Dimensions of Transition in Russia*

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1. Introduction

In the heady days after the failure of the anti-Gorbachev coup in August 1991, many observers believed that transition from the planned to the market economy would be a rather straightforward process. Once the fetters of central planning were eliminated, the market economy would spring up. Of course there were certain key steps that had to be implemented: liberalization of prices, stabilization, and privatization. But once these steps were taken reform would be achieved. With hindsight this consensus seems naive. Transition has proved to be much more complex than was anticipated. Successes have been achieved, but the prices paid were not insubstantial.

This paper explores the dimensions of transition in Russia. To understand the rocky road that transition has taken it is crucial to understand the initial conditions from which the journey commenced. This is because the Soviet-type economy had its own inner logic, which permeated the entire system and conditioned the behavior of agents. And to fully understand the logic of the Soviet

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economy it is necessary to examine not only the formal structure of the system, but its informal structure as well.

The institutions of the command economy developed out of two imperatives: control and growth. Maintaining central control of all aspects of the economy was an imperative of the Soviet system. In principle, it is possible to organize an economy without private property in a decentralized fashion. In practice central control was a political imperative. To satisfy this constraint, the planning system developed its characteristic features, and as this system crystallized, reforms that challenged central control were rejected by the system.

The second imperative was the need to rapidly industrialize an underdeveloped economy. The Russia inherited by the Bolsheviks was a predominantly rural underdeveloped country, surrounded by potential enemies. Once the possibility of global revolutions receded, the Soviet leadership pursued the path of "socialism in one country," and this led to an emphasis on growth and industrialization to meet potential threats.

1.1. Dimensions of Transition

The nature of the transition in Russia is governed by the economic distance that must be travelled from central planning to the market economy. There are two types of legacies which determine this distance. First, *systemic* legacies complicate transition because of the differences between planning and the market. Features that are common to a market economy, *market infrastructure*,[1] are underdeveloped or non-existent. Other features of the planned economy, such as the incentive system within enterprises, the operation of the foreign trade monopoly, and the Soviet system of pricing created legacies that have to be overcome in transition. Transition requires the development of these institutions. The centrally-planned economy de-emphasized the role of money and the banking system, for example, so that the very act of making a payment becomes complicated in transition. Most important, of course, Russia lacked the institution of private property on the production side of the economy. Privatization requires much more than a transfer of ownership. It requires a system of corporate governance, and this, in turn, depends on the legal system.

Second, there are structural legacies. The operation of the planning system

[1] Market infrastructure refers to financial, distribution, and contractual institutions that support economic transactions in market economies. They are usually taken for granted due to their omnipresence in such economies.

distorted the economic and especially the industrial structure. Soviet growth policy favored heavy industry over light industry and investment goods over consumption goods, and defense over everything. The system was biased in favor of industry because this was believed to be critical to economic growth, and in favor of giant enterprises because a small number of organizations facilitated control and because economies of scale were over-rated. Agriculture suffered from chronically low productivity. Services were underdeveloped.

In addition to the legacies of communism Russia has special features due to its size and to its own historical legacy. This is especially important with respect to the legal system, which was underdeveloped even under the Tsar.

Finally, the breakup of the Soviet economy into separate national economies complicated transition by fragmenting what was a common economic space.

2. Basic Features of the Soviet-type Economy

The basic features of the STE are state-ownership of the means of production and centralized control by means of an administered system of planning *in physical terms*.[2] The system replaces the market with a set of directives from the center to the production units throughout the economy. These directives are *commands*, not suggestions. They have the force of law, and subordinates are responsible for fulfilling them, even if the plans are not feasible.

During the brief period of the New Economic Policy (NEP) in the early 1920's, Lenin emphasized state control of the "commanding heights" of industry. But in the mature command economy the state owned not only the "commanding heights," but the foothills, the prairies, and the valleys as well. In the Soviet Union the state and collective sectors accounted for some 88% of the value added in agriculture; controlled 98% of retail trade, and owned 75% of urban housing space [7, 13]. The industrial sector was exclusively state owned. In 1985 91% of employment was in state enterprises, and another 6% was in *kolkhozy*,[3] which have been essentially state farms since the mid-50's. The extensive control of

[2] This is, necessarily, a cursory review. See [15] or [26] for detailed descriptions of the Soviet economic system.

[3] *Kolkhozy*, or collective farms, differred from state farms (*sovkhozy*) in Stalin's times. Workers in state farms received wages, while peasants in collective farms split what was left after the state took its share of output. Of course, in both cases actions were centrally directed. But this made collective farmers residual claimants, and during tough times, peasants sufferred. Under Khruschev the difference between the two essentially disappeared.

retail trade means that even the smallest shops were state owned.

It is misleading, however, to focus too heavily on state ownership. Many economies have some degree of state ownership. The central distinguishing characteristic of the STE is hierarchical control. The system was designed to implement the directives of the leadership.

Information in the planned economy flows only in the vertical direction. up from production units to the central planners, primarily in the form of reports on plan fulfillment, and down from the planners to the enterprises in the form of plan directives. There are, *formally*, no horizontal flows of information.[4] This means that only at the top of the hierarchy can opportunity costs be assessed. At lower levels agents lack the means to assess the trade-offs between different activities. This is because prices in the planned economy are set administratively, and do not reflect marginal costs.[5] The advantage of this, from the systemic perspective, is that it facilitates central control and the implementation of central priorities.

The Soviet Growth Model The Soviet Growth Model (SGM) is a mechanism for extensive growth, that is, growth via the accumulation of inputs rather than through more efficient use of inputs. Resources, human and physical, are mobilized to that task.

With capital accumulation the problem is simple. The planners *decide* the proportions of output to be devoted to consumption and investment.[6] In a market economy high savings rates may require incentives to get households to save. In a planned economy there is no need for incentives. Planners simply choose to produce levels of consumption goods consistent with their investment plans. This leaves the supply of consumption goods determined as a residual.[7]

[4] *Informally*, a parallel, or second, economy existed alongside the formal structure.

[5] Prices were typically set to reflect average cost of production, but this was usually estimated by *excluding* the least efficient producers. See 2.

[6] There is, in fact, an important division of labor in decisionmaking. The decisions about how fast the economy should grow (this was deemed to be subject to Party control in the absence of "wreckers") and the division of output between consumption and investment was a *political* decision, made at the heighest levels of the Party. The planners role was to implement these decisions in the form of plans that could direct the activity of ministries and enterprises.

[7] Notice that the plan determines the supply of consumption goods (independent of price), the level of the wage bill which, in turn, determines aggregate demand, and the price level. Presumably they could set prices to clear the market for consumption goods. Typically, however, they do not. Setting prices below market clearing levels facilitates bribe-taking. With goods in short supply it is possible to distribute rents without budgetary expenditure. It also means that queues and parallel market prices must rise to clear the market.

It is useful to think of the SGM as if the Soviet economy were a single corporation; USSR Inc. The corporation owns a large stock of natural resources, has no outside shareholders (so that all "profits" can be retained for investment) and hires labor. Moreover, as a monopsonist in the labor market, USSR Inc. can minimize the expenditure on labor. Transactions between enterprises are merely transfer prices between "divisions." The exceptions are purchase of labor and engagement in foreign trade.

The objective for this firm is the maximization of government consumption (primarily defense), subject to the constraints that labor be supplied in proper quantities.[8] In order to obtain sufficient labor the state must produce consumer goods, including agricultural output, to induce this supply. We can think of the stock of consumption goods as the wage bill necessary to induce the target level of labor. Services are similarly viewed as an input, not as value.[9]

Notice how this problem differs from a standard planners' problem. In the conventional model the planner is assumed to maximize the discounted value of household consumption. Here, however, household consumption is a constraint: the planners maximize the residual *net* of household consumption. The economy is thus seen as a means of producing items for government consumption.[10] But the planning problem in the SGM is not a static one. The goal is to maximize not the current level of output, but the discounted value of the path of government consumption. It is this objective which justifies depressing consumption to enhance capital accumulation,[11] and also producing heavy industrial goods, owing to the conception that to produce high growth emphasis must be placed on the machines that produce machines.[12]

[8] Notice that the state acts as a *monopsonist* in the labor market: there is no alternative avenue of employment. This means that the cost of labor to the government is less than the marginal product of labor. In other words, the state is able to squeeze out a larger share of national income by exploiting its monopoly power in the labor market.

[9] This accounts for much of the difference between Net Material Product and GDP. NMP does not include services, except for freight associated with inputs.

[10] In practice this was primarily military production, but it could take other forms.

[11] Another way to think of this is that the discount rate that the planners use to discount future government consumption is smaller than the rate which the public uses to discount consumption.

[12] This is the essence of the Fel'dman-Mahalanobis model of economic growth. The economy is viewed as consisting of two sectors, machine producing (sector A) and goods producing (sector B). Both sectors rely on machines as an input. It is then argued that to maximize growth it is necessary to focus initially on the production of machines, expanding the capacity to produce goods in the future. The argument depends on the assumption that the key determinant of output in each sector is capital. A key conclusion is that the more capital that is retained in

The SGM was effective, ignoring the cost, at rapidly industrializing the Soviet economy. A predominantly agricultural economy became, in less than three generations, an industrial power, at least when measured by gross production of autos, cement, oil, and steel. Over time, however, the performance of the SGM began to decline. Growth rates of output per worker decreased from 5.8% in 1950-59 to 2.1% in the 1970's and 1.4% in the 1990's [6]. Total factor productivity growth turned negative in the 1960's and remained so till the end of the regime.[13]

The key defect of the SGM is that output growth is pursued without regard for the opportunity cost of that growth. Consequently, resources are used beyond the point at which they make a positive net contribution to the economy. Because planners used resources to maximize the growth rate of production it is perhaps not surprising that this led to ecologic disaster. As Feschbach and Friendly (1992) argue:

> In the last decade of the 20th century, there are no leading industrial cities in the Soviet Union where air pollution is not shortening the life expectancy of adults and undermining the health of their children. The growth that made the USSR a superpower has been so ill-managed, so greedy in its exploitation of natural resources and so indifferent to the health of its people, that ecocide is inevitable [9].

Another fundamental defect of the SGM is that the return to capital is independent of other decisions. In particular, the model assumes that output is independent of labor's share.[14] Presumably, the amount of consumption will affect the supply (and quality) of labor effort. Any such feedback, however, is

sector A, the higher the rate of growth of capacity, and hence, of the economy. By postponing consumption the eventual capital stock in sector B can be higher, so higher future consumption can be attained. Now the point is not that Stalinist planners followed the formulas of the Fel'dman model, but their decisions were consistent with the model. The key issue was how much to postpone consumption in order to hasten industrialization.

[13]There is an important question of interpretation involved here. If one assumes that labor and capital could be freely substituted, then estimates of total factor productivity are as stated in the text. If one assumes, following Weitzman [34], that such substitution is costly, then total factor productivity does not become negative. Rather the slowdown in Soviet growth is explained by more rapid growth of capital inputs compared with labor, resulting in reduced output growth due to the inability to substitute inputs. Much debate has centered on which interpretation is correct [see [28] and [6], for example], but both explanations are consistent with the defects we discuss.

[14]This is strictly true for the Fel'dman-Mahalanobis model, but not for the SGM, where, as we have seen, labor supply is taken to depend on the supply of consumer goods.

assumed away in the model. So the key to industrialization is seen in the growth of heavy industry. Now this model may have been effective when the level of terror was high. As socialism develops, however, it becomes more and more difficult to maintain such forced industrialization. Consumption cannot be deferred. But when growth is not achieved through forced industrialization it must be achieved through intensive means, primarily via technical change. This the Soviet economy was ill-suited for; instead the SGM fell victim to the extensive growth trap.

The extensive growth trap arises because over time it becomes more and more difficult to mobilize resources. Extensive growth requires high input growth. In the early stages of industrialization high input growth can be achieved by shifting labor from traditional sectors, e.g., the countryside, to the modern sector. High growth in the labor force can be achieved by moving people from agriculture to industry. But as this reserve is used up, labor force participation reaches an upper limit. After that, labor force growth is constrained by fertility. One can still accumulate capital at a high rate, but now the capital-labor ratio will rise, and if this causes the marginal product of capital to fall, then the growth of output will lag.[15]

That the Soviet economy was stuck in this extensive growth trap was recognized by the leadership rather early. Discussion of how to accelerate technical progress, so that growth could be achieved *intensively*, was discussed often (Malenkov quote). The problem is that the system was not designed to support innovation (e.g., [1] and [5]). There are myriad of reasons for this. Paramount is the emphasis endemic in planned economies on current plan fulfillment. The "virtuous haste" that characterizes Soviet planning imposes costs on potential innovators who would sacrifice current production for future gains. This is criti-

[15] Ignoring technical progress (since we are considering extensive growth), *per-capita* output growth can be written as

$$\frac{dy}{y} = F_k \frac{k}{y} \frac{dk}{k}$$

where y is *per-worker* output, k capital per worker, and F_k the marginal product of capital. Because capital's share in national income ($F_k \frac{k}{y}$) is less than one, extensive growth means that the capital-output ratio must increase with growth in k. The effect of this on growth thus depends on what happens to F_k. The key issue is whether the marginal product of capital decreases faster than the capital's share in income increases. If the elasticity of substitution between capital and labor is low, then the marginal product of capital will fall rapidly as capital is substituted for labor, and further extensive growth can only take place by devoting higher and higher proportions of income for investment. Thus the ration of $\frac{I}{Y}$ stood at around 14% in 1950, rising to 33% by 1980. Nonetheless growth rates of per-capita income declined during this period (See [28])

cal because the gains from innovation are taxed away by the dynamic incentives problem (e.g., the ratchet effect) that plagues these economies (see below 2). In this environment innovation is deterred.

An important question is why it proved so difficult to escape the extensive growth trap. One explanation is that in a STE there is no self-correcting mechanism. In a market economy if investments are earning inadequate rates of return, investment goes elsewhere. In the STE, however, investment continued to go into activities where the rates of return were very low. This reflects the absence of a market for capital. One of the key points about socialism was precisely to eliminate private ownership of capital.

One might also be tempted to ask why the elasticity of substitution was so low in the STE. To some extent it is due to the inability to substitute capital for labor in a functional sense. That is, the enterprise does not shed labor, it just underemploys it, as part of an over-full employment system.[16] In STE's the enterprise always wants to hoard as much labor as possible, as a reserve against taut plans. Moreover, it always want to add capital to raise capacity. The capital stock was employed inefficiently due to lack of incentives to use inputs in a cost-minimizing manner. At the same time, there was a built-in input-output conservatism. Plans were based on previous plans. This tended to inhibit substitution as well.

A second explanation focuses on the absence of organizational innovation. Capital is simply poured into existing enterprises; there are no entrepreneurs who are able to re-organize the production process. In market economies an important source of productivity growth is the churning of firms as firms expand, contract, enter, and exit. This causes inputs to flow to higher valued uses. In STE's enterprises enter but do not exit ([20]). Inefficient enterprises may contract but they do not cease operation.

In short, while STE's managed to invest increasingly greater shares of income,[17] the investments were of poor quality because of the informational problems in the economy and the lack of incentives for efficient investment. The public was forced to postpone consumption for the future, but these resources were invested so poorly that no positive return was earned.

The legacy of extensive growth, without reallocation, is that Soviet indus-

[16] There is some question as to whether this was due to soft-budget constraints (Kornai) or a planning commitment to full employment (Granick).

[17] CIA recalculations of Soviet national income show the capital-output ratio rising four-fold between 1928 and 1987, while official data shows it almost tripling between 1958 and 1987. To accomplish this the Soviets had to continually increase the share of investment in national income; thus this share doubled between 1950 and 1975. See [28] and [6] .

try was dominated by large, over-manned enterprises with inefficiently allocated capital. In transition economies the problem is that in order for capital to be reallocated there must be an owner. The absence of property rights makes it difficult to transfer capital assets.[18] Thus even after transition begins the capital stock is rather rigid.

Extensive growth also meant that enterprises used natural resources inefficiently. Energy was underpriced and over-utilized. The same is true for other primary commodities. The implication is that when prices are liberalized many industries are producing negative value added: the value of output is less than the aggregate value of the inputs used in production.[19] This is fundamentally a pricing problem. In particular, when the cost of capital is not accounted for, it will be invested in inefficient ways. We discuss the implications when we come to price liberalization.

The Price System An important feature of the planned economy was a pricing system unrelated to true costs.[20] Pricing under Soviet planning was an accounting device designed to measure enterprise performance, not a signal of terms of trade or of opportunity cost.[21] The price system was designed to support the planning system, not the other way around. Prices for the same good differed based on the user.[22] Most important, perhaps, with pricing based on supply considerations, changes in demand did not result in changes in price. This means that costs measured at Soviet prices do not reflect actual values.[23] When prices were liberalized a new picture of the economy emerged. This had important implications for the structural changes that were necessary.

[18] Notice that this is also true for leasing. Clearly it would be advantageous to have leasing. It would allow capital to be reallocated without ownership change. The problem, however, is that without ownership leasing is impossible, since possession in this case is 100% of the deal. The absence of property rights makes the allocation of capital rigid.

[19] In 1935 Hayek had already noted that: "The best tractor factory may not be an asset, and the capital invested in it is a sheer loss, if the labour which the tractor replaces is cheaper than the cost of the material and labour which goes to make a tractor, plus interest" [14].

[20] [15] provides a good discussion of the principles of Soviet pricing.

[21] And correspondingly, money was not sufficient, nor sometimes even necessary, to complete transactions. What was needed was the authority to purchase the goods.

[22] Industrial prices can be divided into enterprise wholesale prices *received*; wholesale prices *paid* (which are the sum of received plus taxes and markups) and; settlement prices, which differ for each producer, used in branches such as mining, where costs vary widely among producers.

[23] Prices were set so that the branch would earn profits as a whole. Hence, more productive enterprises would earn higher profits, rather than produce a larger share of production.

Prices tended to remain fixed for long periods of time.[24] This is problematic because even if they had been initially set correctly, cost conditions change, let alone demand, so after a few years prices are becoming more distorted. The one exception to this is that new goods get new prices; hence, enterprises that wish to increase the price of their product (say because production costs have increased) try to convince the authorities that their product is really new. This leads to "hidden inflation."

Raw material inputs were under-priced in the Soviet economy. Their prices were based on the operating costs of extraction, ignoring rent; i.e., the opportunity cost of using the resources now rather than in the future. No doubt this harmonized with the goal of increasing production today; scarcity pricing might have induced more conservation, which is inimical to current production.

This bias in raw material prices fed into the system of industrial prices. Heavy consumers of energy were, in effect, subsidized. So too were heavy users of capital, thanks to the absence of interest charges. Costs of production were thus calculated based on an incomplete enumeration of costs.

In addition to incomplete cost-based pricing, the system was biased towards certain users. The same commodity would carry a different price if it were used by heavy industry or light industry. This would then feed into the calculation of costs of production of these goods, so that high priority sectors would *appear* to have lower costs of production than low priority sectors. This meant that the apparent distribution of productivities at the onset of transition, what we may think are efficient sectors, was liable to mask the true picture.[25]

The fact that the pricing system disguised the relative efficiency of various activities means that only with liberalization would the true viability of these activities become apparent. Many sectors that appeared to be productive of value turned out to be destructive of value once prices moved to reflect costs. The extent to which the Soviet economy produced the "wrong things in the wrong way" could only be gauged after liberalization. This effect was magnified by the move to world prices. Many industrial enterprises could not cover costs once prices moved to market-clearing levels. Raising prices only led to unsold output. Price liberalization revealed the extent to which value added in the Soviet economy was really created in the energy and raw materials sector, but it had the effect of

[24] Following the Soviet price reform in 1966-67 prices in industry were not changed until the price revision of 1982.

[25] See [8] for an analysis of the implications of arbitrary pricing on the apparent and actual production of value added in the Soviet economy.

making reform appear to be the destroyer of the manufacturing sector.

The Chronic Seller's Market Another important characteristic of the SGM was a chronic seller's market. The primary cause of this was the emphasis on growth at all costs. Fulfilling the output plan replaced other considerations, and became the criterion on which performance was judged at all levels. Plans were designed to be *taut*;[26] to press on possibilities. The hunt for "hidden reserves" permeated the system.

The primacy of output over other considerations was associated with the phenomenon of *soft budget constraints*.[27] In order to insure that enterprises would fulfill their plans it was essential that financial shortages not hamper production. Hence, enterprises were subsidized, *ex post*, to cover any losses associated with plan fulfillment. The result of this was to eliminate any restraint on the part of enterprises in demanding resources needed for production. The absence of hard budget constraints combined with the pressure to fulfill plans implied that enterprises were always demanding resources. This led to chronic excess demand, which had several deleterious effects, most notably the priority for quantity over quality. When goods are in short supply customers will accept what they can get; they cannot afford to reject inferior quality goods.

A perpetual seller's market also created an excess demand for labor. Enterprises could always find uses for more labor because performance was measured by output rather than profits or costs. Overfull employment planning eliminated the need to have an explicit policy for treating unemployment, which was considered to be a malady of capitalism.

At the same time, excess demand meant chronic shortages of certain goods. Political control and distribution of these goods were used to enforce regime priorities. Privileged access to education, housing, careers, travel, and consumer goods, were reserved for members of the *nomenklatura*. Moreover, such access allowed for the collection of bribe income. In this sense shortage was a necessity; without the items being in short supply no rents could be derived from positions of power.

While access to "deficit goods" provided power and privilege, possession of money was of less importance. With goods in short supply it was not possession of money, but rather access that made purchase possible. In the STE one could

[26] See [16] for an analysis of the role of taut plans in Soviet planning.

[27] See [22] for a comprehensive analysis of the phenomenon, by the originator of the term.

always find a way to pay for a good if one had access. But money without privilege was of much less value.

The combination of shortage and privileged access created a system where *personality* dominated. Allocation and reward were made on the basis of one's identity and position as opposed to the market ideal of anonymous rewards based on productivity. Of course no social system has achieved complete anonymity in rewards, but the Soviet system enhanced the role of personality to the greatest extent. An important consequence of this is the belief, most common among Russians, that those who succeed do so because of who they know rather than what they have accomplished. This creates a cynicism that has plagued reform in Russia.[28]

Dynamic Incentives The Soviet economy provided material incentives to decisionmakers based on performance relative to planned targets. This concentrated attention to the problem of fulfilling plan targets, linked, somehow, to measures of output.[29] The emphasis on growth led planners to base targets on previous achievements: "planning from the achieved level." Thus if an enterprise produced 100 tons of steel this year, its target for next year would be, say, 106 tons. This created a dynamic incentives problem,[30] undermining the power of static incentives. If an enterprise produces a high level of output today, its future bonuses will be jeopardized. To combat this, enterprises would limit the extent of current performance, to preserve a "safety factor" which could be used against future uncertainty. Planners, however, recognized that enterprise directors engaged in such behavior, so they made plan targets even more taut and, so on. Misinformation was intensified.

Under planning, the enterprise exploited its private information to increase its share of enterprise income in the form of bonuses or slack. The form that this behavior took typically involved exaggerating current production and underreporting true productive capacity. Of course, the planners were not ignorant of these activities, and set higher plan targets. The outcome was the familiar game

[28] To an important extent this belief predates the Soviet period, and has been prevalent in Russia, especially in villages, for centuries. The Soviet period merely enhanced it.

[29] At first targets were specified in physical units, usually gross output. Later these were converted to net output targets and then to value-based measures. See [26] for a discussion of the success indicator problem.

[30] Sometimes termed the ratchet effect, which agents underperform this period because they know that the evaluation of their performance next period will depend on current performance.

played between planners and enterprise directors, where each side found it in its own interest to depart from the full-information signal.[31]

3. Legacies

As noted in the introductory section, it is useful to distinguish between systemic or *institutional* legacies of communism and *structural*. We consider each in turn.

Institutional Legacies The most important institutional legacy was the absence of private property in the means of production. With the object of transition being to create a market economy, a process of privatization that would transform ownership was necessary. Such a process takes time to implement.[32] In the interim, ownership is ambiguous.

The primacy of planning in the Soviet system relegated *finance* to a secondary role. Financial flows were utilized as a form of monitoring; they did not motivate economic activity. The purpose of the Soviet financial system was not to intermediate between savers and investors; this task was accomplished directly through the state budget. Indeed, it was crucial that financial matters not interfere with the dictates of the plan. To achieve this the Soviet economic system introduced the system of dual monetary circuits: cash (*nalichnye*) and non-cash (*beznalichnye*). The former was (still is) used by households: wages are received and goods purchased with cash money. Enterprises make transactions with non-cash, or book money. The rationale is easy to grasp if we think of the planning process.

Planners needed a system of measuring plan fulfillment. So enterprises had financial plans that mirrored the physical plans, and when goods were shipped, financial paper went in the opposite direction. If an enterprise had a deficit in its account then the planners knew it was not fulfilling its plan. But even if the

[31] Thought of this way, the dissimulation that was the fundamental behavior of central planning is analogous to tax evasion. Transition has changed the form of tax evasion. Enterprises reduce taxation by understating revenues. Considered in this way, it is hardly surprising that enterprise directors responded to corporatization by altering the form, but not the substance, of their use of private information. In order to survive the tumult of transition, and more generally to simply maximize net income, enterprise directors engage in activities to hide income from the tax authorities. And, just as under planning, the government responds by setting high, and a large number of, tax rates. Transition does not eliminate the game, it simply alters the form.

[32] The Russian experience is one of the most rapid. Vouchers were distributed to the population in October 1992, and most of industry has been formally privatized by June 1994, probably a record speed when one considers the amount of assets involved.

enterprise had a deficit, *this could not be taken as a reason to prevent it from purchasing inputs.* The reason is clear. If an enterprise cannot purchase inputs it cannot fulfill its plan, and then other downstream plans, those of the users of the products from this enterprise, are jeopardized. So the banking system (*Gosbank*) would always extend credit to enterprises in deficit. But this explains why the money had to be non-cash. For cash money can be used to purchase consumer goods, and these were already in short supply. Hence, if credit is automatically extended to enterprises it must be in a form that cannot *leak* back into the household sector of the economy.[33]

In this system enterprises do not borrow to invest or finance current production. Rather they accumulate debts when failure to do so would jeopardize plan activities. Thus the banking system inherited from the Soviet period was hardly commercial in nature. Moreover, it was not very effective in the most fundamental aspect of exchange: making payments. The reason is that finance followed activity, so an order to pay for goods was issued when goods were to be shipped. There was no need for the payment to arrive before the goods were shipped:[34] after all both enterprises were owned by the same authority. Hence, there was little need to invest in the payments system; especially in the speed of clearing. Payments used the surface mail, and often took weeks and even months to transit from one account to another. With the end of planning, the inadequacies of the payments system aggravated the problems that plagued Russia in 1992, and the inter-enterprise arrears crisis in particular [18].

The nature of the legal system under planning was aptly summarized by an utterance of Nikita Khruschev:

> "Who's the Boss: we or the law? We are masters over the law, not the law over us – so we have to change the law; we have to see to it that it is possible to execute these speculators" (quoted in [32, 30]).

A system designed to maximize the scope for the leadership to govern events

[33] Of course in practive such leakage did occur. The means were several. One was no to report when workers passed away, continue to argue for the same wage bill, and pocket the wages due to these "dead souls." Another was to raise the wages of workers and then take some of this back from them by agreement. The so-called cooperative movement under Gorbachev became a notorious sieve in these matters. An enterprise would enter a fictitious contract with a cooperative, say to paint a warehouse. Such a transaction would require a payment to the cooperative in cash. The enterprise and the cooperative would then split the cash.

[34] In a market economy goods are often shipped before payment arrives, but in such cases an arrangement for payment has already been made.

necessarily placed no restrictions on the type of interventions they could make. In Tsarist Russia, the rule of law had made very small inroads.[35] The structure of the Soviet system gave primacy to the party over the rule of law. The plan that directed economic activity had the force of law, but was subject to change at the whim of party officials. The predictability afforded by a system of contracts was inconsistent with the planners' perceived need to intervene to insure plan fulfillment. Although the adverse consequences of such discretion were often recognized, and attempts to limit discretion embodied in reform programs,[36] remained an endemic feature of the system. The costs of this were severe enough under planning, but the cost of this legacy for transition is even greater.

A rule of law is important to governments because it is critical to their ability to collect taxes and regulate the behavior of firms in the event of market failure. But it is also critical to firms. Laws provide standards of behavior, which can coordinate behavior and reduce transaction costs. Under Soviet planning the rule of law was replaced by the rule of the plan and party. Market activity unsupported by the legal system degenerates in major respects.

When legal institutions are ineffective parties must rely on informal contract enforcement mechanisms, most importantly, a history of personal relations with particular individuals or enterprises.. These mechanisms may be efficient for sustained relationships, but they make it very costly for firms to enter new relationships where no history exists.[37] Ineffective legal institutions can thus act as a barrier to entry, or in some cases, to changes in the boundaries and organization of firms required to facilitate transactions.

Foreign trade in the SGM was conducted through a centralized agency, the

[35] Witness the following remark of Count Witte: "[Russia] in one respect represents an exception to all the countries in the world.... The exception consists in this, that the people have been systematically, over two generations, brought up without a sense of property and legality....Under these conditions, I see one gigantic question mark: what is an empire with one hundred million peasants who have been educated neither in the concept of landed property nor that of the firmness of law in general?[quoted in Pipes (1991)] Witte refers here to two generations since the emancipation of the serfs, but there was clearly no such sense of property and legality developed prior to emancipation.

[36] Most notably, perhaps, in the Andropov experiment in the early 1980's, but also the *Shchekino* experiment of the 1970's. See [23] for an analysis of the costs of discretion under Soviet planning.

[37] Informal enforcment mechanisms are typically reputation based. These systems are rather effective when the parties expect to transact frequently. As they rely on informal, typically personal, relationships, however, they are difficult for outsiders to penetrate. This introduces a bias in favor of *status quo* relationships.

Ministry of Foreign Trade (MFT). This had several important consequences for the economy.

Most important, the MFT acted as an insulator which allowed the divorce of domestic and world prices. The MFT purchased commodities from producers at domestic prices and exported them at world prices;[38] and vice-versa for imports. The MFT, and thus the state budget, pocketed (absorbed in some cases) the difference between domestic and foreign prices. This insulation provided implicit protection for industrial producers whose costs exceeded those of producers elsewhere, and it allowed energy and other raw materials to trade domestically at prices far below world levels.

At the same time, domestic producers had little incentive to produce for export, even when world prices were higher than domestic prices. This had a negative impact on the quality of domestic production; without the competitive pressure to produce for the world market, producers faced only a domestic seller's market. Moreover, many enterprises that produced value added at domestic prices were destroying value added at world prices.[39] Such enterprises tended to become non-viable upon liberalization.

Another implication of the MFT system was currency inconvertibility, but of a specific form. Most countries with inconvertible currencies suffer from an exchange rate that is over-valued, creating an excess demand for foreign currency. In the Soviet economy the currency was institutionally inconvertible. Foreigners could only purchase goods through the MFT, which operated only in hard currencies. Hence, the foreign demand for Soviet rubles would be non-existent at any exchange rate.

Russia entered transition with an over-valued ruble; the impact effect of external liberalization was thus a significant nominal depreciation. This largely reflected a flight from domestic assets due in part to inflationary expectations. The nominal depreciation had the effect of increasing the profitability of export sectors, mainly in energy and raw materials, and cushioning the extent of import competition on domestic producers. The initial nominal depreciation was followed, as in all transition economies, by a degree of real appreciation of the currency as domestic prices moved towards world market levels. This has been

[38] This was true for exports to western economies. Trade within the Council for Mutual Economic Assistance (CMEA) was conducted in so-called *transferable rubles*, an accounting device that was used to create a third set of prices for this trade within the socialist camp.

[39] As noted earliers, many producers were producing negative value added even at domestic prices.

an important motor of the structural change accompanying transition.

Structural legacies Structural legacies are the distortions in the economy which Russia inherited from the Soviet period. These legacies complicate the process of transition. The STE displayed a special industrial structure. Output and capital were skewed towards heavy industry and away from consumer goods. Industry was favored over services. In 1980, for example, the services sector employed 37% of the workforce in the Soviet Union, compared with 50% in a sample of countries with similar GDP's.[40] The bias was determined by the emphasis on growth. It clearly does not reflect the preferences of Soviet society. Soviet-type economies focused on heavy industry because that was seen to be the key to growth. Investment was thus slanted towards industry, and industrial investment towards heavy industry.[41]

Table 1: *Sectoral Distribution of Capital Stocks*, 1987 (*percent*)

	Agriculture	Industry	Dwellings	Other
Soviet Union	14.2	32.2	18.6	35.0
Industrial Market Economies	5.0	23.4	35.9	35.6
United States	2.8	22.4	45.6	29.2
Finland	7.5	19.9	33.8	38.8
Federal Republic of Germany	3.6	20.1	44.2	32.1

source:[28]

Table 1 shows the extent to which the Soviet Union's capital stock was skewed towards industry and agriculture. Whereas, however, the over-emphasis on industry was intentional, the large agricultural sector is more a reflection of low productivity. The ultimate irony of Soviet agricultural policy is that in the wake of collectivization, which was supposed to extract more resources from the countryside, Soviet planners continuously had to increase investment in agriculture to produce even moderate growth.[42]

Apart from the nature of the SGM itself, a second reason why the country's in-

[40] The results for output shares are similar: 40% for the Soviet Union and 54% for the comparison group. The comparison group is from Chenery and Syrquin's work on patterns of structural change. Similar results hold for a comparison with European members of OECD, where the employment service share for 1980 was 50%, and for output 57%. See [28].

[41] Some estimates for the Soviet Union put the share of heavy industry in total industrial investment between 1917 and 1976 at 84%[22, 173].

[42] Perhaps the classic example of this is the substitution of the Machine Tractor Stations for livestock. The former was supposedly more scientific and therefore more productive. Its main function, however, was increased control over the affairs of the countryside.

dustrial structure departed so dramatically from that of a normal market economy was the hypermilitarized state of the Soviet economy.

It is indeed hard to over-emphasize the extent to which the Soviet economy was designed for, and around, military production. This holds for the Soviet Union more than for other socialist economies, and for Russia more than other former republics. Russia with 51.8% of the population of the Soviet Union accounted for 71.2% of defense-sector employment [10]. A hyper-militarized economy favors heavy industry over light, because the former is required for defense production.

To gauge the importance of the military in the Soviet economy consider one of the most important branches of industry, machine-building and metal-working (MBMW).[43] This is a key branch, the heart of heavy industry in the Soviet Union. According to official Soviet statistics, some 30% of production in this sector went for arms, 20% was consumer goods (cars, tv's, refrigerators, etc.), and the remaining 50% was investment goods. But this calculation was based on official prices, and understates the true magnitude of defense orientation.[44] The reason is that production for defense received inputs at prices below that of industry in general, thus making defense output appear less burdensome to the economy than it actually was. The key point, however, is clear. The Soviet economy was highly militarized; it was a hyper-militarized economy.

It is difficult to provide a precise assessment of the size of the defense sector, VPK (for *Voyenno-promyshlennaya kompleks*) compared to the rest of the economy. The reason is not so much secrecy but the absence of proper prices. In all economies it is difficult to value military production because there is no market, or only a partial market, for the output.[45] But in the Soviet-type economy there is the added (and more difficult) problem of the pricing of inputs. In the STE, the price of inputs differs according to the *user*. Inputs to enterprises in the military sector are priced lower than the same inputs to the civilian sector.

Such pricing policies have two important effects. First, the defense sector

[43] This and the next several paragraphs follow [10].

[44] Suppose that we converted all MBMW output to world prices, a quite difficult task given the thousands of major products in the sector. Economists at the Institute for Forecasting tried to do this for 1988, and found that at world prices only about 5-6% of production was consumer goods; investment goods accounted for 32%, and the military took the remaining 63%. Of course, even this calculation probably understates the importance of the military in the economy, because the investment goods are presumably used to produce output, and it is not clear how much of that is used to produce output for the military.

[45] Excluding arms sales, but these are often made for political reasons, and hence the prices often do not reflect costs.

will appear to be more productive than civilian enterprises, owing simply to pricing. Why? Because the same accounting value of material inputs implies larger quantities for defense enterprises. Of course this superiority is an illusion due to pricing, but the belief that there was a real productivity difference had important implications for the operation of the system, and for transition.

The second effect of "unequal pricing" is that the cost of producing military output is under-estimated. The lower price that VPK enterprises pay for material inputs is like a hidden tax on the rest of the economy. The opportunity cost of producing military output is understated because of the lower accounting price for defense. Think of how the United States would measure the cost of producing 100 Stealth fighters if Congress passed legislation which required aluminum producers to supply the Pentagon at half the market price. The budgetary cost of producing Stealth fighters would be reduced. But a portion of the economic cost would be shifted on to non-military uses of aluminum (and from there to the rest of the economy). To assess the true cost of the Stealth fighters we would have to know the extent to which non-military aluminum prices were increased to compensate for the below-cost deliveries to the government.

Now in the case of the Soviet economy we must multiply the number of pricing distortions by many orders of magnitudes. For it is not just aluminum, but almost all inputs that are priced differently in the two sectors. Moreover, prices in the civilian sector are not reflective of opportunity cost either. So even though we know that costs are shifted from the VPK to the civilian sector, we are unable to measure them until we can value civilian production at market prices.

Another reason why it is hard to estimate the size of the VPK is that a good deal of civilian production took place in this sector. All aluminum production, for example, was produced in the VPK,as was a very large share of consumer electronics, such as sewing machines (100% of total production), radios (100%), TV's (100%), video-cassette recorders (100%), cameras (100%), chainsaws (100%), freezers (93%), vacuum cleaners (69%), washing machines (66%), refrigerators (40%),[10] and the like. This was not the result of a strategic decision to diversify production, as might be the case with a western defense manufacturer. Rather it was a means of augmenting the capacity of the military in the case of war, since civilian production facilities could be mobilized for military purposes at low cost. The reason is that civilian production used the same inputs,[46] and often similar

[46] Although often not of the same quality. The military had first claim to inputs. Those rejected for military use would go for civilian production. For example transistors, as reported to Hedrick Smith by a worker in a plant: "Military officers sit in each factory–in the big facto-

specifications, as military output. This is why Russian trucks are typically too big for small commercial use and too small for inter-city freight hauling; their specifications are those for military use. The question is how to classify this production. Is it civilian or military?

The legacy of hypermilitarization was a defense burden that could not be maintained in a liberalized economy. The cost of maintaining the structure was simply too high. But this left a large segment of industry producing goods for which no effective demand could be found, and is at the heart of the problem of industrial restructuring in Russia. This cost is magnified by the location of many defense enterprises in cities where they are often the dominant or sole employers, making the social cost of cutting defense expenditures even greater. Defense conversion is always a difficult task. For Russia, defense conversion and industrial restructuring are almost the same thing due to the overwhelming importance of this sector.

Industrial Concentration Apart from the military emphasis, the enterprise structure Russia inherited from the Soviet system has important characteristics that affect transition: an emphasis on size and an absence of small enterprises. Stalinist planners emphasized gigantic plants.[47] By the same token, Soviet enterprises tended to be located in a single area, or perhaps two locations, whereas large western companies tend to have numerous plants geographically dispersed. The Russian economy is much more regionally specialized than western economies, including the United States.

While the extent to which Soviet enterprises were excessive in size has frequently been exaggerated in the literature,[48] what is critical is that small enterprises were missing from the Soviet landscape. It is interesting to compare the size distribution of industry in Russia with that of the Unites States.[49] In the latter

ries, these are generals–and they operate with strict military discipline. They are empowered to reject *brak* [junk or substandard items], and they reject great quantities of *brak*, often at great expense...I have seen how they make transistors. They would make 100 and the military representative would select only one or two. Some would be thrown out as defective and the rest would go to the [civilian] market" [33, 291].

[47] As Wiles noted: "There is something 'socialist' and 'progressive' about mere size, even if unaccompanied by lower costs. Gigantomania as such, then, reinforces the view that large capital expenditures are a good thing, even where smaller ones will do" [35, 304]

[48] See [3] for a comparison of the size distribution of Soviet enterprises with other countries.

[49] This section follows [3]. The comparison is made using the 1987 census of manufacturing for the US, and the 1989 Soviet census of industry for Russia.

most employment is concentrated in small firms (less than 250 workers) or in very large firms (greater than 10,000 workers). These two groups comprised two-thirds of industrial employment in the US compared with only 25% in Russia. Russia has both less extra large firms and less small firms. Most striking is the difference with respect to small firms. In Russia 91.5 percent of civilian employment and an estimated 94.5 percent of manufacturing (i.e., including defense) employment is provided by enterprises with at least of 250 employees, while in US manufacturing only 73.1 percent of employment is provided by such firms. The lack of small enterprises in the Soviet economy no doubt was an important factor inhibiting innovation and technical change.

In addition to the absence of small firms in the Soviet economy it is commonly asserted that Russia suffers from a monopoly problem. Interestingly, Russian industry is not that highly concentrated.[50] Its concentrated branches tend to be small and account for a small proportion of employment. However, potential competition is inhibited by poor transportation infrastructure.[51] Russia is, after all, a very large country, and the transportation and distribution system inherited from the Soviet period was not designed to create national markets. Moreover, the underdevelopment of the financial and legal system serve as entry barriers. These shortcomings in distribution, finance, law, and transportation may be more important to developing competition than technological barriers (i.e., economies of scale).

Summary The upshot of these structural legacies is that at the onset of transition the Russian economy was dominated by large numbers of enterprises that produced goods at costs that could not be recovered in the market. The Soviet industrial system was an edifice built up on the basis of natural resources, and the value added that appeared to be produced in manufacturing was simply transferred from other sectors though the pricing system.

With liberalization the magnitude of the distortions in the economy became manifest. With the cost of energy and other raw materials moving towards world prices large numbers of enterprises could not cover their costs. In an attempt to

[50] Where highly concentrated is taken, for example, to be a four-firm concentration ratio in excess of 60%. On the question of Russian industrial concentration, see [3].

[51] As the authors of the IMF-World Bank-OECD-EBRD joint study on the Soviet economy argued: "Even where more than one enterprise exists, the national aggregates hide a high degree of regional monopoly power that is protected by generally poor communications and transportation and by administered marketing channels which, in turn, are insulated from one another by ministerial lines of responsibility" [21, 16].

remedy this, enterprises raised the price of output, but there were no buyers at these prices.

The key factor that conditions the structural adjustments caused by liberalization is Russia's position as a raw materials exporter. The legacy of the Soviet period is a high-cost industrial sector financed by abundant endowments of raw materials, especially energy. Soviet industry used energy and raw materials much more intensively than market economies (see table 2), using more inputs to produce a dollar of GDP than was the case in large western industrialized countries. When price liberalization raised the opportunity costs of material inputs the existing structure of production was not competitive. In many cases it is simply cheaper to export the inputs. This implies that as Russia moved towards more efficient use of inputs in production, some decline in industrial production was to be expected,[52] since the same value of GDP could be produced with less inputs. Indeed, a shift of resources towards other sectors could be possible with no decline in value added.

Table 2: Indicators of Raw Materials and Energy Consumption, 1988

	USSR	USA	Germany	Japan
Crude Steel production				
(millions of metric tons)	280	19	11	34
ratio USSR to		14.7	25.5	8.2
Refined Copper Production				
(thousands of metric tons)	1 1,73	381	114	307
ratio USSR to		4.5	15	5.6
Primary aluminum production				
(thousands of metric tons)	4,116	809	200	11
ratio USSR to		5.1	20.6	374.2
Synthetic rubber production				
(thousands of metric tons)	4,262	477	132	418
ratio USSR to		8.9	32.3	10.2
Primary energy consumption				
(millions of bbls/day oil equivalent)	46	8	1	2
ratio USSR to		5.8	46	23

source: Handbook of Economic Statistics, CIA (1989), IFS, IMF; and the Economist.

[52] Unless the residual could be shifted to exports which, in the case of armaments was, at any rate, partly possible.

4. A Legacy of Never-ending Reform

The last 30 years of the Soviet system were marked by a succession of attempts to reform the system, Beginning with Khruschev's creation of regional ministries (*sovnarkhoz*), followed by the Kosygin reforms of the mid 1960's, Brezhnev reforms in the late 1970's and the Andropov reforms in 1983, ending with Gorbachev's *perestroika*. The characteristic feature of all these reforms was the attempt to improve the system of planning rather than to replace it. Thus they are all characterized as *partial* reforms.[53] An important legacy for transition of the Soviet reform experience is the expectation on the part of people that reforms issued from above are not likely to be persistent or to make much difference. A history of reforms that were frequently reversed (or amounted to very little) makes it hard for future reforms to be *credible*. People come to lack faith in announcements of new policies. Instead, they search for ways to get around the reforms and to protect themselves against reversal. Even a sensible plan of sequenced reforms may then fall victim to pessimistic expectations.

5. Collapse and Transition

The collapse of the Soviet system set the stage for transition. The process by which the Soviet economy imploded is multi-faceted, and the full story cannot be told here. Several features are worth highlighting, however.

As STEs struggled to cope with declining performance they experimented with reforms that altered the mechanism without changing the fundamental nature of the system. One important feature was the weakening of central control. To a large extent this began with "Brezhnev-communism,." aptly described as Stalinism without the terror.[54] Interestingly, the key element was stability in the bureaucracy. The result of this was an institutionalization of the system of bribes and payoffs to the *nomenklatura*. Stalin had implicitly recognized that without regular purges of the bureaucracy officials would turn the system to their own interest.[55] Terror is the instrument by which the command economy deters the

[53] See [15] for an analysis of this experience. See [24] for an analysis of how frequent reforms and discretionary policymaking affects the ability of policymakers to make commitments.

[54] The Brezhnev period is usually referred to now as the period of *zastoi* (stagnation).

[55] Notice that as shortage becomes universal access to goods is the source of privelege. This provides an incentive for the elite to maintain the system of shortage. Moreover, distributing benefits in this way makes them opaque; the public cannot see the inequity built into the system.

exploitation of rents by executants. Abolition of terror gives executants the capacity to siphon off the rents attributable to their positions. In effect, the cost to the planners of achieving profits is increased by the rents that are paid to subordinates.[56] Another way to put this is that the associated decline in revenues accruing to the center led to increasing budgetary shortfalls, just as larger resources were needed to finance modernization and accumulation for growth.

Perestroika, and related reforms in the East European economies, saw greater elements of decentralization introduced.[57] The idea of such reforms was to give discretion to managers who had greater information about what goes on in the enterprise, and to give them greater scope to use initiative. Yet as a whole the system was not fundamentally altered.

One important consequence was supply diversion [25], as enterprises used their increased discretion to capture the rents associated with non-market allocation. Not all supply diversion goes to more efficient uses. The reason, of course, is that the diverter acquires the resources at below opportunity cost, and plan prices may not reflect social value. Nonetheless, the planning system depends on deliveries that support the plan. Hence, the production sector can be starved of key inputs as goods are diverted to other uses.

Supply diversion not only caused a deterioration in performance; it also led to the *pseudo-privatization* of profits. Enterprise directors and other agents used their added discretion to secure rents that were present in a system where prices did not clear markets. As long as the center could limit discretion, agents were limited in their attempts to siphon rents. With decentralization, however, enterprise directors were presented with far wider opportunities to divert resources to their own benefit. Besides reducing budget revenues, this created a growing public recognition of the inequities in the system.

Decentralization also led to less control over wages. As power shifted from the center to the enterprises the latter used this to increase wages. But prices did not rise, and as there was no acceleration in production, this led to more repressed inflation: the monetary overhang. Wage increases were financed by larger infusions of central bank credit, but this only worsened the imbalance between supply and demand. Of course in parallel markets prices rose. This accelerated the emptying

[56] A related problem is that only the center has economy-wide information, so the increased discretion by agents lower in the hierarchy leads to less effective allocation of resources.

[57] Most important, in this context, is Gorbachev's Law on State Enterprise (1987), which introduced the system of state orders, *gosakhazy*. Under this system, enterprises were required to fulfill state orders and were allowed to make contracts for above-plan output.

of shelves in official markets. Hence, the last stages of socialism were marked by increasing shortages, and lengthening of queues.

We can summarize the ultimate crisis of the command economy in three parts. Production declined and shortage intensified, as goods were increasingly diverted. The implosion in the economy led to a decline in budgetary revenues. And the collapse in budgetary revenues caused a crisis in the system of central control and state orders.

The basic problem facing Russian reformers in the fall of 1991 was that while the fundamental aspects of reform involved institutional changes such as privatization and liberalization of the economy, the reform *environment* was that of macroeconomic crisis, namely monetary overhang and increased monetary financing of budget deficits. This meant that stabilization would necessarily take center stage. Toward the end of the Soviet period (in the early 1990's) monetary financing of the budget deficit approached 20% of GDP.[58] With price fixed in official markets this led to aggravated shortages in state stores while prices rose steeply in unofficial markets. As wage pressure increased and production deteriorated the monetary disequilibrium grew. Inability to collect taxes increased the pressure to monetize deficits and magnified the monetary overhang.

When price liberalization was implemented in 1992 inflation became open and dramatic. Of course the key Soviet pricing problem was distorted *relative* prices, and price liberalization was essential to remedy this. However, monetary disequilibrium meant that the costs of adjustment would be exacerbated by high inflation. Much of the debate and effort in the early years of Russian economic reform were devoted to monetary stabilization, leaving the more fundamental aspects of reform to a later date.[59]

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[58] See [29] for an analysis of Soviet budget problems, and see [4] and [12] for a discussion of the macroeconomic problems experienced by Russian reformers in the attempt to stabilize the economy.

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