Chapter 2:

Socio-economic Development of Siberian Region: A Historical Overview
The Identity of Siberia

In a vast land like Russia, there is often a distinction made between its ‘European’ and Asian part. Relations between European and Asian Russia were always characterized by the dichotomy between metropolitan country and colony. The term ‘Eurasia’ or ‘Evraziia’ was used by Eurasianists to indicate a different geographical world both from Europe and Asia. They did not define the exact boundaries of Eurasia but the various versions of expanse of Eurasia roughly coincided with the pre-1914 Russian Empire. Mackinder (1904) identified a vast expanse east of Urals as the pivot of world history. The significance of Eurasia was bought to light as ‘a distinct geo-cultural mega region not entirely separated from Europe but challenging the conventional paradigms of east and west (Vinkovetsky, 2007). The Eurasianists declared cultural independence from both Europe and Asia. They identified ethnic Russians with other Eastern Slavs and people of Eurasian mega region, Finno- Ugric, Turkic and Mongolian.

Siberia’s own regional identity is a result of the region’s socio-economic peculiarities- its unique geo-political status, great economic potential and ethno-religious specificities. Contemporary historians and sociologists are often unanimous regarding the ideology of provincialism. They attribute it to certain factors like remoteness of Siberia and her isolation from other parts of the country, a historically evolved tolerant relation between native peoples and newly arrived people in the region, better democratic relations between various strata as compared to other parts of the country. As a consequence, in the words of noted historian and sociologist, A Boronoev, Russia and Siberia transformed into a binary pair in which arose contradiction between the whole (Russia) and one of its parts (Siberia).

It is most probable that formation of Siberian identity began towards the 18th century. The turn of the 19th century witnessed the progress of industrial development in eastern regions of the country. At the beginning of the 20th century Siberia became a typical example of a region in which ‘territory’ as a collective consciousness and the concept of ‘fatherland’ was created (Vodichev, 2007). N.M Yadrintsev and G. N. Potanin formulated the basic approaches to found Siberian Studies as an academic course and a thesis on putting together the Siberian sub-ethnos. There were attempts by regional elites
by the way of formation of inter-regional association -“Siberian Agreement”- during the economic chaos in the early 1990s. These were restricted as efforts to gain regional political power.

Ablazhey (2003) has recounted the genesis of a movement for autonomists in the 20th century, oblastnichestvo. Though primarily associated with the regional patriots of Russia in the 19th century oblastnichestvo came to be linked with regional concerns about education, popularisation of the regional press and increasing anthropological knowledge of Russia’s periphery. The social revolutionaries propounded programmes very dissimilar from Yadrintsev and Potanin’s original concept of Siberia’s autonomous development. 20th century proponents of oblastnichestvo ideated a federal structure in Russia, and then there were oblastniki who demanded ‘self- administration and economic managements like the Russian local councils (Zemstva). The classification of oblastnichestvo within the single rubric of autonomy became cliché as it had manifold properties (Chatterjee, 2008). Regionalism in the context of Siberia did not represent a single doctrine, rather a sum total of view based on different concepts on the issue of decentralization (Ablazhei, 2007). Critics have denounced the ambiguities that surfaced in the 20th centuries and proclaimed that oblastnichestvo was political formula.

Bradshaw and Prendergast (2005), theorize that Siberian identity may achieve an open political expression, capable of evoking a fear of Siberian separatism particularly when population and elite migrate to the west and the center cannot suggest solution for socio-economic problems of Siberia and Siberia continues to act as a resource appendage for the ‘Other Russia’. Voskressenski (2008) opines that Russia faces no separatist movement in the region as the people of Siberia perceive themselves as Russians first. Other scholars opine on the form of social movements that could manifest. Russia has always been a simultaneously long-suffering and potentially revolutionary society. So far, the exhaustion of ideals during the rule of Stalin, Brezhnev, Gorbachev, and Yeltsin, through bureaucratic socialism and wild capitalism, has not extinguished hope and faith. Consequently, until people’s ability to generate new ideals is restored there will be no social movements, and without them Russia will not change. But these social movements cannot be like those of the past. There will be no banners, no mass parades, no all-encompassing ideology, no avant-garde parties, and no onslaught of the state. In the
Evolution of Siberia as an Economic Hub

Siberian development continues to present Russian economic planner with a paradox about how to focus regional development policies. On one hand Siberia possesses untold resource potential and occupies a strategically important location vis-à-vis China and Pacific Basin, on the other hand, in order to exploit and develop, the land requires disproportionately higher capital and labour inputs as compared to the more developed regions of Russia. Because of this paradox, the priority attached to Siberian development has been shifting the fortunes of Siberia.

While discussing the major stages in Siberia's economic history, three stages can be pointed out:

Early historic period

Soviet period

Transition

In the early historical period, Siberia frequently served as the point of departure for several nomadic groups such as Huns, Mongols, and Manchus who conquered and lost immense empires. The steppes of South Siberia saw a succession of nomadic empires, including the Turkic and the Mongol Empire. The initial period of Siberian development in the Russian trade was bound up with the fur trade and lasted approximately a hundred and fifty years. In the eighteenth century the second stage began with accent on mining. The mines and works beyond Lake Baikal made extensive use of convicts and exiled. Siberia's traditional relationship to the west of the Urals was of a mercantilist colony. The accent was on agriculture, mining and extraction of resources. Siberia, a resource rich area of Russia has enjoyed the following advantages which have become the lynchpins of its development such as favorable natural geological conditions for oil, gas, coal and certain ores, large timber reserves and cheap electricity costs in terms of unit
capital costs (over the long haul). Post-industrialization, Siberia became the military hub for the Soviet Union. In the Post-Soviet Period, Siberia went through major upheavals. No more was it USSR’s centralized energy generator. Post-soviet policies have mainly targeted resource extraction and regional intensification—resulting in lop-sided progress and inefficient resource utilization. Another turning point came in the 1990s with the economic transition. Hence, only from the end of 19th century its economic development started. In the 20th century, Siberia attained the most intensive development, transforming from colonial outlying district to an industrial and agrarian region playing a significant role in economic and the geo-political status of Russia (Ablazhei 2007).

1. Early Historical Period

According to Radlov, the earliest inhabitants of Siberia were the Yeniseians, who spoke a language different from Ural-Altaic. The Yeniseians were followed by the Ugro-Samoyedes, who also came originally from the high plateau and were compelled, probably during the great migration of the Huns in the 3rd century BC, to cross the Altai and Sayan ranges and to enter Siberia. Various sources dating from the 3rd and 2nd centuries B.C. enable us to recreate the lives of people of people’s living the Altai and Sayans and the events of a dark and dramatic period in their history where the people from the period were subject to the Huns, who ruled the entire territory from the mountain range of the Altai and the Sayans to the Trans Baikal area (Sansone 1980) Archaeological discoveries of the third millennium B.C. have shown that people living by the Altai and Sayan massifs resembled their European contemporaries in their customs and practices. They domesticated cattle and used implements made of copper. The ancient history of Siberia is characterized by the sophisticated nomadic civilizations of the Pazyryk7 and the Xiongnu8, both flourishing before the Christian era. Ten centuries later the entire belt of steppe land was inhabited by these tribes of cattle breeders and

7 an ancient nomadic people who lived Altai Mountains lying in Siberian Russia, south of the modern city of Novosibirsk, near the borders of China, Kazakhstan and Mongolia

8 Nomadic people from Central Asia generally based in present day Mongolia. From the 3rd century BC they controlled a vast steppe empire extending west as far as the Caucasus
cultivators. The first elements of Chinese culture were introduced a thousand years later by Mongoloid tribes, who also brought with them with the patriarchal system. The period from the thirteenth to tenth centuries B.C. saw flourishing of the so-called Karasuk culture, created by scattered semi-nomadic tribes roamed the Urals and Yenisei with tenuous links among themselves. The last centuries B.C. were characterized by the development of tribal nobility and by bloody wars between tribes and groups of tribes. The power of the Huns began to weaken during the first centuries A.D. when new tribes principally the Kirghiz came from the Central Asia and penetrated the South-West Siberia.

The new tribes forcing out the original conquerors subduing the local peoples and compelling them to pay a heavy tribute in valuable furs which were later traded with the Chinese (Sansone 1980). Towards the end of the first millennium A.D, the Kirghiz state which lay on both sides of Yenisei split into two small khanates (principalities). Thus by the beginning of the 13th centuries, Siberia was composed of mosaic of tribes belonging to different ethnic groups. The apparent lack of unity made the Mongol invasion easier. Turkic peoples such as Khakases and Uyghurs, also compelled to migrate north-westwards from their former seats, subdued the Ugro-Samoyedes. This Turkic empire of the Khagases lasted until the 13th century, when the Mongols, under Genghis Khan, subdued them and destroyed their civilization. Russian traders from Novgorod crossed the Urals as early as the 13th century to trade in furs with native tribes. Explorers brought back many furs from their expeditions. The main treasure to attract Cossacks to Siberia was fur of sables, foxes, and ermines. The Cossacks rapidly penetrated eastward by land and on riverboats, building a string of small fortresses and levying tribute for Moscow from the sparse population in the form of precious furs. By 1640 they had reached the Sea of Okhotsk, an arm of the Pacific Ocean, and soon afterward they collided with Chinese troops. The Russian conquest began much later. Among the political entities emerging after the breakup of the Mongol state of the Golden Horde in the mid-15th century was the Tatar khanate of Sibir. Czar Ivan IV's capture of the Kazan khanate in
1552 opened the way for Russian expansion into Siberia. In 1581 a band of Cossacks\(^9\) under Yermak crossed the middle Urals and took the city of Sibir (near modern Tobolsk), capital of the *Sibir khanate*, which gave its name to the entire region.

*The Russian Conquests:*

In Russia the Mongol or Tatar\(^10\) occupation lasted for almost 250 years. After Genghis Khan's death, Mongol empire was set for an eventual decline. During the seventh decade of 13th century, the Mongolian empire completely disintegrated. Two states were formed in Russia, which included the Central Asia and South of Russia (*Dzhagatai Ulus*) and the Golden Horde (*Ulus Guchi*) which extended from Lower Danube and Gulf of Finland in the west to Irtysh basin and lower Ob in the east. Only the Russians were never completely subdued by the invaders from the East as the Russian heartland did not form a part of the Golden Hordes, but only vassals of it. The common oppression of the Mongol Tatars, helped aroused a feeling of national consciousness in them. The princes were able to unite against the struggle against the oppressors. The Muscovite Principality gradually became the most important centralizing force. Russian forces led by Prince Dmitry and consisting for most part of Muscovites defeated the Mongols on Kulikovo, September 8, 1380. After the battle, the Mongols retreated into their territories. In 1382, Moscow was captured and put to torch. Only in 1480 was Mongol-Tatar yoke finally thrown off under the rule of Ivan III. Russia became a unified state in the middle of the 16\(^{th}\) century during the reign of Ivan IV (1530-1584) - who was also known as Ivan the Terrible. After firmly establishing himself on the throne, Ivan IV attacked the fortresses of Kazan and Astrakhan and joined them to the Russian state. In 1595, Yedigher, ruler of Siberian Khanate beyond the Urals, dispatched an emissary to Moscow with the proposal that his domain should be incorporated into the Russian land as an autonomous province. In exchange of the tsar's protection, the Tatar Khan promised to pay an annual tribute of one

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\(^9\) Traditional community of people living in the southern steppe regions of Eastern Europe (primarily Ukraine and southern Russia) and Asian Russia. They are famous for their self-reliance and military skills, particularly horsemanship

\(^10\) The terms were applied to peoples of Mongol hordes. Later the Turkic-speaking peoples of European Russia, the Caucasus and Siberia also came to be known as Tatars: Kazan Tatars, Siberian Tatars etc.
sable pelt per male subject. The prolonged negotiations that followed Yedigher’s proposal were concluded successfully but the consequent agreement was short-lived. Yedigher’s heir Kuchum sized the throne and refused to pay the annual tribute. Relations between Russian and Czars degenerated and the bellicose Khan Kuchum began to prepare for an attack on Border area of Russia. Russia’s conquest of the Tatar khanate was completed in 1598 and during the 17th century Russia annexed all of West Siberia. A colony of the Russian Empire, Siberia was administered by a colonial office based first in Moscow and later (after its founding in 1703) in the new Russian capital of St. Petersburg. Siberia remained a mostly unexplored and uninhabited area.

Many historians challenge the popular idea that Siberia was subjugated to Russia by a handful of Volga Cossacks. They believe that if the people of Eastern and Northern Russia voluntarily cooperated with the Russian entry. For example in a discussion published in Geographical Journal 1918, authors Miss Czaplicka and Leslie Urquhart opine that that “the overwhelming majority of the Russian settlements of Western Siberia were founded by voluntary immigrants. For instance out of 776 old settlements in Yeniseisk Government, 674 answer to this description , while 102 developed from the Cossacks ‘palisaded fortresses or ostrogs. Thus the success of the Russian advance in Siberia is due to peaceful penetration of the eastern and partly of the southern peasants and other Russian people.” A prominent student of Siberian history, N. Yadrisev had the following to say in 1892: “Yermak’s horde was nothing more than a by-product of the fermentation of minds and discontent among the popular masses of Russia who were seeking a way of out of their misery. The Cossacks were propelled by the same force which later in the sixteenth and seventeenth centuries drove the thousands of people who streaming into Siberia in search of life of freedom and plenty to throw off the yoke of serfdom, disorder, trouble, and inhuman regimentation and to escape from the unbearable hardships and abuses.”

In the beginning of the eighteenth century the nomads' threat weakened; thus the region became more and more populated; normal civic life was established in the cities. Russian settlement of Siberia was spurred by groups of zemleprokhodtsy (literally, “crossers of land”), who came mostly from North European Russia and traversed the easy portages

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11 According to the other sources, tribute was 1000 pelts per year
linking the east-west Siberian river systems to pioneer new forts and trading communities. In the 17th and 18th centuries, the Russians that migrated into Siberia were hunters, and those who had escaped from the Central Russia- fugitive peasants in search for life free of serfdom, fugitive convicts, and Old Believers (Sengupta, 2007).

Willard Sunderland has pointed out with regard to Russian settlers in Siberia, both Russians and non-Russians influenced one another in multiple ways, and the Russians' influence was not always the strongest. He describes how in the Caucasus, Russian civil and military officers used local clothes, rode horses in the natives' way, and even sought to be indistinguishable from the natives. The line between the Russians and the natives was blurred through intermarriage, trade, conversion, and desertion; and from the Middle Ages it was difficult, if not possible, to distinguish a Cossack from a native of the Caucasus, just as Russian settlers reassembled natives of Siberia (Sunderland 1996).

Early Trade:

Although military governors collected tribute, they interfered little with native Siberian customs and religions; while the smaller, weaker ethnic groups succumbed to Russian influence, larger tribes such as the Kazakhs and Yakuts thrived and reaped material benefits under Russian administration. Siberian furs constituted an important source of wealth for Russia and figured prominently in Russian trade with Western Europe. These furs, along with customs duties levied on all Siberian raw materials acquired by Russian entrepreneurs, more than reimbursed the state for the costs of its Siberian conquest and administration. Local people, submitting to Russia, received defense by Cossacks from the southern nomads. In exchange they were obliged to pay yasak (tax) in form of furs. There was a set of yasachnaya roads, used to transport yasak to Moscow. Yasak, varied in different places, but historical documents relating to the period Russian tax collectors in the Verkahoturye district took ten sables a year from each married man and five from every bachelor. There is evidence that yasak was imposed on five-year boys. In some areas, yasak was collected from the district as a whole rather than from individuals. With the decline of the fur trade in the early 18th century, mining became the main economic activity in Siberia. The state was the chief entrepreneur, but wealthy private families were
also involved. Silver, lead, and copper mining began around 1700; gold mining developed since the 1830s. In 1726, copper mining and construction of copper works began in the Tomsk and Kuznetsk districts, while not far from Lake Kolvanskoye the Ural industrial A. Demidov started his copper works. The open cut mines at the foot of Zmeinaya produced the Siberian silver and gold shipped to Central Russia at that time. In the Altai Mountains, poly-metallic ores and along the Yenisei river, copper and iron began to be commercially exploited (Shinkarev, 1973). In the 19th century Siberia's importance increased by the discovery of gold. Owing to the serf system of the Russian economy, the discovery of gold the 19th century did not produce 'classical gold rushes' like those in the California, Alaska or Australia, for the serfs in the European part of the country were not free to travel at will. Forced labor in the mines, often using convicts, proved generally unproductive, however the gold miners were usually free laborers. In 1832 dredging for gold began in the Chulym River that runs across the Achinsk taiga. Different teams of prospectors streamed to find gold. Finally in 1863, prospectors reached Vitim, an area which is now has been part of renowned gold fields. Thousands of people swarmed into the dense forests along Vitim and toiled from dusk to dawn panning the streams and the rivers. Very often this was accompanied by violence and murders (Shinkarev, 1973)

Siberian Settlements:

The agricultural development of the new territories turned into an independent economic process and the wide Siberian expanses began attracting hunters and Cossacks but also peasants -In the southern belt of Siberia the native population established close contacts with the Russian settlers and emulated their methods of grain-growing. The shift in general direction of colonisation to the southern taiga and the forest-steppe with cultivable land was accompanied by the construction of roads which gradually merged into a single giant Siberian road. The railroad's needs spurred the development of coal mining and the opening of repair shops. Cultivation of fertile chernozems in the steppe and forest-steppe belts of Siberia assumed a particularly vast scale in the latter half of the 19th century in the wake of the increased migration of peasants to these parts. In the
Central and Eastern Siberia, agricultural development was slower and chiefly confined to some parts of the forest steppe, including the Minusinsk Depressions, the Kansk region, the region west of lake Baikal and the central part of the Trans-Baikal area. Of less significance were small tracts of plough land scattered in the taiga mostly in the widest parts of the Siberian river valleys. In a distinctive core-periphery constellation, it was treated as raw-material appendage of center over many decades. Natural resources were extracted in its regions, processed in European part of the country or exported and proceeds were used in a large part to buy capital goods for investment in other regions. This relationship is described by Yanovsky (1972) when he talks about Siberia as a mere resource trove for the rest of Russia during the tsarist times: "Siberia was stuffed with mineral deposits, yet hardware was being brought over all the way from Central Russia. There was such a shortage of metals that Siberian peasants had to use nails of wood! Cattle and wool, were plentiful, but even the coarsest cloth came from the metropolis and all because Siberia was looked upon as a good market for inferior but costly fabrics. Weaving factories in Siberia. Why, that would have meant undesirable competition to the manufacturers in Central Russia! As matters stood, there were no nails, no cloth, no glass, and no roads. Siberia was crammed with cheap farm products, but exports of surplus grain were out of the question because of the utterly impassable roads." Anton Chekhov noted, "The people in Siberia are ignorant. Calico, tableware, sheepskin coats and even nails are brought from Russia." (Sansone 1980) Especially after the exile of leaders of the Decembrist Conspiracy of 1825, a small but vocal Siberian intelligentsia agitated for an end to Siberia's colonial status. Meanwhile, Russian colonizers continued to push southward, establishing forts along the steppe to thwart nomadic raids. The agriculture in Central Russia was still under pressure of serfdom, formally abandoned in 1861. In 1861, newly emancipated Russian serfs were allowed to take free possession of Siberian land, but Russian settlement of Siberia on a large scale began only with the construction (1892–1905) of the Trans-Siberian Rail Road, after which the eastward migratory movement reached major proportions. Trans-Siberian Railroad gave a great boost to Siberian agriculture, allowing for increased exports to Central Russia and European

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12 Russian army officers led about 3,000 soldiers in a protest against Nicholas I's assumption of the throne after his elder brother Constantine removed himself from the line of succession.
countries. It pushed not only the territories closest to the railway, but also those connected with meridional rivers, such as the Ob (Altai) and the Yenisei (Minusinsk and Abakan regions). The railroad also enabled European Russia to obtain cheap grain from Western Siberia and butter from the Baraba Steppe. Siberian agriculture exported a lot of cheap grain to the West. From 1896 to 1913 Siberia on average exported 30.6 million poods (approximately 500,000 tonnes) of cereal products (grain, flour) annually.\(^{13}\) (Khramkov, 2001) Thus, to defend it and to prevent possible social destabilization, in 1896 (when the eastern and western parts of the Trans-Siberian did not close up yet), the government introduced Chelyabinsk tariff break—a tariff barrier for grain in Chelyabinsk, and a similar barrier in Manchuria. This measure changed the form of cereal product export: mills emerged in Altai, Novosibirsk, and Tomsk; many farms switched to butter production.

*Siberia in the Russian Revolution:*

Before the Russian Revolution, Siberia contributed only a tiny fraction of Russia's industrial output, mainly in the form of gold. By the time of the revolution Siberia was an agricultural region of Russia, with weak entrepreneur and industrial class. Only 13% of the region's population lived in the cities and possessed some political knowledge. (Shilovosky, 2003) The lack of strong social difference, scarcity of urban population and intellectuals led to uniting of formally different political parties under ideas of regionalism (Shilovosky, 2000). By the 1920s the agriculture in Siberia was in decline. With the large number of immigrants, land was used very intensively, which led to exhaustion of the land and frequent bad harvests (Mikhalin, 2002). Agriculture wasn't destroyed by the civil war, but the disorganization of the exports destroyed the food industry and reduced the peasants' incomes. Furthermore, *prodrazvyorstka*\(^{14}\) and then the natural food tax contributed to growing discontent. In 1920-1924 there were a number of anti-communistic riots in rural areas, with up to 40,000 people involved (Shishkin, 1999).

\(^{14}\) food apportionment, a governmental program during the Russian Civil War, which obliged peasantry to surrender the surpluses of almost any kind of agricultural produce for a fixed price. The absolute limit of a given product for personal or household needs was pre-determined by the state.
The Russian revolution was the culmination of a long period of repression and unrest. Since the reign of Peter I, czardom was becoming autocratic. The growing social discontent was the main reason for the violent upheaval in Russia in 1917 that overthrew the czarist government. Subsequently civil war broke out between the Bolsheviks (Reds) and the anti-Bolsheviks (Whites), which ravaged Russia, until 1920 (Pereira, 1996). The Whites or Pro-Tsarists represented all shades of anti-Communist groups, including members of the constituent assembly. Several of their leaders favored setting up a military dictatorship, but few were outspoken czarists. Siberia played a key role in the Russian civil war of 1918–20. An autonomous Siberian government formed in early 1918 was soon superseded by the regime of the counterrevolutionary Admiral A. V. Kolchak, who made his capital at Omsk. An allied expedition attempted to prevent German use of Siberian resources in World War I. Most of Siberia was in White hands by late 1918, but Czar Nicholas II and his family were murdered by the Bolsheviks at Yekaterinburg (formerly Sverdlovsk) that year. Early in 1920, Admiral Kolchak’s government collapsed, and he was executed.

*Restoration period (1921-1927):*

After three years of imperialist war and four years of Civil war, the soviet people inherited a small part of national wealth of 1913. Civil war ended national economy in a state of ruin and disorganization lost about 19 million of her able bodied population (16 to 49 years of age, war causalities, victims of epidemics and famine, disabled veterans) to one-seventh of what it was in 1913. The number of workers diminished by almost 36% and labour productivity fell by almost a fourth of what it was. Coal production fell by 75%, oil by 60%, pig iron was 40 times less, cement and sugar 30 and 16 times less respectively. Agriculture production in 1920 was only 2/3rd of that in 1913. Farming had been split up and number of farms machines and implements reduced to half of 1913 caused a sharp decline in labour productivity and in marketable agricultural produce. Productivity fell by over 30 per cent and gross agricultural output declined from 61 millions tons to 27 million tones. Areas sown to cereals declined from 2243. 7 million acres in 1909-1913 to 1574.1 million acres in 1921 (Yefimov and Anchishkin, 1970)
Decline in production was accompanied by destruction of fixed industrial assets. Transportation was in a deplorable state. A considerable part of railways were destroyed—two-thirds of locomotives had been destroyed. The country’s economic potential on the basis of which soviet economy began developing was less than half of what it used to be. The country’s economic potential on the basis of which soviet economy began to develop was less than half of what it used to be in tsarist Russia.

The government drew up the following the plan for the restoration of national economy with these foci:
1. The development of trade as a form of contact between industry and agriculture
2. A rapid development of agricultural production to ensure an adequate supply of raw materials to industries and of food material to the towns.

It was pointed in the 14th CPSU Congress in 1925 that three requisites were required for industrialization: A home market, a well-developed raw material production in agriculture and the essential minimum of food stuffs for industrial workers. Therefore it was necessary to begin building up industry by developing agriculture. On the other hand a rise in agricultural produce could be achieved only by developing trade.

Soviet Siberia During the Soviet period, Siberia's role has been perceived and portrayed as more than simply a storehouse of resources, its development was linked to ideological concerns as Soviet planners have attempted to eliminate or at least reduce regional inequalities in levels of development and standards of living throughout the then Soviet union. Siberia under the Soviets represented a striking example of conflict between national growth maximization and regional equalization as the two main goals of soviet regional policy. Soviet planners focused on intensive type of development. They believed that the increase in intensiveness of production must be attained through growth in labour productivity by supplying the labour force with more sophisticated and effective fixed asset. Intensification of production must be manifested in an increase in return on capital. The decline of output per capital unit is a trend that began in end of 1950s as an outcome of capital intensiveness without corresponding increase in labour productivity.

15 Capital coefficient
There were negative effects of shift of industries to Eastern region of Soviet Union (i.e. Siberia) which was manifested by the decline in the capital coefficient. The greater demands of climate and other natural conditions are often cited as possible reasons but they were offset by favourable conditions like larger seams in coal industry, the richer ores in non-ferrous metallurgy and better quality of timber. Soviet socialist economy had to undergo huge difficulties (political, social and economic) hence transformations and did not proceed in a straight path. The economic history of the Soviet Union (since the end of the Civil War in 1920) can be roughly broken down to five stages, namely, the restoration period following the First World War and Civil War (1921-1927), basic reconstruction and industrialization of national economy and building up of the industrial potential on the basis of profound socialist transformations (1928-1940), the war and the restoration period (1941-1950), further industrialization and transition to the construction of the material and technical basis of communism (1951-1965) and the period in the development of national economy (1966-70), characterized by the technical revolution, higher economic efficiency and a rapid rise in the standard of living. Under the Soviet government Siberia went through an enormous economic development. Since the establishment of Soviet power the natural resources of the vast territory of Siberia and the Far East were utilized to an increasing degree having rapidly turned from potential into dynamically operating ones (Pokshishevs'kyi, 1974). Forced labor was still used for mining purposes and agriculture in the vast Siberian region kept on growing due to the forced massive resettlement of the Russian rural population. As a result of this coercive resettlement Siberia's population doubled between 1915 and 1945. During the Soviet period there was a three-part strategy in the region which partly reinvigorated regionalist impulses: A massive program of economic development based on resource extraction, the continued use of Siberia by Stalin as a place of exile or forced labor for political prisoners and ordinary criminals, the creation of nationality-based units, which diverted attention from regional issues to ethnic ones and provided a pretext for ignoring regional challenges to soviet legitimacy in Siberia. Under the Soviet government, Siberia, especially the Ural-Kuznetsk complex, underwent dramatic economic development. The agricultural colonization of Siberia was carried out by the forced resettlement of large segments of the Russian rural population, notably the expropriated kulaks (wealthier
peasants). Siberia's population doubled between 1914 and 1946 (Pokshishevsky, 1974). Forced labour was also employed extensively in the East Siberian gold mine.

_Reconstruction and Industrialization of National Economy during the Pre-War, Five Year Plan Periods (1928-1940)_

The economic potential of pre-revolutionary Russia was on the whole restored in 1927-1928 and output of a number of key industries, particularly the engineering and power industries had considerably the 1913 level. Soviet Union ceased to be an agrarian country during five year plan period. The share of industry in national income increased from 27.6% in 1928 to 45.3% in 1932. New economic policy (NEP) worked out by Lenin did not mean the restoration of Capitalism but socialist industrialization at that time. Trapeznikov (1972) quotes Lenin: "No matter what the further complications of the struggle may be, no matter what occasional zigzags we may have to contend with (there will be many of them—we have seen from experience what gigantic turns the history of the revolution has made and so far it is only in our own country; matters will be much more complicated and proceed much more rapidly, the rate of development will be more furious and the turns will be more intricate when the revolution becomes a European revolution)—in order not to lose our way in these zigzags, these sharp turns in history, in order to retain the general perspective, to be able to see the scarlet thread that joins up the entire development of capitalism, the road we naturally imagine as straight and which we must imagine as straight in order to see the beginning, the continuation and the end—in real life it will never be straight, it will be incredibly involved—in order not to lose our way in these twists and turns, in order not to get lost at times when we are taking steps backward, times of retreat and temporary defeat or when history or the enemy throws us back—in order not to get lost, it is, in my opinion, important not to discard our old basic Programme the only theoretically correct line is to retain it (Pokshishevsky, 1974)."

Implementation of NEP was started in 1921. The 'Prodraverstka' (surplus-appropriation system) was replaced by the 'Prodnalog' that is selling to the state of a certain amount of products. In 1924 'Prodnalog' was replaced by a single agricultural monetary tax. In this way major economic problems boiled down to transport fuel and consumer goods. Ever
since 1925 a single economic development plan was worked out for every year. They were called 'control figures'. They showed considerable rise as compared to pre-revolutionary period. In this way NEP enabled the soviet government to put ruined economy on its feet. After economy had been resolved Soviet Union was still a backward agrarian economy without heavy industry with primitive labour prevailing in the agriculture and with no up-to date defense industry. Such a state of affairs called for a forced rate of industrialization and mobilisation of all the industries. Industrialization policy was intended to build a modern industrial base with heavy industry as its backbone, putting agricultural production at an industrial basis, increasing volume of production and consumption and finally stopping import of vitally important goods by producing them domestically.

First five year plan (1928-1933) and the second five year plan (1933-1937) as well as three and half years of the third five year plan (1938-June 1941) were spent in solving numerous problems of industrialization. One of the main ideas of first plan was "power concept that is setting up of centres with distribution and development of power resources.

Second five year plan(1933-1937) envisaged further new construction of an ever larger scale and was to ensure the functioning of new production apparatus built during the first five year plan. Capital investments ran up to 15.2 thousand million rubles in 1933-1937 that is their volume was 13 percent greater than during previous five years. The USSR held second place in the world in engineering by the end of second five year plan. Within these five-ten years industrial plants a fixed asset in agriculture and transport had almost completely renewed.

One of the greatest difficulties during this period of industrialization was the lag in production of consumer goods when regarded from general economic level and purchasing capacity of the population. A redistribution of manpower was taking place in agriculture, industry, construction and transport.

The chief objective of third five year plan was to overtake and surpass the leading capitalist countries in per capita production. The emphasis was on production of special steels and non-ferrous metals which was due to the needs of engineering and defense industry. During the three years of the plan 2900 new plants factories, mines and power
stations were put into operation (as much as thrice as during entire first five year plan period). A scheme of comprehensive utilization by constructing several hydraulic power plants on river was drawn out in the 1930s. The powerful Angara hydraulic power plants have provided for formation of the Irkutsk power generation system in its modern version (Pokshishevsky, 1974).

Under the First Five-Year Plan (1928–33), forced labor was instrumental in mining coal and building the iron and steel complex of the Kuznetsk Basin.

In 1930s, the Party started the collectivization, which automatically put the "kulak" label on the well-off families living in Siberia for a long time.

Naturally, raskulachivanie applied to everyone who protested. From the Central Russia many families were exiled in low-populated, forest or swampy areas of Siberia, but those who lived here, had either to escape anywhere, or to be exiled in the Northern regions (such as Evenk and Khanty-Mansi Autonomous Okrugs and the northern parts of Tomsk Oblast). Collectivization destroyed the traditional and most effective stratum of the peasants in Siberia and the natural ways of development, and its consequences are still persisting. (Pokshishevsky, 1974).

In 1940 coal production in eastern area was seventy percent greater than in whole of Russia in 1913 while steel production there was forty percent greater than in 1939.

Power generation in the east was 31 times above 1928, in the Urals and West Siberia, 18.6 times with a general rise of 8.1 times for whole of Soviet union.

The speedy development of productive forces in east brought about a 12 fold rise in the entire national industry. 14.5 fold increase in the industry of Urals, Siberia and Far-East.

The races of Irkutsk, Bratsk, and Ust-Ilimsk hydraulic power plants constitute multi-graded cascade from Baikal to Yenisei. It was also then that the building of Ural-Kuznetsk complex was completed and foundation of a new steel base was laid in the Far East. New coal basins were developed in Karaganda and Cheremkhovo and the coal production was considerably expanded in Urals and Central Asia (Pokshishevsky, 1974).

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16 "de-kulakization"
Map 27. Major Projects of the Five Year Plan Period

Reorientation of the entire regional structure of investment took place in the war years (1941-45) as a result of reallocation of country's military and industrial base to western Siberia. Kuznets combine itself accounted for 35.6 per cent of all capital investments in the industry’s during the First Five year plan. There was an increase in investments in Russian Far East as well. In 1940, Far East accounted for 9.5 per cent of all fixed collective farming) while share of Siberia was 8.8 per cent. Average capital investments increased by 23 per cent in west Siberia and declined in post war years because of reconstruction of war damage. (Rumer 1984). In the first half year of the war, Soviet Union lost territory which had 40% of the population and accounted for 63% of the coal produced, 58% of the steel, 60% of the aluminum, 38% of the grain and 80% of the sugar. A week after the war began the "mobilisation economic plan" the first war time plan- was adopted and in August 1941 the "military economic plan" was drawn up. Under these plans 1360 big plants and factories were created. During the four years of war industrial production in Siberia increased by 180 percent, the Urals became country's arsenal. Immediately after World War II the soviet government directed 40 percent of its overall capital investments for the development of Siberia’s productive forces (Yanovsky, 1972). Almost 5.5 million people returned to reconstructed cities in 1943 and 1944. Soviet union lost twenty million people and a third of national wealth was destroyed.

The first post war five year plan was also envisaged the further development of social production structure. In 1947 rationing of consumer goods was abolished. Siberia's economic development increased dramatically during World War II with the transfer of many industries from European USSR to the other side of the Urals, where they would be less vulnerable to German seizure. Siberian grain was essential in enabling the Soviet Union to resist the German wartime onslaught despite the loss of valuable agricultural areas in West USSR. In 1941, many enterprises and people were evacuated into Siberian cities by the railroads. In urgent need of ammunition and military equipment, they started working right after being unloaded near the stations. The workshops' buildings were built simultaneously with work. Most of the evacuated enterprises remained at their new sites after the war. They increased industrial production in Siberia to a great extent, and
became constitutive for many cities, like Rubtsovsk. The most Eastern city to receive them was Ulan-Ude, since Chita was considered dangerously close to China and Japan. On August 28, 1941 the Supreme Soviet stated an order "About the Resettlement of the Germans of Volga region", by which many of them were deported into different rural areas of Kazakhstan and Siberia. By the end of war, thousands of captive soldiers and officers of German and Japanese armies were sentenced to several years of work in labour camps in all the regions of Siberia. These camps were directed by a different administration than Gulag. Though, Soviet camps hadn't the purpose to lead prisoners to death, the death rate was significant, especially in winters (Polijan, 2004). The range of works differed from vegetable farming to construction of the Baikal Amur Mainline. The vast Siberian concentration and forced-labor camp network established by Stalin were pulled down and but many of the political prisoners were released during Mikhail Gorbachev's leadership (1985-1991).

Post-War Industrialization:

The country began to build the material and technical base of communism. Further industrialisation required adequate expansion of raw material base. The 1951-1970 period includes four five year plans. The seventies was particularly a pro-Siberian period, when high priority developmental strategies attested by the Soviet planners who desired to take advantage of the resource-potential in Siberia, on the basis of which territorial production complexes (TPC's) were planned in oil and gas extraction in West Siberia. Wein (1984) describes: "Siberia and the Soviet Far- east are currently the scene of ambitious resource development programs: territorial complexes are being built-up as the nuclei for the intensive industrial development of what were until recently virtually uninhabited areas and a region rich in raw materials is to be opened up in the east by construction of the Baikal Amur Mainline. The whole period was characterised by rapid development of power engineering. The exploitation of mineral resources of Asian part of the country started on an unprecedented scale. In the eastern regions are concentrated nearly 75% of country's coal reserves, 80% of the hydro power and timber and the bulk of non-ferrous and rare metals, large amount of chemicals, iron ore and building material. Siberia was developed for iron ore and non-ferrous metallurgy and exploitation of oil and gas.
deposits. Post-War Industrialization of Siberia continued at a rapid pace, with special concentration on South West Siberia and the Lake Baikal region. Siberian agriculture, which suffered during the Stalinist collectivization campaign, was revived in the mid-1950s by Khrushchev's "virgin lands" program, focusing on cultivation in the steppes of South West Siberia and North Kazakhstan. The Seven-Year Plan (1958–65) emphasized construction of large thermal and hydroelectric power plants in Siberia and elsewhere. The new resource based focus in the 1960's and the 1970's, shifting successively from east Siberian hydroelectric development to the oil and gas program of western Siberia, the Kansk-Achinsk lignite and power development and to the Baikal-Amur project in the Far East. In the second half of the twentieth century, the exploration of mineral and hydro energetic resources continued. "Many of these projects were planned, but were delayed due to wars and the ever changing opinions of Soviet politicians."

Leonid Brezhnev\textsuperscript{17} in a report on Five Year Plan at Central Committee plenum in November 1982 testified that the eastern regions of country were receiving a larger share of capital than ever. The share of investments in Eastern part of Soviet Union has not exceeded 17 per cent. From 1951 to 1975 it increased by approximately 2 percentage points- from 15 per cent to 17 per cent. After 1975 data on territorial distribution disappears from published sources (Rumer, 1984). The dominance of basic resource and first-stage processing industries, with fuel industries were particularly strong in Western Siberia, nonferrous metals in Eastern Siberia and food industry in the Far East where fishing accounted for about a fifth of the region's industrial output (Dienes, 1982). Dienes (1991) predicts that it is likely that regions and resources west of Lake Baikal will be oriented westward towards the European part of Russia, while that East of lake Baikal could become increasingly integrated into the Asian-Pacific basin. Granberg (1989) talks of dichotomy, in which 75 to 80 percent of the population and economic activity continued to be concentrated in the European part of Russia, while about 80% of gas and coal reserves, 75% of water resources and a large part of nonferrous metals were found in Siberia. Man power was being shifted to such pioneering areas and new towns were rising in the taiga and in the wooded steppe agriculture in pioneering regions of Siberia and the Far East. Joint ventures with the Japanese to develop coastal ports and various

\textsuperscript{17} political leader (CPSU General secretary) of the USSR from 1964 to 1982
resources in Pacific Siberia and the ambitious Baikal-Amur Mainline were some of the better known strategies and projects directed at exploiting the vast wealth of both domestic and foreign trade purposes.

There were three most critical Post war investments in Siberia:
1. Territorial Production Complexes
2. Development of Oil and Gas fields
3. Construction of Baikal Amur mainline

Diagram 1. Territorial Production Complexes (TPCs)
Industrial Development areas of Siberia and the Far East


- Ya- N- Yamal Nenets territorial production complex
- Kh-M- Khanty mansi territorial production complex
- St- Strezhevoy economic node
- Ye- Angara Yenisey territorial production complex
- Uj Bratsk Ust Illimsk territorial production complex
- U- L - Upper Lena -territorial production complex
- NB- North Baikal territorial production complex
- Ud- Udokan Economic node
- Sya- South Yakutian territorial production complex
- WA- West Amur Territorial production complex
- ZS- Zeya Svobodny Territorial production complex
- Ur- Urgal Economic node
- Kom- Komosolmsk territorial production complex

Note: Cross-hatched designate total area. Black squares in the lower right the area in agricultural land use rights.
The clustering of mineral deposits fosters a comprehensive resource development through the creation of Territorial Production Complexes. In the Siberian region a stress was laid on TPCs to promote an integrated development of this part of the country. Siberia was envisaged to have planned economy. Along the mineral rich areas of the railway line new industrial nodes were planned to mushroom up, bringing new productive forces for maximizing the productive relations.

The new industrial towns were planned to be clustered up into new industrial nodes. Combined with these industrial nodes, industrial belts will be formed comprising industrial or territorial production complexes. A number of important territorial-production complexes have been developed in the southern and central belts of Siberia and the Far East accounting for over two-thirds of their industrial production. The specialisation and size of each complex mirrors the resources it has at its disposal, the size of the co-operation of different branches of production within each complex as well as in the promotion of territorial division of labour between them and on a country wide scale.

TPCs in Western Siberia

The biggest territorial production complex in western Siberia combines the Kuznetsk Coal Basin (Kuzbas) with the neighboring Novosibirsk Region. This complex arose on the basis of the vast resources of almost 1,000,000 million tons of high grade of high grade hard coals whose annual extraction approaches 1,000,000,000 tons. (Pokshishevsky, 1974). The town Novokustnetsk (500,000 inhabitants) with a very large metallurgical plant was built on this in the Kuzbas itself. With time branches of production, utilization either metal or coal chemical products sprang around the Kuznetsk Iron and Steel Plant whose steel plant played an important role in the industrialisation of the whole Asian part of the nation. The Kuznetsk Metallurgical plant fostered the growth of enterprises manufacturing heavy metals, structures, equipment for mines and other metal-consuming items particularly for Kuzbas itself where mining townships developed for mines and other metal consuming items, particularly for the Kuzbas where mining townships developed in to a large town like Novokustnetsk, slightly smaller Kemerovo
and Propokopyesk and several towns each with a population of over 100,000. Other enterprises utilizing Kuzbas metal and power have been built where the Trans Siberian railway crosses the Ob, in Novosibirsk which has developed into major engineering industry centre (farming machinery, hydraulic presses, turbo generators, electric engineering and other items). There are also other towns indirectly associated with this complex, for example, Tomsk with its electrical engineering industry, Barnual with its engineering factories or Rubtsovsk with its tractor plant (both in Altai region). In assessing the general course of industrializing of Western Siberia it should be borne in mind that it has been sharply stimulated by the Kuzbas. Uninterruptedly supplying Eastern part with considerable quantities of inexpensive metal and first grade but also very inexpensive coal it has accelerated the development of many industrial centers of Siberia.

Characteristic of the Kuzbas and Novosibirsk industries is the preponderance of large enterprises employing many thousands of workers each, the high power to worker ratio is yet another manifestation of the scope of construction and the speed at which a large scale socialist industry has been created there. It is possible to judge the capacity of the consumer market of the Kuzbas - Novosibirsk complex by referring to the simplest demographic figures: Out of the total of 12,100,000 inhabitants of the western Siberia, 5,400,000 live in Kemerovo and Novosibirsk regions of which 83 and 67 per cent respectively are urban residents. These regions are among the most highly urbanized in Western Siberia. Prominent among the “isolated” industrial centres in Western Siberia is Omsk with its major engineering, a large oil-refining industry, several petrochemical factories and some food factories processing local raw materials.

Other major towns in western Siberia were Barnaul and Tomsk- seats of engineering and woodworking industries, Rubtsovsk with a tractor factory and Biisk with engineering and food factories. Another TPC based on the concept of interconnecting system of oil fields and petrochemical enterprises (Surgut, Tobolsk and the old centers situated at the oil pipelines in the more densely inhabited belt) outlets of the plants, building materials, factories, thermal power stations other enterprises (Tobolsk, Tyumen and Surgut) ensured its continued growth and a system inside and outside complex. It was expected in the course of Ninth Five-Year plan period the complex will come close to producing 130
million tons of oil annually. Oil is carried by Shaim-Tyumen, the Ust Balyk-Omsk and Alexandrovsk-Anzhero-Sudhnesk pipelines to the Omsk old refinery and to the trans-Siberian railway Trunk Line.

TPCs in the Eastern Siberia

According to online encyclopedia, Wikipedia, Krasnoyarsk in the 1970s was the nucleus of TPC going up around it, expanding on its periphery so the range of natural resources determining its production pattern. Krasnoyarsk is situated at the intersection of Trans Siberian Railway and the Yenisei was the only major industrial centre Eastern Siberia. In the 17th century it was an outpost on the line between the taiga and the forest steppe. Later it became a market town with a small factories and a provincial centre. After the Revolution it played a crucial role as the base of industrialization of Siberia. It began to develop at a particularly rapid rate during the Great patriotic War when it was chosen as a site for some of the enterprises, mainly engineering plants which had been evacuated from European part of the country. Among these resources are the exceptionally inexpensive brown coals mined in open cuts (prime cost less than a ruble per ton in some cases) which are used as fuel for thermal power stations and hydropower of Yenisei River. The Krasnoyarsk Hydroelectric Power station has an installed in the world has an installed capacity of 6,000,000 KW and is one of the biggest hydroelectric power stations in the world with an installed capacity of 6,000,000 KW and is one of the biggest hydroelectric stations in the world. This station is rising further upstream on the Yenisei where the river cuts through a narrow gorge in the Sayan Mountains. The middle Yenisei hydroelectric power station (6,000,000 KW) is slightly downstream where it receives the River Angara. These two feed off the Central Krasnoyarsk Industrial Complex.

The resource complex has great potential resources, For example, Kansk-Achinsk Brown Coal basin tributary to this complex are estimated at 1,200,000 million tons. Among the other prospective resources located in the centre of Krasnoyarsk estimated at 1,200,000 million tons and Angara pit iron Ore basin located in the corner formed by the confluence of the Yenisei and the Angara, slightly north of the latter's mouth. Kansk, a fairly large
textile centre and Minusinsk depression with its fertile forest steppe lands, a major grain producer and a mining centre where copper, poly metallic and iron ores are extracted. South east of Krasnoyarsk lies the large Irkutsk- Cheremkhovo Territorial Production Complex. The large Irkutsk Cheremkhovo is located in the South-east of Krasnoyarsk lies the TPC. This TPC was formed after the revolution and at first its development depended on the resources of the Cheremkhovo Coal Basin estimated at approximately 90,000 million tons. Irkutsk with its rapidly developing engineering capabilities became the centre the organizational and economic center of the whole centre. After the great patriotic war, the industrial specialization of the complex was greatly enlarged as a result of coal- chemical enterprises while the oil pipeline leading from the region west of the Urals to Irkutsk stimulated the construction of coal chemical enterprises while the oil pipeline leading from the region west of Urals to Irkutsk stimulated the construction of oil refineries.

Subsequently timber mills and hydro electric power stations on Angara- the giant Bratsk hydroelectric power station (over 4,000,000 KW) is connected to various enterprises with a 550,000 volt high tension line. In the south east Irkutsk region is rimmed by Lake Baikal. Lake Baikal is world’s deepest fresh water lake (1620 m).

*Development of Oil and Gas fields:*

Most of Soviet Union’s oil and gas consumers were in the European part of the nation however the bulk of energy resources were concentrated in the Eastern part of the country in Siberia- particularly in northern regions of Tyumen district (Astrakhov et al, 1989). In Nizhnevartovsk Oil and Gas region (Tyumen Oblast) the population in 1971-1974 grew by 2.5 times. This also characterized the point of highest investment activity in Eastern part of USSR (Pushkev, 1975). “Oil workers are the elite of Siberia. Their headquarters are located in Tyumen, a modern town where everything or almost everything belongs to the oil drilling directorate: special colleges, enterprises, workshops, hotels, sanatoria, hospitals, green houses, apartment houses and even a fleet of river vessels. The directorate, for which 80,000 people work, is made up of nine sub-divisions for oil extraction, technology, drilling, work management, geo-physical and geological
prospecting, supplies of spare parts, trade, agriculture and public health. Work is automated as much as possible in order to keep the demand for scarce and expensive labor resources to the minimum. Electronic systems, the chief of which is located in Tyumen, with others in Surgut and Nizhnevartovsk, maintain centralized control. All food consumed in the oil drilling centers is provided by farms directly related to the Tyumen oil directorate.” (Sansone, 1980).

Construction of BAM

The most famous project was Baikal Amur Mainline. It was planned simultaneously with Trans-Siberian, but the construction began just before the WWII, was put on hold during the war and restarted. The idea of building a Baikal-Amur Railway (BAM)\textsuperscript{18} dates from 1880s. the engineers building the Trans-Siberian Railway thought of shortening its total length by 400 kilometers by routing it further north.

In 1930s and 1940 a 180-kilometer section of the track was laid, but it was dismantled due to World War II and a vital railway near Stalingrad was laid.

After Stalin's death, it was again suspended for years to be continued under Brezhnev. Cascades of hydroelectric power plants were built in 1960s–1970s on the Angara River. The power plants allowed the creation and support of large production facilities, such as the aluminum plant in Bratsk, Ust-Ilimsk, rare-earth mining in Angara basin, and those associated with the timber industry.

The 180-500 kilometer track laid in the north of the Trans-Siberian trunk line relieved the pressure of traffic on the Trans-Siberian railway, which carried nine percent of all freight moved by rail all over the world.

The intention of BAM was to, encourage the growth of number of industrial enterprises engaged for the most part in processing high quality timber and mining copper and tin in this section.

\textsuperscript{18} BAM railway line links central Siberian Russia with the Pacific. The BAM parallels the Trans-Siberian Railway but passes north rather than south of Lake Baikal. It is 1,928 miles (3,102 km) long, with 1,987 bridges. Its eastern terminus is Sovetskaya Gavan on the Tatar Strait. Its construction started in 1938 but was dismantled for parts after World War II. It was restarted in 1974 and officially completed in 1991. Although it operates along its entire length, it is little used, largely because of a lack of funds to maintain it.
The project would open up the boundless riches that lay along its winding track, as it linked agricultural and mineral-rich areas.

People would increasingly come to the now, almost unpopulated area. The first settlers would be the construction workers themselves, some of whom will remain to work on the railways, while others will find employment in the enterprises of territorial industrial complexes currently planned.

The distinctive feature of the BAM was joining the zones or clusters of variety of mineral deposits mainly of oil, gas, iron-ore and coal to promote comprehensive resource development through creation of TPCs. The pressing inescapable dependence of Soviet economy on Siberia's resources made BAM an important investment. However the immensity of the natural obstacles, huge construction costs and low level of indigenous technology put its construction beyond the realm of practicability. As TSR became closer to the USSR’s border, the vast natural resources in Siberia became vulnerable to an attack by the hostile southern neighbour (China) and placed the construction of BAM as a priority Soviet project.

The downside of this development was the ecological damage due to the low standards of production and excessive sizes of dams (the bigger projects were favoured by the industrial authorities and received more funding), the increased humidity sharpened the already hard climate. The resulting destruction of natural areas and the gross waste of resources led to strong environmental opposition.

There were several unintended consequences of the BAM project. Centered on the issue of the polluting of Lake Baikal, Siberian environmental groups became some of the first organizations to challenge the Communist party's decisions openly. Indigenous peoples also protested the destruction of their autonomous regions.

The BAM route crosses seven mountain ranges, soaring up to 2800 meters and 3200 water courses, among them nine major rivers, including the Lena and the Amur, necessitating the construction of no less than 3200 engineering structures-one for every kilometer of track, including 200 railway stations, 64 of which provide the starting point for full scale towns, 142 large bridges and 25 kilometers of tunnels.
Diagram 2. Agriculture Area by BAM segments


BAM segments

Left bar graph in each pair designates status as of 1978; right graph designates future prospects. Bottom shading of each graph designates cropland. Top shading designates forage land under each graph is number of agricultural enterprises of each type as of 1978 and projected (S-state farm, K-Collective Farms, Industrial Sideline farms, SP: Special purpose farms) each pair of the bar graphs refer to a segment of the BAM.

A--Irkutsk Oblast segment
B--Buryat ASSR segment
C--Chita Oblast segment
D--South Yakutian segment
E--West(Tynda) portion of Amur Oblast segment
F--East (Zeya) portion of Amur Oblast segment
G--West(Inner Bureva) portion of Khabrovsk krav segment
Map 28. The New Conditions in Geo-Political and Economic-Geographic Position
Of Siberia

Source: Malov V.Yu et al (2008), Asian Part of Russia: New Stage in the Development of Northern and Eastern Regions of the Country, V.V.Kuleshov (eds), Russian Academy of Science-Siberian branch, Institute of Economics and Industrial Engineering: Novosibirsk
Environmental Impact of Modernization in Siberia:

The scrambles for strategic resources often jeopardize non-strategic resources (the environment). State planners realized the enormous wealth of Siberia but undermined their own capabilities when it came to managing its resources. Leader after leader, environmental concerns and cost-analysis with a sustainability viewpoint were subordinated to the upholding of the red flag. During Stalin's reign, by the 1950s the state had established mines in Northern Siberia for Coal, copper, tin, zinc, gold and platinum. Scientists in the Siberian Science City, 'Akademgorodok', planned a paper mill which would utilize Lake Baikal as an excellent industrial setting. Since the start of the project, the level of lake started to rise and destroyed the delicate ecosystem. The chemicals in the lake skyrocketed past acceptable limits up to ninety-eight times the norm (Josephson, 1997) Economist Abel Aganbegian reported that air and water pollution from the mill irreparably damaged the industries of Baikal flora, fauna, fishing and major resources of the region. Mighty construction projects continued to be envisaged without any consideration of their aftermath.

Feschbach and Friendly (1992) use the Siberian town of Zima to illustrate the ill-effects of state planned industrial projects. During the 1970s, the Chemical Industry ministry established a project to utilize the large chlorine deposit to manufacture polyvinyl chloride and pure alcohol. The factories spewed toxins in the air and in 1989- air in Zima contained the highest level of benzopyrene in the USSR-twenty-two times higher than the tolerable level. It is true that vast areas remain practically unaffected by human activity, yet in industrial regions air, water and soil are heavily polluted with toxicity. Obsolete Technologies, lack of facilities for rendering and purification of industrial waste are the reasons for large economic centers of Siberia - Angarsk, Bratsk, Kemerovo, Krasnoyarsk, Novokuznetsk, Norilsk - to get on the list of the most ecologically unhappy cities in Russia. Cities like Omsk, Amur, Tomsk, Novosibirsk, Arkhangelsk and Kemerovo Even autonomous areas and the Altai, Tyva, Khakasia, Sakha-Yakutia and Komi republics as well as Nenets, Yamal-Nenets, Khanty-Mansi which constitute the
Russian Federation are being "bombed" from outer space all the time. These republics have turned into huge space trash dumps. A total of 23500 sq. km of the Altai republic are covered with space trash. It is contaminated with toxic rocket fuel components. Such contamination has affected the region's medical-demographic statistics, the average life expectancy totals 48-50 years; local mortality rates are also terrifying. Unknown rocket fuel chemicals had killed off animals and fish contaminating some open water bodies and harming local vegetation. The entire territory turned into a real disaster area. Altai territory still continues to suffer from those "rocket rains", which terrify the local population.

According to V.Izmailov and V.Smagin the diamond industry in republic of Sakha has been developed using 12 underground nuclear explosions, some of which were auto by incidental release of radio nucleotides. Near the city of Mirnyi is gigantic gaping crater of a diamond pipe. The exploitation of the quarry was not followed up by the necessary to restore disturbed (Bykov, 2006). The planned large scale development of the oil field in the Republic of Sakha is particularly troubling. Experience shows that tank farms such as Batagai, Zhigansk, Nizneiansk, ust kinga Zyrianka and others have discharged as much as 3000 mg of petroleum products and 1.5-2 mg of tetra ethyl lead per liter of water. Pollution of Yana River with petroleum products averages 6 times the maximum permissible concentrations (MPC).

Due to the increasing attention about Siberia’s environmental problems by international environment organizations and rare public protests following the approval of the initial route in March, with rallies held from Moscow to Irkutsk, the Siberian region bordering the lake, President Vladimir V. Putin in his Concluding Remarks at Meeting on Social and Economic Development in the Siberian Federal District, on April 26, 2006 at Tomsk declared that the Siberia-Pacific Pipeline oil pipeline being built across Siberia should

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19 The pipeline, an $11.5 billion, 2,500-mile project to pump Russia's oil to markets in Asia prompted
be rerouted significantly further away from the northern shore of Lake Baikal, one of the world's natural landmarks. His decision reversed a controversial government decision in March 2006 to allow the country's pipeline monopoly, Transneft\(^\text{20}\), to build the pipeline within a half mile of Baikal, the world's most voluminous fresh-water lake.

\textit{Mikhail Gorbachev's leadership (1985-1991)}

The future direction of urban growth and the nature of Siberia's impact on Russia's economy had taken a U-turn under Gorbachev's leadership with emphasis on the East Siberia and the Far-East. Gorbachev's Economic Policy emphasized the intensification, scientific and technical progress, modernization and energy resource conservation. This implies a general shift away from Siberia and between European-oriented West Siberia and Eastward-oriented Pacific Siberia. There has been a strong correlation between Resource exploitation and urban growth. There seems to be too simple a scenario for future Siberian development. Two opposing strategies during perestroika preached by Gorbachev's economic reform raised again the issue of regional specialisation versus complex development and provoked a discussion about the role and significance of Siberia's future geopolitical structures and tendencies. Some authors argued that Gorbachev's general approach to economic growth and his emphasis on intensification and modernisation focused primarily on the development of western regions of the former USSR.

(Dienes, 1987) wrote: "This 'European oriented strategy' would have a negative impact on Siberia and make economic growth in this region highly selective and distorted both in the sectoral and regional dimensions" Others outlined the beginning of decentralisation and economic autonomy and with it the expansion of Siberia's sovereignty in the framework of ongoing economic and political reforms. However, despite frequently

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\(^{20}\) Transneft operates one of the largest networks of oil pipelines in the world. The company moves crude oil through more than 30,000 miles of pipeline stretching across Eastern Europe and Asia. After the breakup of the Soviet Union, the government agency that controlled the Russian oil industry and the pipeline system (Glavtransneft) reorganized and in 1991 formed the joint-stock company Transneft. The company transports about 93% of the oil produced in Russia.
changing investment priorities and attempts to integrate the Siberian economy in a more complex way (e.g. through TPC's) Siberia remained over the whole soviet period strongly dependent on the European core west of The Urals (capital, technology and workforce). Branch over territorial planning was particularly evident for this region. The results were resource based industrialization in Siberia, non diversified industrial structures and the lack of intraregional-inter branch exchanges. For the late perestroika period, not only a growing polarisation between metropolis and periphery but also a dead circle in the center periphery relationship in which natural resources shipped in from the latter were mostly converted to capital goods (machines, drilling-towers) and later shipped back to the periphery.

De Souza anticipated a 'New Economic-Geographical Map' for Siberia. In 1990-91 the most likely scenario was drawn by De Souza, taking into account a hierarchy of policies related to Siberian development. In the short term, economic exploitation within high priority sectors (oil and gas in Western Siberia) would continue and with it the one sidedness of Siberia's production structure. But by medium and long term investment. Oil and natural gas fields were a priority in the 1960s and 1970s first in the West, then in the Far-East and finally in the North. As a consequence of Moscow's planners' ideological stance to 'reduce inequalities' within the country the country ended up with an over-utilized western Siberia and wilderness in the Eastern and Far-Eastern Siberian regions. By 1980s, incomplete projects and extremely low returns on high investment threatened Siberian development (Hill and Gaddy, 2003)

Disintegration and its implications

The Soviet Union collapsed in 1991 when Boris Yeltsin seized power in the aftermath of a failed coup that had attempted to topple the premier Mikhail Gorbachev. By the time Gorbachev ushered in the process that would lead to the dismantling of the Soviet administrative command economy through his programs of glasnost\(^{21}\), perestroika\(^{22}\) and

\(^{21}\) political openness
\(^{22}\) economic restructuring
uskoreniye announced in 1986, the Soviet economy suffered from both hidden inflation and pervasive supply shortages aggravated by an increasingly open black market that undermined the official economy. In order to restructure the Soviet administrative command system and implement transition to a market-based economy, Yeltsin's shock therapy was deployed within days of the dissolution of the Soviet Union. The subsidies to money losing farms and industries were cut, price controls abolished, ruble moved toward convertibility. The economic crisis of 1990's crippled the Northern and Far Eastern territory of Russian economy, huge industrial and mining complexes had been virtually abandoned, vital infrastructure facilities including municipal heating systems in the region of severe cold in winter had broken down, large parts of the population had emigrated or died out. Siberian foreign economic connections were complicated by new circumstances after the USSR's disintegration. With the fall of the USSR, Siberia became more open to foreign travel and trade, while local Siberians sought to distance themselves from the Russian government in Moscow.

According to IMF Executive Director for Russia, Alexei Mozhin, there was a shift of priorities in Siberian development strategy from an effort to endow Siberia with an integrated economy. Earlier, Influx of workers was promoted in regions where they were needed to operate resource industries.

Effects of Russia's 1990s economic crisis hit Siberia especially hard. For a people already struggling to survive in a harsh climate, the situation nearly turned desperate. Years of centralized planning and management in the former Soviet Union resulted in the creation of unique spatially distributed energy systems, such as the unified electric power, gas, and oil supply systems and the railway network, the region also suffered population losses that were more substantial than those suffered by Russia as a whole. The subsidy dependent region was already pushed into financial distress as a result of the Russian economic reform policies begun in 1991 after the break-up of the Soviet Union, vulnerable populations such as single mothers, multi-children households, the elderly, the disabled and children, bore the brunt of the suffering.

According to staff writer of Red Cross, Kriner (2002) reports, Government-run institutions such as orphanages and hospitals also suffered, and many, struggling to

23 speedup of economic development
operate on as little 30 percent of necessary budgets, were unable to provide the most basic needs. Russia was written off by many prophets of doom in the 1990s, following the disaster that engulfed the country after its disintegration\textsuperscript{24}. But Russia has emerged once again as a powerful nation, according to Eurasian report (2008) it has accumulated gold and foreign currency reserves worth of $500 billion. The GDP has grown almost six times since 2000. Today Russia has GDP of $125 trillion, on of the top ten economies of the world and holds 7\textsuperscript{th} position in terms of GDP on purchasing power parity. The Russian economy enjoyed an average growth rate of almost 7 per cent per annum. Russia has a population of 143 million and per capita income of more than $8000- the largest market to the east of European continent.

According to many experts, Russia would be the largest economy in Europe and the fifth largest in the world by 2050. The country which suffered the most acute unemployment in the 1990s has only 5.3% of its people unemployed down from 6.7 per cent in 2006. However, the ongoing inflation rate at 12- 13% - much higher than the promised rate of 6-8% is a major cause of concern for the economy. Russian rouble has proven to be a strong currency- gaining 15% strength against the US dollar in the outgoing year. Russia’s total trade turnover increased by 23 percent to $515 billion in 2007. While the imports grew 37.1 per cent to $198.7 billion, the export in turnover is 62 per cent while the share of import is 38%. Russia has been enjoying increasing trade surplus over the years. Russia enjoying surplus budgets all these years, it was 3.9 per cent last year. Russia created an economic environment conducive to foreign investments. The year 2007 witnessed 20 per cent growth in Foreign Direct Investments (FDI) in the Russian economy rising to a record level of $41 billion. One notable thing is that FDI increased not in the raw material sector but in processing, manufacturing and construction industries too.

Apart from Siberia's inhospitable climate, poor transportation links and a badly developed physical and social infrastructure, the region also faces problems like high labour turnover and low capital efficiency. Most of the Siberian districts are dependent on federal subsidies and fall short of investments. In a speech at a Security Council Meeting on National Security in the Siberian Federal District, 2003 President Putin explained the

\textsuperscript{24} Russia was declared bankrupt in 1998
paradox in Siberia- “While labour in Siberia is short, its natural riches are colossal and it has major industrial and research centres and defence industries, but the yield from them is poor. Most Siberian regions survive on subsidies, their economies are based on raw materials extraction, and they have run-down basic assets, are short of investments and have problems with replenishing their reserves of raw materials. The situation is compounded by the high prices of energy and transport.”

Experience of Globalisation\textsuperscript{25} for Russia and Siberia

The end of Soviet Union is widely documented in the early work of global theory (Fukuyama, 1993), followed by an explosion in academic work on globalization (Busch 2000). By 2004 however the craze seemed to have calmed down somewhat (McCann, 2004). The collapse of the Soviet Union is seen as major result of globalization or one of the major markers of its starting point. The decay of soviet economy (in mid- 1970s to late 1980s) and the death of Soviet Union as a political entity (finally coming in December 1991) is often attributed to globalization (Castells 2000). Its economy, based almost entirely on raw materials and heavy industry such as steel production and machine building was described as ‘the most advanced 19th century economy’, incapable of innovation, investment and reform (Arnason, 1993)

At present, there seem to be three broad approaches to understanding globalization. First is the radical thesis (‘the first wave literature’) which views the phenomena to fundamentally transform the nature of all society. Second there is the counterargument to this view, known as the skeptical position (Giddens 2000, Held et al 2000). The analysts of this school of thought do not buy the argument that a new global age has been ushered in. they tend to claim that given a longer historical view, the period 1990-2000 is simply one phase of expansive capitalism, and there have been other phases in the past with greater levels of world interaction. Third view formed after the 1990s is a synthesis of

\textsuperscript{25} Robertson, 1992, defines globalization as a process of the world becoming “one place”- One system in the Parsonian sense, hindered only by the religious, legal or industrial differences. Giddens sees globalization as a continuation of the process of modernity, of time and space “dissociation” and embeddedness beginning as early as the sixteenth century (Giddens 1990). Harvey also connects globalization with modernity, or rather post-modernity, and the “compression” of time and space, i.e. taking less time to transcend space (Harvey, 1989)
both these positions. It is referred to the ‘transformationalist’ position (Held et al, 1999) or the ‘third wave position’ (Hay and Marsh 2000).

This view tends to be accompanied by a broader discussion of what globalization actually is. In particular more attention has been paid to the role of individual agency as opposed to sweeping structural changes. Gustafson’s work (1999) talks of ‘Capitalism Russian Style’. He talks about Russia’s unique experience with Globalisation. He discusses Russia’s complicated and partial connection with global capitalism. Russia after transition had its own local dynamics and processes which refuse to fit into a homogeneous global mould. For ordinary Russians, the experience of globalization has come by means of and as a consequence of glasnost and the subsequent collapse of the authoritarian Soviet state that had previously strictly controlled its citizens ‘access to the rest of the world. Ordinary Russians ‘experience of the collapse of the soviet union has been inextricably intertwined with a growing inter-connectedness and awareness of other parts of the world, in other words, with globalization and the transformations of the glasnost era coincide to such a degree in the Russian federation that most citizens do not - cannot – distinguish between the two.

_Siberia and Globalization:_

Few areas of the Soviet Union suffered from the aftermath of the disintegration of the command economy as much as the Asian side of Russia did, due to its marginal economic situation, lack of adequate infrastructure, severe shortage of social services and other amenities and extreme climates. At the same time, new, transforming Russia began to open its doors to foreigners, even into such “forbidden cities” as Vladivostok, which was off-limits even for Soviet citizens until 1992 (Bychkova, 2004). As the venue of the 2012 APEC summit, the grand task has been set: to build the new, modern city of Vladivostok – the pearl of the Far East. But who should decide the pace of globalizing for a region as vast and diverse as Siberia? The people of Siberian region should be free to decide on their own the pace of opening up to the world and the lifestyle changes that would make them more ‘global’. Whether they wish to learn some link language or follow their own faith or adopt another one should be the priories of local people. It is
this right that should ideally formulate the future of the region. The local people have the right to keep their identities intact and the rest of the world should admit the people's ethnic diversity. The state government should involve the local representatives of the people and the academicians in such decision-making (Vodichev, 2008).

The vibrant trading centre for the Siberia connects the European Russia with the land of the Sun. Novosibirisk has come to be a stop in the itinerary of the tourists from all over Europe mainly who travel through west of Russia to east and to Mongolia, China, Japan, Taiwan and Malaysia to reach to Australia / New Zealand. Shops are laden with Chinese and expensive European foods.

Novosibirsk has become a city of contrasts: of huge colorless concrete apartment blocks and tiny brightly lit kiosks and stores with goods of all descriptions; of wealthy new Russians and impoverished teachers; of young people buying European pop music and older people marching in soviet-style May Day parades. Although the city is experiencing dramatic social change, Novosibirsk retains many features of its soviet existence, from street names and high-rise to long-lasting social networks, in the post-Soviet present (Spencer, 2004).

More than a quarter of Novosibirsk's residents have wages below the official poverty level. Few locals have started local businesses and manage to register profit by staying one step ahead of tax inspection and the mafia. A stark contrast from the Soviet days when the city was the military production core and the workers received better wages and extensive benefits.

However, soviet-era inequalities of access based on education, occupation and sector of employment persist in the city (Zaslavsky, 1995). One's position in the geographic/occupational hierarchy determined one's access to power (dustup k vlast'yu). The residents of Novosibirsk can be divided into "new rich" and "new poor" (Silverman and Yanowitch, 1997). The "new poor" earn near or below subsistence wages and call their lifestyle "not living, just existing". This group includes many state employees-doctors in government hospitals or clinics, school teachers as well as unskilled factory labor, doorkeepers or cleaning women and pensioners. In 2000, the official subsistence was $35 (1000 roubles) per person per month. Despite this, official "minimum", many

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26 Basic basket of goods, excluding rent
state sector jobs had a base salary of just about $20 (600 roubles). The “new poor” are already coping with unfamiliar financial constraints are faced with an increasing sense of relative deprivation.

This deprivation is especially difficult for school children since children of newly prosperous show off in front of poorer schoolmates and teachers who have no chance to imitate them.

The “new rich” in Novosibirsk are the minority but growing number of residents who feel they “don’t have to deny themselves anything” and can consider saving for an apartment, car, computer or vacation. By this measure, earning $120 per person per month in 2002 in Novosibirsk (excluding rent) seems to be the minimum threshold for living well. These are managers or owners of local businesses, private doctors, private English teachers and employees of foreign companies, joint ventures or successful local businesses. A few new rich earn good salaries through telecommuting (working over the internet) for computer companies in United States and Canada. Another emerging group is the ‘Novorusskie’ (New Russians), the super wealthy who amassed fortunes during the early years of privatization. The super wealthy – whether businessman or mafia bosses generally live quite separate lives from the other residents. However, regardless of origins, most super wealthy have moved to Moscow (Spencer, 2004).

Hence, the Siberian region has undergone marked socio-economic transformations since its early history as a scattered semi-nomadic tribal-dominated region, colonized for fur requirements of the European part of Russia. The agricultural development of the new territories turned into an independent economic process and the wide Siberian expanses began attracting hunters, Cossacks and peasants and then miners. Siberia’s traditional relationship to the west of the Urals was of a mercantilist colony, the accent on agriculture, mining and extraction of resources was strengthened with the construction of Trans-Siberian Rail Road.

The region holds unsavory memories at the time of kulak expropriation and exiles. The region subsequently industrialized and developed into a military base. Soviet policies centred on intensive development, resource extraction and regional intensification- resulting in lop-sided progress and inefficient resource utilization.
The collapse of the Soviet Union is seen as major result of globalization or one of the major markers of its starting point. The Asian side of the Soviet Union suffered from the aftermath of the disintegration of the command economy. The region also suffered population losses that were more substantial than those suffered by Russia as a whole. The region is undergoing its unique experience of globalization. With the economic rise of Asia and recovery of Russia, importance of Siberia is undergoing retrieval. Owing to its own historical and socio-economic peculiarities, Siberia has evolved a distinctive identity than other parts of Russia. It has unique geo-political status, great economic potential and ethno-religious specificities.