-1985

Expenditures	1971-1975	1976-1980	1981-1985
Capital expenditures for soil amelioration activities (billions of rubles)	29.6	40.0	43.9
Capital expenditures for soil amelioration activities (percent of GDP)	1.3	1.4	1.2

Source: Y.Gaidar, page 76, 2007

From the table 29 we can see that the expenditures for soil amelioration in the USSR slightly rose from 1971 to 1985 year. Moreover, the state sold to the collective farms and supplied the state farms with 1 790 000 tractors, 1 100 000 lorries, 550 000 grain combines and other agricultural machineries (Podkolzin, 1968, p.254). All these measures increased the labor productivity in agriculture by 40-45 percent, lowered production costs and ensured higher profitability (Podkolzin, 1968, p.254).

Reforms of Kosygin were successful for the Soviet agricultural sector in the initial period. From 1966 to 1970 the total volume of agricultural output was to be annually increased by an average 25 percent (Podkolzin, 1968, p.253). Output of the agricultural sector during the year of Kosygin reforms increased to 171%, growth of gross agricultural output increased to 1.7 percent (Latov, 2010, p.1). The table 30 displays the good performance of the Soviet agricultural sector during Brezjneve period.

Table 30: Soviet Agricultural Performance, 1961-1980

	1961-1965	1966-1970	1971-1975	1976-1980
Gross agricultural output (million of rubles)	66.3	80.5	91.0	99.9
Grain harvest(million tons)	130.3	167.6	181.6	205
Cotton (million tons)	4.9	6.1	7.7	8.9
Potatoes (million tons)	81.6	84.8	89.6	84
Meat(million tons)	9.3	11.6	14.0	14.8
Milk (million tons)	64.7	80.6	87.4	92.6

Source: Alec Nove, page 379, 1992

From the table we distinctly see that the agricultural figures of the USSR slightly increased during the 1961-1980 years. But after 1971-1975 the growth level of agricultural products began to decrease.

3.3.2. Stagnation in the Soviet Economy

However, after the 1972 year the problems and stagnation had started in the Soviet economy. The period of “developed socialism” finished and the long era of “stagnation” had begun in the Soviet economy. The table 31 displays the beginning of the period of Stagnation in the Soviet economy.

Table 31: GNP, Inputs and Productivity 1950-80 (annual rate of growth)

	1950-1960	1960-1970	1970-1975	1975-1980
Gross national products	5.7	5.2	3.7	2.6
Combined inputs	4.0	3.7	3.7	3.0
Labor (man hours)	1.2	1.7	1.7	1.2
Employment	1.6	2.1	1.5	1.2
Capital	9.5	8.0	7.9	6.8
Land	3.3	0.2	1.0	-0.1
Total factor productivity	1.6	1.5	0.0	-0.4

GNP per capita	3.9	3.9	2.7	1.8
Population	1.8	1.3	0.9	0.8

Source: Guf Ofer, page 18, 1988

The main economic figures of the economy began slightly falling from the beginning of 1970th years. Also in the Soviet planning system began the first cases of unfulfillment of the plan. The table 32 shows the unfulfillment of the plan in the USSR in the period of Stagnation.

Table 32: Plans of Five-year in the Period of Stagnation

	1966-1970	1971-1975	1976-1980	1981-1985
GNP				
Plan	6.5-7.0	5.8	4.0	4.0
Actual	5.0	3.1	1.8	1.8
Industry				
Plan	8.2	8.0	4.9	4.9
Actual	6.3	5.4	1.8	1.8
Agriculture				
Plan	5.5	3.7	5.0	5.0
Actual	3.7	-6	2.1	2.1

Source: Handbook of Economic Statistics, page 62, 1988

From the table 32 we see that the plan of the main sectors of economy was unfulfilled during the long period of Brezjneva era from 1966 to 1985 years. After the 1970s years this process began to accelerate. The main failure of the Kosygin reforms was that these reforms were itself put into operation by bureaucratic methods and its effect on the country's economy for start weakening and weakening and had almost vanished by 1970s years (Medvedev, 1983, page 192).

However it's very interesting, why had the Soviet economic system started to weaken and fall into stagnation? Which negative factors increased and deepened crisis and stagnation in the USSR? The historian and economists explained it with the several reasons. The first reason of the Soviet economic stagnation during the second phase of Brezjneva regime (1972-1982) laid in the absence of the scientific-technical progress. For example, Western countries carried out promotion in such areas as electronization and biotechnolization of economic activity, the use of nuclear power engineering,

comprehensive automation of production and management and etc. In contrast, in the USSR the developments of scientific-technical policy did not take into account all trends of the scientific-technical revolution. Many achievements of the scientific-technical progress have been directed to military industrial sector. Weakness and shortage of the scientific-technology progress in production very negatively affected the economy of the country and slowed the development of all branches of the production. The second cause of stagnancy in the economy was the development of the Soviet economy on the extensive basis, characterized with involvement in the production of additional material and labor resources. The Soviet extensive model manifested on the following framework: 1) aiming for the increase of the volume in the 1970s years the USSR could surpassed USA on still smelting, on mining of oil, gas and coal, 2) the economy developed on account of increasing the number of workers, 3) the economy of the country was monopolized, where was completely absent competition, 4) availability of megalomania i.e the building of large and expensive enterprises which had not always matched expectations. As the result of deeply inculcation of extensive growth model in the early of the 1970th years the USSR was suffering of labor scarcity and of the depletion of natural resources at a low cost that existed during the earlier phase (Mazat, 2011, p.14). For example, if we compare the USSR with the USA we can see that the end of the 1970s the Soviet Union had outstripped the USA in production of coal, iron, cement, diesel locomotives, tractors, steel tubes, metal-cutting, machine tools, industrial timber, but was behind the USA in productivity of labor and in gross national products, electronics, instrument-making, oil-technology, the production of programme-controlled machine (Medvedev, 1983, p.194). All these factors confirm the extensive structure of the USSR economy. Third main reason of the failure in the economy was linked with the burden of the military industry. The period between 1960-1970 years were the most glowing moments of the Cold War. The USSR spent the huge money to the Military Industrial Complex. The military load led to a great disproportion in the Soviet economy.

3.3.3. Intensification Process in the Soviet Economy

By the 1970s Soviet leaderships identified the problem already and tried to move to a regime of intensive accumulation with minimization of the cost and increase of “efficiency” (CIA, 1986, p.3). Along with this for the improvement of the conditions of the economy the Soviet authorities decided to move the economy of the country to intensive development. Intensification constitutes a process of production development that is based on using qualitative growth factors, introducing new technology and improving its structure (Abalkin, 1987, p.47). The components of intensification (scientific and technological progress), the saving of resources, structural changes are factors that boost efficiency. The Soviet Union “efficiency” was one of the main problems of the economy. Almost in all sectors of the Soviet economy, every unit of output used to demand more resources to be produced than in Western industrialized countries, for example, the average quantity of raw materials and energy necessary to produce the same final good were, respectively, 1.6 and 2.1 times greater than in the USA in the 1970s years (Gaidar, 2007, p.75.). The situation was not due to an intrinsic “inefficiency” of the central planning system, actually, the “efficiency” of installed productive capacity in the USSR was affected by the militarization of the economy, by the deterioration of the “discipline” of Soviet workers and by the extreme climatic conditions in many parts of the country (Mazat, 2011, p.12).

The process of intensification began rapidly to be implemented in the industrial sector of the country. The USSR in the last year of 1970s had created an enormous Territorial Production Complexes (TPC). For the increasing power of the enterprises before the ministers was created industrial, production and scientific-production association. The same process was implemented also in the agricultural sector of the USSR. The main directions of the intensification in the agricultural sector were: 1) mechanization and electrification of the main production process in farming and cattle-breeding, 2) development of the process of specialization the agricultural enterprises, 3) increase of the fertility of the soil on account of chemicalization and land reclamation (Gushin, 1991, p.4). Also to stimulate production r agro-industrial association RAPO

was created in 1982 yea. Along with kolkhozes and sovkhozes they also included agrochemical, motor transport, technical repair, procurement and supply enterprises.

Despite of all these reorganizations the process of shift of the Soviet economy to a regime of intensive accumulation failed. This failure was due to the inability to change the attitude toward retirement and replacement of the installed fixed capital, the difficulty in the corporation of technological innovation in civilian industry, the militarization of the economy, the deterioration of the “discipline” of Soviet workers and the high cost of the industrialization in Siberia (Mazat, 2011, p.15). The first reason of failed intensification was the ageing of installed fixed capital. The service rate of fixed capital in the Soviet Union was higher than in Western countries and it is explained by very low retirement rate due to the focus on capital expansion, rather than the improvement of installed machinery and equipment (Mazat, 2011, p.16). So even the USSR leadership attempt to move to an intensive regime of accumulation, the policies toward an acceleration of the retirement and the replacement of fixed capital failed, so the age of the capital stock rose (Table 34) and the fixed capital productivity decreased sharply (Table 33) (Mazat, 2011, p.16).

Table 33: Rates of Change of Real Gross Product, Factor Inputs and Productivity in the USSR (average annual percentage)

Period	Real Gross Product	Factor inputs			Factor productivities		
		Total	Labor	Fixed Capital	Total	Labor	Fixed Capital
1961-73	5.0	4.3	1.8	8.1	0.7	3.1	-2.9
1974-78	3.4	3.8	1.4	7.4	-0.3	2.0	-3.7
1979-85	2.1	3.1	0.8	6.4	-1.0	1.2	-4.1

Source: Numa Mazat, page 16, 2011

Table 33 displays that the fixed capital productivity decreased from -2.9 percent in 1961-1973 to -4.1 in 1979-1985 years. Moreover, from the table 34 we can see that the average age of equipments slightly increased from 7.8 years in 1970 to 9.9 years in 1985 and the average service life also grew from 24 years in 1970 to 27.9 years in 1985.

Table 34: Age Characteristic of Equipment in the Soviet Industry

Years	1970	1980	1985
Share of equipment with average of			
less than 5 year	41.1	36.0	33.7
6-10 years	29.9	28.9	28.5
11-20 years	20.9	24.8	25.5
Over 20 years	7.8	10.3	12.3
Average age of equipment, years	8.3	9.3	9.9
Average service life, years	24	26.9	27.9
Accumulated depreciation as a % of gross (initial) value of capital stock	26	36	41

Source: Numa Mazat, page 17, 2011

Another factor explaining the acceleration of the decrease of fixed capital productivity was the fall of capacity utilization fell, mainly because of labor scarcity (Mazat, 2011, p.17). The labor scarcity was one of the main problems of the Soviet government, especially in agricultural sector. As the result of industrialization and militarization of the Soviet economy the share of labor force in agricultural sector sharply fall in the 1980s years. In 1950, 48 % of Soviet labor force worked in the agricultural sector whereas, in 1970, the proportion was only 25% (Mazat, 2011, p.9). The other reason of the reduction of labor force in the agricultural sector was the growth of level of urbanization in the country. The table 35 shows the increase of urban population of the USSR during the 1956-1990 years.

Table 35: Urban Population of the USSR, 1956-1990

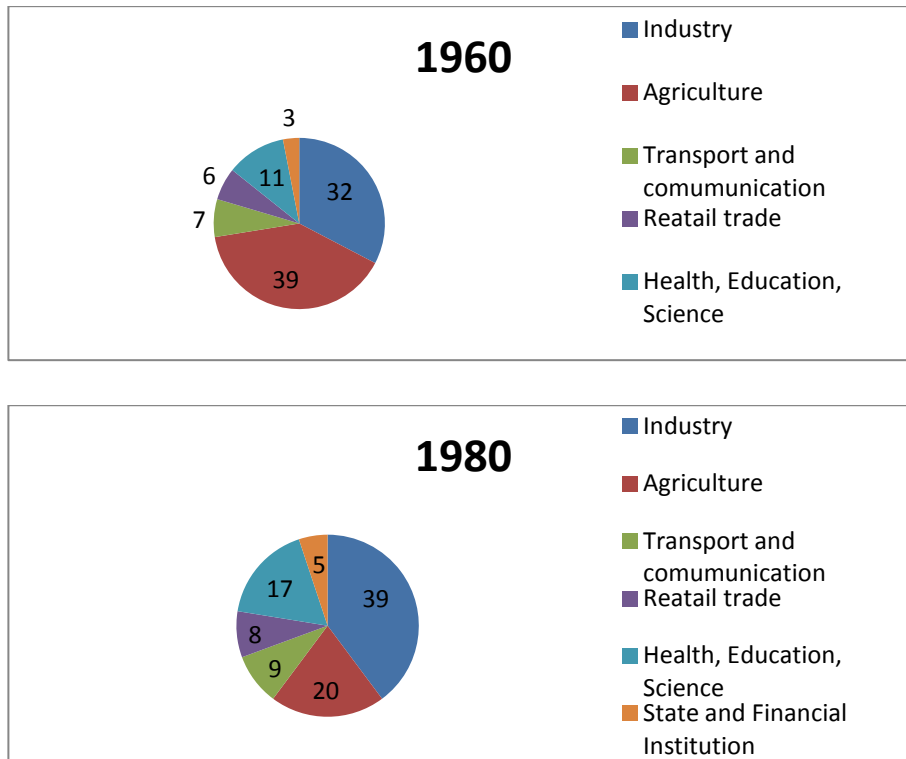
Year	USSR urban population (in millions)	Share of urban population in the USSR (percent)
1956	82.2	45.0
1970	136.0	56.0
1975	151.9	60.0
1980	167.3	63.0
1985	180.1	65.2
1990	190.6	66.0

Source: Y. Gaidar, page 88, 2007

Above stated mainly were the reasons for low productivity and failure of the Soviet agricultural sector. This problem was dealt with in a ridiculously inefficient way,

time, and again fall, schools, universities and even scientific institutions sent people to harvest grain (Kenez, 2010, p.220). The figure 1 shows the situation in the Soviet labor force between 1950-1985 years.

Figure 1: Evolution of the Distribution of Soviet Labor Force (1950-1985)



Source: Numa Mazat, page 9, 2011

The figure displays how slightly decreased the share of labor force in the Soviet agricultural sector between 1960-1980 years.

The limited incorporation of technological innovations in civilian industry was another problem of the Soviet system and an obstacle to the transition toward an intensive regime of accumulation (Mazat, 2011, p.17). It was due to the militarization of the economy. Many scientific resources, innovations, general scientific break thoughts investment were in the military sector of the USSR. This help to explain why the Soviet technology in civilian sector usually lagged behind that of the West.

The main place in the failure of the Soviet intensification played the process of “relaxation discipline”. The full employment and progressively more open political system had negatively effects on both the discipline and the economic mobilization (Mazat, 2011, p.18). The process of “relaxation of discipline” began in the period of Brezjnef and intensified all along the Brezjnef era. The other cause of hindering the intensification of the Soviet regime of accumulation was the process of industrialization of Siberia. Between 1960s and 1970s years in Siberia region of the USSR were launched the enormous civil and military industrial projects. But extreme climatic conditions in Siberia and particularly the cold represented a huge loss in terms of labor and fixed capital productivity compared to the situation in temperate climate regions (Mazat, 2011, p.19).

So, the attempt of Soviet leadership to move to an intensive regime of accumulation failed and the situation in the economy of the USSR continued to deteriorate.

Table 36: Soviet Industrial Sector, 1965-1980

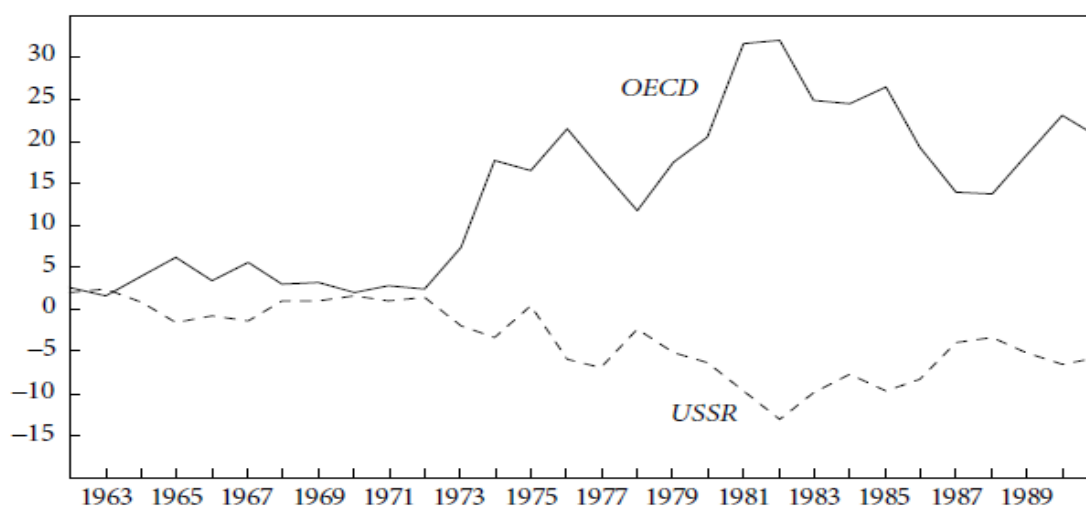
	1965	1970	1975	1980
National income (1965=100)	100	141	128	120
Industrial production (1965=100)	100	150	143	124
Electricity (milliard kWhs)	507	740	1 039	1 295
Oil (million tons)	243	353	491	603
Coal (million tons)	578	624	701	716
Steel (million tons)	91	116	141	147
Fertilizer (million tons)	31	55	90.2	104

Source: Alec Nove, page 386, 1992

From the table 36 we can see how slightly decreased the figures of national income and industrial production of the USSR after the 1970 years. The great difficulties arose in the power and fuel industries. After 1979 year the output of coal and production of iron and steel began to decrease (Medvedev, 1983, p.156). The situation was much worse in the agricultural sector of the USSR. Soviet demand for food and especially meat were rising much faster than local supply, because of low agricultural production and stagnation in the production of grain (Mazat, 2011, p.20). Labor work scarcity, depletion of land as the result of chemicalization, severe climatic features decreased the

productivity and development of the Soviet agricultural sector. According to plan, the average annual production grain was to have amounted to not less than 230 million tons, but in fact it amounted in 1979-82 to no more than 180 million tons (Medvedev, 1983, p.196). Moreover, the gross output of agriculture decreased rapidly, in the year of nine five-year plan (1971-75) it consisted 13 percent of gross national output, and in the year of tenth five-year plan (1981-85) only 6 percent (www.ido.rudn.ru). As the result of crisis and shortage of agricultural and consumer production in the USSR in 1977 year the country introduced food rationing or talons for the some foodstuffs. The only way for the Soviet government in this situation was to import these agricultural goods and it drove the USSR to become the largest importer of cereals in the world in the 1970s (Mazat, 2011, p.20). Moreover, the balance of trade for grain and agricultural product worsened dramatically in the beginning of the 1970s. Import of grain and others agricultural products fluctuated annually because of weather conditions, but grew steadily in the long term (Gaidar, 2007, p.95). From the figure 2 we can see how the import of grain increased in the USSR from the OECD countries after 1972 year. After 1977 year the figures of grain import had changed between 15-20 billions of dollars (Figure 2).

Figure 2: Balance of Trade for Grain in the USSR and Member Countries of the Organization for Economic Cooperation and Development (OECD) (billion of year 2000 dollars).



Source: Y. Gaidar, page 97, 2007

Soviet purchase of grain was 2.2 million tons in 1970 year, had grown to 29.4 million ton in 1982 and reached its highest point in 1984, 46 million tons (Gaidar, 2007, p.95). The USSR was forced to make long-term contract on grain deliveries, guaranteeing the annual purchase of no less than 9 million tons from the USA, 5 million from Canada, 4 million from Argentina and 1.5 million tons from China (Gaidar, 2007, p.95).

Table 37: Grain Imported by the USSR

Year	USA	Japan	Italy	W.Germany	Egypt	China
1970	2.2	15.8	6.7	8.1	1.3	5.4
1975	15.9	19.0	7.2	6.8	3.8	3.7
1980	29.4	24.7	7.8	5.2	6.1	13.4
1983	33.9	25.5	6.4	4.5	8.0	13.4
1984	46.0	27.2	7.5	4.8	8.7	10.4
1985	45.6	26.9	7.5	7.0	8.9	6.0

Source: Y. Gaidar, page 98, 2007

The table 37 shows information about the import of grain in the USSR from the other countries. From the table 36 we can see how the import of the grain in the USSR slightly grew during the 1970-1985 years. The biggest importers of the grain to the USSR were USA, China and Japan.

Table 38: Grain Exported by Russia in the Early Twentieth Century and Grain Imported by the USSR in the Late Twentieth Century

Export/Import	Share (percent)	Global ranking
Global grain export 1907-1913	45.0	1
Global grain import 1980-1990	16.4	1

Source: Y.Gaidar, page 97, 2007

Table 38 displays comparative information about the Russian export during the pre-soviet time and import during the 1980s years. The Soviet Union turned from the largest exporter of the grain in 1907-1913 to the largest importer of the grain in 1980s. In the 1980th, the Soviet Union bought more than 15 percent of the world's imported grain. The USSR had also begun to import technology, electronics and fire chemicals from the advanced industrial Western countries (Mazat, 2011, p.21). Technological transfers were aimed to eliminate shortages of specific products, the formation of new

industries, the modernization of old ones and the rising of productivity. The one of the main aims of technological import was also decision of problem of the Soviet technological progress in the civilian industry. The table 39 displays how high the level of Soviet imports was from developed socialist countries during 1961-1985 years. Import of machinery and equipment grew from 464 million dollars in 1961 to 6 524 million dollars in 1985 year (Table 39).

Table 39: USSR Trade in Machinery and Equipment with Capitalist Countries

Export of machinery and equipment			Import of machinery and equipment		Net balance of export of machinery and equipment	
Year	Million dollars	Share of machinery and equipment in gross export (%)	Million dollars	Share of machinery and equipment in gross import (%)	Million dollars	Surplus of import over export
1961	19	1.9	464	26.7	-445	25.0
1963	41	2.5	500	18.6	-460	12.3
1970	93	3.3	1 114	26.5	-1021	11.9
1975	364	5.2	5 042	39.6	-4677	13.8
1980	453	3.5	7 178	30.7	-6725	15.9
1985	425	3.5	6 524	21.0	-6100	15.4

Source: Y. Gaidar, page 99, 2007

“Lifeline” for the Soviet economy during this period which allowed to the USSR to spend huge money for the import was the increase in the oil prices in the world in 1973-74 and 1979-81 years and the discovery a large petroleum deposits in the Western Siberia. Moreover, a massive switching from oil to gas in internal Soviet energy supply enabled to raise dramatically the volume of oil available for export (Mazat, 2011, p.21). By 1980 year oil made up 67 percent of the USSR export to OECD countries (Gaidar, 2007, p.103). The annual Soviet trade with OECD members jumped from less than 20 percent of the USSR total trade in the 1960s to 31 percent in the 1970s years (Joint Economic Committee, 1979, p.52). Soviet export to Western economies increased at an annual growth rate of 26 percent from 1970 to 1980 (Mazat, 2011, p.22). Also the share of raw materials in the total export of the Soviet Union increased from 26% in 1970 to more than 50% in 1980 year (Figure 3) (Mazat, 2011, p.23).

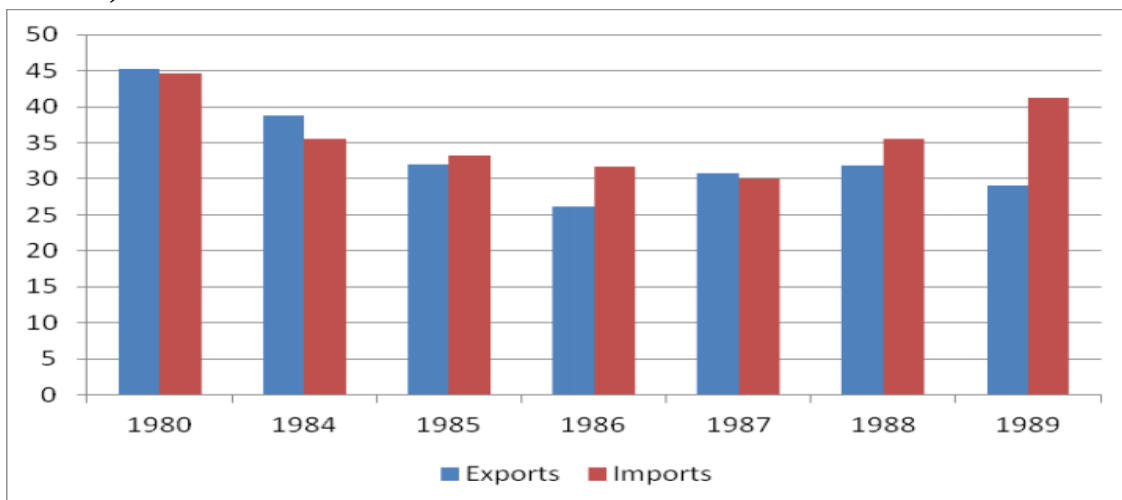
Figure 3: Evolution of the Share of Raw Materials in the Total Export of the USSR



Source: Numa Mazat, page 23, 2011

Oil export increased the flux of hard currency from oil exports stopped the growing food supply crisis, increased the import of equipment and consumer goods (Gaidar, 2007, p.102). All these changes led to the developing of the USSR foreign trade. Soviet foreign trade averaged around 20% of Soviet GDP in 1980 year (Mazat, 2011, p.22). Also, as the result of these changes in foreign trade of the USSR the trade imbalance had increased. By the start of the 1980s, imports exceed export by more than 15 billion dollars (Table 39). Table figure 4 shows information about the imbalance in the Soviet trade during the 1980s.

Figure 4: Soviet Trade with Capitalist Developed Countries 1980-1989 (billion 2000 dollars)



Source: Numa Mazat, page 24, 2011

The new trend of the Soviet foreign trade created a situation of structural external vulnerability (Mazat, 2011, p.23). The Soviet export began depending more and more, on the position of international prices, especially on oil and gas. Also increased the share of import from the Western countries, that also put the USSR in a depend position from the capitalist countries. Finally, namely these structural vulnerability situations were one of the causes of dissolution of the USSR.

3.3.4. Social Sphere of the USSR during Brezhnev Era

The social policy of the USSR position of the country during Brezhnev era was stable. Science developed with very fast tempo during the regime of Brezhnev. The most important discoveries have been made in space science. The Soviet scientist made the first complete map of the moon. Moreover, the Soviet spacecrafts reached the surface of Venus. Also many outstanding discoveries have been made in other branches of science such as physic, chemistry, biology and etc. Big strides have been made in the field of education. Comparing with the other periods as 1970-80 years the Soviet government could achieve a high growth of the educational level of the population. The number of people with higher education between 1959-1987 years increased to 3.9 times, and with secondary education to 3.6 times (www.ido.rudn.ru).

Also the government achieved great successes in the social life of the Soviet people. During Brezhnev's eighteen years the real incomes of people grew by 33 percent, were put into operation more than 1.6 billion meters of living space, more than 162 million peoples received apartments in the new houses, during the eight five-year plan, the minimum wage of the workers increased from 40-45 to 60-65 rubles (www.ido.rudn.ru). The main problem of the population remained the shortage of consumer goods in the market.

Transportation system of the USSR during the Brezhnev era also developed very rapidly. Special progress was in railway sector of transport. During 1965-1984 in many Soviet cities such as Baku (1967), Tbilisi (1966), Erevan (1981), Minsk (1984), Volgograd (1984), Tashkent (1977), Kharkov (1975) were built underground. Also in many Soviet cities and towns were built tramways. The greatest achievement of the

transportation system in the period of Brezjnev was the building of the Baikal-Amur mainline with a length of 3500 km.

The period of Brezjnev era in Soviet economy was a very long period of time. The performance of the Soviet economy during Brezjnev regime we can see in the table 40.

Table 40: National Income of the USSR in Several Branches of Economy

	1958	1965	1970	1980	1985
Industry	50.2	52.4	51.2	51.5	45.5
Agriculture	24.1	22.0	21.8	14.9	19.5
Construction	9.5	9.0	10.3	10.3	10.8
Transport	4.4	5.6	5.6	5.8	6.1
Trade	11.8	11.0	11.1	17.4	18.2

Source: Kudrov, page 209, 2003

In the early period of Brezjnev regime the Soviet economy reached to very high peaks. Industry, agriculture, transport developed with very fast tempo. In these years the number of indicators the Soviet economy overtook even the USA. But starting from the 1970s years the general situation began to deteriorate. Kosygin reforms which were aimed for amending the situation in the economy ended with failure. Moreover, the process of transition of the economy to the intensification road also ended unsuccessfully. In the Soviet economy began stagnation, shortage of food, grain, consumer goods. Import from the Western countries drastically grew, the structure of nomenclature began to develop in the society (the higher officials in the USSR). At the peak of these problems ended the era of Soviet leader Leonid Brezjnev, who died 10 November 1982 year. After this, the process of dissolution of the Soviet economy had started with low tempo.

So, the analysis of these three periods shows the inefficiency of the planned economy of the USSR in the long-term period. After a certain period of time, despite of the reforms, huge investments and large-scale constructions the performance and efficiency of the Soviet Economy, especially in agriculture stayed very low. The reforms of the Soviet authorities were effective only in the initial phases, the second phases of reforms as the result of internal economic contradictions was unsuccessful. Command-

administrative Stalinist model of the Soviet economy objectively spawned the extensive type of development, excessive resource consumption and technological backwardness, it was economy in which producer was not interested in meeting the real needs of the population. Super centralized economy of the USSR, in which completely was absent the market mechanisms and relationships led to the shortages, the exhaustion of resources and labor exploitation. All these internal negative factors created favorable conditions for the weakening and dissolution of the Soviet Union.

4. THE MAIN CAUSES OF COLLAPSE OF THE USSR

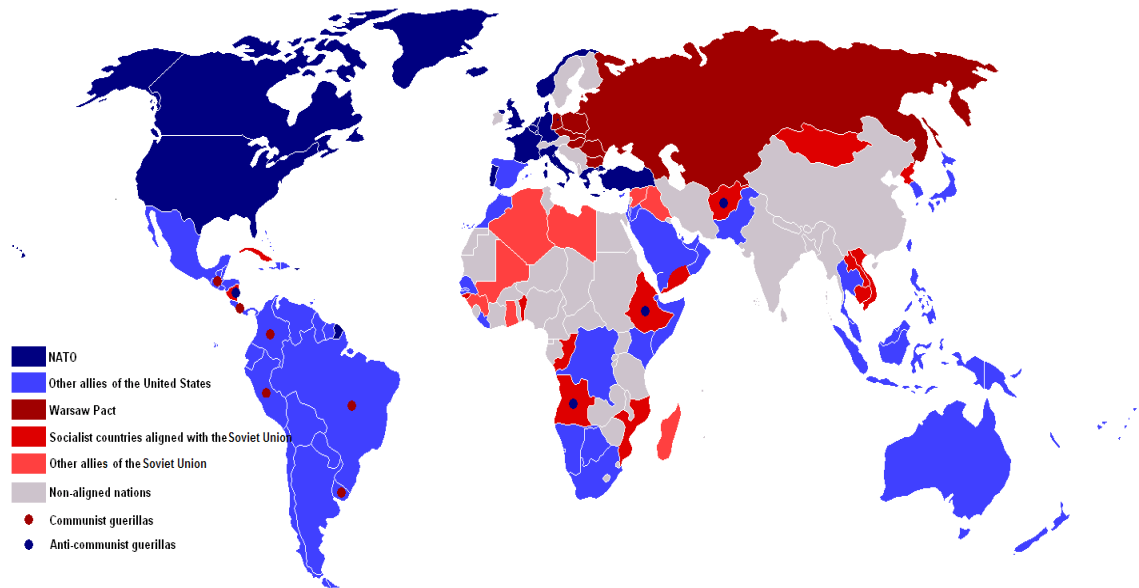
In the Chapter 4 we will analyze the main economic causes of collapse of the USSR. In our research we identified many causes of breakdown of the Soviet Union. But some of these have a crucial place in the study of the collapse of the USSR. They were the following causes: 1) Cold War, 2) The oil crisis in the Soviet economy, 3) Repressed inflation in the USSR and 4) Gorbachev's Perestroika (Restructuring) in the Soviet economy. Each of these causes had a range of negative impacts and effects on the Soviet economic and social system and each of them occupies the significant place in the process of dissolution of the USSR. Our main task in Chapter 4 is to find out and analyze each of the above mentioned reasons, and also show how they negatively affected the Soviet economy, which negative factors and aspects they caused in the economy and how they impacted the breakdown of the USSR.

4.1 Cold War

One of the main reasons of collapse of the USSR was the Cold War, which very negatively affected economy of the USSR. What does Cold War mean and how did it start? The Cold War is generally regarded as a quest for global hegemony, an ideological confrontation and a massive military arm race between two powerful countries with the opposing political system: the USSR and USA (www.sites.com). Firstly, the term "Cold War" was introduced by American journalist U. Lippman. The Cold War took its root from the end of World War II, when the after of liberation of Europe the world was divided into two parts: the capitalist camp with capitalist economic system led by the USA and were merged in the NATO and the socialist camp with the socialist economic system which led by the USSR and were merged in the Warsaw Pact countries. The map

below shows information about the countries with the capitalist system (blue) and the socialist system (red).

Picture 2: The World during the Cold War



The Cold War was defined by political conflict and economic competition rather than armed military conflict (Egan, 2011, p.1). Many historians agreed that the main cause of the Cold War was an epic struggle between conflicting and incompatible ideologies: the utopian, totalitarian vision of universal communism and the pragmatic and humanistic idea of individual liberty and political pluralism represented by the United States and its allies (Bailey, 1988, p.3). The Soviet Union wished extent its communist ideologies, believing that global communism distribution was a key to move the world into a better future. For confront to the capitalist block in 1950 year the USSR organized the socialist trade organization COMERCON which included the following countries: Poland, Czechoslovakia, Hungary, Romania, East Germany, Albania and Bulgaria. A bulk 83% of Soviet trade was within this block and only the other 17% remained with the capitalist world (Moore, 2006, p.9). On the other hand the USA, a capitalist nation, felt it was its responsibility to prevent this occurring. In contrast, in the United States accepted Marshall Plan in June 1947 year. It involved providing financial aid to Europe in the belief that “prosperous, free people would not turn to communism”

(Egan, 2011, p.5). USA feared the principle of “Domino Theory”. It was believed that if one state became communist, it would influence the surrounding states and nations and a domino effect would be created, with an accumulation of nations accepting to communism (Egan, 2011, p.3).

So, started confrontation between the two superpowers, began the long and heavy arm race between two different camps, which encompassed a very long period in the history from 1950 to 1989 years.

4.1.1. Analysis of the Soviet Military Spending

To understand the political motive of the conflict let's get back to the economy and try to understand why the Cold War negatively affected economy of the Soviet Union. Of course, it's obviously that the main problem of the Soviet economy during the Cold War was the huge military spending of the Soviet government that eventually undermined the country's economy and accelerated its dissolution. To understand the negative aspects of the Cold War let's analyze the military complex of the USSR during 1948-1990 year and examine indicators of the Soviet MIC (Military Industrial Complex). In our analysis we made extensive use of indicators CIA as the figures of the Soviet sources not always correspond to reality. USA, according to American exporters, spent from 1950 to 1991 years nearly 5-10 billion dollars, on the average from 200 to 500 million dollars per year, for to calculate and analysis of the MIC of the USSR (Shlikov, 2001). Computer model of CIA for counting the USSR military spending called SCAM (Soviet Computerized (or Cost) Accounting Model). The Soviet Military Expenditures (SME) can be estimated in two ways, the CIA used a building-block (direct-costing) method which begins by identifying and listing thousands of distinct components of weapons and military activities which makes up the Soviet military and military activities which makes up the Soviet military program for a given year, another is a residual method which based on the use of Soviet official data and consist in calculating military expenditures as a difference between the values of total and civilian branches in machine building and metal working (Dudkin & Vasilevsky, 1987, p.42).

The defense expenditures of the Soviet Union always kept in strict confidence by the Soviet government. Also the Soviet defense sector was organized in a manner that facilitated the build-up of military power in an authoritarian political system and a command economy, therefore during plan-implementation, the Military-Industrial Commission (MIC) made energetic efforts to ensure that defense goals were achieved, also military inspectors (voenpredy) in factories were supposed to safeguard quality standards (Davis, 2000, p.6). The severity and secrecy of the Soviet spending for the defense sector revealed many problems associated with their calculation, but in our analysis we use more accurate and acceptable figures, that will help more accurately determined the military budget of the USSR.

After the World War II the military spending of the USSR has a flickering character. From 1945 to 1949 in the Soviet army was the process of demobilization; the army has been reduced from 11 million to 2.8 million people, also the level of military production fall from 50.5 billion in 1945 to 14.5 billion rubles in 1947 year (Bistrova, 2002). However, beginning from 1950 year in connection with the conflict in Korea the share of the military expenditures in the USSR economy began to growth. The armed forces of the country again increased to 6 million soldiers. Also in 1949 years the USSR constructed the first atomic bomb. Since that time and until the end of the Cold War the nuclear arm race between the USA and USSR began to develop with fast tempo. The official numbers of nuclear warheads were kept in secret but some sources gave presumable data about the nuclear weapons in the world. Relying on these figures we can say that the USSR could overtake the USA by the numbers of nuclear weapons only in 1982 year. Table 41 shows information about the amount of nuclear warheads. The number of nuclear warheads in the USSR dramatically increased nearly from 4000 in 1962 to 34 000 in 1982 year (Table 41).

Table 41: The Numbers of Nuclear Warheads

Year	1947	1952	1957	1962	1967	1972	1977	1982	1989
USA	32	1005	6444	~26 000	31 225	27 000	~25 000	23 000	22 217
USSR	0	50	660	~4000	8339	~15000	~25 000	~34000	-

Source: Federation of American Scientist: State of World Nuclear Forces.

The dramatically growth the numbers of nuclear weapons in the USSR in during of the Cold War is shining example of heavy burden to the Soviet economy. Between 1953-1958 years in the Soviet Military Industrial Complex again began the lull. During this period the Soviet industry had changed its priority to the civilian industry. The military spending for 1953 year was decreased from 43 225 million rubles to 40 049 million rubles, also the share of defense spending in the GDP of the country during this period decreased from 12% to 9% (Bistrova, 2012).

In spite of this since 1960 year the Cold War acquired the new character and more stable direction in the economy of the USSR. The share of defense expenditures again began to increase and continue to grow during of the Cold War. Between 1960-1974 years the USSR military expenditures rose more than 2.6 times and amount at present to about 53 billion rubles (CIA, 1976, p.4). The table 42 shows the Soviet expenditures during the 1961-1974 years.

Table 42: The Soviet Military Expenditure, 1961-1974 (billions of rubles)

1961	1962	1963	1964	1965	1966	1967
22.2	23.4	24.6	24.8	32.6	33.0	35.0
1968	1969	1970	1971	1972	1973	1974
40.0	47.5	49.5	50.2	50.7	52.2	51.7

Source: CIA, page 2, 1976

The table displays that the Soviet military expenditures more than doubled from 1960 to 1974 year. According to officially published data defense expenditures in 1961 increased to 24.7 percent, the investments were aimed to the rocket technology and development of enterprises of the USSR Ministry of Defense (CIA, 1976, p.6). In 1962 military spending in the USSR rose by 5.4 percent, but accordingly to official published data the increase was 8.6 percent (CIA, 1976, p.6). The growth of spending for military in this year occurred mainly as the result of: 1) expenditures in support of the Cuban crisis, 2) increase in the price of livestock products and 3) increases in investment for armaments (CIA, 1976, p.6). In 1963 year the defense budget grew by 5.1 percent, officially published figure was 10.3 percent and in 1964 rose by 0.8 percent (CIA, 1976). In 1965 the military expenditures of the Soviet Union was around 32.6 million

rubles and increased by 31.5 percent in comparison with 1964 year (CIA, 1976, p.8). The big growth of military production and procurement of armaments in the USSR in 1965 was linked to the beginning of the Vietnam campaign. Also the Soviet Union in these years allocated a big sum of money for supporting of India in the military conflict with Pakistan. According to Western estimates, between 1961-1965 years there were the highest rate of growth in defense expenditures of the USSR, when the average rate of growth was 7.6% (Bistrova, 2012). The major investments in the defense sector were directed to the Ministry of Defense Industry, Ministry of Radiotechnical Industry and Ministry of Aviation and Shipbuilding Industry.

Since 1966 years in the USSR was introduced a new economic reform. As the result of introduction of this reform the government of the USSR freed sizeable budget funds for use in military direction of industry, capital investment, which previously had been financed entirely from the state budget, were in large part replaced by long-term bank credits (CIA, 1976, p.8). This reform made possible for the Soviet government sharply increase the military production and procurement of armaments. So, from 1966 in the Soviet MIC began the new era which characterized with more rapidly increasing of defense spending. Table 43 shows expenditures of the USSR during the 1965-1989 year which were calculated by the different sources.

Table 43: Soviet Defense Expenditures, 1965-1991

Indicators		1965	1970	1975	1980	1985	1988	1989	1990	1991
Defense Expenditures										
Soviet DE (official)	Billion Current Rubles	12.8	17.8	17.4	17.1	19.1	20.2	75.2	69.1	96.6
Soviet DE (CIA)	Billion Current Rubles	33.0	46.9	68.0	94.0	126.2	163.3	160.1	160.0	202
Soviet DE (CIA)	Billion 1982 Rubles	66.3	82.2	97.3	105.7	111.9	124.8	116.5	109.7	103
Procurement (CIA)	Billion 1982 Rubles	32.8	41.5	47.8	49.1	47.9	52.7	46.9	42.5	39.9
Construction (CIA)	Billion 1982 Rubles	5.7	4.4	4.8	5.9	5.7	6.1	5.9	6.0	5.6

Personal (CIA)	Billion 1982 Rubles	8.6	10.1	11.3	12.0	12.4	12.6	12.3	11.6	10.9
O&M (CIA)	Billion 1982 Rubles	9.3	12.8	16.1	18.1	21.0	24.0	22.0	21.6	20.2
RDT&E (CIA)	Billion 1982 Rubles	8.9	12.1	16.1	19.3	23.7	28.2	28.2	26.8	25.1
Soviet DE (CIA)	Billion 1988 \$	190	222	255	270	284	297	286	264	226
USA DE (CIA)	Billion 1988 \$	220	260	192	211	283	299	296	286	252
USA DE (Conversion)	Billion 1982 Rubles	80.9	101.4	73.2	88.1	127.2	154.1	147.5	140.6	135.5
Defense Burden										
DE/GDP Curr. Rubles	%	NA	12.2	13.6	14.7	15.9	17.8	15.6	NA	NA
DE/GDP Const. Rub	%	16.0	15.4	15.5	15.3	14.9	15.5	14.3	13.8	14.0

Source: Christopher Davis, page 10, 2000

The table displays detail information about the Soviet military spending during 1965-1991 year. Figures of the Soviet defense expenditures almost in all sources and sectors slightly increased from 1965 to 1989 year. As we see from the table between the period between 1965-1970 years were marked by a sharp growth in military spending which was cause of the Israel-Arab conflict and the invasion of Soviet troops into Czechoslovakia. According to CIA, the total increase of military expenditures in 1967-1968 amounted to about 7 billion rubles (CIA, 1976, p.9). A slight growth in defense spending also was during the 1970-1973 year. At the end of 1973 year the military spending of the USSR was approximately 53 billion rubles per year and devoured about 32 percent of the USSR state budget (CIA, 1976, p.9).

Generally, interval between 1965-1988 years was the most violent period in the history of the Cold War. Real defense expenditures rose from 66 billion 1982 rubles in 1965 to a high point of 125 billion rubles in 1988, the share of procurement fell from 49% in 1965 to 43% in 1990 year (Davis, 2000, p.12). In respect of Soviet Military Burden (SMB) the official Soviet defense expenditure series generated a low defense burden a (DE/GDP) in the 2.3-2.5% range for the period 1965-1988, in contrast, the CIA

estimated that the Soviet defense burden in current prices rose from 12.2% in 1970 to a peak of 17.8% in 1988, while in contrast 1982 prices it increased from 15.4% in 1970 to 15.7% in 1987 (Davis, 2000, p.13).

In the period of the Cold War also drastically grew the Soviet Defense Institutions. For analysis we took the more animated period from 1965 to 1991 years. Table 44 shows detail information about the armed manpower and equipment forces, defense industry production and military export of the Soviet Union.

Table 44: Development of the Soviet Defense Sector

Indicators	Unit	1965	1970	1975	1980	1985	1990	1991
Armed Forced Manpower								
Total Armed Forced	Thousands	4464	4835	5595	5923	5900	4958	4563
Armed Forces Military Equipment								
Tanks	Number	-	38000	42000	5000 0	5260 0	4170 0	5440 0
Total Artillery, MLR	Number	-	21000	26100	2990 0	5020 0	6420 0	6420 0
SAW Launchers	Number	-	9800	9500	1000 0	9600	8650	8650
Tactical Submarines	Number	-	240	265	257	203	242	221
AF Fighter/Attack Air	Number	-	2850	3550	5000	5900	4335	4905
Strategic Bombers	Number	118	157	157	157	160	128	100
Defense Industry Production								
Tanks	Number	-	4500	2500	3100	3000	1300	850
Helicopters	Number	-	-	-	700	600	175	350
Bombers	Number	-	-	-	30	50	40	30
Submarines	Number	-	-	-	13	8	12	6
SP Artillery	Number	-	-	-	900	1000	400	300
ICBM's	Number	-	300	200	250	100	125	-
Military Exports								
Total Arms Export	\$ million	700	2400	4000	1700 0	1730 0	1420 0	6600
Share World Arms Exp.	%	-	27.9	31.3	39.3	34.2	37.1	25.9
Non-socialist Arms Exp	\$ million	300	995	2790	6980	7500	9410	4300

Source: Christopher Davis, page 12, 2000

The table shows slight increase in the amount of manpower, industry production in the Soviet MIC from 1965 to 1985 year. The armed forces expanded from 4.5 million in 1965 to 5.9 million in 1985 year, the number of deployed weapons increased significantly over 1975-85, tanks from 38 000 to 52 000, helicopters from 800 to 4300, the number of strategic warheads rose from 882 in 1965 to 9 997 in 1985, their

destructive power (equivalent megatons) grew by 40% and ICBM's became more accurate (Davis, 2000, p.14). All these digits and figures with big precision display the enlargement of the military burden to the Soviet economy. In some military figures the increase of the defense production between five years composed around 20-25%. It's a very high figure. Moreover, the Soviet defense industry possessed 1100 enterprises under twelve ministers that were subordinated to MIC (Davis, 2000, p.14). In the middle of 1980s years its labor force consisted of 7.2 million manufacturing and social sector workers in the MIC and 2.8 million in the civilian economy, moreover the defense firms manufactured a wide away of civilian goods that accounted for 40% of total MIC production by 1985 (Davis, 2000, p.14). The MIC of the USSR produced nearly 90 percent of televisions, refrigerators, radios, around 50 percent of clearness, motorcycles and electric range (Davis, 2000, p.14).

The other burden for the Soviet economy related with the MIC was the level of military export or assistance to third world countries and countries of the socialist camp. Total arm sales of the USSR from 1965 to 1987 increased from 700 million dollars to a peak of 21 000 million dollars, export to non-socialist countries rose from 300 million dollars to a high of 11 900 million dollars in 1989 (Davis, 2000, p.16). During the 1975-1985 the USSR exported nearly 15 000 tanks, 5600 fighter aircraft and 66 surface warships (Davis, 2000, p.16). In the early of 1980s 30-35 percent of military production of the USSR was exported abroad (Table 43). Moreover, during the Cold War the military supplies of the USSR to the third world and socialist countries going into debt. The table 45 shows information about the war conflict in the period of the Cold War and debt of these countries to the USSR.

Table 45: Debt of the Countries to the USSR (1950-1991)

Country	Period of conflict	Debt of the country to the USSR (billion dollars)
North Korea	1950-1953	2.2
Laos	1960-1963, Aug. 1964-Nov. 1968	0.8
Egypt	October 1962- April 1974	1.7
Algeria	1962-1964	2.5
Yemen	October 1962- April 1963	1.0
Vietnam	July 1965- December 1974	9.1

Syria	June 1967, October 1973	6.7
Cambodja	April 1970- December 1970	0.7
Bangladesh	1972-1973	0.1
Angola	1975-1979	2.0
Mozambique	1967-1969, 1975-1979	0.8
Ethiopia	December 1977-November 1979	2.8
Afghanistan	1978-1991	3.0
Nicaragua	1980-1990	1.0
Total	1950-1991	34.4

Source: Bistrova, 2002

The highest debt had Vietnam with 9.1 billion dollars, Syria with 6.7 billion dollars and Afghanistan with 3.0 billion dollars (Table 45).

The other table 46 depicts information about the Soviet economic and military expenditures to the third world countries between 1955-1979 years.

Table 46: Soviet Expenditures in Noncommunist Third World, 1955-1979

Region	Soviet expenditures to Noncommunist Third World under Khrushhev 1955-1964 (US dollars)		Soviet expenditures to Noncommunist Third World under Brezjnev 1965-1974 (US dollars)		Soviet expenditures to Noncommunist Third World under Brezjnev 1975-1979 (US dollars)	
	Military	Economic	Military	Economic	Military	Economic
Mideast	1.4 billion	1.2 billion	10.8 billion	2.2 billion	12.5 billion	3.4 billion
South Asia	1.7 billion	180 million	2.1 billion	2.1 billion	3.1 billion	1.1 billion
Africa	735 million	33 million	3.5 billion	403 million	12.1 billion	2.5 billion
East Asia	404 million	1.1 billion	nil	3 million	nil	180 million
Lat. Amer.	30 million	nil	nil	781 million	765 million	101 million
Total	4.3 billion	2.6 billion	16.4 billion	5.6 billion	28.4 billion	7.3 billion

Source: Karl Moore, page 28-30, 2010

Only total military expenditures of the USSR to the Noncommunist Third World countries increased from 4.3 billion dollars in 1955-1964 to 28.4 billion dollars in 1975-1979 years (Table 46). Moreover, the total debt of all countries during the 1950-1991 years amounted 34.4 billion dollars (Table 45). Many of these debts were not returned and it was the big blow for the financial system and was a major factor of undermining of the economy of the USSR.

The other disaster for the Soviet Union political and economic life in the period of Cold War was the war in Afghanistan (1979-1989). Breznev supposed that the Soviet Union could achieve fast and crucial victory over the country and extend the influence of Communism into the Central Asia. The USA quickly condemned the Soviet invasion in Afghanistan and began covertly supporting Afghanistan resistance fighters. According to Mendkovich, the USA spending in Afghanistan during 1980-1989 years constituted not less than 12.2 billion dollars or 0.2% of USA GDP. The table 47 shows detailed information about the USA spending during the War in Afghanistan.

Table 47: Expenditures of the USA to the War in Afghanistan (million dollars)

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CIA USA	30	50	50	80	120	250	470	630	NA	NA

Source: Nikita Mendkhovic, 2010

Support of the USA the war in Afghanistan of course very negatively affected the USSR. The expenditures of the USSR surpassed the USA in 4.1 times and in 14.2 times when comparing the share of expenditures in the national GDP (Mendkhovic, 2010). During the period from 1978 to 1990 the expenditures of the Soviet Union to the grant aid to Afghanistan constituted nearly 8 billion 48.6 million rubles (Mendkovic, 2010). The table 48 and 49 displays information about the different expenditures of the USSR in Afghanistan between 1985-1987 years.

Table 48: Spending of the USSR to the War in Afghanistan, 1985-1987

Billions of Rubles	1985	1986	1987
Total expenditures	2623.8	3650	5374
-financing of the Soviet armed forced	2023.5	2341	3955
-support of the Afghan army	600.3	703.8	-
-non-military financial aid to Afghanistan	-	453	1258
-military supplies	516.3	579.1	1063.4
Share in budget expenditures %	0.6	0.8	1.2
Share in budget deficit %	18.8	8	10.2
Share in GDP %	0.3	0.4	0.6

Source: Nikita Mendkhovic, 2010

From the table 48 we can see that the main share of the spending, around 72% went to support of the Soviet army. The highest point of the expenditures of the USSR according to Mendkhovic was in 1988-1989 years, when the spending composed nearly 6 billion of rubles.

Table 49: Total Expenditures of the USSR during the Afghan War (billions of rubles)

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	T
Total Exp.	1 387	1 200	1 439	1 148	1 578	2 623	3 650	5 374	6 000	6 000	30 401

Source: Nikita Mendkhovic, 2010

Thereby, how displays the table 49 the total expenditures of the USSR during the nine years of war in Afghanistan were 30.4 billion rubles. The war in Afghanistan had an ever more adverse effect on the Soviet Union than the Vietnam War had on the USA. This war weakened already fragile economy and also deepened the stagnation in the Soviet economy and was the big blow to the political prestige and economic life of the country. The war in Afghanistan also distracted the Soviet Union from its arms race with the USA, thus allowing America to gain a technological advantage and strengthened its political position in the world.

To understand how high the military spending in the USSR was, we compared these spending with the others countries. The table 50 shows information about military capital stock in different countries.

Table 50: Military Expenditures of Different Countries, 1950-1990 (billions of 1986 dollars)

Countries	1950	1960	1970	1980	1990
USSR	91	95	170	247	299
USA	69	168	209	196	288
China	8	16	37	45	53
Turkey	2	3	5	8	12
France	11	22	21	28	34
United Kingdom	23	29	26	29	35
Japan	4	4	7	14	22

Source: Charls Wolf, 1989

The table clearly shows the high rates of the Soviet defense expenditures comparing with the other countries. During the Cold War between the USA and the USSR was tense race in the military spending, and therefore the defense expenditures level of these countries always remained nearly equal. The main paradox here in the next, the Soviet GDP was four times less than the USA and it followed that the share of the Soviet military spending were four times greater than in the USA. For example, in 1974 year the defense expenditures of the USSR in dollar terms was 20% higher than in the USA, while the share of the Soviet military spending in GDP in ruble was only 6%, that is lower than the USA in dollars (7%) (Shlikov, 2001). On this basis, the share of the Soviet military spending always remained above 20-25% than in the USA. the Soviet defense burden (SDB) also was very high. For example, if we take 1985 year, it was 15.9 percent while in Japan it was 1%, in Warsaw Pact East European States 2-4%, West Germany 3% and in the USA 6% (Davis, 2000, p.13).

However, after 1985 year in the history of the Cold War the abrupt changes had started. The regime of CPSU General Secretary Michael Gorbachev announced a national security strategy in early Perestroika (Restructuring) that was based on the conciliatory “new thinking” in international relations by setting more modest security objectives and placing greater emphasis on threat reduction through diplomacy and arms control and less on military power (Davis, 2000, p.17). Defense reform of Gorbachev included rehabilitation and the transfer to the civilian economy of defense organization model. Between 1985-1987 years the military spending of the USSR remained high. In this period, especially in 1988 the Soviet defense spending reached to its highest point to 297 billion dollars (Table 43). The military spending of the USSR accounted for one-third of GNP. Moreover, the armed forces of the country grew on an “extensive” basis, defense industry produced more weapons, and arm export rose to 22 billion dollars in 1988 (Davis, 2000, p.18). But as we mentioned earlier in 1988 year the Gorbachev regime began the process of new national security strategy. In January 1989, Gorbachev revealed a three-year program to cut total defense expenditures by about 14 percent and military procurement and R&D expenditures by almost 20 percent, the USSR authority reduced the size of the armed forces from 5.7 million in 1988 to 4.6 million in 1991 (Davis, 2000, p.18) the size of tactical air forces dropped almost by 20

percent in 1990, naval forces declining by about 4 percent, the procurement spending for the strategic offensive mission had fallen by about 20 percent in 1990, strategic defense fall by more than 15 percent, also procurement spending for space systems dropped by more than 25 percent in 1989 (CIA, 1991, p.3).

According to CIA estimates in 1991 year the Soviet Defense Spending declined by about 6 percent, also the defense industry of the USSR experienced cuts in procurement by 8% in 1990 and 25% in 1991 year (CIA, 1991, p.1). Collapse of arms expenditures decreased to 7 billion dollar in 1991, and declines in civilian purchase of its goods (Davis, 2000, p.18).

However all these decreases in the Soviet MIC couldn't improve the economy and the living standards of the country. The Soviet Union lost its political prestige and place in the World stage. In November 1989 the Berlin Wall fell, which officially could be considered as the end of the Cold War. In July 1991 the Warshavian Pact was canceled, the socialist camp collapsed and the era of socialism came to end.

The end of the Cold War put an end to the fifty-years of confrontation between the USA and the USSR. Based on the analyzed information we can say that the Cold War was responsible for the long term decline of the USSR. During the Cold War, from 1950-1989, the military spending of the USSR in average was 220-300 billion dollars and occupied nearly 20-30% of GDP.

4.1.2. The Negative Impacts of the Cold War

The defense spending to very negatively affected the agricultural sector of the Soviet Union. Heavy and military industries devoured more than a half of the Soviet labor force. As the result, during of the long Cold War in the Soviet there was a huge shortage of labor force in agricultural sector. Moreover, as the result of militarization of the industry felt the lack of agricultural machineries, so the huge share of the Soviet industry was aimed to the production of tanks, aircrafts, military vehicles and etc. Therefore the performance of the Soviet agricultural sector during the Cold War was very low.

The Cold War also had a negative impact on the industrial sector of the USSR. In the industry all achievements of the Scientific Technical Progress were aimed to the Military Industrial Sector (MIC). Therefore, the incorporation of technical innovations in civilian industry of the USSR was very limited. Many highly qualified scientists, resources, the huge share of innovations and investments were designed to the defense sector of the USSR. In contrast, the West in 1970-1980s years were introducing the achievements of the Scientific Technical Progress in the civilian industry, began production of computers, new commercial and household goods, machines and robots. The USSR due to the excess of militarization in industry couldn't afford it and imported these goods from the West.

The negative side of the Cold War was also the worsening of environmental situation and social life of the USSR. The nuclear tests and military factories of heavy industry polluted cities and created a health care crisis, the standard of the living dramatically decreased between 1970 and 1986 years, the mortality rate in the USSR also decreased from 8.2 per 1000 to 9.8 per 1000 (www.sites.com). After 1980 years nearly one third population of the USSR lived in industrial areas. Also militarization of economy crowded out investment, or at least reduced it, which in turn slowed technical expansion of existing capital.

Finally, fifty years of the Cold War completed exhausting the economy of the USSR. During this time in the Soviet economy accumulated the negative effects of the huge defense spending of the USSR, which in the late of 1980s gave a deep crack in the economic and financial system of the country. The huge defense budget of the Soviet Union weakened the economy and gave a great impetus to the collapse of the USSR at the end of 1991 year.

4.2. The Oil Crisis in the Soviet Economy

The crisis in the Soviet economy that led to collapse of the Soviet Union was closely connected to the developments of the oil market in the USSR. Russia is the country with the very rich natural resources, especially oil and gas, and through all times, the oil industry and sector played the significant role in its economy. At its peak

in 1988, it was the largest producer and second larger exporter of crude oil surpassed only by Saudi Arabia. However, the big attachment of the country's economy to the raw material or natural resources threatened the big dips in the economy. We know that state revenues derived from higher oil prices cannot be considered stable and equally it's hard to predict change in the world's prices. And in this situation, a resource-rich countries risks a budget crisis, balance of payments problems, reductions in hard-currency reserves, and the inability to service and repay foreign debt (Gaidar, 2007, p.54), how it had happened with the USSR.

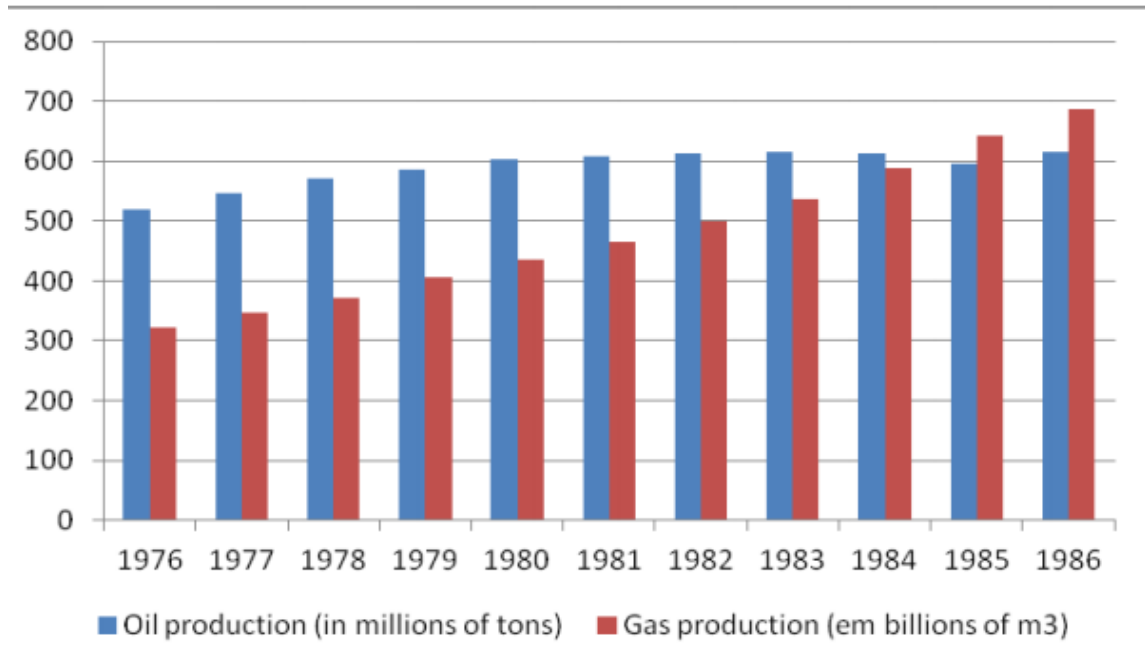
The Soviet Union was not the first and only resources rich country which collide a serious crisis resulting from difficulties to predict variations in price from the country raw material export. For example, in his books "Collapse of an Empire" Yegor Gaidar compared the oil crisis in the USSR with the silver and gold boom in Spain in the 16th and 17th centuries. Discoveries of gold and silver in the America led to an unprecedented influx of precious metals in Europe in this period. The increase of the gold and silver supply in the still sluggish-growing European economy brought fast price increases to a society used to stable price, increased the productivity of industry, agriculture, transport and etc. However, after 1600 year the fellow of precious metals from America slowed down and the richest silver deposits were exhausted. As the result the higher domestic prices had reduced government income and hence the Spanish budget in real terms, and these circumstances led to a trail of bankruptcies, which defined Spanish finance in the second half of the sixteenth century (Gaidar, 2007, p.42).

4.2.1. Analysis of the Soviet Oil Sector

Let's again go back to the USSR economy, analyze oil sector and try to find the negative aspects of Soviet oil industry. The Soviet oil crisis took its roots from Khrushchev era. The matter is that, after the World War II the Soviet Union dramatically grew the extraction of oil from 19 436 million tons in 1945 to 148 million ton in 1960 year (www.vedamost.info). Moreover, in 1960s the Soviet authorities began the fast process to transform the fuel balance of the USSR, which too strongly orientated to coal and neglected oil and above all natural gas, which was available in large quantities and very little used (Nove, 1992, p.362-363). A massive shifting from oil to gas in internal

Soviet energy supply allowed to increase sharply the volume of oil available for the export. The figure 5 shows detailed information about the process of shifting from oil to gas in the Soviet economy during the 1976-1986 years.

Figure 5: Evolution of Soviet Oil and Gas Production



Source: Numa Mazat, page 22, 2011

From the figure we see how slightly increased the share of gas production in the USSR energy balance, as the result of switching process. The gas production rose from 320 billion of m³ in 1976 to 680 billion of m³ in 1986 year (Figure 5). The production of gas surpassed the oil production in 1985 year.

Table 51: Soviet Oil Performance, 1920-1990

Year	Extraction of oil (million ton)	Export (million ton)		Year	Extraction of oil (million ton)	Export (million ton)	
		Oil	Oil product			Oil	Oil product
1920	3.9	-	-	1962	186.2	26.3	19.1
1922	5.3	0.04	0.05	1965	242.9	43.4	21.0
1924	7.1	0.06	1.3	1970	353.0	66.8	29.0
1926	10.3	0.16	1.9	1972	400.4	76.2	30.8
1928	11.6	0.29	3.3	1975	490.8	93.1	37.3
1931	22.4	0.38	4.8	1977	533.8	122.1	38.9

1934	24.2	0.46	3.9	1980	603.0	119.1	41.3
1938	30.2	0.17	1.2	1982	591.1	122.4	49.7
1940	31.1	-	0.9	1985	595.0	117.1	49.7
1946	21.7	-	0.5	1987	624.0	136.6	59.2
1950	37.9	0.3	0.8	1988	624.3	144.2	61.0
1954	59.3	2.1	4.4	1989	607.0	127.3	58.1
1958	113.2	9.1	9.0	1990	571.2	108.7	50.

Source: <http://www.vedamost.info/2012/09/1961.html>

The table 51 displays how increased the extraction and export of oil in the Soviet Union during the long period from 1920 to 1990 year. The extraction of oil dramatically increased in 1958 years and since this year began to grow with very fast tempo and reached a peak in 1988 with the figures 624.3 million tons (Table 51). This sudden growth in the oil industry also was associated with the famous monetary reform of Khrushchev in 1961, when the Soviet government decided to multiply the internal volume of the ruble by ten, as the old exchange rate of the ruble was very unprofitable for the export. More detailed information about this monetary reform we presented in the Chapter 3.2.3. This reform helped to increase the export of the Soviet oil on world markets.

The other causes influenced to the increase of the production and export of the Soviet oil production in 1950-60s was the discovery of large oil deposits in the Western Siberia and Volga Oil Basin. The first oil well in Western Siberia was opened in September 1953 year, in the following years also were discoveries Megionskoe and Ust-Balykskoe deposits in 1961, Fedorovskoye in 1963 and Mamontovskoye and Samotlor in 1965 year (Gaidar, 2008, p.100). They were characterized by high production levels, as a rule, exceeding 100 tons a day per well, at accessible depth of 1.8-2.5 kilometers, moreover from 1972 to 1981, oil production in the Western Siberian Oil and Gas Province (ZSNGP) grew from 62.7 million tons to 334.3 million tons, more than 500 percent (Table 52). The table 52 gives more detailed information about the oil production in the Western Siberia in 1965-1984 years.

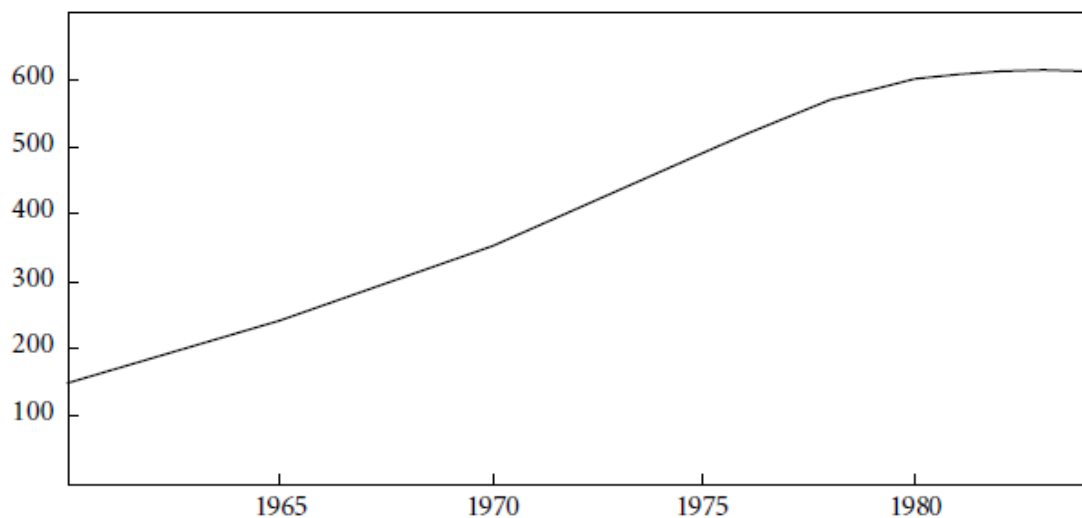
Table 52: Oil Production in the Western Siberia, 1965-1974

Year	Total oil product (million ton)	Year	Total oil product (million ton)
1965	1.0	1975	148.0
1967	5.8	1976	181.7
1968	12.2	1977	218.3
1969	21.3	1978	254.1
1970	31.4	1979	283.5
1971	44.7	1980	312.6
1972	62.7	1981	334.3
1973	87.7	1983	370.1
1974	116.4	1984	377.9

Source: Yegor Gaidar, page 101, 2007

The table shows the slight increase of oil production from 1965 to 1984 year. The other figure 6 shows the information about the oil production in the USSR during the 1960-1984 years. The figure displays the slightly increasing of oil production in the USSR during this period.

Figure 6: Oil Production in the USSR, 1960-84 (million tons)



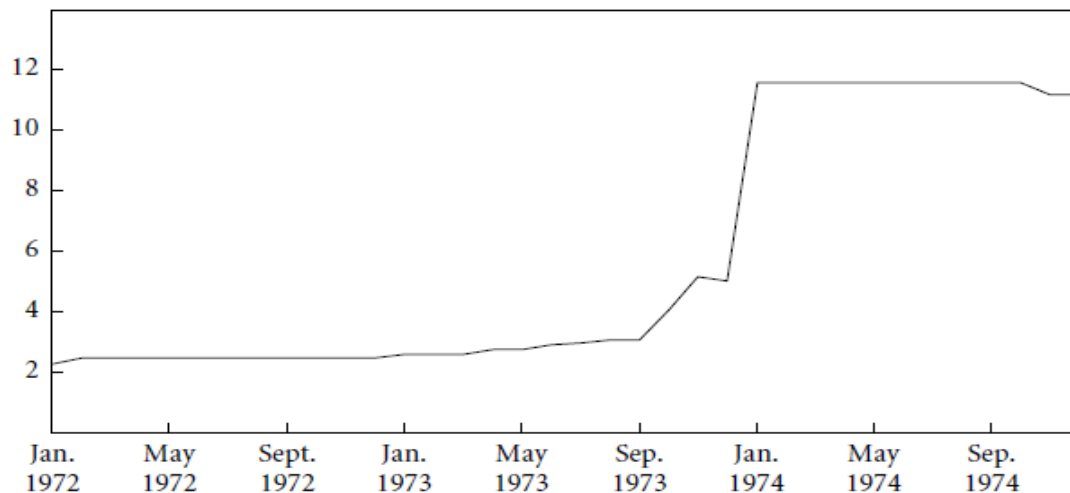
Source: Yegor Gaidar, page 101, 2007

Also the big push to the increase of the Soviet oil export was given by the shortage of food, agricultural production (especially grain) and technological equipment in the Soviet economy in 1960-1970 years. The USSR began the process of oil export to

the capitalist countries in exchange for imports of food, grain and technological equipment. The Soviet government quickly developed a market for its oil in capitalist countries; its need for hard currency prompted the use of methods that gave quick result but risked creating much lower yields in the following years (Gaidar, 2007, p.100).

In 1973 year occurred the event which very deeply and positively affected the Soviet oil industry. In 17 October, 1973, in the period of Arab-Israel War, the Arab producers reduced their oil production and export, and Saudi Arabia the largest producer in the Arab world, announced that it would reduce production by 10 percent and introduce an embargo on oil to the USA (Gaidar, 2007, p.52). As the result, there was the unprecedented rise in the world oil prices between 1973-1974 years, and the jump in prices in 1979-1981 years, which provided significant boost to the Soviet economy. Figure 7 shows information about the average monthly global oil prices in 1972-1974 years.

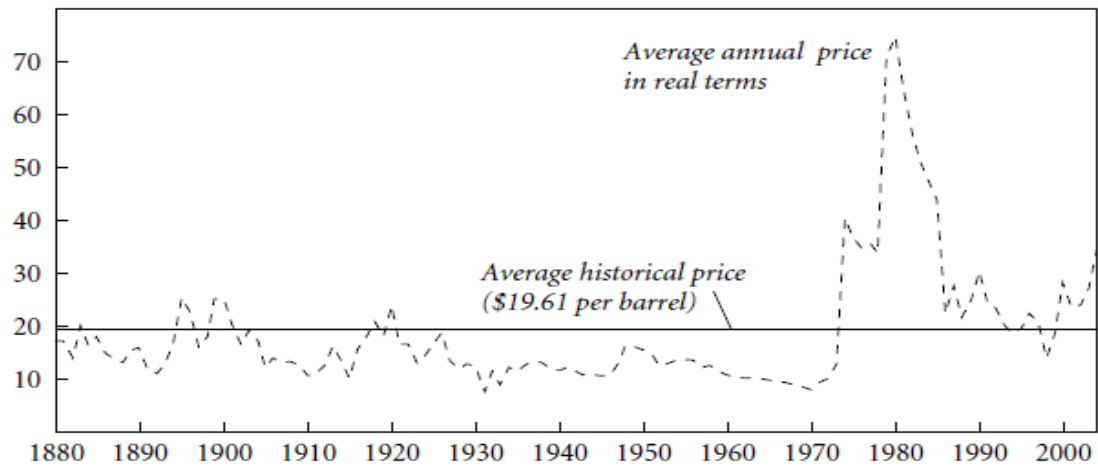
Figure 7: Changes in Average Monthly Global Oil Prices, 1972-1974



Source: Yegor Gaidar, page 58, 2007

How we see from the figure the price to the oil in the world market dramatically increased from 2.3 dollars per barrel in September 1973 to 12 dollars per barrel in January 1974 years. Starting from 1973 years to 1979 the oil world prices sharply rose and reached a peak in 1979 years when barrel of oil cost nearly 72 dollars. Figure 8 shows the price of oil in the world market during XX century.

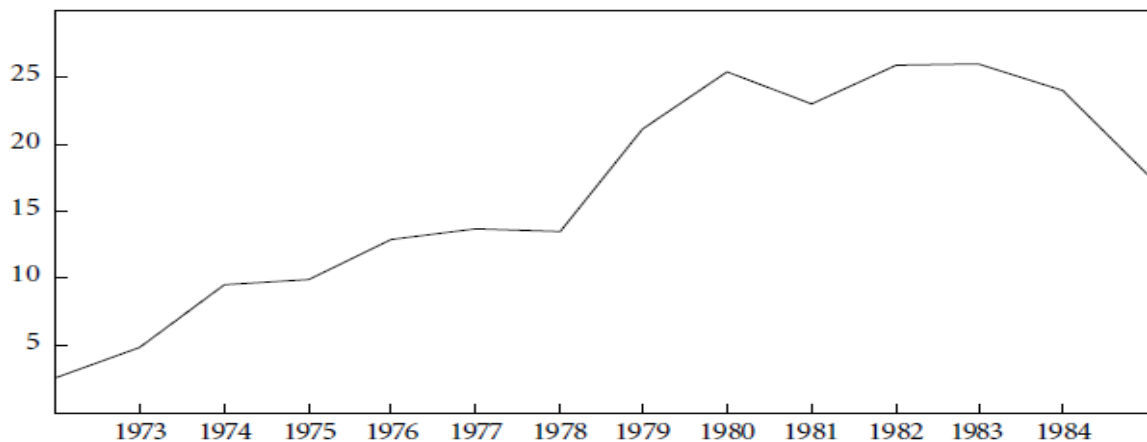
Figure 8: Long-term Historical Change in Crude Oil Prices, 1900-2000 (2000 dollars)



Source: Yegor Gaidar, page 55, 2007

The sharp rise of the oil prices also affected the export level of the USSR. Since 1973 the oil export in the USSR began dramatically growing. Figure 9 below shows detailed information about the exports of oil and oil products from the USSR to OECD countries from 1972 to 1985 years.

Figure 9: Export of Oil and Oil Products from the USSR to OECD, 1972-1985 (billion dollars)



Source: Yegor Gaidar, page 103, 2007

Export of oil in the USSR and OECD began increased from 1973 year and reached a peak in 1982-1983 with the figures 25 billion dollars (Figure 9). Moreover, the

Soviet export to the Western economies increased at an annual growth rate of 26 percent from 1970 to 1980 years (Mazat, 2011, p.22). Also the share of raw materials in the total export of the USSR increased a lot from 26% in 1970 to more than 50% in 1980 years (Mazat, 2011, p.23).

As oil export increased, the influx of hard currency was greater than even at the beginning of 1973 year, moreover the hard currency from oil export stopped the growing food supply crises, increased the import of equipment and consumer goods, ensured a financial base for the arms race and the achievement of nuclear parity with the USA, and permitted the realization of such risky foreign policy actions as the war in Afghanistan (Gaidar, 2007, p.102).

4.2.2. The Negative Impacts of the Oil Crisis to the USSR

In spite of the increase in income of the Soviet government, the new trend of the Soviet economy and foreign trade created a situation of structural external vulnerability. Firstly, the share of raw material, especially gas and oil in the Soviet export becoming higher, and the Soviet export was depending more and more on the evolution of the international prices. The other sides of structural external vulnerability was the dramatically increasing and growing dependence of the Soviet economy on the imports, especially such important goods as agricultural production, machines, equipment and technology. Simply, it began rapid grow the dependence of the Soviet economy on the West, especially from the USA. Moreover, in the period of great oil production, higher prices from 1970s to 1980s the USSR authority did not found hard currency reserves to invest the income in liquid market, the USSR had not found hard currency on hand to meet its trade needs, moreover, the USSR increased its borrowing, despite of the huge rise in oil revenues (Gaidar, 2007, p.102). The Soviet authorities did not think about what would happen if the prices to the oil fell. The increase of oil prices and incomes of the USSR made the Soviet economic system lazy.

However, soon it turned catastrophes for the Soviet economic system. The short and wonderful tale of the USSR was finished. Beginning from 1979 year the international oil prices began to decreased, the value of Soviet exports fall. At first time,

the process was slow, the price was 31.76\$ in 1982, 28.67\$ in 1983 and did reached 27\$ in 1984 (Gaidar, 2007, p.61). We can see this process from the figure 10. As the result of this sudden drop, the income of the USSR slightly decreased. Another negative sides in the oil sector was the increasing of expenditures to extract an additional ton of oil by 70 percent between 1974-84 years, moreover expenditures for extracting fuel doubled from the early 1970s to the early 1980s (Kudrov, 2003, p.31). It was the result of severe climatic conditions and technological embargo imposed by the USA on the USSR from 1981 to 1983 years (Reynold & Kolodrevj, 2006, p.277).

In the fall of 1981, prompted by serious balance-of-payment problems, the Soviet Union had to inform the socialist countries of the Eastern Europe of a 10 percent decrease in the annual deliver of oil and its intention to use the difference to increase exports to OECD countries (Gaidar, 2007, p.107). The table 53 shows information about the oil export in the USSR, between 1980-1986 years.

Table 53: Oil Exported from the USSR, 1980-1986

Oil export	1980	1983	1984	1985	1986
To socialist countries	84.8	80.0	80.6	77.9	85.3
To capitalist countries	30.7	44.8	44.0	33.3	37.6

Source: Yegor Gaidar, page 107, 2008

From the table 53 we can see how slightly dropped the export of the USSR during 1980-1986 years, but the main tragedy for the Soviet economy was still ahead.

The drop of the oil price in the world market and decline of the Soviet oil production in the early of 1980s largely had political roots. It takes its origins from the invasion of the Soviet troops in Afghanistan in 1979 year, which radically changed the situation in the world political system. The United States from enemy turned to the best friends and political military support for the Saudi Arabia, the largest exporter of oil in the world. In 1980s years Richard Pipes wrote a note to the American authorities, recommending using the dependence of the Soviet economy on oil prices to destabilize the communist regime (Gaidar, 2007, p.107). And therefore, since the Soviet Union became one of the largest oil exporters in the world, the USA strategy was to hurt oil export revenues which would then damage the Soviet economy. It was a part of global

strategy of the USA, part of directive of national security (NSDT-85) which was signed by president Ronald Reagan in November 1982 year and which set damage to the Soviet economy as a goal. One way to do that was to put a downward pressure on oil prices and therefore the USA asked Saudi Arabia to increase its oil production in order to cause the Soviet oil revenues to decline (Reynolds & Kolodzies, 2006, p.275). On September 13, 1985 year the Oil Ministry of Saudi Arabia Yamani announced that his country began the process of increasing the oil production and starting since 1985 Saudi Arabia increased its oil production from 2 to 6 barrels per day (Gaidar, 2007, p.61). As the result, oil prices collapsed approximately from \$30 a barrel in November 1985 to \$12 in March 1986 year (Reynolds & Kolodziy, 2006, p.274).

The second reason for Saudi Arabia to increase oil production was to increase its revenues. Saudi Arabia output went from 2 million barrels per day at \$30 per barrel or \$60 million dollars per day in late 1985, to 6 million barrels per day at \$12 per barrel or \$72 million per day in 1986 that is a 20% increase in revenues (Reynolds & Kolodzies, 2006, p.276). The other side this cost to the Soviet budget some 20 billion rubles annually (Dyker, 1992, p.178). The other reason of increase of the oil production by Saudi Arabia was that the Arabian royal family was openly anti-communist, due to the USSR was a country dominated by atheism that posed a threat to the Muslim world.

So, decrease of the oil prices and fall of the Soviet oil revenues very negatively affected the economy of the USSR. According to Schweizer, a \$1 decrease in the prices of oil, reduced Soviet foreign currency earnings by \$1 billion per year. In the first three years (1986-1988) state revenues of the USSR drop by 31 billion rubles and expenditures grew by 36 billion rubles, moreover sharply grew money outlays, in 1986 were 3.9 billion rubles, in 1987 5.9 billion rubles and in 1988 11.8 billion rubles (Gaidar, 2007, p.137). The table 54 shows more appropriate information about the decrease of the state revenues of the USSR from the sale of oil and oil products between 1984-1987 years.

Table 54: Implications of Falling Oil Prices for Revenues from the Sale of Oil and Oil Products, 1984-1987 (billion rubles)

Item	1984	1985	1986	1987
Total revenue from the sale of oil & oil products (billion of hard-currency-equivalent rubles)	30.9	28.2	22.5	22.8
Of which, revenue from developed capitalist countries (billions of hard-currency-equivalent rubles)	13.6	10.6	5.5	7.1
Total revenue from the sale of oil & oil products (percent of GDP)	4.04	3.63	2.82	2.76
Of which, revenue to the developed capitalist countries (percent of GDP)	1.8	1.4	0.7	0.9

Source: Yegor Gaidar, page 135, 2007

From the table 54 we see the slight fall of the total revenue of the USSR coming from the sale of oil and oil products. The figures decreased from 30.9 billion rubles in 1984 to 22.8 billion rubles in 1987 years.

The decrease of state revenues as the result of oil price decline led to budget deficit in the USSR. The Ministry of Finance and Goskomstat estimated the deficit in the state budget for 1985 at 18 billion rubles, according to theirs figures, it reached 90.1 billion rubles in 1988 and was 92.2 billion rubles in 1989 year (Table 55). The table 55 shows information about the budget deficit of the Soviet Union during the period from 1984 to 1990 years.

Table 55: Soviet Budget Deficits, Actual and Projected (billion rubles)

	1984	1985	1986	1987	1988	1989	1990
Official Soviet figures	-	18.0	47.9	57.1	90.1	92	60
CIA figures	11.0	17.0	49.8	64.4	68.8	-	-

Source: David Dyker, page 177, 1992

The table clearly displays increase of the deficit of Soviet budget, from 18.0 billion rubles in 1985 to 92 billion rubles in 1989 year.

On the other side with the falling oil production and oil export, the Soviet economy faced another problem associated with hard currency fall. Hard currency deficit start to grow rapidly from 1983 to 1988, and in 1989 year, for the first time, the

Soviet Union runs a current account deficit on a massive scale. The table 56 shows information about the Soviet hard currency external balance between 1983-1990 years.

Table 56: Soviet Hard-currency External Balance (billion dollars)

	1983	1984	1985	1986	1987	1988	1989	1990
Balance of trade	1.3	2.2	-0.8	-3.9	0.4	-2.7	-6.5	-4.9
Balance of payments current account	1.5	3.0	1.0	-1.0	1.5	-1.5	-4.5	-3.0

Source: David Dyker, page 183, 1992

The worst situation was in 1989 when the balance of trade decreased to -6.5, a balance of payments to -4.5 (Table 56). The deficit in the current account of the balance of payment also worsened because of the increasing domestic needs for consumer and agricultural goods due to the shortage (Mazat, 2011, p.29).

These trends were developing along with a rapid increase in the volume of the Soviet external debt. A consequences of the deterioration of the current balance of payment and of the international economic difficulties was the fast degradation of the conditions of foreign financing (Mazat, 2011, p.30). Situation deteriorated also in the result of rising rates and shorter deadline loan of the Western banks to the USSR. As the result, foreign net debt of the Soviet Union increased from 14.9 billion dollars in 1985 to 45.4 billion dollars in 1991 year (Mazat, 2011, p.30). The state debt of the USSR at the start of 1989 year was 312.4 billion rubles; in late 1989 it reached 400 billion rubles, or 44 percent of GDP (Gaidar, 2007, p.137). Moreover along with the USSR, the debts of socialist camp countries had also increased. By 1988 the hard currency foreign debt of the socialist countries to the West was 206 billion dollars (Table 57). More detailed information about the debt of the USSR and socialist camp we can see in the table 57.

Table 57: Foreign Debt of Socialist Countries to Western Creditors (billion dollars)

	1981	1984	1986	1987	1988
Poland -Total	25.9	26.9	33.6	39.3	38.9
Of which net debt	25.1	25.4	31.9	36.3	36.9
USSR- Total	26.5	22.5	33.1	40.1	41.5
Of which net	18.1	11.2	18.3	26.0	27.2
CMEA countries as a group	99.2	87.6	120.5	142.7	140.5
Of which net	83.2	63.3	90.9	111.2	109.8
All socialist countries	127.8	115.7	163.9	191.2	205
Of which net	105.0	71.7	119.7	143.4	154.1

Source: Yegor Gaidar, page 128, 2007

From the table 57 we see how the debt of socialist countries to Western Creditors from 1981 to 1988 years slightly grew. The total debt of all socialist countries slightly rose from 127.8 billion dollars to 205 billion dollars in 1988 year (Table 57). The Soviet government undertook all possible measures for the decreasing the hard currency crisis, state debts and budget deficit. The USSR began to use its gold reserves but they were insufficient to finance the long-term deficit of the balance payments (Mazat, 2011, p.30). The gold reserves of the USSR as the result of huge spending dramatically decreased from 36 billion dollars in 1985 to 7.6 billion dollars in 1988 year (Gaidar, 2007, p.120). And finally the Soviet gold and hard currency reserves exhausted at the end of 1991 and afflicted the situation in the Soviet financial sector. The other method was the increasing of export of Soviet machinery for hard currency. However, the Soviet equipments were the low technical and quality level and in the end of 1988 more than 194 000 exported machinery were return to the USSR (Gaidar, 2007, p.113).

Along with this the level of the Soviet oil production and export continued slightly decrease in subsequent years. Besides the financial problems the other reasons of the drop of the Soviet oil production explained by the exhaustion of numerous old deposits and delays in introducing new production methods because of a sharp reduction in financial, material and technical resources for the development of the sector (Gaidar, 2008, p.191). Moreover, the development of the oil-extraction industry in the 1980s years in the USSR characterized by a high degree of depletion of productive deposits, aggravation of the structure of the Soviet raw material basis, also a decreasing the

number of new and active oil wells, increased water presence in the oil, increasing the absence of materials and equipment. All these factors also played the significance role in the deterioration and decreasing of oil production in the USSR. The figure 10 shows information about the Soviet oil production during 1985-1990 years.

Figure 10: Soviet Oil Production, 1985-1990 (million tons)



Source: Numa Mazat, page 30, 2011

So, of course it is right that the failure of the Soviet oil production and industry closely linked to politics, but another side it's very strongly interconnected with the economy of the Soviet Union too. By "economy" we mean the strong and hard dependence of the USSR economy on the oil export and oil prices. Moreover, considering the fact that the Soviet Union was one of the two superpowers in the world at this time and dependence position on the oil of the economy of such a big country certainly was unacceptable. But the Soviet authorities not take into accounts this fact and starting from the 1970s to solve of many economic and financial problems of the country relied on the export and incomes from the oil. Soon in 1980s this tactics of the Soviet Union gave a crack, with the sharply decrease in oil prices, the Soviet economy a big share of the budget which was the oil revenues fell into a deep crisis. The crises generated in the economy such problems or symptoms as increasing budget deficit, external debt and hard currency problems. These factors very deeply shocked the Soviet economy and accelerated its dissolution in the early of 1990s years.

4.3. Repressed Inflation in the Soviet Economy

One of the assumed causes of the collapse of the Soviet economy was repressed inflation. First, let's define what means repressed inflation and how it had appeared in the Soviet economy. Unlike the open inflation, where is a gradual rise in price, in the repressed inflation, consumer prices remained stable for many decades because they are were fixed and subsidized by political authorities and does not reflect supply and demand (Efremov, 2012, p.9). Whereas retail prices stays virtually unchanged, wage of workers continues to grow over the years, and this process creates repressed inflation, which manifested as increasing excess demand that leads to excess liquid assets in the hand of population in place of higher prices (Efremov, 2012, p.10). Repressed inflation most characteristic for the countries with the Socialist, command administrative type of the economy, where prices are under strict control of authorities, and the USSR was one of these countries. According to Shleifer, the factor of repressed inflation with distorted incentives and partial liberalization very negatively affected the Soviet economic system, continued the completely undermined plan enforcement, led to a breakdown of traditional economic ties and coordination mechanisms in the USSR economy (Shleifer, 1991, p.343). For understanding the main causes and consequences of the repressed inflation in the Soviet economy, let us turn to history and see how repressed inflation appeared and developed in the Soviet economy.

The first price control system in the USSR economy was established by the Stalin in the period of NEP in 1928 and remained in place till the time the USSR existed. In the initial periods, during the 1921-1949 years the Soviet economic and pricing system was inherent to the open inflation. During this period, the Soviet economy suffered from the open inflation, as official prices in state stores had been increased a moderate rate each year, but market prices in collective farm markets increased even faster (Efremov, 2012, p.38). Especially situation was worse in the period of World War II, when due to the war expenditures, inflation started getting out of control and the first budget deficit had started running in the USSR. At the end of 1947 year official prices in the USSR were four times higher that they had been in 1940, while kolkhoz prices were

six and half times higher than 1940 levels and four times higher than state price at the time (Efremov, 2012, p.43).

Table 58: Soviet Price Trends, 1928-1956

Year	Basic Industrial goods (excluding petroleum)	Average Annual Wage (workers)	Price in State & Cooperative stores	Price in Collective farm Markets
1928	100	100	100	100+
1929	98	114	-	-
1930	96	133	-	-
1933	100	223	400	1500-2000
1935	103	323	-	900-1470
1936	157	406	700	700+
1938	180	493	-	700+
1939	201	-	840	-
1940	231	579	1000	1780
1941	240	-	-	2220
1942	244	-	-	13 850
1943	246	-	-	31 220
1944	249	822	-	26 335
1945	249	-	2545	13 575
1946	249	-	3180	-
1947	249	922	3895	11 530
1948	249	-	3235	4175
1949	669	-	2770	2880
1950	556	-	2215	2770
1951	551	1128	2035	2810
1952	523	1140	1925	3100
1953	523	1164	1740	2595
1954	523	1190	1640	2855
1955	510	1204	1640	2855
1956	497	1240	1640	2610

Source: Efremov, page 42, 1956

From the table 58 we can see how prices in the USSR slightly increased between 1929-1940 years. Table shows that after 1940 the process of hyperinflation had started in the economy, the price in state and cooperative stores dramatically growth from 1000 rubles in 1940 to 3895 in 1947 year (Table 58).

However, after 1947 year in the Soviet pricing and economic system started fundamental changes. In 1947 year the Soviet authorities accepted the Currency Reform

which wiped out inflation from the economy of the Soviet Union. Under this reform, old rubles were mandatorily exchanged for new one at a 10 to 1 ratio (Efremov, 2012, p.43). Moreover, the currency reform eliminated high prices and temporarily reversed the previous inflationary pressure. Economists' estimates display that the money supply in the USSR as the result of reform was decreased more than three times. Official and farm market prices began to deflate with fast tempo, the state retail prices were decreased to 17%, the market prices fell by more than three times. From the table 58, we can see how slightly decreased the prices after 1948 year. Starting from the tome of this currency reform the foundation of repressed inflation was firmly laid in the USSR. For the rest of the post-war era, prices in state stores and cooperatives were strictly controlled and subsidized, so they changed very little until the late of 1980s years.

However, after 1960s years repressed inflation in the USSR has acquired a new appearance and coloring. In his paper Byung-Yeon-King identified two main causes of repressed inflation in the Soviet Union after 1965 year. First causes was the provision of retail price subsidies, second was the siphoning effect. Price subsidies take its root from 1965 year, when Brezhnev's chief economic minister Kosygin introduced a reform that included retail price subsidies for basic foods, such as meat, milk, sausages, sugar and butter, in order to keep their price stable (Efremov, 2012, p.45). The purpose of these subsidies was to keep retail price of basic foods stable by absorbing cost increases which became more possible because the reform allowed enterprises to set wages and prices of their products to a larger extent (Kim, 2000, p.8). Starting from this, the retail subsidies in the Soviet economy began to grow with fast tempo, they rose from of state budget expenditures in 1965 to 20% in the late 1980s, moreover the total amount of subsidies increased from 2 billion rubles in 1965 to 37 billion rubles in 1980, which amount to nearly 54% of national income generated in agriculture or almost 25% of the gross output of agriculture (Kim, 2000, p.7-8), that led to disequilibrium of the consumer market. The table 59 shows detailed information about the price subsidies in the USSR from 1965 to 1989 year.

Table 59: Price Subsidies in the USSR, 1965-1989 (billion rubles %)

Year	LP	FH	MK	GR	PV	FS	OP	TP	IP	WF	DS	TES	SDS	STFS
1965	2.8	0.1	-	0.3	-	3.5	0.4	3.9	0.4	-	3.5	4.3	3.4	4.2
1966	3.5	-	-	-	-	4.2	0.3	4.5	0.6	-	4.2	5.1	4.0	4.8
1967	4.8	-	-	-	-	5.7	0.2	5.9	0.8	-	5.7	6.7	4.9	5.8
1968	5.7	-	0.4	-	-	7.4	0.3	7.7	1.0	-	7.4	8.7	5.8	6.8
1969	6.2	-	0.6	-	-	8.3	0.1	8.4	1.2	-	8.3	9.6	6.0	6.9
1970	8.8	0.2	2.1	0.8	-	13.3	0.2	13.5	1.4	-	13.3	14.9	8.6	9.6
1971	10.9	-	2.6	-	-	15.6	1.0	16.6	1.7	-	15.6	18.3	9.5	11.1
1972	11.7	-	2.7	-	0.3	16.9	1.4	18.3	2.0	-	16.9	20.3	9.8	11.7
1973	11.5	-	3.2	-	0.3	15.9	0.2	16.1	2.4	-	15.9	18.5	8.6	10.1
1974	13.5	-	3.4	-	0.5	17.8	-	17.8	2.7	-	17.8	20.5	9.0	10.4
1975	14.2	0.2	4.0	0.6	0.5	19.8	0.2	20.0	3.1	-	19.8	23.1	9.2	10.8
1976	13.0	-	5.3	-	0.7	21.3	0.6	21.9	2.9	-	21.3	27.0	9.5	11.1
1977	14.6	-	6.0	-	0.8	23.1	0.7	23.8	3.2	-	23.1	27.0	9.5	11.0
1978	15.8	-	5.9	-	0.8	24.7	0.2	24.9	3.7	-	24.7	28.6	9.5	11.1
1979	15.3	-	7.7	-	1.3	26.7	0.1	26.8	4.0	-	26.7	30.8	8.5	10.0
1980	14.0	0.2	7.5	0.8	1.0	25.1	0.2	25.3	4.3	-	25.1	29.6	8.5	10.7
1981	15.2	-	8.3	1.4	1.1	26.4	2.4	28.8	4.4	-	26.4	33.2	8.5	10.7
1982	15.3	-	9.0	2.0	1.7	28.8	1.1	29.9	4.6	-	28.8	34.5	8.4	10.1
1983	21.4	-	13.8	3.7	2.2	42.1	3.2	45.3	4.7	9.4	51.5	59.4	14.5	16.8
1985	26.6	2.1	18.9	4.4	3.0	56.0	3.0	59.0	5.0	13.9	69.9	77.9	18.1	20.2
1988	26.8	2.6	16.1	6.3	2.0	57.6	5.3	62.9	1.8	27.1	84.7	91.8	18.4	20.0
1989	22.6	-	17.2	6.1	-	55.0	6.3	61.3	-	32.2	87.2	93.5	18.1	19.4

Subsidies Notes: LP-Livestock & Poultry; FH-Fish; MK-Milk; GR-Grain, PV-Potatoes & Vegetables; FS-Food Subsidies; OP-Other Procurement Subsidies (Cotton & Wool); TP-Total Procurement Subsidies (FS+OP); IP-Input Subsidies for Agriculture; WF- Weak Farm Subsidies (FS+OP+IP+WF); SDS- Share of Direct Subsidies out of the State budget expenditures; STES-Share of Total Explicit Subsidies out of the State budget expenditures.

Source: Kim, page 21, 2000

The table shows how the price subsidies increased in the USSR economy during the 1965-1989 years. In the table Total Explicit Subsidies (TES) divided into to the three parts: agricultural procurement subsidies (TP), input subsidies (IP) and weak farm subsidies (WF). Agricultural procurement subsidies (TP) are also divided into two parts: food subsidies (FS) and subsidies on agricultural inputs for light industry (OP). From the table we see how subsidies sharply had grown after 1965 year. While the state budget expenditures rose by 3.8 times during 1965-1989, subsidy expenditures soared by 23.9 times in the case of direct subsidies and 20.7 times in the case of total explicit subsidies during the same period (Kim, 2000, p.9). Moreover, the spending of subsidies rose from

4% in 1965 to 9% in 1970 and reached a peak in 1980 with the index of 20% of budget expenditures (Kim, 2000, p.7).

Table 60: Retail and Implicit Prices of Food (in rubles per kg)

		1970	1975	1980	1985	1986	1987	1988	1989
Meat	Official retail price A	1.72	1.70	1.74	1.75	1.76	1.77	1.80	1.79
	Subsidies B	1.60	1.75	1.99	3.56	3.51	3.71	4.28	4.69
	Imp.Retail price A+B	3.32	3.45	3.73	5.31	5.27	5.48	6.08	6.48
	A/A+B	0.52	0.49	0.47	0.33	0.33	0.32	0.30	0.28
Milk	Official retail price A	0.27	0.26	0.24	0.25	0.25	0.25	0.24	0.25
	Subsidies B	0.06	0.08	0.14	0.31	0.29	0.31	0.40	0.42
	Imp.Retail price A+B	0.33	0.34	0.38	0.56	0.54	0.56	0.64	0.67
	A/A+B	0.82	0.76	0.63	0.45	0.46	0.45	0.38	0.37
Butter	Official retail price A	3.49	3.47	3.39	3.38	3.38	3.38	3.40	3.40
	Subsidies B	1.48	2.07	3.33	6.29	6.29	6.40	8.41	8.99
	Imp.Retail price A+B	4.97	5.54	6.72	9.67	9.67	9.78	11.81	12.39
	A/A+B	0.70	0.63	0.50	0.35	0.35	0.35	0.29	0.27

Source: Kim, page 22, 2000

The highest among the subsidies was the food subsidies was the food subsidies figures of which slightly changed from 3.5 in 1965 to 55.0 billion rubles in 1989 (Table 60). The highest point the retail price subsidies reached in 1988 year.

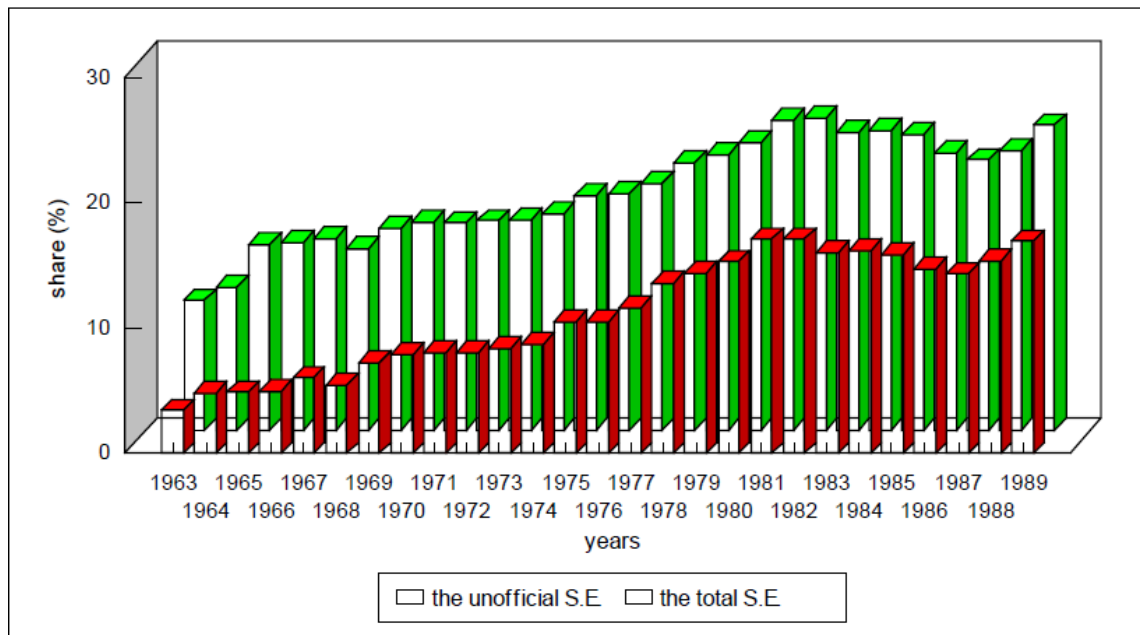
The table 60 compares retail prices food with their implicit prices, which are defined as the sum of official retail prices and subsidies per unit, and thus shows the level of price support accounted for financial resources from the state budget (Kim, 2000, p.10). How shows table the consumers paid nearly 50-80% of implicit prices in 1970, however in 1980 these figures sharply fell and consist only 20-25% of implicit prices. The highest figures of subsidies in implicit retail price were in meat and butter, which reached a peak in 1989 with the index of meat 4.69 butter 8.99 for rubles per kilogram (Table 60). As the result of price subsidies the price of these products remained almost unchanged during the long period between 1970-1989 years.

So, fast growth of retail price subsidies in the USSR economy had a lot of negative effects on the Soviet economic system and was the major cause of repressed inflation. The negative aspects of continuing budget price subsidies were the following

problems: market disequilibrium and the growth of budget deficit. A big share of subsidy expenditures (20% in 1989) in the total budget expenditures of the USSR was one of the reasons of increase in budget deficit of the USSR. Also rising subsidy payments from the budget was the reason that other budgetary expenditure such as investment financed by the state budget had to be squeezed (Efremov, 2012, p.65).

The other cause of repressed inflation in the Soviet Union was the siphoning effect. However, what means the “siphoning effect”? The term “siphoning effect” means the leakage of the purchasing power of enterprises into retail market (Kim, 2000, p.7). We can divide the siphoning effect into two groups the official and the unofficial siphoning effects, which means the purchase of consumer goods by the socialisted sector with official permission and without permission respectively (Kim, 2000, p.11). According to Byung-yeon Kim, the Soviet enterprises bought a substantial amount of consumer goods using enterprise money without official permission. Moreover, without retail price subsidies, price adjustment mechanism would have worked to balance supply with demand in this situation, but so in the Soviet economy was the price control incurring huge subsidies, it made the unofficial siphoning effect to intensify consumer market disequilibrium (Kim, 2000, p.20). The unofficial siphoning market effect is measured by the spillover of the purchasing power of enterprises and social organization without legal sanctions from the authorities, i.e beyond the scale of small wholesale, the official siphoning effect (Kim, 2000, p.11). The figure 11 shows detailed information about the total siphoning effect between 1963-1989 as a percentage of retail turnover in the official retail network.

Figure 11: Total and Unofficial Effects (% of retail turnover in the official retail market)



Source: Kim, page 24, 2000

How we can see from the figure after 1965 year the share of the total siphoning effect in government and retail turnover jumped to a higher level because enterprise were allowed to use their money more freely for purchasing consumer goods due to the industrial enterprises reform (Kim, 2000, p.11). The figure displays how high was the level of siphoning effect in the Soviet economy, which played the main role in the strengthening repressed inflation in the Soviet economic system.

4.3.1. Estimation of Repressed Inflation in the Soviet Union

After the understanding the main causes of appearance of repressed inflation it would be very interesting to estimate and measure the level of repressed inflation in the Soviet economy. The best way to measure the level of repressed inflation in the economy of the USSR is to analyze the figures of the inflation in tables.

Table 61: Inflation in the USSR, 1980-1991

Year	Official inflation	Income growth	Expenditure growth	Money Supply growth	Farmers' market inflation
1980	1.0	5.2	4.6	-	14.1
1981	1.0	4.3	5.0	-	9.1
1982	4.0	4.2	3.4	-	-1.1
1983	0.0	4.8	4.7	-	-3.9
1984	-1.0	3.8	3.9	-	2.8
1985	1.0	3.7	3.7	-	3.5
1986	2.0	3.6	3.7	6.1	-3.6
1987	1.3	3.9	3.5	7.8	2.6
1988	0.6	9.2	8.5	13.6	2.6
1989	2.0	12.9	11.6	19.5	9.5
1990	5.3	16.9	15.2	21.5	29.0
1991	-	24.0	24.0	-	71.0

Source: Shleifer, page 344, 1991

The table 61 displays changes in the official Soviet price index during the 1980s years. In the first column the table displays that no substantial price grew between 1980-1990 years and inflation was only 5.3 percent in 1990 year, in contrast, in other three columns of the table we can clearly see how rapidly increased income, expenditures and the money supply in the Soviet economy. Moreover, in the last quarter of 1980s we see a sharp increase in the growth rates of all these variables. So, given the growth of money and income and the rigidity of official prices, created conditions for fast developed of repressed inflation (Shleifer, 1991, p.345).

One way to oversee this process is to collate free market prices with state prices. The last column of the table show inflation in the farmers' market which drastically grew from 9.5 in 1989 to 71.0 in 1991 years. Since official food prices had not changed at all during this period, inflation of the farmers' market prices also reflected the relative change in market and official prices and thus the magnitude of repressed inflation (Shleifer, 1991, p.345).

In order to, get more detailed information about the inflation in the last and most crisis years of the Soviet economy let's translate our attention to another table.

Table 62: Monthly Inflation in the USSR, 1990-1991

Month	Inflation	Month	Inflation
1990		December	4.5
July	1.2	1991	
August	0.8	January	4.5
September	2.8	February	5.1
October	-	March	52.0
November	3.1	April	170.0

Source: Shleifer, page 345, 1991

The table 62 displays the month-to-month growth in the commersant aggregate cost-of-living index, which represents both free and state market prices (Shleifer, 1991, p.345). From the table we see how the level of monthly inflation in the first quarter of 1991 year sharply grew. It was mainly associated with the price liberalization, when in the initial periods of 1991, some prices were finally raised or liberalized. As the result, the open inflation in the Soviet Union reached about 200 percent in 1991 year. This occurred because the increase was not sufficient to balance supply and demand, but they did unleash the repressed inflation that had been building for decades (Efremov, 2012, p.70).

For the measuring of repressed inflation in the Soviet economy we also used the method of comparison the ratio of state prices to black prices for selected commodities (Shleifer, 1991, p.346). In our analysis we used table from Shleifer paper where presented the ratio of state store prices to black market prices for selected commodities in Moscow in December 1990.

Table 63: Ratio of Market to State Prices, December 1990, Moscow

Commodity	Ratio	Commodity	Ratio	Commodity	Ratio
Drugs	19.0	Coffee	3.0	Rug	2.6
Iron	5.6	Television	2.5	Sewing machine	2.8
Automobile	4.4	Cement	2.4	Women's jacket	3.7
Tea	3.0	Vodka	2.4	Men's sweater	3.3

Source: Shleifer, page 347, 1991

The table 63 presents that the black market price in average was three or four times higher than the state store prices, moreover the ratio of some commodities, for

example drugs reached unusually high level. The price ratios help us to understand, how high the level of repressed inflation was in the economy of the USSR.

The tables presented in the above accurately and clearly displays and measures the existence of repressed inflation in the Soviet economy. Analysis shows that the long cost containment by the Soviet authorities very negatively affected the Soviet economy and social system, especially in the second half of 1980s years. Very high hyperinflation which occurred after the price liberalization of Gorbachev in 1990-1991 years deepened the crisis and shortage in the Soviet markets.

4.3.2. Negative Impacts of Repressed Inflation to the USSR

Now let's to see, what negative impacts did repressed inflation have on the Soviet economy, which eventually led to the dissolution of the USSR? The first negative consequence of the repressed inflation on the economy of the USSR was less time spent in the workplace. In the countries with the socialist system and planned economy, due to the low level prices, goods were distributed through queues and search rather than through market. Unofficially Soviet sources estimated that 30 million man-years are spent in queues annually about 25 percent of the working time of every adult (Shleifer, 1991, p.347). This situation in the Soviet market worsened after the late 1980s when the nominal wages of population increased sharply but the nominal prices stayed fixed. As the result of it the Soviet workers had more incentive to look for goods and less incentive to work for rubles, since increasingly time rather than money is needed to produce goods, therefore workers will work less and search more (Shleifer, 1991, p.348).

Less time spending of the Soviet worker in the workplace very negatively affected the Soviet economic productivity, as productive of labor fell, output automatically decreased. In 1990 official measures of "losses of time" in industry and construction were about 50 million man-days (Shleifer, 1991, p.348). So, decrease in labor productivity very negatively affected all spheres of the economy, especially the industrial, agricultural output of the USSR and deepened crisis in the Soviet market and economy.

Another negative aspect of repressed inflation was Input Hoarding. In the process of open inflation which began in the USSR after the price liberalization in the early of 1990s, money began losing its functions as a store of value and consumers hoarded durables and dollars as an alternative (Shleifer, 1991, p.349). Firms switched out of the national currency and hoarded them to preserve wealth, and this process was very significant for the firms which accumulated a big amount of wealth in short period of time and after could change, resell or in some cases used by firms to procure both consumption goods and durable inputs with which to pay to their workers. However, why did the Soviet firms hoard durable inputs than outputs? The first explanation, widely used inputs tend to be more generic and hence more liquid, second it might be easier to keep by the KGB, which threatened the largest penalties for the firms (Shleifer, 1991, p.350). The table 64 presents information about the hoarding in the USSR during 1980-1989 year.

Table 64: Measure of Hoarding

Year	Average ratio of firm input invent to output inventories	Ratio of total intermediate goods invent to total final goods inventories
1980	4 485	4.8
1981	4 444	4.9
1982	4 104	4.6
1983	3 993	4.6
1984	3 837	4.7
1985	4 140	4.7
1986	4 113	5.2
1987	4 151	5.6
1988	4 336	5.8
1989	4 336	6.2

Source: Shleifer, page 351, 1991

The first series is present the average of the ratio of firms input to output inventories, which covers firms producing intermediate as well as final goods, the second series is the ratio of total intermediate goods inventories to total final-goods inventories (Shleifer, 1991, p.350). From the table we see how the second series slightly increased, which reflecting the particularly short supply of final goods. The main cause of this short was the increase of accumulation of intermediate goods inventories by the

firms. If the hoarding of durables goods by consumer reduces retail inventories and so raises the cost of the search for goods, in contrast the hoarding of inputs by the firms can do much more damage for the economy, as the firms hoard inputs rather than produce decrease the output of firms (Shleifer, 1991, p.350). But, situation becomes much worse when the decrease in output of an upstream producer automatically down the production of downstream producer. So the downstream production in the USSR had no alternative supply sources and was closely tied to one product this led to breakage of the production chain and structure of the economy. This process widely spread in the Soviet economy at the end of 1980s and had lamentable consequences for the Soviet economic system. The output of production, especially in industrial sector dramatically decreased in the economy.

Another negative consequence of repressed inflation in the Soviet economy was Supply Diversion. Repressed inflation in the USSR created situation when the prices of some goods was highly distorted and extremely low. Free market prices for many producer goods were very high and those prices were the prices that the state permitted to pay (Shleifer, 1991, p.351). The free market and state price distortions gave firms an enormous stimulus to distort honor plans and to sell outputs of enterprises to whom that paid more (Shleifer, 1991, p.352). The potential buyers of enterprises output were cooperatives and illegal enterprises which were created during the regime of Michael Gorbachev. As the result of supply diversion the traditional buyers of the goods couldn't get the inputs and this process began to reduce the output of the Soviet economy.

In the USSR the process of supply diversion had a several forms. The main form of supply diversion was selling goods to parties that pay more than the traditional state buyers. Another significant form of supply diversion was barter, the enterprises instead of supply products to the planned recipient, sometimes barter the output for commodities, which includes food and consumer durables (Shleifer, 1991, p.352). The last form of diversion in the USSR was theft. According to EZ (*Ekonomika I zhizn*) report theft of state property rose by almost one-third from 1989 to 1990 and then rose to 39 percent between the first quarters of 1990 and 1991 years (*Ekonomika I zhizn*, 1991). All these forms of diversion very negatively affected the production process and sharply

decreased the output level of Soviet enterprises. To verify in this, let to analyze the table 65.

Table 65: Indicators of Supply Diversion, 1987-1991

Period	Volume of unfilled deliveries in billions of rubles (state price)	Percent of enterprises failing to meet contractual obligations
1987	3.1	23
1988	2.2	17
1989		
First quarter	1.1	9
Second quarter	2.8	14
Third quarter	3.3	21
Fourth quarter	3.4	19
1990		
First quarter	2.5	13
Second quarter	2.8	18
Third quarter	5.8	25
Fourth quarter	6.6	25
1991		
First quarter	10	24

Source: Shleifer, page 353, 1991

The first series of table shows the volume of unmet deliveries measured as the ruble value of delivery that were contracted for but not made (Shleifer, 1991, p.353). From the table we see how the volume of unfilled deliveries sharply grew from 2.2 billion rubles in 1988 to 17.7 billion rubles in 1990 year. The second series of table presents percent of enterprises failing to meet their contract commitments, and the figures in this series grew from 17 percent in 1988 to 25 percent in the third and fourth quarter of 1990 year. The largest numbers of supply diversion were dispersion in the following sectors of the Soviet economy: chemical industry, metallurgical, timber and construction complex. Such diversions very negatively affected the economy of the country, directly decreased output of production, deepened shortage in the market and indirectly deteriorated production of downstream.

Another main negative aspect of repressed inflation was the process of population's savings. As the result of repressed inflation the wages and incomes of populations increased more rapidly than the productivity gains. Moreover, the fast

growth tempo of repressed inflation led to the shortage in the market and consumers could not find anything they wanted to buy and because many citizens chose to save a portion of their income each year. Starting from the 1970s, workers continued to earn more money than they spent and savings continued to grow and in the second half of the 1980s, the gap between income and spending became much larger (Efremov, 2012, p.46). In 1980s the population saved 4.1 percent of their wages and the number continued to grow throughout the decades reached 13 percent by the first quarter of 1991 (Efremov, 2012, p.46). According to Byung Kim the share of forced savings in total monetary savings increased from 9% in 1965 to 42% in 1989 (Kim, 2000, p.6). The table 66 shows detailed information about the total savings in the USSR during 1970-1989 years.

Table 66: Total Savings Deposits (billion rubles)

1970	1980	1985	1986	1987	1988	1989
46.6	156.5	220.8	242.8	256.9	296.7	337.7

Source: David Dyker, page 182, 1992

The table distinctly displays how the total savings deposits drastically grew in the USSR. The figures increased from 46.6 billion rubles in 1970 to 337.9 billion rubles in 1989 year. Most of rubles went into saving in bank deposits (Dyker, 1992, p.182). Domenico Muti in her articles wrote that the population could spend extra income in small free and black markets.

The increasing savings of populations very negatively affected the Soviet economy. A large accumulation of savings became reasons for “monetary overhang” and increased the Soviet money supply. According to Efremov, only 15-30 billion rubles were needed for cash circulation in 1985, yet the actual money supply at that time was over 200 billion rubles, the total money supply was astonishingly seven to ten times what was need for regular use (Efremov, 2012, p.47). This process has further strengthened the shortage and inflation in the Soviet economy.

So, by analyzing this chapter we persuaded how traumatic repressed inflation was for the economy of the USSR. Starting from the 1965 years, in the result of Kosygin

price subsidies reform repressed inflation developed in the Soviet economic system accompanied with unchanged retail prices and increased workers' wages. The negative influence of repressed inflation accumulated over long years and gave scratch in the last years of 1980s years. As the result of Gorbachev's reform and price liberalization, all negative aspects of inflation gushed outside and deeply damaged the Soviet market. The process of deepening of shortages, budget deficit began in the economy of the country also the process of Input Hoarding and Supply Diversion had started. All these factors drastically decreased the output and labor productivity of the Soviet economy, increased the market disequilibrium and played the major role in the dissolution of the USSR at the end of 1991 year.

4.4. Perestroika (Restructuring) in the Soviet Economy

Beginning from the middle of Brezjnevev epoch ("Epoch of Stagnation") there was a deep crisis and stagnancy in the Soviet economy. The main economic indicators of the country such as: economic growth, national income, agricultural and industrial output showed very low performance and since 1972 year had slightly decreased. CIA estimated that only growth of gross national product of the USSR sharply fell from 5.1 percent in 1961-1965 to 1.9 percent 1981-1985 years (Brown, 2006, p.134). By mid 1980s years an acute economic, financial and political misbalance had developed and the system needed in a very deep reconstruction and transformation.

This reformer became Michael Gorbachev which took the position of party general secretary, after a short Chernenko interlude in 10 March 1985 year. The main aim of Gorbachev was the restructuring of economic, political, social and cultural life in the USSR, he wanted to change the Soviet Union behaviorally and save socialism from stagnation. Therefore in April 1985 year Gorbachev began his famous reform program Perestroika (Restructuring). Perestroika meant the renovation of socialism and recovery of the creaking economic mechanism, and carried less ideological baggage than reform-with its connotation for Soviet conservatives of reformism-and so became a cloak under which increasingly radical reform could be carried out (Brown, 2009, p.40). According to Gorbachev, there were two main goals of Perestroika reforms, first to stop slowdown

trend of Soviet economy and second to raise the life standards of the population (Mazat, 2011, p.25). The reform covered a wide range of economic activities, from agriculture to housing and was supported by the most parts of the citizens in the early periods. The most radical change of the reform and Gorbachev was trying to implement “market socialism” in the Soviet economic system, similar to what China had done in the late 1970s. Gorbachev was very aware that the Stalinist command economy he had inherited was simply not delivering the promised goods to the masses (Carlyle, 2002, p.47). He admitted that true socialism was never constructed because the wrong forms and methods “were canonized, idealized and turned into dogma” (Lauritzen, 2011, p.37).

However, it’s interesting, why did the Perestroika begin specifically in 1985 year? In this place thoughts of historians and economists are separated, some people believe that the high economic growth rates in the West were responsible for Perestroika, others believed that the American Proposal for a Strategic Defense Initiative (SDI), which shifted the military competition between the USA and the USSR to the area of high technology was responsible for Perestroika.

One of the main slogans of Gorbachev in the initial phases of Perestroika was the process of “acceleration” (intensification) which was adopted in December 1985 year. As a result of it, the twelfth five-year plan, that lagged during 1986-1990, included a major retooling of industry, based on the desire to move from extensive to intensive growth (Fischer, 1994, p.233), on the basis of accelerating scientific and technological progress. The plan also foresaw to increase the growth rate of the national income, the productivity of social labor, industrial and agricultural output and real incomes (Abalkin, 1987, p.27) and was aimed to overcome negative phenomena that developed in the Soviet economy in the late 1970s and early 1980s years. The Gorbachev policy of “acceleration” was carried out by the large investments in the high technology areas, especially on machine building. During the period of “acceleration” the time between 1986-1990 the government intended to increase the growth rate of industrial production from 16.5 percent in 1981-1985 to 22.1 in 1986-1990, agricultural production from 5.5 percent in 1981-1985 to 14.4 percent in 1986-1990, and real incomes per capita from 11

percent in 1981-1985 to 14 percent in 1986-1990 (Nove, 1992, p.399). The process of “acceleration” gradually introduced during the Gorbachev’s Perestroika.

The first policy of Gorbachev’s Perestroika was the “anti-alcohol campaign” which was introduced in May 1985 year. The Soviet Union, especially Russia was historically ranked among the world’s heaviest drinking countries, prior to the anti-alcohol campaign, annual consumption of alcohol in the USSR was 14.2 liters per capita (compared to 8 liters in the USA) (Bhattacharya & Gathmann, 2011, p.4). The effect of widespread alcoholism very negatively affected \Soviet society and was a major cause of premature death, low labor productivity and absenteeism that decreased the productivity of economy of the country. Approximately 90 percent of missed workdays were due to drinking, moreover in 1986 year there were 4 million officially registered alcoholics in the USSR (Gaidar, 2007, p.78). The “anti-alcohol campaign” provided to reduce hours of sale, by raising the prices significantly, decreasing production and by increasing penalties for being drunk on the job. Between June 1985 and May 1986 only, State production of vodka and hard liquor declined by 30-40%, cognac production fell by 44% (Bhattacharya & Gathmann, 2011, p.5). Production of alcoholic beverages in state factories was reduced by 50% during 1985-1987 years, also the Soviet authorities increased alcohol prices in 1985 alone, the price of vodka, liqueur and cognac rose by 25%, and prices were increased by about 25% more in 1986 (Bhattacharya & Gathmann, 2011, p.6). Moreover, the sale of alcohol was forbidden near factories, hospitals, airports and educational institutions began the big media propaganda and health educational programs. As the result during 1985-1988 years, official sales of alcohol were as much as 60% below pre-campaign levels, and total consumption had fallen by 25-30% (Bhattacharya & Gathmann, 2011, p.12). Campaign gave positive results in the decline of the death rates in the USSR but became very painful for the economy of the country. The “anti-alcohol campaign” led to the drastic reduction in tax revenues also the decline in alcohol sales had a negative effect on the budget, costing about 2 percent of GNP (Fisher, 1994, p.233). Dramatically decreased the revenues of country from the alcohol sales in 1985 revenues from alcoholic beverages sales was estimated at 60 billion rubles, after the resolution revenue in 1986 was 38 billion, in 1987 35 billion, and in 1988 year

was 40 billion rubles (Gaidar, 2007, p.134). The table 67 shows more detailed information about the revenues from alcohol sales.

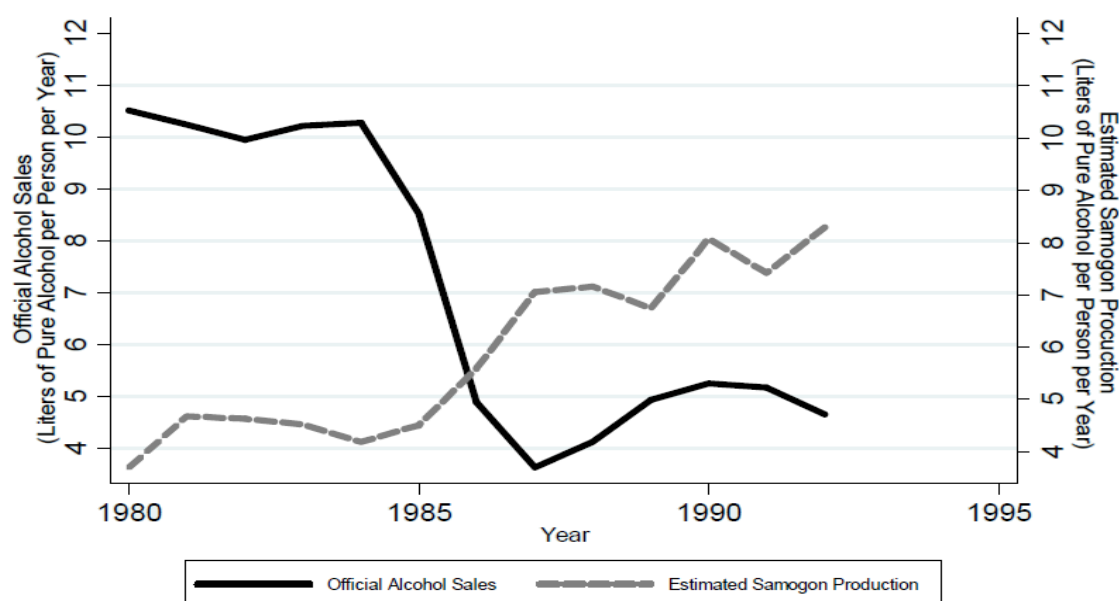
Table 67: Fiscal Implications of the Anti-Alcohol Campaign, 1985-1987

Item	1984	1985	1986	1987
Tax revenues in the state budget from sales of alcohol beverages (billion rubles)	36.7	33.3	27.0	29.1
Tax revenues in the state budget from sales of alcohol products (percent of GDP)	4.8	4.3	3.4	3.5
Retail sales of alcohol beverages (billion rubles)	52.8	47.7	37.0	36.0
Retail sales of alcohol beverages (percent of GDP)	6.9	6.1	4.6	4.4

Source: Yegor Gaidar, page 135, 2007

From the table 67 we see how tax revenues in the state budget from the sales of alcohol products rapidly decreased during the campaign. Along with this in illegal production of alcohol (samogon) began which led to the shortage of sugar, spirits and yeast in the Soviet market. The figure 12 displays how the production of samogon sharply increased with the decrease of production of legal alcohol.

Figure 12: Official Alcohol Sales and Indirect Estimated of Samogon Production



Source: Bhattacharya & Gathmann, 2011

All these processes very adversely affected the USSR and became the big blow for the Soviet economy. The “anti-alcohol campaign” of Gorbachev deepened the budget deficit of the USSR and that was reason that it was ended in 1988 year.

Another policy of Gorbachev’s Perestroika was Law on State Enterprises which was adopted in July 1987 year. USSR began the process of inculcation of “market socialism” and decentralization of the Soviet economy. This policy granted substantial autonomy to state enterprises and defined that central plans were becoming indicative and but not obligatory any more (Mazat, 2011, p.25). Enterprises were given targets for the value of these outputs by the central planning but detailed plans of input-outputs for each company were abandoned, moreover the government contracts were substituting state orders and only a part of the production of enterprises was bought by the state, another part of the output of enterprise could be sold through wholesale trade between the companies (Mazat, 2011, p.25). The Law on State Enterprises also allowed the enterprises to set prices on the some products; the pricing system was not any more entirely controlled by the Gosplan. Also the enterprises could set the level of wages and bonuses for the workers. For the controlling of this process in the enterprises Labor Councils were organized. Labor Councils were responsible for discipline in the enterprises, the determination of the level of wages and for the distribution of profits between investment and incentive funds for employees (Kotz, 2007, p.76-77).

The inculcation of the law about the autonomy of the state enterprises had a range of negative consequences for the Soviet economic system. It disorganized the coordination of the economy previously ensured by the Gosplan, which was losing progressively its control over the Soviet economy and created bottlenecks and deepened shortage in the Soviet markets (Mazat, 2011, p.26). Also using the broad autonomy the enterprises dramatically grew the share of profit going to incentive funds, which increased from 82% in 1988 to 95% in 1989 years (Mazat, 2011, p.26). The income of incentive funds was used mostly for increase of the wages of the workers. The process of rapidly increasing of real wages by the enterprises became causes of growing shortages, excess demand and inflation in the country.

From the table 68 we can see how the income of incentive funds sharply grew in the USSR. It's increased from 34 billion rubles in 1986 to 130 billion rubles in 1989 year (Table 68).

Table 68: Distribution of Enterprises Profit in the USSR, before and after 1987 Reform (in billion rubles)

	1986	1987	1988	1989
Total profit of state enterprises	198	206	237	265
Profit paid to State budget	101	95	92	95
Share of the total profit paid to State budget	0.51	0.46	0.39	0.36
Profit retained by enterprises	91	97	119	138
Of which paid into enterprise incentive funds	34	33	97	130

Source: Numa Mazat, page 26, 2011

Another negative sides of Law of 1987 year was loses of the total control over the enterprises by the Soviet State. As the result of granting a broad autonomy to the enterprises the Soviet State could not collect any more tax it needed. This negative aspects dramatically decreased accession of the state budget. From the table 68 we can see how the share of total profit paid to the state budget fell. The profit of the state budget from the enterprises sharply decreased from 0.51 percent in 1986 to 0.36 in 1989 year (Table 68). This process led to the deepening of the State budget deficit in the USSR. The freedom to determinate the prices of products by the enterprises also negatively influenced the economic system and deteriorated the pricing system of the country. The consumer good enterprises, which had become profit-seeking because of their newly acquired autonomy, shifted their production from basic goods to “new products”, which embodied minor alternations to existing items and were more profitable (Mazat, 2011, p.27). As the result, “new goods” price of which not set by the state became very highly-priced and carried a large markup. This process increased the shortages of basic consumer goods in the Soviet markets and also intensified the work of the illegal secondary markets or black markets in the Soviet Union.

Michael Gorbachev strongly supported private economic activity in the economy of the country and because of that starting from the 1986 year the Soviet began

actively implementing the functions of private sector and privatizations. In November 1986 year the Law on Individual Labor Activity was adopted, which was a first step in the direction of the formation of a private sector in the USSR. This law legalized such activities as taxi services, private tuition, car and television repair. This was still, however, a very limited measure, those engaged in it were supposed to do it only part-time and, although that stipulation soon fell by wayside, by 1989 the people involved still numbered just 300 000 (Brown, 1996, p.145). A much more extensive, marketizing piece of legislation was adopted in May 1988 and called the Soviet Law on Cooperatives, which also represented the real birth of Soviet private sector. The cooperatives functioned as private enterprises and do not obey to the plan (Mazat, 2011, p.27). Distribution of cooperative income would be decided exclusively by the members of the cooperative, and cooperatives would have complete freedom as regard sales as purchases contracts (Dyker, 1992, p.95). Moreover, cooperatives had the rights to engage in credit activities, i.e they constituted the embryo of a system of private financial institutions, had access to foreign trade, could participate in joint ventures and were free to set their prices (Mazat, 2011, p.28). Instead of this, the government restricted the activity of cooperatives in some areas of economy such as trade in video films, produce alcohol, medical care, jewelry production and sale, publishing and etc. Average wages in cooperatives was 2.5 higher than in state enterprises and therefore the number of workforce in the cooperatives dramatically growth from 200 000 in 1988 to 3.1 million in 1990 and reached a peak in 1991 with the figures of 6.2 million people, moreover cooperatives generated 3 percent of Soviet GNP and 10-12 percent of national income of the country (Dyker, 1992, p.99). However, as in other cases, cooperatives created a range of problems for the Soviet economy. After the Law “On the Foreign Trade Activity of State Cooperative and other Enterprises” in December 1988, which sharply weakened the State control over foreign trade, many cooperatives bought goods from state enterprises for the low state domestic prices and sold them abroad for hard currency (Gustafson, 1999, p.27). In this process, some enterprises managers, which are now known as Russians oligarchs enriched themselves a lot. Also cooperatives played the main role in the distribution system of the Soviet Union. As the result of autonomy and free price setting cooperatives sharply increased the price and employees wages that

led to the growth of inflation level in the USSR. All these process became the causes of disintegration of the Soviet economic system and increasing the structural external vulnerability of the country.

Along with Perestroika the other main slogan of Gorbachev reforms was “Glasnost” (Openness), which was launched after the 27th Party Congress held in February 1986 year. Glasnost indicated Gorbachev’s desire to make the Soviet system a more open one, where people could eventually express their ideas freely and openly (Darraj, 2010, p.70). Also Glasnost gave a very wide freedom to Soviet peoples in many areas, especially in media and political stage. As the result, began the process of criticism of the CPSU and of Gorbachev in newspaper and on television. Another decree was the resolution “On the Democratization of Soviet Society and Reform of the Political System” which was adopted in June 1988 year and embodied the principle of one-party pluralism (Yu Sham Wu, 1992, p.204). Under this resolution the law about the democratic multiple-candidate elections in the USSR was adopted on the national and local levels. Gorbachev’s program of “democratization” resulted in defection from the Party’s ranks as well as in the forthcoming formation of anti-communist opposition parties (Dunlop, 1993, p.75). Also this process increased and strengthened the power of the national political parties in the Soviet republics.

Eventually, the Gorbachev’s policy of “Glasnost” and “Democratization” weakened the structure of Communist Party (CPSU), decreased decentralization of the political system and increased the nationalistic movements and feelings in the Soviet Republics. Along with the economic problems, the process of national disintegration began.

In the middle of the 1990 year the economic situation in the USSR began to deteriorate. The economy began shifted from the crisis situation to the catastrophe. The reforms and laws of Gorbachev’s Perestroika began to fail one after another.

The first failures of Gorbachev began with process of “acceleration”. In the first years the process of acceleration positively affected the Soviet economy, especially in the industrial sector, but after 1986 years Gorbachev program of “acceleration” began to

fail. The basic problem with the strategy of “acceleration” was that, it was in complete conflict with the aim of economic reform, which required a lesser degree of tautness to permit flexibility and the abandonment of administered allocation of inputs (Nove, 1992, p.400). In other words the process of “acceleration” conflicted with the economic reforms of Perestroika which largely reduced the success of the implementation of program. Also a difficult financial situation in the USSR at the end of 1980s didn’t allow for more effectively implementation and development of the process of “acceleration”.

4.4.1. Industrial Sector during Perestroika

Mishap of the process of “acceleration” and Perestroika program began negatively impact the industrial and agricultural sector of the USSR. After 1988 the production and average growth rate of the industrial sector of the USSR began to decrease with very fast tempo. In 1990 year the industrial production of the USSR fell by 1.2 percent, industrial output by 6 percent, food industry output by 8.5 percent (Nove, 1992, p.414). The level of physical output indicators also rapidly decreased, in 1990 the production of oil fell by 9 percent, coal by 11 percent, steel by 12 percent, iron by 10 percent, motor vehicles by 8 percent, tractors by 12 percent, fertilizers by 8 percent, timber by 13 percent and paper by 7 percent (Nove, 1992, p.414). The tables 69 and 70 show more detailed information about the performance of the Soviet industrial sector during the Perestroika.

Table 69: Industrial and Agricultural Product in the USSR, 1986-1990 (in percent)

	1981-1985	1986	1987	1988	1989	1990
National income	3.2	2.3	1.6	4.4	2.5	-4.0
Industrial product	3.9	5.5	4.6	6.3	0.4	-1.2
Agricultural product	1.0	7.1	-1.4	2.5	1.7	-2.3

Source: Alec Nove, page399, 1992

The table 69 displays how the growth rates of industrial, agricultural production and national income of the USSR decreased after the 1988 years. The industrial production growth rate dramatically decreased from 6.3 percent in 1988 to -1.2 in 1990 year (Table 69).

Table 70: Soviet Industrial Sector, 1985-1990

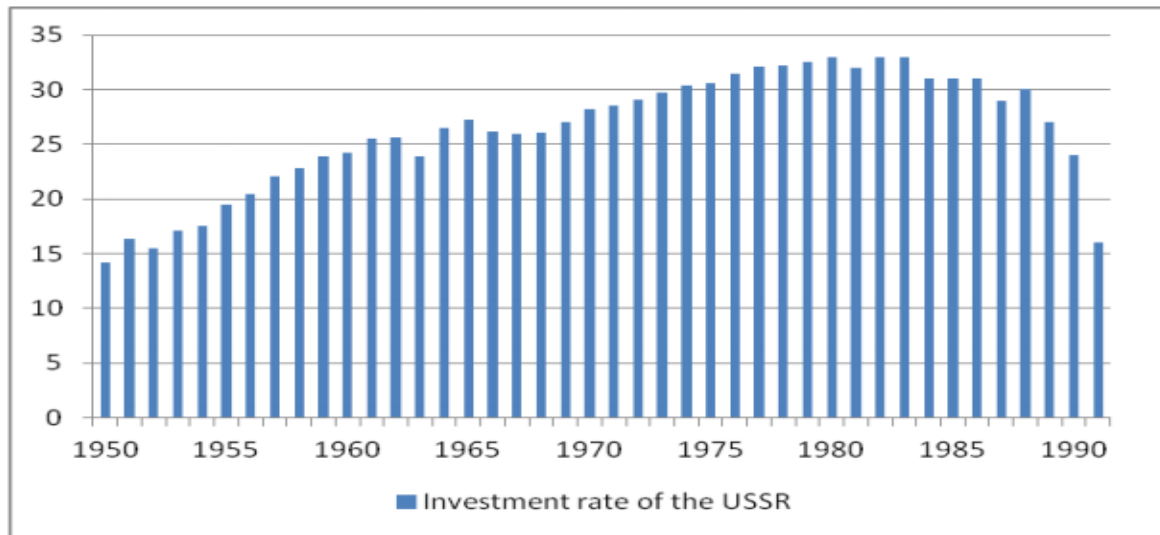
Industrial sectors	1985	1988	1990
Electricity (billion kWhs)	1 545	1 705	1 728
Oil (million tons)	595	624	570
Gas (million cub meters)	643	770	815
Coal (million tons)	726	772	709
Rolled steel (million tons)	108	116	112
Chemical fibers(thousand tons)	1 394	1 535	1 500

Source: Alec Nove, page 400, 1992

The table 70 shows information about the output of some industrial branches between 1985-1990 years. As we see after 1988 year the figures of some industrial branches slightly decreased.

The main role in the decreasing of the productivity of industrial sector of the USSR played Gorbachev's decree about the "Law on State Enterprises" and "Law on Cooperatives" which gave a push to the increase of the level of Input Hoarding and Supply Diversion in the Soviet enterprises (Chapter 4.3). The high defense spending of the Soviet government Also negatively influenced the industry, in spite of decrease in the military expenditures of the USSR by 14.2 percent in January 1989 year (compare to 1987) and arms manufactures by 19.2, the Soviet military spending remained still very high and hindered the development of the industry. Also the high level of inflation and shortage in the Soviet market, and low level of discipline became the causes of violation of work discipline that led to the fell of labor and industrial productivity. Gorbachev famous programs "Glasnost" and "Democratization" which led to the increase of national movement and separatism in the Soviet republics also negatively affected the industrial productivity. This political and national disintegration led to the break of production chain and ties between the socialistic republics. As the result of difficult financial situation which had been developing in the USSR in the late of 1980s years the government began dramatically decreasing investment in the economy and especially in the industry. The figure 13 shows how the investment in the USSR economy dramatically decreased.

Figure 13: Evolution of the Investment Share in the USSR, 1950-1990



Source: Numa Mazat, page 8, 2011

The investment share in the USSR reached a peak in 1975 with the figures 39 percent, but after 1973 the process of rapid decrease of investment in the Soviet economy had started. The figures fell from 33 percent in 1975 to 23 percent in 1990 year (Figure 13). Eventually, all these factors very negatively influence to the Soviet industry and led to the fell of productivity of the industrial sector of the USSR.

Table 71: Industrial Performance of the USSR, 1970-1989

Product	1970	1975	1980	1985	1986	1987	1988	1989
Steel (million metric ton)	115.9	141.3	147.9	154.7	160.6	161.9	163.0	160.1
Ferrous rolled metal (million metric ton)	80.7	98.7	102.9	108.9	112.0	114.1	116.0	115.5
Metal-cutting tools (thousand)	202.2	231.3	216.2	181.8	164.1	156.1	147.9	142.6
Tractors (thousand)	498.5	550.4	554.9	585.5	595.0	567.5	559.2	532.2
Fertilizer (million metric ton)	13.1	22.0	24.8	33.2	34.7	36.3	37.1	34.3
Chemical fibers (thousand metric ton)	623.0	955.0	1 176	1 393	1 479	1 517	1 554	1 557
Cars (thousand)	344	1 201	1 327	1 332	1326	1 332	1 262	1 217
Pig iron & fellow alloys (million metric ton)	85.9	105.0	107.3	110.0	113.8	113.9	114.6	113.9

Source: USA/USSR Facts and Figures, page 4.1-4.16, 1991

In the table 71 we give the figures of some industrial sectors of the USSR between 1970-1989 years. Starting from 1988 year the figures of all industrial products began to fall.

4.4.2. Agricultural Sector during Perestroika

Along with the industrial sector situation in the Soviet agricultural sector began to deteriorate. The first major agricultural legislative measure of Gorbachev came in November 1985 year, when he announced the abolition of five ministries and one state committee and set up instead of them a new “super ministry for agriculture the USSR State agro-Industrial Committee-Gosagroprom. Republican and Local Gosafroprom bodies would now have a substantial freedom to fix “incentive prices” for some up-market categories of products, moreover farms would now be allowed to sell up to 30 percent of their planned level of procurement of fruit and vegetables to consumer cooperatives (Dyker, 1992, p.115). This renovation amended situation of the Soviet agricultural sector, but beginning from the 1987 the situation in agricultural sector again began to deteriorate. The growth rate of agricultural production decreased from 7.1 percent in 1986 to -1.4 in 1987 year (Table 68)

Starting from the 1988 year the reorganization of the Soviet agricultural sector was transferred to another stage, in which the implementation of market relationships in the agricultural sector had started. In 1989 year the Law on Leaseholds was adopted and in 1990 the Law on Land passed which permitted to lease 50-100 hectare blocks of lands and farm on an independent basis, had been around for some time on an experimental basis (Dyker, 1992, p.121). In December 1991 the other decree “On the reorganization of collective and state farms into any standard form of association” was adopted and began the process of decollectivization or transformation of kolkhozes and sovkhozes in partnership which received economic and juridical independence. But unfortunately adopted by the Soviet authorizes reforms, on the contrary worsened situation in the agricultural sector of the USSR. Tenant farmers faced with the great difficulties in financial acquisition of equipment and vehicles, and with numerous bureaucratic obstacles. Introduction of elements of market relationships in the agricultural sector strengthened the disbalance and deepened crisis in the Soviet agricultural sector.

According to official figures in 1990 year agricultural production decreased by 2.3 percents and agricultural output by 11 percents (Nove, 1992, p.412-414).

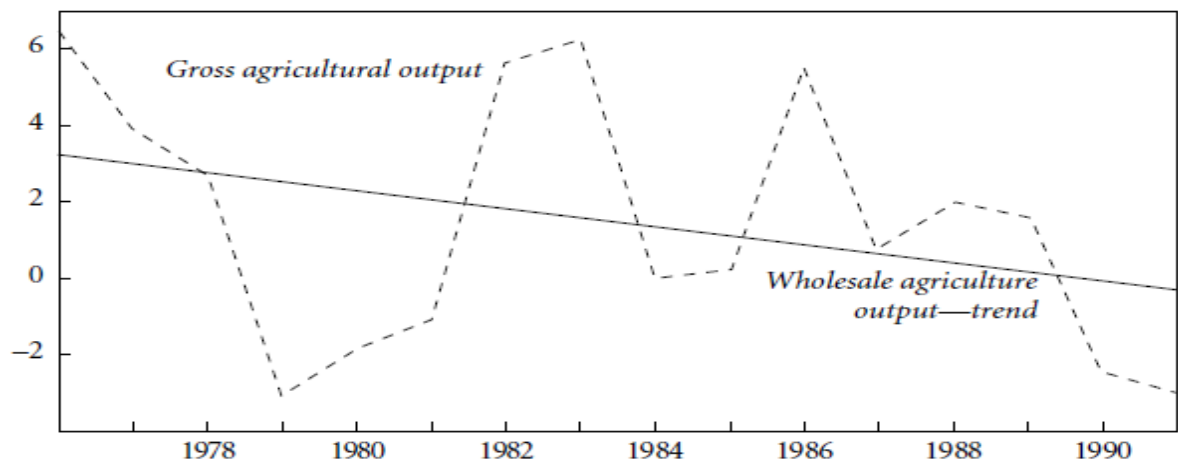
Table 72: State Procurement of Main Agricultural Product from Soviet Producers (thousand tons)

Product	1981-1985 (average for the period)	1986	1987	1988	1988 (percent of average for the period 1981-85)	1986-88 (average for the period)	Average for 1986-88 (percent of average for 1981-85)
Wheat	33 684	43823	35195	34840	103	37 953	113
Total grain crop	66 643	78787	73347	61375	92	71 170	107

Source: Yegor Gaidar, page 124, 2007

The table 72 demonstrates how grow rates of agricultural production (wheat and total grain crops) slightly decreased in the USSR at the end of 1980 years.

Figure 14: Rate of Growth of Agricultural Output, 1976-1990 (percent)



Source: Yegor Gaidar, page 149, 2007

The figure 14 shows the rate of grow of agricultural sector of the USSR between 1976-1991 years. The figure clearly shows how the rate of agricultural output sharply decreased from 1989 to 1990 year. Generally, the Soviet agricultural output had very unstable character between 1976-1990 years.

Table 73 displays the agricultural production of some agricultural products in the USSR during 1970-1989 year. The indicators of many agricultural products in the last year of 1980s show very bad performance comparing with earlier periods.

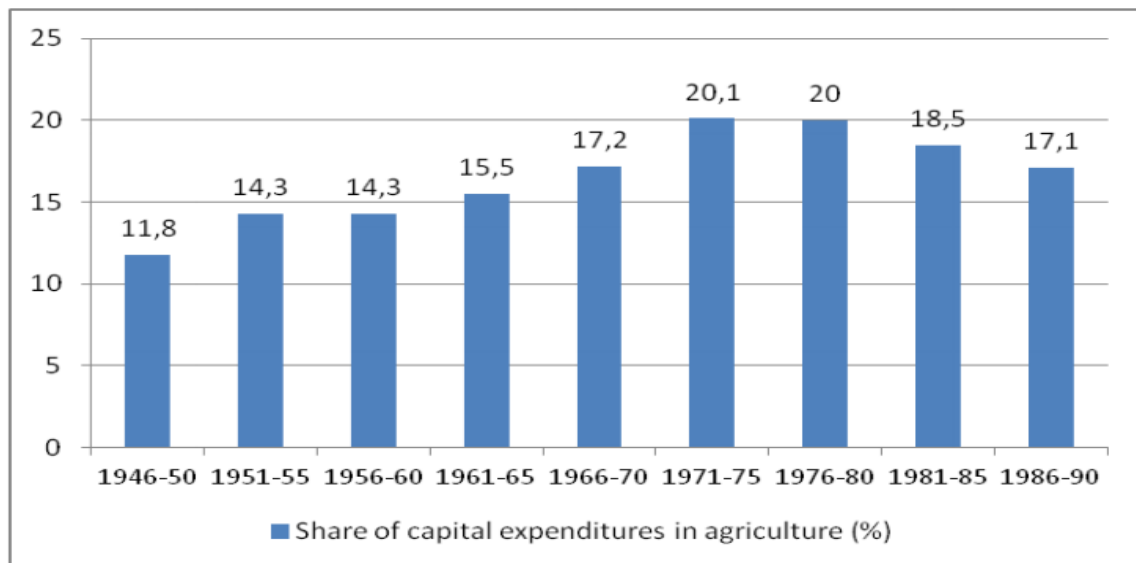
Table 73: The Soviet Agricultural Performance, 1970-1989 (million meters ton)

Item	1970	1975	1980	1985	1986	1987	1988	1989
Wheat	99.7	62.8	92.5	73.2	86.6	77.4	78.8	87.2
Rye	13.0	8.3	9.0	14.3	13.8	16.1	16.9	18.3
Rice	1.3	1.9	2.6	2.4	2.4	2.4	2.6	2.3
Cotton	2.34	2.54	2.70	2.78	2.66	2.50	2.76	2.66
Potatoes	96.8	88.7	67.0	73.0	87.2	75.9	62.7	72.2
Vegetables	21.2	23.4	27.3	28.1	29.7	29.2	29.3	28.7
Fruit	7.6	8.7	7.9	10.5	11.5	8.2	8.9	9.7
Milk	83.0	90.8	90.9	98.6	102.2	103.8	106.8	108.5

Source: Numa Mazat, page 10, 2011

There were many reasons of the low agricultural performance of the USSR during the Perestroika. The main role was the decrease of investment in the agricultural sector, due to the large budget deficit in the economy.

Figure 15: Share of Capital Expenditures in Agriculture, 1946-1990



Source: Numa Mazat, page 10, 2011

From the figure 15 we can see how the expenditures in agriculture of the USSR slightly decreased beginning from the 1976-1980 years. The other main reasons failure

of the agriculture was the structural and economic vulnerability which began after the introduction of elements of a market system in the Soviet agricultural sector. This led to the economic disbalance, breaking of agricultural relations and recession of labor force. Recession of the Soviet agricultural output increased shortage and deficit in the Soviet market in the early of 1990s.

4.4.3. Financial Sector during Perestroika

The most catastrophic situation was in the financial sector of the USSR. Gorbachev's reform Perestroika deteriorated situation and deepened the crisis in the Soviet financial sector. Acute situation had developed around the budget deficit of country. The budget deficit of the USSR grew extremely rapidly, to 47.9 billion rubles in 1986, 57.1 billion rubles in 1986, 57.1 billion in 1987, 90.1 billion rubles in 1988 and 100 billion rubles in 1989 year (Nove, 1992, p.404). In the last quarter of 1991 year the budget deficit of the USSR reached to 22 percent of GNP (Fisher, 1994, p.236).

Table 74: Expected Execution of the Union Budget in 1991 (billion rubles)

Item	Approved plan for 1991	Expected execute in 1991
Total revenues	250.1	112.1
Total expenditures	276.8	256.7
Deficit	26.7	144.6

Source: Yegor Gaidar, page 235, 2007

Table 74 shows information about the budget deficit in 1991 year. The total expenditures of government exceed the total revenues more than 2 times, resulting in deficit summed up to 144.6 billion rubles (Table 74).

One of the main reasons of the deterioration of the Soviet budget deficit during Perestroika was the anti-alcohol campaign of Gorbachev, as the result of which the Soviet budget during 1985-1987 years lost around 37 billion dollars (www.albest.ru). Also the significant role in the failure of not only budget, but also all Perestroika programs, played the disaster in Chernobyl Nuclear Power Station in 26 April 1986 year. As the result of disaster 100 square kilometers of land was polluted by radiation, 200 000 people were urgent resettled and 1.5 million gradually resettled (Dyker, 1992, p.196). The total expenditures of the Soviet government aimed to eliminate the

consequences of the accident were nearly 12.6 billion of rubles (Evenko, 1990, p.27). Another tragedy associated with the high expenditures of the State budget was the powerful earthquake in Armenia in 1988 year, where by the government was spent around 11 billion rubles (Evenko, 1990, p.27). These unpredictable events caused a big blow for the economy and budget of the USSR.

Along with the state budget deficit also grew external debt of the USSR. The table 75 shows how the debt of the USSR increased between 1989-1990 years.

Table 75: Soviet Hard-currency Debt at Year End 1989 and 1990 (billion dollars)

	1989	1990
Gross liability to Western banks	44.8	42.1
Liability to official expenditure credit agencies	5.7	5.9
Liability to private, non bank entity	1.8	2.1
Arrearages on trade payments	0.5	5.0
Gross debt	52.8	55.1
Claims on Western banks	14.7	8.7
Net debt	38.1	46.4

Source: Neu, page 11, 1991

The state debt at the start of 1989 was 312.4 billion rubles, in the late of 1989 it reached 400 billion rubles, or 44 percent of GDP (Gaidar, 2007, p.137).

The sharp rise in the Soviet net foreign borrowing was a deteriorating currency account position (Neu, 1991, p.14). Both the merchandise trade balance and the current account balance peaked in 1987, and both have moved into deficit by 1989 year (Neu, 1991, p.14). A part of the decline in both balances was accounted of the disappointing performance of the Soviet oil industry in the late 1980s. Also the sharp deterioration in the Soviet currency account position during 1980s is consisted with a large increase in foreign borrowing (Neu, 1991, p.15). All information about the Soviet Currency Account represented in the table 76. The table distinctly shows how the positions of trade balance, service balance, external debt service position and current account slightly deteriorated in the Soviet Union during the 1985-1987 years.

Table 76: Soviet Current Account in Convertible Currencies (billion dollars)

	1985	1986	1987	1988	1989	1990
Trade balance	1.3	3.6	8.2	4.8	0.1	-5.7
Exports	27.5	26.8	31.3	33.4	35.2	36.2
Imports	-26.3	-23.2	-23.1	-28.7	-35.4	-42.6
Service balance	-1.8	-1.8	-1.7	-3.3	-3.8	-5.0
External debt ser. position	NA	-7.8	-8.8	-8.2	-9.4	-13.3
Gold sales	1.8	4.0	3.5	3.8	3.7	3.6
Current account (except gold)	-0.5	1.8	6.6	6.6	-3.9	-10.7
Current (include gold)	1.3	5.8	10.1	5.1	-0.2	-7.1

Source: C.Neu, page 15, 1991

The other table 77 represents the macroeconomic performance of the USSR economy during the Perestroika. The table clearly displays how deteriorated the main economic indicators of the country during the 1985-1991 years.

Table 77: Soviet Macroeconomic Performance, 1985-1991

	1985	1986	1987	1988	1989	1990	1991
GNP growth	0.8	4.1	1.3	2.1	1.5	-4.0	-13.0
Gross investment growth	3.0	8.4	5.6	6.2	4.7	-2.5	-6.0
Budget deficit/GDP (%)	2.4	6.2	8.8	11.0	9.5	8.3	20
Retail price index	3.5	4.4	4.5	6	8	20	100
M2 growth	NA	8.5	14.7	14.1	14.8	20.2	75
Nominal wage increase	2.9	2.9	3.7	8.3	9.4	12.3	70
Real wage	-5	-1.5	-5	2	1	-6	-15

Source: Fisher, page 234, 1991

GNP of the country decreased from 0.8 percent in 1985 to -13.0 in 1991 year (Table 77). Also the M2 growth and nominal wage dramatically increased that led to the growth of level of inflation in the country.

Table 78: Gross Domestic Product (GDP) of the USSR, 1970-1990

Year	GDP billion dollars	GDP per capita dollars	Share in the world GDP %	GDP, growth %
1970	433	1783	13.14	-
1972	516	2085	12.36	113.2
1975	686	2696	10.66	111.2
1977	738	2851	9.43	107.1
1979	840	3428	8.45	107.4

1980	940	3541	7.9	104.2
1982	960	3554	7.96	105.8
1984	938	3411	7.37	94.5
1985	914	3293	6.99	97.4
1986	849	3031	5.6	92.9
1987	798	2823	4.65	94
1988	777	2725	4.05	97.4
1989	770	2680	3.83	99.1
1990	776	2684	3.48	100.8

Source: Ivan Kushin (www.kushhins.org)

The table 78 represents information about the GDP performance of the USSR between 1970-1990 years. The table displays the slight decrease of GDP growth and Soviet share in the world GDP between 1970-1990 years.

To abandon the hard crisis situation the economists S.Shatalin and G.Yavlinsky submitted the Soviet government reform plan which was known as the “Shatalin 500 day programs”. The plan invoked a rapid transition to a market economy within 500 days and incorporated the ideas of large-scale privatization, a great devolution of power to the republics, and the speedy construction of market institutions (Brown, 2006, p.152). But the plan seemed very ambitious and unrealistic and therefore was rejected by the Government. Instead of this reform in 22 January 1991 year the Soviet government adopted the monetary reform of Minister of Finance V. Pavlov. The reform was designed to get rid of excess money supply which was in circulation and solve the problem of shortage in the commodity market of the USSR. Reform was carried out in a very short period of time and envisaged that the 50 and 100 ruble banknotes sample 1961 are redeemable at a small sample of the same bill in 1961, and notes so and 100 rubles of 1991 year (www.ria.ru). The Soviet government believed that the monetary reform will destroy the shadow business corruption, speculation and smuggling which were widespread in the Soviet economy in the early of 1990s years. The confiscatory procedure allowed withdrawing from circulation 14 billion rubles in cash which was approximately 10.5 percent of the total mass or slightly less than 17.1 percent of the planned withdraw (www.ria.ru).

The second stage of the reform began in 2 April 1991 year with the liberalization and sharp increase in the prices of the most important consumer items. The government

version of retail pricing reform called for price hikes of 60 percent, but in fact, prices raised by an average of 90 percent, for meat and poultry 260 percent, sausages 310 percent and baked goods 300 percent (Gaidar, 2007, p.211).

Table 79: Retail Prices for Selected Food Products

Food products	April 1990	March 1991	April 1991
Beef, 1 st category/with bones	1.97	3.35	7.90
Dressed chickens, gutted	3.03	3.52	5.85
Meat patties (per ten)	1.15	1.28	4.03
Meat pilmeni	1.38	1.53	4.40
Cooked sausage, premium grade	2.79	3.26	8.90
Link sausages, premium grade	2.40	2.82	7.34

Source: Yegor Gaidar, page 211, 2007

The table 79 shows how retail prices for selected good products sharply increased in Soviet market during April 1990-1991. The price of some goods increased more than four times.

However, accepted by the government a package of reform didn't have a positive impact on the economic and social life of the country, on the contrary exacerbated the situation in the economy. Firstly, as the result of early and fast confiscation the government made the significant monetary compensation to the citizens that led to the increase of money supply in the country. Moreover, the main reason for a substantial increase of the money emission in June and September was refusal of the former republics to transfer funds to the Union budget. As the result of large expansion of money supply, in the Soviet economy began hyperinflation. Also acute price increase in the April led to a decline of living standard of population and gave to push to demonstrations and riots in many cities of the USSR.

Table 80: Change in the Money Supply, 1988-1991

Month	1988	1989	1990	1991
April	4.13	3.63	2.60	4.77
May	-0.93	-1.55	0.22	5.50
June	3.40	3.48	2.62	18.74
July	3.76	2.18	2.93	19.87
Augusts	-2.06	-0.20	5.76	17.13

Source: Yegor Gaidar, page 217, 2007

The table 80 shows how the money supplies increased in the Soviet market between 1988-1991 years. The figures display the dramatic increase of money supply in the economy in the second quarter of 1991 year. The failure of the monetary reform led to a worsening and destabilization of the political and economic situation in the country.

Gorbachev's policy of restructuring of the Soviet economic, social and political system of the USSR and transition to the market economy ended with complete failure. In the last month of 1990 year the government completely lost control over the political, economic and social system of the Empire. Mistakes made in the process of implementation of reforms deepened the crisis and increased the misbalance of the economy. Firstly, the Glasnost policy of the Gorbachev had served to start up the opposition to communism, to the CPSU and to the Soviet Union. This reform deeply had shaken the potency of the Communist Party, the KGB and the Marxist-Leninist ideology and gave impetus to the nationalistic movements and ethnic conflicts, which accelerated the collapse of the Soviet Union. Secondly, in the reform of Perestroika a lot of miscalculations and mistakes were made, also reforms were implemented without strict control of the state which led to the big failures in the economic and social system of the country. As the result of failures the economic, social and political life of the country fell into the catastrophic situation. Dramatically increased the level of inflation, shortages, budget deficit, external debt, crime and mortality, fall the production of industrial and agricultural sector, decreased the living standards of population. All these factors led to complete disintegration, disbalance of the country and eventually destroyed the USSR in December 1991 year.

CONCLUSION

Dissolution of the Soviet Union represented a very complicated and mixed process. The main aim of this work was the determination the main causes and negative factors which led to the collapse of the USSR. For the achievements of the above aim we carried out the following analysis.

In Chapter 1 we gave information about the process of establishment communism in Russia. Communism in Russia was declared 25 October 1917 year as the result of Great October Revolution. Between 1917-1921 years the process of introducing of socialism and Marxist-Leninist ideology in the social, economic and political structure of the country had started. In the early years of socialism in the policy of War Communism acted, which was aimed to strengthen and extend ideology of communism. The process of large-scale nationalization and the abolition of private property began, which led to the acute economic crisis.

In Chapter 2 we discussed the economic policies which were introduced after the construction of the Soviet Union. In March 1921 year the process of transition to the New Economic Policy (NEP) or “state capitalism” began in the Russia, which provided for the partial introduction of the private sector in the economy. The NEP played the enormous positive role in the economic and social life of the country, especially in industrial, agricultural and financial system, the new structure of capitalist-oriented economy encourage the Soviet economy and gave to her a new power.

However, starting from 1928 year the process of transition from the capitalist-oriented to the administrative-command type of economy had started. The policy of Democratic Centralism was installed. As the result, the strict state control over all management structure of the country was established and was introduced the planned

economy. The policy of Democratic Centralism encompassed a very long period in the history of the USSR, from 1928 to 1991 year, and was very ineffective for the economy.

In the Chapter 3 we conducted an extensive analysis of the Soviet economy during the 1925-1982 years. We divided this period into three epochs: Stalin era (1925-1953), Khrushchev era (1955-1964) and Breznev era (1965-1982). Our chapter starts from Stalin era, which we also divided into three phases: the period of industrialization and collectivization (1925-1938), the phase of Great Patriotic War (1941-1945) and the phase of the post war reconstruction (1946-1953). The process of industrialization characterized by the dramatic increase of the level of industrial projects and production and gave the Soviet economy the dynamic modern industry. The process of collectivization characterized by the reconstruction of small individual peasants farms into the large-scale collective farms. In the first years this process was very ineffective but after 1930s year collectivization improved the position of the Soviet agricultural sector. In the second phase, in the Great Patriotic War the Soviet economic structure was changed from the plan for peaceful economic development to the military economic plan. This phases characterized by the decline in production of all branches of the economy. In the post-war reconstruction period began the process of the large-scale reconstruction of social and economic life of the Soviet Union. In the country were built a large numbers of new factories and enterprises, dramatically growth the performance of industrial and transport system of the USSR. In this period also began the process of expansion of the Socialist camp and the USSR along with the USA became the world superpower.

In the second part of the Chapter 3 we explain Khrushchev epoch in the Soviet economy. The significant place in this part played the agricultural reforms of Khrushchev, which was aimed to the improvement of condition of agricultural sector. These packages of reforms were unsuccessful for the Soviet agricultural sector, due to the climatic conditions, miscalculations and led to the strengthening of the crisis in the agriculture. Another failure of Khrushchev was linked to the monetary reform of 1961 year, when the Soviet government made a grave mistake in the gold content of the ruble. These failures in agricultural and financial sector deteriorated the performance of the

Soviet economy. In spite of this in the industrial and transport system the great strides had been achieved.

In the third part of Chapter 3 we explained the economy of the Soviet Union during the Brezhnev era. We divided this era into two phases: “developed socialism” and “stagnation”. As the result of Brezhnev policy and Kosygin reforms, the initial phase of Brezhnev epoch characterized with the improvement of performance of the main branches of economy. However, after 1972 year the process of stagnation began in the economy. The main economic indicators of the country began slightly fall. The causes of these falls were explained by the absence of the scientific-technical progress, militarization of economy and development of economy on the “extensive” basis. After this, the process of dissolution of the Soviet economic system had started.

In the last chapter of the thesis we explained the main economic causes of collapse of the Soviet Union. We divided the causes of dissolution into four groups. The first reason is the Cold War. In this part we measured the military expenditures and military burden of the Soviet Union during the Cold War. The high defense spending and militarization of the economy of the USSR were causes of huge unemployment in the agricultural sector, a limited concentration of technical innovation in civilian industry, the low level of living standards and lack of investments in the other branches of the economy. All these factors very adversely affected the Soviet social and economic system.

The second part of the chapter gave information about the strong and hard dependence of the Soviet economy on the oil export, which began after the 1960s years. After 1970 years the income from the oil export constituted more than one third of the budget revenues of the USSR. USSR was the largest oil exporter in the world. However, starting from the 1985 year the oil prices began dramatically to decrease, as the result, in the Soviet economy, a large share of the budget which was the oil revenues fell into a deep crisis. The oil crises engender such economic problems as huge budget deficit, external debt and hard currency problems.

Along with the oil crisis the important role in the deterioration of the Soviet economic system played the repressed inflation. Beginning from the 1960s years as the result of Kosygin price subsidies reform repressed inflation began developing in the economy. As the result of negative impact of repressed inflation in the 1980s years the process of Supply Diversion, Input Hoarding had been initiated which led to the decrease of output, deepening shortage, decline in labor force and increase of the free market inflation.

The last part of Chapter explains the programs and reforms of Perestroika (Restructuring) which were launched by the last president of the USSR Michael Gorbachev. To abandon the crisis conditions of the economy, during 1985-1991 years a range of followings laws and reforms: the process of “acceleration”, anti-alcohol campaign, the Law on State Enterprises, the Law on Individual Labor Activity, the Law of Cooperatives, the Law of the Foreign Trade Activity and etc. were accepted .However these reforms and laws as the result of miscalculations, mistakes, non strict state control and hard financial situation completely failed. The failure of reforms led to the lost of the government control over the politic, social and economical system of the empire and accelerated breakdown of the USSR.

So, the detailed analysis of the economy of the USSR has helped us to make the following important conclusions. Despite of the fact that the Soviet economy gave impression of powerful and strong economy from outside in reality it was a very fragile and weak by its nature. Inefficient administrative-command economy, accompanied by a number of other negative factors, such as: high defense spending, repressed inflation, oil dependence of the economy led the economic system of the country to the disgusting condition. These negative economic factors became the grave, where was buried the great empire called the Soviet Union.

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