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CONTRIBUTORS

J.S. Majumdar is a member of the Central Committee of the Communist Party of India (Marxist).

C.P. Chandrasekhar is Professor at the Centre of Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University, New Delhi.

Archana Prasad is Professor at Centre for Informal Sector and Labour Studies, Jawaharlal Nehru University, New Delhi.

Xi Jinping is the General Secretary of the Communist Party of China.

For subscription and other queries, contact
The Manager, Marxist, A.K.Gopalan Bhavan, 27-29 Bhai Veer Singh Marg, New Delhi 110001
Phone: (91-11) 2373 8725. Email: pdpbln@gmail.com

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C.P. CHANDRASEKHAR

Learning to Plan

Revisiting the Soviet Experiment

When in 2017 the world marked the centenary of the Bolshevik seizure of power on November 7, 1917, many were unwilling to celebrate the economic achievements of the system that the revolution put in place. Soviet socialism was a failed system, they argued – one that did not work, leading finally to its collapse. Moreover, although the collapse of the Soviet Union occurred in the 1990s, the beginnings of failure are sought in developments since the collectivization of the late 1920s, which are seen as marked by much sacrifice by the ordinary citizen with little long term benefit in terms of growth.

THE DIFFERENTIATING FEATURES

Many of these critical analyses ignore or dispute three key elements of the Soviet experience, the implications of which go beyond the Soviet experiment. The first is the fact that the Soviet Union, despite having to muddle through in the face of extraneous constraints, did manage to replace the market mechanism with the 'planning principle'. The advocates of the planning principle saw in it the means to (i) overcome the anarchy associated with the atomistic decision making characteristic of systems based on private property and the market mechanism; and (ii) ensure the execution of socially beneficial projects, that are unlikely to attract investments in a system where investment decisions are driven by profit. A typical example of the latter are crucial infrastructural projects.

In market-driven and profit-oriented systems, the level and allocation of investment gets determined by the 'guesses or expectations of a large number of independent decision-takers (entrepreneurs), in the long run "revised" by ex post movements of market prices' (Dobb 1960). Since the investment in fixed capital that results is by definition irreversible, decision errors are costly in individual and social terms. And such errors are bound to occur, since private investment decisions must be based on estimates of prices that would prevail over the lifetime of the project. The only basis for these estimates are 'historical prices'. But it is the independent and subjective decisions of capitalists based on historically given prices that create the capacities and generate the pattern of demand that actually determine future prices. Expectations of future costs and prices based on historical prices are bound to be wrong. So the sum total of individual investment decisions result in shortages in some sectors, and over-investment, unutilized capacity and closure, in others. Moreover, the system would be incapable of ensuring full employment. Hence a system that seeks to supersede the anarchy of capitalism must coordinate investment and arrive at 'prior' decisions on the total volume of investment, its allocation to different sectors and particular projects and the technical forms in which the investment would be embodied, to maximize growth and ensure full employment. That was the essence of the planning principle.

The second element of the Soviet 'model' that advocates of the superiority of the market mechanism want to underplay or rubbish, is its unusual choice between emphasizing capital and consumer goods production, which amounted to privileging investment over consumption in a poor country with low per capita consumption and high unemployment. The Soviet development strategy (formalized in the Feldman model) managed to demonstrate in large measure the ability of a state representing workers and peasants to make the 'social decision' to rein in consumption growth in the short run, in order to divert investment to the production of the machines that can more productively employ workers and accelerate the growth of income and consumption at a later date. This choice was essential not just to realize ambitious developmental goals, but was the principal factor explaining the consolidation of Socialism in One Country subject to capitalist encirclement and plagued by war. Soviet success was crucially dependent on the successful implementation of that strategy.

Finally, the third aspect of the Soviet model that disturbs those who want to undermine its achievements is that despite the emphasis on heavy industry and machine production that was so crucial to its success, the Soviet Union ensured rather early in its development path that the unemployed and underemployed in its largely rural labour force were absorbed into a more productive non-agricultural sector, with improved living standards involving increased consumption levels and access to basic services such as housing, education and health. According to one careful estimate of consumption trends during the years when the post-revolution economy was stabilized and before the Second World War, total consumption in the Soviet Union increased by 42 per cent between 1928 and 1937 and per capita consumption by 37 per cent (Allen 2003).

THE RECORD

Critics of the Soviet Union not only choose to ignore these essential elements of the Soviet path but also the fact that it is one among the few (actually four) examples in the 20th century of countries that made the transition from being an underdeveloped backward country to being an advanced nation (the other three being Japan, South Korea and Taiwan, since Hong Kong and Singapore were entrepot city-states and not really comparable). At the time of the October Revolution, while Russia had seen substantial development of the railways (though not as much as the rest of Europe relative to area and population) and was home to pockets of advanced industrial development, it was predominantly a backward and largely an agrarian economy. Only a tenth of the population was employed in industry and around 15 per cent lived in towns. Given the limits to productivity advance in agriculture defined by geography and climate, accelerating growth required faster and more diversified industrialization. And given the constraints on obtaining technology and capital equipment from abroad, investment in machine and intermediate production to raise productivity and production in the consumption goods sector was crucial.

Long term, comparative GDP estimates from Angus Maddison establish that over the period 1928 to 1970 the Soviet Union was the second fastest growing economy in the world, after Japan. And when compared with Southeast Asia, West Asia (Mideast), China, British India and Africa, its performance was remarkable, resulting in the closing of the developmental gap between the backward Soviet Union and the advanced countries. Excluding the war decade of the 1940s, GDP growth stood at between 5 and 6 per cent a year over 1928-70. Deceleration began only after that, falling to 3.7 per cent per annum during 1970-75, 2.6 per cent during 1975-80 and 2.0 per cent over 1980-85.

The period of comparison starts in 1928 because the immediate post-revolution decade included the years of turmoil or *War Communism* (1918-20) when the battle of the Red Army forces with the counter-revolutionary White army was waged and won, and of the New Economic Policy (1921-28) when damage caused by War Communism was repaired and normalcy restored. In the course of the former, between 1917 and 1920, the industrial economy was devastated, with output of cotton yarn, for example, falling by 93 per cent and that of pig iron by 96 per cent. Besides having to overcome such damage, two decades later, the Soviet Union played a decisive role in defeating Fascism, suffering further damage, amounting to a near catastrophe. The Second World War not only forcibly diverted resources away from development but took a huge toll in terms of the loss of human lives and capital and material resources. Yet, development proceeded at a rapid pace to reduce the income gap between the Soviet Union and the advanced nations. Seen in that light, the relative performance of the Soviet Union over 1928-70 was remarkable, to say the least.

This ability to 'catch up' in GDP terms is also noteworthy because the Soviet Union's situation was unlike that of South Korea and Taiwan, which by virtue of being 'frontline states' in the Cold War had the benefit of access to developed country (especially US) markets and capital. The Soviet Union was shut off from access to capital from abroad to finance imports of productivity-enhancing equipment and had limited access to markets abroad. Also, the facts that for long there was Socialism only in one country, and that country was encircled, meant that resources had to be diverted to defence expenditures, to deter enemies within, during the civil war, and without, subsequently. In addition, the Soviet Union's achievements in the realms of ensuring full employment, universalizing education and provision of health services are without comparison.

The remarkable record of the Soviet Union is often veiled by resorting to two devices. The first is to compare Soviet achievements with targets set by the Soviet leaders and planners themselves, which in some periods remained unrealized. The second is to compare Soviet performance with that of other countries over the longer period 1928 to 1989, which includes the two decades after 1970 that were characterized by a slowdown of growth, because of the failure of the reforms that began to be instituted in the 1960s and after, in the run up to the disastrous transition that *Perestroika* involved. When examined over this extended period stretching to 1989, the increase in per capita GDP in the USSR was less than that in South Korea, Japan, Taiwan, Portugal, Finland, Singapore, Italy, Norway, and Thailand. If the end-date is shifted to 1991, Spain, Jamaica, and Singapore also perform better than the Soviet Union. This, however, calls for an explanation of why the performance of the period 1928-70 could not be sustained, rather than for a dismissal of the whole experiment as an economic failure.

THE 'PHYSICAL' CONSTRAINTS ON DEVELOPMENT

The Soviet developmental achievement, as noted, was based on a significant increase in investment, and therefore a rise in the share of annual output diverted to investment. This required in the first instance the postponement of consumption increases in order to release resources for investment. But what became clear was that this investible surplus had to take specific material forms. Agricultural surpluses were needed to feed the labour force employed in the non-agricultural sector, provide industry with needed agricultural inputs, and undertake exports that earned foreign exchange needed to import some of the essential capital goods needed for industry. A part of the surplus had to be in the form of capital goods (equipment and machinery) needed to employ workers in the non-agricultural sector as well as rapidly raise their productivity. This investment goods surplus had to be substantially domestically produced since the agricultural surpluses that could be transformed through trade into machines was limited, as were the opportunities for trade. Finally, some of the surplus had to be in the form of intermediate goods to service the requirements of agriculture and industry.

Thus, there were two kinds of imperatives that faced the post-revolutionary government. First it had to make the institutional changes needed to enhance the area of control of the state, allowing it to subordinate the market mechanism to the 'planning principle' so as to subsequently neutralize the former. The market mechanism was not benign and would favour the better off leading to increasing inequality and the restoration of capitalism. And, as noted, the market was 'anarchic' with competing capitalists acting on their own and no possibility of coordinating investment to reduce social waste and allocate investment in ways that maximize growth. Second, it needed to delineate and implement a strategy that would maximize growth while overcoming the structural constraints set by the country's backwardness and its internal and external conditions.

CHANGING ASSET OWNERSHIP

Institutional change did not imply a sudden and complete transition to comprehensive state ownership. It is true that Lenin and the Bolsheviks did see proletarian leadership in the revolutionary transition as crucial to the progress to socialism. It is also true that immediately after the revolution, during the period of war communism and thereafter, a large number of industrial and banking enterprises were brought under state ownership. By late 1919 around 4,000 large-scale industrial units had been nationalized, and subsequently even a number of small scale factories were brought under state ownership. But such state ownership was driven by the imperatives of the civil war and did not imply socialism in Lenin's understanding. The *April Theses* made clear the need to immediately bring 'social production and distribution of goods under the control of the Soviet of Workers' Deputies', but saw this measure among others (such as the consolidation of all banks and subordinating the single entity to Soviet control) as also having been 'frequently undertaken during the war by a number of bourgeois states'. In sum, these moves may support the subsequent transition to Socialism, but were in the first instance not undertaken with that sole purpose, and were not completely irreversible. They were necessitated by the special circumstances of War Communism. Within such a frame, agriculture remained largely under commune control, though land was nationalized to break the monopoly over land of the landed aristocracy. Land was allocated to willing cultivators functioning with some independence even if as part of the larger commune. Private presence was substantial in trade, especially retail trade. Thus the system combined elements of private and social ownership, and a role for the market alongside that for command and control.

The initial phase of workers' control in industry went through many phases of change. In the first, to combat managerial chaos and even syndicalism in which workers' committees saw themselves as owners who had the right to the produce of 'their' factories, control was centralized and mangers appointed reporting to the Centre. Simultaneously, in many instances control was shared with or left to erstwhile owners, given their expertise in managing the enterprises which was seen as needed to sustain production. However, since the civil war necessitated control over production to prevent private efforts to limit output and indulge in sabotage and the diversion of supplies for military needs, the government was forced to march to nationalization. But, as mentioned, for Lenin this hastening of pace in the introduction of state ownership and management was the result of the special circumstances of War Communism and the need to protect the gains of the revolution.

AGRICULTURAL SURPLUSES AND THE SMYTCHKA

The strategy for accelerated development taking shape during these years was partly defined by the circumstances of the time. As noted, diversifying into industry required providing for the agricultural and allied consumption needs of the industrial working class and the agricultural raw material needs of industry. There were, among others, two features of Russian agriculture at that time which militated against realizing this. First, Russian agriculture was poorly off, with low and stagnant productivity and limited possibilities of expansion of cultivated area. So raising land and labour productivity was crucial. But fragmented land ownership and operation left cultivators without the means or the incentive to cultivate, and small holdings militated against the use of modern agricultural practices and the exploitation of scale benefits to raise productivity. Second, while the exit of workers from the rural areas increased per person agricultural output, the resulting surplus of food crops was not automatically released to meet the needs of urban workers, because of increased self-consumption of those staying back in agriculture, especially the middle peasantry. Efforts to mobilize 'surplus' food was imperative if industrialization was to be accelerated. Agricultural surpluses were also needed to earn foreign exchange through their export, so as to finance the import of capital goods needed for industrialization.

While in the later years of planning the determination of the volume and composition of surpluses needed to realize a target rate of growth while maintaining inter-sectoral balance was facilitated by appropriate models and computational facilities, in the early years trial-and-error inevitably played a role. The Soviet Union being the first experiment with planned development, it was also the site where the process of planning was learnt by doing. It was clear, that a central question posed early in the developmental transition was regarding the measures that had to be adopted to mobilize the *material* agricultural surpluses needed to 'finance' industrialization. Once the revolution nationalized all land and transferred its use to peasants organized in communes, the egalitarianism in landholding while unleashing peasant energies created a land holding structure not conducive to the use of modern technologies and exploitation of economies of scale. Cooperativization or collectivization was crucial for raising productivity and enhancing surplus in production.

Simultaneously, the fact that agriculture did exhibit increasing returns to scale meant that commune ownership was not a guarantee against class differentiation. With decentralized allotment of land determined in principle by the expressed intent of commune members to cultivate the land resulting in individualized possession and operation, the process of differentiation would create a section of richer (capitalist) peasants or *kulaks* at one pole and marginal farmers and workers at the other. In time, the richer peasants or *kulaks* would control the disposition of much of the surplus making them a potential threat to the socialist project.

The task of mobilizing the required surplus was made more difficult by the fact that for a considerable period after the revolution flows between sectors, especially between agriculture and industry were largely mediated by exchange relations or the market. The Soviet state needed to control and influence those relations of exchange to realize the requirements set by its intended *a priori* plans. This would require either compulsorily procuring agricultural surpluses, especially food, at state determined prices, or manipulating the terms of exchange (or relative prices) between a predominantly peasant agriculture and state controlled industry in favour of the latter, and thereby garnering surpluses through the sale of industrial requirements to the peasants.

Over 1919-20, one way in which food surpluses were sought to be mobilized was through compulsory procurement. Based on its estimates of surpluses (above necessary self-consumption) the government requisitioned supplies and directly distributed them. Since during this period industrial goods were in short supply because of the underdeveloped state of industry and the damage caused by war, industrial prices were rising. Workers in industry were partially insulated from that inflation by payment of a substantial part of wages in kind. The peasantry on the other hand was doubly burdened, by having to hand over (often under duress) the requisitioned supply of food at specified prices and by having to pay higher prices for industrial goods.

In time the disincentives created were so severe that the area sown and therefore the level of production began to shrink. Combined with the damage inflicted by war on agricultural operations, this reduced agricultural production in 1920 to just above 40 per cent of the average production during the five years preceding the war. Recognizing the economic and political damage being caused, the 8th Party Congress, persuaded by Lenin, warned not 'to confuse the middle peasantry with the *kulaks*', and made clear that 'Soviet policy must reckon with a long period of cooperation with the middle peasantry'. To that end it called for a 'more attentive attitude to their needs', and 'the elimination of arbitrary conduct on the part of the local authority'. Nevertheless nationalization of industry and the compulsory procurement of agricultural surpluses and centralized allocation of these surpluses to the urban population and the army were the essential features of *War Communism* (Dobb 1966: 105-106). A concomitant was a reduced role of the money economy and market-mediated exchange between agriculture and industry.

The measures adopted were, as is to be expected, unpopular with the peasantry, threatening the political element recognized by Lenin as crucial for both the success of the Russian revolution and the consolidation of its gains: the *smytchka* or the alliance of the working class and the peasantry. But the rapidity with which those measures were embraced was not because of any attempt to accelerate the transition to socialism, as interpreted in some quarters within and outside the Soviet Union, but was explained by the exigencies of the war period. So as soon as the war ended, the effort was to roll back the extent of centralized control and administration, and restore normalcy in production within the framework of the extant ownership pattern and by reviving exchange transactions mediated by the market where necessary. *War Communism* was an unavoidable aberration, and with its end a more gradual process of transition can begin.

THE RETURN TO 'NORMALCY'

The first step to reduce the burden on the peasantry and restore market relations was the replacement of compulsory procurement with a food tax, set at a level where it would yield around half as much as the previous system did, to cover the essential needs of the non-agricultural sector. Simultaneously, the right of the peasant to trade whatever surplus remained with her was restored, as were market mediated relations between agriculture and industry and a greater role for the money economy. At the other end, industrial enterprises were allowed to sell their output commercially and acquire their supplies from the market. This process was extended and finally industry (with some strategic exceptions) was released from direct relations with the State budget and expected to meet its expenditures from its own revenues. This was the framework that ruled during the period of the New Economic Policy, which saw a return to decentralized, market-mediated relations, with a fair amount of dispersed control over production and commerce. In the concession to capitalist relations, the primary locations of incipient capitalists were agriculture and trade, in the form of the *kulaks* or the richer peasants who hired labour, and traders in the retail trade or the 'Nepmen' as they were called.

This 'transitional mixed system' that Lenin termed State Capitalism had a bundle of contradictory features. Nationalized medium and large industry, agriculture with pre-socialist ownership forms such as communes and cooperatives except for small areas under collective farms, peasant differentiation with labour-hiring *kulaks*, private capital in trade, and market mediated trading relations, especially between agriculture and industry. The system was State Capitalist because of nationalized industry, State oversight over petty production, and political power in the hands of the party of the working class. Given these features it was not stable, and would evolve either in the direction of capitalism led by the *kulaks* and the Nepmen, or in a socialist direction with greater state ownership and control. Ensuring the latter was all the more difficult because of the actuality that socialism was restricted largely to one country, even if a federation.

The unstable nature of this system came to the fore when, after the restoration of some normalcy in industrial production, the country was faced with the bad harvest of 1921. With inadequate agricultural goods being offered in exchange for industrial products, industry was starved of both demand and revenues to sustain production. Agricultural prices rose, but with supply shortfalls peasant incomes did not rise, but actually fell. And urban workers had to allocate more of their incomes for more expensive food. Together these reduced demand for industry. The crisis was one where the marketed surplus being delivered by agriculture was not enough to meet the needs of restored production in the cities.

But the situation soon reversed itself in destabilizing ways, as improved weather and better prices led to an increase in agricultural production and a fall in agricultural prices, shifting the terms of trade or relative prices in favour of industry and against agriculture. Starting with the 1922 and 1923 harvests production picked up and prices fell by around half in the six months following August 1922. However, the extent of the price decline was far in excess of what was warranted by the improvement in agricultural production, because the cartels or syndicates of industrial enterprises that had been formed to deal with the trading problems encountered in 1921 were using the occasion to keep their prices relatively high. Combined with a much slower recovery in manufacturing production this resulted in a growing divergence between agricultural and industrial prices. This 'scissors crisis' threatened not only to alienate the peasantry but also to trigger a fall in sowing and agricultural production. The state had to intervene to rein in the cartels and support agricultural prices with the help of exports.

These developments underlined the problems that were likely to arise in agriculture-industry relations as growth returned and accelerated. By 1926, the Communist Party had come to the conclusion that the return to normalcy was complete and the stage had been set for accelerated growth under a post-NEP regime. But the question remained as to how the agricultural surpluses were to be mobilized to support a more rapid pace of industrialization.

Initially, the tendency was to seek the support of the peasantry to enhance production. As part of that process, in 1925, the period for which land could be leased was raised from six to twelve years. This was a concession that favoured the *kulaks*, who were the ones who resorted to leasing in land allotted to poorer peasants in return for access to equipment the former owned. Increased production from the use of this concession would accrue to these sections who would also have control over marketable surpluses crucial for industrialization. But the justification for a softer stand vis-à-vis the peasantry was not the need to favour the 'productive' *kulaks*, but to isolate them in time by winning over the middle peasants.

PRIMITIVE SOCIALIST ACCUMULATION

While the official reaction to the 'scissors crisis' was an attempt to appease the peasantry by ensuring that prices and production were such as to enhance agricultural incomes, there was a strong faction that still saw the need to squeeze the peasantry to extract the surpluses needed for industrialization. Yevgeni Preobrazhensky formalized this argument by making a case for 'primitive socialist accumulation', through which the State extracted surplus value from the petty producers, especially the peasant economy, so as to expand industry and raise its productivity. This extraction was to be done not so much through taxation (which was one possibility), but more effectively by setting prices such that the terms of trade shift sharply in favour of industry. But as past experience had shown, this could not only alienate the peasantry, but also disincentivize agricultural production and reduce the real material resources made available to support industrialization. In the debate that ensued, the official position won out, with emphasis on reduced industrial prices as a way of encouraging peasants to trade in their surpluses, and an effort to put an end to any coercion of the kind adopted in the rural areas under War Communism.

With that position adopted with respect to agriculture, attention was now turned to formulating the strategy for rapid industrialization. Already, in a report presented by Stalin to the Fourteenth Party Congress in 1924, the immediate objective set was to ensure 'that the Soviet Union be converted from a country which imports machines to a country which produces machines, in order that by this means the Soviet Union in the midst of capitalist encirclement should not become an appendage of the capitalist world economy, but an independent economic unit which is building Socialism'. This was an early statement of the position that given the limited possibilities of and dangers of relying on transforming domestic goods into imported machines through trade, the machines had to be produced at home. Machines would be produced to produce the machines that would then enhance productivity in the consumption goods sector.

But even as plans to accelerate industrialization began to be put in place, the agrarian constraint once again asserted itself. Problems arose with mobilizing agricultural surpluses with signs of a shortage of industrial goods required to be exchanged for agricultural supplies at the prevailing prices favouring agriculture. The opposition once again attributed this to the strengthening of the *kulaks* favoured by the agricultural policy under the NEP, with these favoured sections holding back supplies from the state procurement agents in the hope of getting a higher price in markets. The official position did not deny the need to rein in the rich peasantry in the changing situation, but felt that the relative strength of this section in rural areas was being exaggerated and that there was still no clarity on the best way to do confront it without losing out on the support of the middle peasant and endangering the *smytchka*. There were many who still felt that a soft touch approach to the peasantry as a whole was the need of the times.

Differences on the question of the relation between agriculture and industry pointed, however, to a more fundamental issue that needed to be faced. How fast must industry be planned to grow? The faster the pace of industrialization, the greater would be the agricultural surplus that would have to be mobilized, and the more the burden that would have to be imposed on the peasantry. Calls for a soft touch towards the latter from the 'Right opposition', of which Bukharin had emerged an important representative, were in essence a call for a slower pace of industrialization. But as already noted, this was not all a matter of free choice for the Soviet government. A high rate of investment in industry and the creation of a large and fast expanding industrial sector were necessitated by the circumstances of the time. And failure to industrialize could lead to a restoration of capitalism.

A crisis in the intra-sectoral exchange between industry and agriculture in 1927, which intensified in 1928, made clear that any plan of accelerated industrialization could not be pursued within the framework of agriculture-industry relations that existed. Within the relatively egalitarian and fragmented distribution of land, the pace of increase of productivity was limited. And given the relative position and role of the rich peasantry and the desire for increased self-consumption of the middle peasants, mobilizing even the available surplus was extremely difficult. Even in the good harvest year 1925-26, marketed surpluses were below their pre-war level. The official position on the attitude to be taken vis-à-vis the peasantry changed sharply relative to what had been expressed three years earlier, and the Right opposition came under severe attack. Reporting to the Fifteenth Congress Stalin declared: 'The way out is to turn the small and scattered peasant farms into large united farms based on the common cultivation of the soil, to introduce collective cultivation of the soil on the basis of new and higher technique. The way out is to unite the small and dwarf peasant farms gradually and surely, not by pressure but by example and persuasion, into large farms based on common, cooperative cultivation of the soil, with the use of agricultural machines and tractors and scientific methods of intensive agriculture. There is no other way out.' In practice in the immediate following years, the main benefit of collectivization was not so much the increase in productivity, as the ability to both release workers from agriculture and mobilize the surpluses needed to support industrialization. In addition, the establishment of large scale state farms from new land brought into cultivation in the arid regions helped substantially increase the surplus grain that could be procured.

Collectivization did evince an aggressive response from the rich peasants and the land hungry middle peasantry, leading to resistance of various sorts including the slaughter of cattle as a form of protest. What followed was an aggressive offensive against the kulaks, with their property being expropriated. In the process 'excesses' were common, earning collectivization a bad name. The transition was brutal and painful, but at much cost it did pave the way for launching the process of 'socialist construction' based on rapid industrialization.

PLANNING SOCIALIST CONSTRUCTION

The industrialization strategy was ambitious from the start. The First Five-Year Plan targeted an increase in net investment to between a quarter and a third of national income, which was almost two and a half times the level before the First World War in Russia and double that in Britain in pre-war times. And of that investment a third was to be in industry, of which in turn three-fourths was to be diverted to heavy industry. By the end of the First Plan, capital goods output had risen by 250 per cent and the output of machine by 400 per cent, albeit from a low base. The performance of the consumer goods industries, though uneven, was less noteworthy.

From the beginning the Soviet experiment was one of making short term sacrifices in the long run road to rapid productivity increases in the future. However, because growth was expected to accelerate, the fall in the share of consumption in national income was not expected to result in a fall in absolute aggregate consumption, but in a significant increase of that figure. Consumption did increase. But with the disruption and slaughter that followed collectivization and the increased demands for defence, the government's own consumption targets were not realized.

With growth high and productivity increases not as dramatic as was originally envisaged, employment increased significantly, leading to a transition from a situation of excess labour supply to one of labour shortage, and especially so for skilled labour. Wages rose and upset calculations of the demand for consumption goods leading to inflation. But the fact of the matter was that right from the start the Soviet strategy was extremely successful in drawing workers into the workforce as part of a process of 'extensive growth'. Productivity increases were, however, lower than expected.

Not surprisingly, the Second Plan (1933-37) was better than its predecessor for three reasons. First, collective farms were consolidated and their operations improved. Second, the government learnt from early mistakes, reducing the share of investment in total income and increasing investment in consumption goods production, for example. But the capital goods sector still got around three-fourths of total industrial investment. The strategy remained the same, since the circumstances defining it had not changed. Third, the increased production of capital goods helped support investment and increase productivity. But meanwhile the threat from Fascism was already being felt, necessitating diversion of resources to defence and the military, adversely affecting the growth of consumption.

Despite the constraints, over the 10 years of the first two plans iron and steel production had risen by 400 per cent, coal production by 350 per cent, and electric power by 700 per cent. Politically, the Soviet Union had travelled a long distance from the period of War Communism and the NEP. Socialist industry had made significant strides and collective agriculture had stabilized. The new Constitution of 1936 could confidently state that 'the socialist economic system and the socialist ownership of the tools and means of production' had been 'firmly established as a result of the liquidation of the capitalist economic system, (and) the abolition of private ownership of the tools and means of production'. The absolute output in many sectors of industry was ahead of that in many advanced capitalist nations, though per capita production was way below that in many of those countries. The Soviet Union had prepared the base for full catch up, and for substantial improvements in the standards of living after years of sacrifice. But, unfortunately, the Second World War intervened.

Though Hitler's assault on the Soviet Union came in June 1941, the last but one year of the Third Five-Year Plan, preparations for war had become inevitable from the very beginning of the plan period. This had a number of consequences. First, even by 1940, defence expenditure rose to double what it was at the beginning of the third plan, and the allocations for defence and investment combined left less than half of national income for consumption. Moreover, just 15 per cent of investment in industry was available for the consumption goods sector, precisely when the time had come to reward the person on the street with the fruits of planning in the form of increased consumption. The sacrifice in consumption growth that the Soviet citizen had been called upon to make was followed by a devastating war, which was a disaster in all senses excepting for the fact that it helped win for the whole world the battle against fascism. Production at the war front was brought to a halt, equipment was damaged and much of capacity had to be evacuated to the east. Civilian consumption in the Soviet Union fell by much more than in England or France.

The devastation of war was aggravated by the deliberate destruction by the retreating German army of industrial facilities, railway tracks, mines and cattle. Even by 1945 only a small proportion of the pre-War productive capacity of the affected regions had been restored. Not surprisingly, the post-war, Fourth Five-Year Plan had to return with a vengeance to the emphasis on heavy industry. The onset of the Cold War did not help. Defence investments had to expand to close the gap with the United States.

It hardly bears stating that this amounted to a harsh imposition on the people over an extended period starting with the civil war. They were being called upon to sacrifice increases in consumption with the promise of investment aimed at raising productivity, growth and future consumption. But if a significant part of what is sacrificed is diverted to either repair the damage caused by wars or prepare the military and means to fight them, that promise is belied. The pressure on the State to make up for this deviation was immense.

TIME FOR RESTRUCTURING

Meanwhile, even before the war, the long period of 'extensive growth' that had drawn the surplus labour force into employment had come to an end. This resulting tightness in the labour market would have been aggravated by the loss of human lives during the War. This made the transition to a trajectory of 'intensive growth' driven by technological change and productivity increases an immediate imperative. Not surprisingly the Fifth and Sixth Plans, covering the decade of the 1950s, were focused on the effort to promote 'intensive growth' with labour productivity projected to increase by 50 per cent. That task was, however, rendered more difficult by the fact that the wars and the encirclement had diverted investments from productivity-enhancing machine production to the production and improvement of defence equipment.

Further, just when the shift to an intensive path had to begin, the need to enhance consumption was at its highest. Thus, by the 1950s and 1960s, two shifts in the development strategy were called for. The first was a conscious effort to compensate the Soviet people for the long years of sacrifice they had endured, by changing the emphasis in the plans from investment to consumption and leisure. The second was the acceleration of technological change and productivity increase, which required diverting resources to research and development and increasing investment in new equipment that embodied new technology.

Progress on the first of these fronts was visible. Long overdue benefits were instituted, such as reductions in the number of working hours per day and number of working days per week, improvements in wages of the lowest paid, reductions in wage disparities, and enhanced social security benefits. Investment in light industries producing manufactured consumption goods was encouraged. Yet, the pressure to increase the pace at which these changes were being instituted remained.

But the more important problem that emerged was to ensure the second of the transitions from extensive to intensive growth. The deceleration of growth that began in the 1970s, noted earlier, was evidence that progress in this area was short of what was required. There were also signs that consumption demands for larger quantities of more diverse and better quality consumption goods could not be met.

The resulting perception that the twin tasks set for the Soviet government were not being accomplished to the satisfaction of a population that had made much sacrifice and waited patiently for the benefits of a socialist future strengthened those arguing for change. The historical origins of these problems are well known, and been discussed above. However, the explanations for these shortfalls shifted to other features of the centralized system of decision-making that delivered the achievement of the period of extensive growth. This determined the direction 'restructuring' should take. The special circumstances which had imposed huge burdens on the ordinary citizen in the past were ignored, and those burdens themselves and the avoidable distortions that emerged in the process of 'learning to plan' became the justifications for the corrective reforms adopted at the 20th Party Congress of 1956 and subsequently.

These reforms were influenced by an analysis emphasizing the institutional weaknesses associated with centralized investment decision-making as a system of economic governance. These weaknesses were seen as varied. First, the system, it was held, wrongly presumed that central planners have adequate access to the wide and enormous range of information required to execute their implicit brief. This 'informational inadequacy' arises only partly because of the difficulties involved in creating a framework which allows for the collection, collation and transmission of the required information at a fast enough pace. It also results from the fact that agents at lower levels of implementation and governance may choose to hold back and not transmit crucial information or even find incentives for transmitting partial or incorrect information, which puts the whole mechanism in threat. This may not matter as much during the extensive phase, but can gain importance during the intensive phase.

In addition, there was the view that centralization had led to 'bureaucratization' at different levels of decision making, which the political framework created to protect 'socialism in one country' and simultaneously accelerate socialist construction could not prevent. Such bureaucratization could not only lead to wrong investment decisions, influenced by sectional rather than societal interests, but could also lead to objectives and rules which are set not because they are perceived by the planners as being socially accepted, but to those which are considered best by the planners themselves, and not necessarily always from a societal point of view. Even if consumer sovereignty, which presumes that individuals are the best judges of what is good for themselves, is a notion that can be dispensed with under socialism, some means to ensure the incorporation of individual priorities and desires when deciding on the volume and pattern of consumption should be provided for, if individuals are not to be alienated from the system. Market mediated signals and the flexibility of producers to respond to them were seen as the best devices to address this issue.

Finally, the view gained ground that pecuniary incentives were needed to align the objectives and goals of agents at all levels of decision-making or implementation (including shop-floor workers or workers in agricultural cooperatives or state-owned farms) and to make all agents adopt the objectives considered appropriate by the central planners. The potential lack of uniformity of objectives among agents whose structural position in the system differs is of significance because the conventional means under capitalism of trying to impose discipline through closures, retrenchment and lay-offs and the threat of the sack, are rejected under socialism. Alternatives have to be found. This problem has always been recognized in the traditional discourse on planning, which considered politics and 'socialist example' to be the keys to realizing correct and consistent decisions at lower levels of decision-making. Consensus among the majority around the political agenda, seen as a requirement to put in place the system of central planning itself, and the ability to use that consensus to enforce non-financial penalties for deviance, were seen as adequate to ensure commonality in objectives pursued by different agents. In practice, the critics argued, this means of ensuring consensus does not work.

THE CHARACTER OF REFORM

Influenced by views such as these, the reforms adopted amounted to a reversal of the march towards a more centrally controlled socialist economy operating on the basis of the planning principle. To start with, they made the emphasis on investment and investment goods production an error. There was a growing perception that priority for capital goods production was a reflection of over-centralization and had to be diluted or done away with. Dilution of that priority was seen as needed not only because the sacrifices necessitated by development in the midst of two war periods warranted faster growth of consumption goods production. Dilution was needed to combat centralization and bureaucratization.

Secondly, the reforms sought to reverse changes in ownership structures. An example was the decision to permit collective farms to own machinery, subsequently validated theoretically in the formulation on the 'two forms of socialist property', with 'the advance towards communism' expected to proceed with both 'the perfection of State property' and 'the rapid development of cooperative and collective farm property'. And the third was the dilution of the idea that the planning principle should supersede the market mechanism, on the grounds that the requirement for money wage payments and wage differentials in the labour market necessitates a monetized market for consumer goods, and therefore a role for the market mechanism and the law of value in determining the allocation of investment and the pattern of production. A 1961 Programme spoke of the need to combine planning of 'key targets' with the 'extension of operative independence and initiative of enterprises'. These were departures from the principles in the earlier view that demarcated and differentiated between the essential natures of capital market economies and socialist centrally planned systems, with a much greater role for market mediated decentralization.

Given the slow pace of productivity increase, these arguments for 'decentralization' were justified as a means to encourage innovation at the operational level and as needed to correct the distortions created by quantitative targets set to realize the plan, which led to the neglect of quality. The call was for a departure from centralized directives and to more 'transparent' and 'effective' indices of performance such as 'profit'.

Soviet planning, if it still could be called that, began taking a whole new direction. It cannot be denied that the long years of sacrifice and the distortions created by the need for extreme centralization in particular periods, necessitated slowing down the march to a fully planned economy. A process of restructuring within the frame of a 'New New Economic Policy' suited to a much advanced economy was perhaps required. But, this imperative gave space to certain ideological tendencies that exploited the fatigue of a nation that had been in a state of near constant struggle, to reverse many of the advances that made the Soviet Union an economy that operated on the basis of the socialist planning principle by transcending the anarchy of the market mechanism. It is not the intent of this essay to examine whether the slowdown that continued and the final crisis that afflicted the Soviet Union was a result of this transition. But experience proves that the reforms adopted did not restore dynamism to the Soviet Union in the intensive phase of growth. In the event, by stretching the period of judgement to 1990, the critics can incorrectly declare that a remarkable experiment with immense achievements was a dismal failure.

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