

Materialien und Dokumente zur Friedens- und Konfliktforschung

Herausgegeben von Sigmar Stopinski und Manfred Kerner

Nr. 7

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Transition or Development Strategy?

**Structuralist considerations in elaboration of the Russian
Federation's strategy of market transformation**

Die Deutsche Bibliothek - CIP-Einheitsaufnahme
Kuznetsov, Evgenij:
Transition of development strategy? : Structuralist
considerations in elaboration of the Russian federation's
strategy of market transformation / Yevgeny Kuznetsov. -
Berlin : Berghof-Stiftung für Konfliktforschung, 1992
(Materialien und Dokumente zur Friedens- und Konfliktforschung ;
Nr.7)
ISBN 3-927783-22-6
NE: GT

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ISBN 3-927783-22-6

ISSN 0936-8558

Berghof-Stiftung für Konfliktforschung

Berlin

1992

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Abstract

The article examines problems of the Soviet market transition from a development economics point of view. The basic feature of the Soviet economy is its pervasive technological segmentation, which creates numerous structural rigidities and inhibits standard neoclassical adjustment. Assuming price, wage and interest rates decontrol, we seek to explore emerging Soviet market structure following neo-structuralist lines to distinguish fixed-supply and mark-up pricing market sectors. In a highly imperfect monopolized market structure second-best policies explicitly incorporating particularities of the 70 years of highly unbalanced Soviet economic growth are needed. A dual-dual economy ("modern" vs. "traditional" and "neoclassical adjustment" vs. "neo-structuralist adjustment" market sectors) framework is proposed to address this challenge.

Foreword

The on-going unprecedented transition in Eastern Europe and the former Soviet Union is proof of methodological deficits, the social sciences are challenged to overcome. The "sovietology" was too much a mixture of political combat and rigorous analytical effort as to provide adequate concepts of the political and social dynamics in the former socialist countries. The political process which debilitated the power structure of the old system was not sufficiently recognized, the radical change came as a surprise.

The road the transition process will take is difficult to predict given the paucity of reliable indicators and the lack of social science experience in Eastern Europe and Russia. One focus of research at the Berghof Institute the conversion of the military sector in the CIS, though the dynamics of disarmament can only be analyzed as an integral part of the general transition.

The research team is integrated in an international informal network of scholars who pursue similar research. The Berghof Institute organized in April 1991 an international workshop "Conversion of the military sector in the Soviet Union in the changing economic system". A second workshop will be held early this summer "Research on the ongoing transformation of the economies in the CIS and Eastern Europe: Post-socialist transition from a development economics point of view".

Several Russian colleagues have visited or worked at the Berghof Institute during the last year, Ksenia Gonchar, Yevgeny Kuznetsov, Victor Voronkov to name but a few. In order to intensify the research communication within the network we are glad that Yevgeny Kuznetsov¹ gave us the permission to reproduce his recent paper "Transition or Development Strategy? Structuralist considerations in elaboration of the Russian Federation's strategy of market transformation".

We hope that his conceptual approach will help to expand the theoretical dimension of the present, often alarmist discussion on the future of Russia and Eastern Europe. At the same time we wouldlike to encourage other colleagues to offer similar materials for circulation within our informal network.

Peter Lock, Berlin, March 1992

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1. Introduction

An unnamed but highly respected Brazilian economist at one of the IMF meetings once noted that all economies in the world can be divided into four types: developed, developing, Japan and Argentina (J. Timmerman, p. 24). Japan exemplifies an economy which, in spite of having very scarce natural resource endowments, became a dynamic industrialized nation. It was joined recently by the Gang of Four. Argentina, on the contrary, having the sixth highest per capita income in the world as recently as the end of the Second World War (Tella and Dornbush, 1989) exemplifies a country moving backward: from a rich and relatively developed level to a developing society locked into various low-level equilibrium traps.

This taxonomy, while conceptually fuzzy, conveys the flavor of the development economics of the fifties and sixties, which did not make a sharp distinction between "socialist" and "capitalist" development strategies. The dichotomy was more between balanced and unbalanced growth (Hirschman, 1958; Streeten, 1959) rather than between market economy and planning. Streeten (1959) concludes that in order to get growth one may have to sacrifice balance. In this growth-promoting role market and planning might be equally successful. To continue this line of reasoning, one may also hypothesize that some consequences of growth-promoting unbalanced development might be similar in both the market and planning allocation mechanism alike. From this perspective the relative decline of Czechoslovakia compared to neighboring Austria is not just the result of inflexible planning, but also the consequence of equally inefficient import-substitution within the highly protected Soviet bloc which was imposed by the USSR. At this point the Czechoslovak decline is similar to the Argentinian case where the breakdown of the system of international trade was the initial cause of embarking on import-substitution.

The advent of neoclassical economics in development studies in the '70s made the wall between economists studying the First, Second and Third World virtually impenetrable. Neoclassical economics concentrates on the analysis of planned economy as a fixed-price vs. flex price allocation mechanism. The fixed-price/flex price and later soft budget/hard budget constraint dichotomy introduced by J. Kornai completely overlooks the specific constraints imposed by inherently unbalanced Soviet and to a lesser degree East European growth on allocative efficiency. Persistent structural disequilibria in various sectors of the Soviet economy generated by its postwar growth pattern are beyond the purview of the neo-classical analytical framework.

The structural approach takes account of differences between sectors of the economy that may inhibit the equilibrating adjustments in resource allocations implied by neoclassical theory (Chenery, 1986; L. Taylor, 1991), but there are very few western economists who study post-planned economies from a structuralist perspective. Neo-structuralist concepts in development economics, and in particular in Latin American studies, provide a useful antidote to mainstream neoclassical economics. Nothing resembling the rivalry between neoclassical and neo-structuralist economists is present in the debates of their Soviet counterparts. There are, to be sure, several famous Soviet economists working in the neo-structuralist tradition (Iaremenko, 1981; Glaziev, 1990; Danilov-Danilyan, 1984) but, paradoxically, they themselves are completely unaware of where their analytical approach has led them. No interaction exists with their structuralist peers in the West or Latin America.

Although western neo-structural analysis of Soviet economic problems is virtually non-existent,² studies in the Schumpeterian framework have been published recently (Murrell, 1990a, b). The evolutionary outlook, which regards the world as more flexible and susceptible to change than the

² The notable exceptions are manuscripts of L. Taylor (1991) and Zhukov and Vorobyov (1991). The author became aware of them after this article had been completed. He would like to thank L. Taylor for making these manuscripts available to him.

structuralist outlook does, may be considered an optimistic version of the structuralist perspective.

Recent discussions of the Soviet market transition unnecessarily concentrated on the problem of whether to adopt shock therapy or embark on a more gradual transition. The evolutionary approach usually rejects shock treatment (Murrell, 1990b). Because of political constraints (disintegration of the Soviet state) some version of economic shock therapy in the Russian federation is now (end of 1991) unavoidable. The political rationale behind it is to induce the Soviet republics to start implementing coherent economic policy; presumably the dramatic changes initiated by the shock in Russia would provide the impetus for other republics to move in the same direction. To put it bluntly, from the non-orthodox point of view shock therapy is not a central problem of stabilization and transition. The crucial problem is what to do beyond shock therapy to facilitate the creation of market institutions and to mitigate the numerous supply rigidities which would continue to exist after price decontrol in the structurally unbalanced Soviet economy. If the problem is the institutional vacuum that emerged because of the abolition of allocative authorities, then there is no reason to believe that the relevant institutions would readily arise in response to price decontrol.

To make matters worse, the current Soviet economic disarray and disintegration do not by any means amount to an institutional vacuum. New binding structural constraints such as external strangulation and growing labor militancy appeared in the USSR since 1985 as a result of a dramatic decline in foreign revenues and general democratization. They created Latin American types of stalemates in which a multiplicity of actors have the power of veto but are powerless to impose their own schemes. This article seeks to establish a framework of discussion of the Soviet transformation which explicitly takes into account both the old and inertial and the newly emerging structural and institutional rigidities of the Soviet economy which might provoke very specific and unexpected responses to the standard neoclassical prescriptions.

The paper is structured in the following way. Section 2 reviews the numerous Soviet studies of the structural and technological particularities of Soviet growth and interprets the Soviet economy as a special type of developing dual economy. Section 3 addresses the implications of the structural segmentation for the emerging Soviet market structure, granting that the majority of factor prices and macroprices have been made flexible. Section 4 speculates on long-term development trajectories of the Soviet economy based on neoclassical, evolutionary and neo-structuralist assumptions about its market transformation. Section 5 extends the discussion into the relevance of the development economics perspective for the Soviet transformation. Section 6 provides an outline of the policy prescriptions in a dual-dual economy framework. Some conclusions and directions for further research are drawn in the final section.

2. Technological and organizational segmentation of the Soviet economy

Studies of the Soviet technological and industrial structure generally arrive at the conclusion that it is segmented and highly heterogeneous (Iaremenko, 1981; Danilov-Danilyan and Rivkin, 1984; Glaziev, 1990). At the extreme, some authors describe the Soviet economy as dual, where one sector is modern industry based on microprocessor technology and the other is outdated. Glaziev (1990) provides evidence of a strong dichotomy between the two sectors. This dichotomy is based primarily on two pieces of evidence. First, the microprocessor-based sector and the old sector based on "chemical" and "metallurgical" long waves are expanding simultaneously. There is no or very slow substitution of traditional by microprocessor manufacturing processes as is taking place throughout the rest of the developed world. Second, the intersectoral transfers of factors of production are weak. In other words, the economy is locked in a low-level equilibrium trap with a

feeble "modern" sector that impedes its structural transformation. This is not, however, the familiar defense/civilian industry dichotomy, but rather duality based on a modern version of long wave theory (Dosi, 1984; Perez, 1985).

The major claim of the theory of long waves is that the socioeconomic consequences of the diffusion of modern microprocessor technologies may be compared to that of industrialization.³ High-tech industrialization may be seen as a global process of substitution of the traditional industry of smoking chimneys by the R&D-intensive information sector, quite similar to the substitution of agriculture by industry. If so, Alexander Gerschenkron's (1962) basic question once again becomes relevant: which prerequisites are indispensable for high-tech industrialization and if some of them are missing, what might substitute for them?

Explosive diffusion of microprocessor technologies began in the developed world after the first Oil Shock. Simultaneously because of the changing technico-economic paradigm (Perez, 1983 - a set of prevailing organizational and production routines) a great number of new organizational forms emerged (venture capital, internal ventures). Unsuccessful organizations went under, other industries successfully entered, and carried out their creative destruction. The existence of this Schumpeterian (Schumpeter, 1934) competition, which created a variety of organizations bearing the risk, became the basic internal prerequisite of high-tech diffusion.

Since successful application of technology is obtained only through learning by doing, the transfer of technology within multinationals rather than trade of goods became the major vehicle of diffusion. Multinationals create new high tech units by replicating their own successful experience obtained by learning by doing and unavailable in an ordinary marketplace. The freedom of entry of multinationals to the national economy became the essential external prerequisite of post-industrial technologies diffusion in the industrialized world.

Obviously, both of these prerequisites did exist before the Oil Shock, which became one of the major impetuses for the takeoff of the industrialized societies into high-tech economies. They were taken for granted. This is why Gerschenkron's question about the prerequisites of post-industrialization has never been asked. Since the end of the '70s growth of Schumpeterian competition, expansion of multinationals, and diffusion of microcomputers and other high technologies became a self-reinforcing process.

Planned economies, however, by definition were missing both of these prerequisites and had to find substitutes for them. What follows is the hypothesis of growing duality of the Soviet economy as a substitution for these missing prerequisites. The essence of this substitution is the following. Long-term goals (strategic and security goals are among them) were assigned to the relatively technologically advanced sector based both on imported technology and indigenous R&D. Short-term goals of maintaining stable economic performance and achieving modest consumer satisfaction resulted in creation of a technologically and organizationally separate "subsistence" (traditional) sector.⁴

3 That is not only attributable to the new dynamic sector which drains the labor from the traditional branches of the economy; the manufacturing process of the traditional branches also changes dramatically (and indeed, a substantial proportion of demand for electronics comes from metallurgy, the chemical industry, etc.). This profound technological change creates new prevailing organizational forms and changes drastically the motivations and skills of labor. The technological duality (Glaziev, 1990) or segmentation (Iaremenko, 1981) of the Soviet economy is a process but not a product segmentation. Metallurgical or chemical plants belong to the modern sector along with semiconductor industries if their manufacturing processes are modern, i.e., based on a recent advancement in the microprocessor industry.

4 This term invoking the notion of development economics implies that the major function of this sector is just to "put out the fires" (Kornai, 1980) of chronic and constant shortages.

To understand the evolution of industrial duality since the middle of the '60s one should address the long-term implications of both the profound change in Soviet economic management of the mid '60s and the windfall oil revenues of the beginning of the '70s-mid '80s. The USSR economic reform of the mid '60s failed to produce a market environment, but it did reestablish the primacy of the in-kind product structure of planning. Each ministry was responsible for a certain output. As is well known, industrial monopoly is prone to strategic behavior. Soviet industrial monopolies by no means were the exception to this rule. The implications of the emergence of long-term strategic goals on the part of civilian industry were two-fold. In striving for independence each industrial monopoly tended to create its high-tech pocket of excellence usually based on western equipment, but the bargaining power of defense industries was somewhat reduced in the process. In certain cases, other civilian industrial monopolies obtained first priority in input allocation. The most notable examples are the civil engineering industrial monopoly dealing with diversion of Siberian rivers to central Asia, and the oil and gas industrial monopoly. The share of the latter in total industrial development increased from 6.6% in 1969 to 28% in 1989 (Narchoz, 1990).⁵

The civilian high-tech sector, which is technologically and organizationally very similar to the defense high-tech sector, had two sources of growth - imported western equipment, and supply spillovers from the defense industry. In the latter case for reasons of economies of scale, the firms established in the defense sector subsequently expanded into the civilian sector. The typical Soviet defense-oriented firm is a highly diversified enterprise broadly comprising three units: a dual-use technology base (metalworking and generic machine-building), defense output, and civilian output units depending on it. All of consumer electronics is being produced by defense firms. More than 40% of defense sector output is civilian production.

The most noticeable outcome of this stratification of the economy on the relatively advanced sector implementing long-term goals and on the outdated sector was the appearance of the organizational competition which, however distantly, resembles classical neo-Schumpeterian competition. This is a very important neoSchumpeterian hypothesis; organizational routines and search procedures (terms coined by Nelson and Winter, 1982) of the hightech modern sector are to a certain extent different from those of their selection environment. The exit-entry procedures of creative destruction, while absent in the obsolete (traditional) sector, do exist in the modern one.

The crux of the matter is that there is no physical creation and demise of new organizations: the modern sector simply adapts organizations and firms of the traditional sector to its specific needs (thus "borrowing" them from the traditional sector) and then returns them when they are no longer needed. There is a competition to enter the modern sector.

If the manager of a firm in the technologically advanced sector of the economy cannot meet the exacting performance standards (resulting in relatively high output quality and a substantial share of export output), how will it affect his or her career? The outcome of Soviet industry would be a promotion to the post of one of the deputy ministers of the same or another industry to oversee the outdated (traditional) segment of the industry in question. This lateral promotion would

5 The deindustrialization induced by the expansion of primary exports is called the Dutch Disease (Wijnbergen, 1984). The Soviet case of "Dutch disease" was different from its classical example: the industrial decline of oil-exporting countries as the result of the oil boom. While the machine-building industry supplying the machinery for oil and gas extracting flourished, the semiconductor and electronic industry was concentrated in the defense sector and special "pockets of excellence" of civilian industry. The large-scale investment in defense electronics of the '60s should have been followed by large-scale investment in civilian high technology. After some consideration this idea was dropped (Kovalenko, 1987). In the absence of both organizational competition and freedom of operation of multinationals, indigenous civilian high-tech development was considered to be too costly. The USSR was supposed to exploit its comparative advantages in primary product and buy civilian high technology in exchange. Oil revenues changed the relative price system, which resulted in permanent stagnation in the civilian high-tech sector. In this sense, the Soviet Union was subject to a special case of the Dutch disease.

actually be considered a career setback. This example gives some idea of the intricacy of the labor market in the Soviet dual economy, where the appointment in the advanced sector even to formally inferior positions might be preferred to employment in the traditional sector.

Given this background, the rapidly declining USSR high technology, and especially defense industry performance should be attributed not to the erosion of the priority protection of the modern sector, but rather its growing inflexibility. Now this sector is the one with entry but without exit. Once having entered the modern sector, an individual or institution stays in it forever, irrespective of further performance. This was not the case in the '60s. At that time a rapidly growing high-tech sector did perform selection functions (Kuznetsov and Shirokov, 1989).

What accounts for the change between the '60s and the '80s? Hirschman's (1970) conceptual distinction between "standard" (capital stretching) monopoly and "lazy" (that exhibits quality deterioration in its adjustment behavior) monopoly, however fuzzy it may seem, provides useful insights. The central concept of all of Hirschman's writings is that of unbalanced growth which, by producing specific incentives and strains creates entrepreneurship. In the economy where price-augmented competition is not strong (as in both developing and planned economies), "voice" (public or personal interference in a monopoly-ridden economy) might be as effective in enhancing allocational efficiency as exit. Limited competition is able to suppress "voice" and thus comfort and bolster monopoly by unburdening it of its more troublesome customers. One way for a "lazy" monopolist to rid himself of the voice of these customers is to extend to them alone especially high quality service and in this way buy "freedom to deteriorate" (Hirschman, 1970, p. 60).

The Soviet economy provides an unusual example of an economy where the distinction between "lazy" (quality-deteriorating) monopoly and monopoly providing quality with high costs was institutionalized. The customers with powerful voice - the military, military industries and producers geared specifically to Western markets - maintained the highly diversified military-industrial complex and social pockets of excellence within the civilian sector (Kuznetsov and Morgunov, 1989), while the remainder of the economy - its traditional sector - was left to deteriorate.

Since the beginning of the '70s the voice mechanism has begun to lose its former effectiveness. Nepotism and widespread corruption resulted in a more feeble voice for engineers and chief designers as far as military industries were concerned (Korotkevich and Shchekochikhin, 1991). Capital-stretching "aggressive" monopolies increasingly turned into "lazy" monopolies. Following Hirschman one might hypothesize that in an economy with very limited competition, economic development degenerates into a transformation from manufacturing industry dominated by "lazy" monopolies to one with capital-stretching monopoly or, at best, oligopoly. This is, of course, a transition from one evil to another, but in some unfortunate countries like Argentina or the Soviet Union, even this transformation has stalled.

The dichotomy in decision rules and utility functions of the modern and traditional sectors had important implications for investment allocations. In McKinnon's terminology (1973), the Soviet investment allocation mechanism was highly fragmented.⁶ There was no equalization of the implicit institutional internal rate of returns emerging in the modern and the traditional sectors respectively. A potentially efficient investment project of the modern sector (in its civilian subsector in particular) may have lacked traditional resources of its own (i.e., of the modern sector), as well as access to external financing, while at the same time these resources were

⁶ McKinnon (1973, p. 10) emphasized that the scope for intertemporal decision making, within which the investment allocator maximizes his utility, can be reduced to three components: (1) his endowment or owned deployable capital, (2) his own peculiar productive or investment opportunity, and (3) his opportunities for external borrowing over

available in the traditional sector and vice versa. The fragmentation of the investment allocation process is the major cause of the continuing reproduction of Soviet technological duality.

Technological dualism is a common feature of import-substituting industrialization in general. In Argentina (J. Katz, 1987) modern microprocessor technologies are to be found only in large enterprises which are able to exploit economies of scale. Cooper (1981) suggests that in many developing countries demand for sophisticated machinery by the import-substituting industries is met predominantly by imports or locally based foreign suppliers. Local machinery producers are restricted to the informal sector or to less technologically demanding markets. This is the local/foreign demand dichotomy. This was certainly one of the features of Brazilian import substitution before the beginning of the '70s, when government began to pursue a selected market reserve policy for high-tech output. Government interference aimed at the erosion of the machine-making sector duality resulted in the public ownership of high-tech ventures or credit subsidies to local high-tech firms. Thus erosion of technological duality contributed to capital market fragmentation, but created less-dependent growth. As Porteous (1991) notes, policies aimed at stimulating the general level of high-tech demand with the economy in the dual economy context would have only limited impact on encouraging development.

This conclusion is equally relevant for Soviet postwar growth. Aficionados of Kornai (1980) would be surprised to learn how widespread the facts of excess supply (rather than excess demand) of high-tech goods were in Soviet manufacturing in the '70s (Kuznetsov, 1989). "Traditional" (obsolete) enterprises were reluctant to use certain high-tech goods because of the tremendous amount of learning needed, given enterprise obsolescence, to achieve output increase. Defense enterprises of the modern sector were left alone to exploit scale and scope economies, which became an impetus for their diversification into civilian production.⁷

One might compare the dynamics of the traditional (civilian-oriented) sector of the Soviet economy with the indigenous technological development of Latin American enterprises during the deep phase of import substitution. In order to get capital goods for investment, Soviet civilian firms of the traditional sector with underdeveloped capital goods industry, in order to get capital goods for investment had to turn either to the world market or the "modern" defense-oriented sector like their Latin American counterparts. In the Soviet economy diversification of defense enterprises into civilian, mainly capital goods production is a process similar to the expansion of multinationals in Latin American LDCs. In fact, however inefficiently highly diversified defense enterprises performed the functions of multinationals as far as technology transfer is concerned, 80% of civilian production of defense-related enterprises now consists of monopoly output (Salikhov, 1991).

a. Monopolized market structure with very high level of industrial concentration (see Kroll, 1991 for a survey of empirical evidence). Monopolistic firms have the power to practice "mark-up pricing" and usually use a fixed margin above costs.

b. Complementarity of imports to national goods (two-gap model). Foreign capital goods play an essential role in investment and certain intermediates are required to keep production going. Lvov, Glaziev, Karimov, and Kuznetsov (1990) provide a review of the empirical evidence of the degree of dependency of the Soviet capital goods industry on import from the West. For certain

time outside his own enterprise. A fragmented capital market is one where these three components are badly correlated.

7 As well as for the drive to produce more military hardware. The pressure from defense enterprises to produce more to exploit economies of scale became the important factor for the USSR-USA military drive. The world market was indispensable for defense enterprise growth. There are important similarities between the growth dynamics of Korean *chaebols* and Soviet defense industrial ministries.

industries (polygraphic, pulp and timber), the degree of dependency in capital goods has reached 80%.

c. A high degree of "round-aboutness" and vertical integration, i.e., "in-house" provision of goods and services which are technologically dissimilar to the company's major activity (for empirical evidence, see Lavrovski, 1983). A low degree of subcontracting means economies of scale and technical considerations, just like in Latin America, will dominate technical choice almost regardless of factor prices (Katz, 1987). This and other market failures will require public interventions and may create a situation of complementarity (rather than crowding out) of public and private investments when certain government projects are needed to stimulate private entrepreneurs.

All these structural features of a quasi-autarchic economy were quite visible during the recent Polish stabilization episode. Enterprises' response to the shock therapy was very different from the neoclassical adjustment (Jorgensen, Gelb, Singh, 1990). The supply responsiveness was very low and the enterprises have generally responded to shock reduction of internal demand not by improving their efficiency, but by maximization of prices (Kolodko and Rutkowski, 1991).

They are much more pronounced in the Soviet case. The Soviet planner was completely captured by various industrial monopolies. This regulation failure of catastrophic proportions produced an economy where macro and micro became blurred. Monopoly power created the need for an intermediate level of analysis, a mezo-economy where various monopoly structures act as mezo-economic agents. Can we do macroeconomics for Russia or any of the newly emerging states? This question is worth asking as a useful reminder of pervasive segmentation of the Russian economy, any fragment of which will adjust to the macroeconomic stabilization in its own way.

Let us now assume that the prices, wages, and macroprices such as interest rates are decontrolled in some version of shock therapy and the only function of government after it is to enhance the market. Given the structural features of the Soviet development strategy, what market structure is likely to emerge? We turn now to the mezo-economic perspective on the Soviet economy.

3. Emerging market structure of Soviet industry

One way to grasp the complexities of an economy with numerous structural rigidities is to propose its breakdown into markets with clearly different pricing and supply-demand adjustment policies, and then see how these markets interact.

In Latin American structuralist studies there are models with two broad commodities domestically supplied where in one sector supply is limited by available capacity and prices which adjust to clear the market, and a second sector in which production meets demand with mark-up pricing (Taylor, 1988, 1991). A flex-price sector with the supply limited in the short run is agriculture, services and the primary export sector, while the fixed-price sector is manufacturing.

One of the outcomes of the Soviet version of unbalanced growth is that the slowly growing fixed-supply sector will be quite large in the Soviet market transformation for the years to come. And unlike its Latin American agricultural prototype, the Soviet fixed-price sector is plagued by natural monopolies (in the electric power industry, or the metallurgical industry, with the most powerful specialized blast-furnaces in the world) or other monopolies which might be difficult to break down for institutional reasons (large transaction costs, for example). That results in the emergence of mark-up pricing in the fixed-supply sector - the combination is virtually unknown in developed and developing countries alike.

Causes of fixed rather than demand-driven supply deserve special attention for they go far beyond the productivity constraints of agricultural and primary export sectors. In the traditional sector the problem is the impossibility of maintaining, let alone increasing, the output of certain products like chemicals and metallurgical products without huge social overhead investments into environmental clean-up, which were usually neglected. This is directly unproductive investment, and to carry them out, special incentives will be required.

Negative real value of capital because of incurred debt towards the environment is not the only reason for the adverse supply shock. The beginning of perestroika just happened to coincide with the end of capital life-cycles in many intermediate goods industries, but most notably metallurgical and chemical. In 1983 80% of investment into the metallurgical industry was investment into current repair to "put out the fire" of supply collapse (Kuznetsov, 1987). Environmental wear and tear among the population makes expansion of multinationals in this sphere problematic even though the Russian Federation has (if pollution is acceptable) comparative advantages in producing intermediate goods with high value added (rolled metals of high quality, certain types of chemicals). In addition, such industries as metallurgical and chemical, parts of which belong to the market sector in question, have strong and militant labor movements that might enhance a more rapid rise of wages than mark-ups. Assuming that saving propensity is higher from profits than from wages, underinvestment becomes quite probable. Then state interference becomes inevitable (Table 1).

In the modern sector there are COCOM barriers that make a high-tech output increase within any conceivable foreign currency constraints impossible, not only in the medium term but also in the long run.

If the share of the fixed supply/mark-up pricing sector is substantial, then structural inflation is unavoidable. Whether structural inflation turns into hyperinflation would depend upon the militancy of the labor movement and its ability to find a compromise with the government and enterprise authorities.

The squeeze of aggregate demand will of course result in a shrinkage of the fixed-supply mark-up sector. This squeeze of aggregate demand may not be large enough because of the dramatic deindustrialization it will produce in the demand-driven mark-up sector, which is essentially a civilian capital goods industry. In addition, with declining sales, oligopolistic firms raise their mark-up in order to maintain the rate of profit as a percentage of capital. Macroeconomic policies thus have a boomerang effect. The signs of such inertial inflation were visible not only in Latin America, but also to some extent in the aftermath of the Polish shock therapy (Kolodko and Rutkowski, 1991). The tolerance towards the squeeze of the civilian aggregate demand will be very low in Russia because this will be accompanied by huge cuts in defense-related demand of the same order of magnitude as in the civilian sectors. The defense demand cuts are called conversion, but in the short run unemployment, not conversion, is the story.

A market sector with the output determined by demand and mark-up pricing is, as has already been noted, the standard structuralist specification. In the Soviet case it is basically the capital goods industry. Along with the recession, which would produce unutilized capacities, another factor is important. Because a substantial share of capital goods production facilities emerged as offspring of defense firms diversification, the price-quality ratio is so high that many industries produce negative value added. The electronics industry might be an example. The whole industry should be closed down. Even assuming that the plant closing would increase dramatically, one would expect some residual space capacity in the medium term.

One can also discern an emerging sector with fixed-supply and market-clearing (competitive) pricing. In the traditional sector the situation is quite similar to the standard Latin American case with the agricultural product in fixed supply in the short run. In the high-tech sector the dominance of the defense-related enterprises introduced new and somewhat unexpected factors into the picture.

The defense-industrial complex is currently quite successful at producing civilian goods with close to infinite opportunity costs - those which allow one to break the bottlenecks in a fixed-proportion Leontiev-type manufacturing process which are standard in Soviet industry. Example of such output are spare parts of every type, railway machinery, and equipment for agricultural output preservation. Demand for this specific output is price inelastic. Supply is inelastic also, as will be explained below. The combination of inelastic supply and demand results in very volatile prices.

Civilian goods have always been produced in defense enterprises. In fact, the major share of consumer durables comes from the defense industrial sector, and substantial foreign exchange in components procurement was essential. The market of non-system products emerging as a result of defense enterprise conversion is potentially competitive and even contestable (free entry and exit), but it will in the medium term have severe foreign exchange constraint. Binding foreign exchange constraint of the two-gap model may produce, in the medium term, a fixed-supply segment in the high-tech sector. This is the legacy of the high share of defense output in Soviet industrial production, and an inherent generic characteristic of defense technologies, the transformation of which into civilian technologies without substantial external borrowing is problematic.

The positive aspect of the Soviet unbalanced growth is that it does tend to create the most attractive market sector with demand-determined output and competitive prices. A modest import of microcomputers was sufficient to produce fierce competition on the Soviet personal computers market. Even under the conditions of soft (but clearly hardening since 1990) budget constraints, the shortage of microcomputers disappeared, and there is a market-clearing price based, apparently, on the law of one price (on the price of the imported computers, i.e., the black market exchange rate). The characteristic of the emerging Soviet market structure in fixed/flex-price mark-up/market-clearing price in both modern and traditional sectors are summarized in Table 1.

The peculiar blend of the emerging sectors with respect to pricing rules and capacity utilization assumptions fits well with neither neoclassical nor structuralist visions of the economy, and complicates the elaboration of reform packages. Priceinelastic supply, and mark-up pricing sectors indicate structuralist adjustment and justify heterodox shocks. The sector with price-elastic supply and competitive pricing exhibits neoclassical adjustment and justifies the case for orthodox reforms. Finally, the sector with inelastic supply, elastic demand and mark-up pricing makes the case for orthodox stabilization, with the potential danger of launching an informal indexation process through the mark-ups.

The complexity of the emerging Soviet market structure can be addressed in two ways. In the short run one might think of the sequencing of the stabilization episodes in which orthodox and heterodox shocks alternate. A mix of two types of shocks is also possible. In the long run one should think of evolution and erosion of the current segmentation of the technological and market structures of the Soviet economy. The specific configuration of the four identified market sectors produces a variety of possible long-term development paths.

4. Long-term development paths of the Soviet economy

The occasional borrowing of terminology (take-off, duality) from development economics to our analysis is not coincidental. The comparison of Eastern European countries with LDCs based on their high and growing share of foreign revenues from primary resources export became in recent times quite standard (Winecki, 1989). From a broad historical perspective, this is a rather shallow analogy. Norway, Australia and Canada are high-income market economies having more than 60% of their exports concentrated in primary export activities (Lewis, 1989, p. 1578). However, in the case of the USSR there is a fundamental reason to view this economy as a special type of LDC. Extensive high-technology defense build-up of the '50s and '60s began in this country on an apparently insufficient civilian technology base which eventually created the technological and organizational duality.

Having in mind this Soviet development feature and characteristics of its emerging market structure, we will examine its long-run market future within a strictly capitalist mixed economy framework.⁸ Here one may distinguish three development paths. First (and the only one that seems to be in the mind of proponents of the conventional shock therapy) is a convergence of a system that we are trying to stabilize with a Pareto-efficient competitive market equilibrium of the Walras type. This will eventually bring about a western level of welfare, and this is the very reason that numerous sacrifices should be made. Poland might be an example of this development path.

In the second development path the stabilization program is just a transition to a Pareto-inefficient Nurdse-type of market equilibrium, known in development economics as a low-level equilibrium trap - a stagnant equilibrium where it is not profitable for any single producer in the economy to increase production because of market limitations. Although all producers would profit from it if they increased production (Nurdse, 1953; Basu, 1984). This might happen because modern technologies generate increasing returns to scale, whereas traditional sector uses constant returns to scale technologies. As has been shown (Taylor, 1991, ch. 10; Kuznetsov, 1990; and elsewhere), in a model with these two technologies and one output, two equilibria are generated. The lower equilibrium is the Nurdse trap. Contrary to the conventional view (Basu, 1984), however, nonmarginal demand shock is required to get out of a low-level equilibrium trap. To put this jargon into plain English, modern (increasing returns) technologies have a minimum threshold level of utilization that makes them profitable. If aggregate economic demand is small, then this threshold at the microlevel is not achieved. The firms stick to the traditional constant returns to scale technologies. Since the technologies are obsolete, the internal and in particular foreign demand they generate is small. Insufficient aggregate demand does not allow one to break through the microthresholds of increasing returns technologies.⁹ This is the dynamic process that makes a low-level trap locally stable.

It is more or less clear that only an unbalanced growth pattern (advocated, for example, by Hirschman, 1958) with its incentives and strains generated by imbalance can ensue structural transformation and take an economy out of a possible stagnation trap. This conclusion in itself supports Murrell's dual economy policy,¹⁰ since unbalanced growth assumes that there must be a sector with adverse terms of trade with the rest of the economy, whose growth it finances in this way.

8 The notorious "third way," combining the best of two worlds, is no longer a subject of controversy even among trained professors of the department of political economy at Moscow University.

9 The described dynamics also cover the mechanics of Argentinian industrial duality mentioned in section 2.

10 Murrell (1990b), incorporating the evolutionary approach, argues that there should be two sectors in an economy in transition - a state sector with central macroeconomic control which provides short-term stability, and emerging near it a private one which performs creative destruction of the state sector and provides the long-term hope for the prosperous market future.

The market locked into a low-level equilibrium trap, just like a "genuine" market, may have flexible prices and interest rates. High interest rates, however, do not reflect opportunity costs of capital but rather profitability of speculative activity. Price volatility coupled with inflation makes investment decisions highly uncertain. Argentina with its profound capital flight is the most noticeable example of this second development path. If the market sectors with mark-up pricing are dominant in the course of the market transition, then there is the possibility that the Soviet economy will embark on a stagnationist strategy.

The third development path may not be described as the transition from administrative (planned) economy equilibrium to any kind of market equilibrium. I would put it as a constant drifting from one disequilibrium to another in this Bermuda Triangle: "planned economy" - "Walras (competitive market) economy" - "Nurkse (stagnant market) economy." This economy is constantly in some kind of chaos, and a certain degree of institutional vacuum (not yet market, but already not planned) is its equilibrium. Again, this is a long-term situation: an economy is constantly balancing on the knife edge, and the transition strategy (to what? That is why it is better to think in terms of development and not transition strategy) seeks to ensure such a knife-edge development path with gradual drift to the market part of the triangle. Chaos is an unavoidable component of this path. Only its manifestations are constantly changing. The basic question of this development strategy is not how to stabilize the economy, since in this view such a goal (for the Soviet economy, at least) is largely unattainable, but rather how to make the chaos more creative and to channel it into the creative destruction of the administrative state sector and formation of market-oriented organizational routines. This strategy is viable if there will be some degree of transformation from market sectors with fixed-supply or mark-up pricing to competitive pricing.

We will now review theoretical perspectives which may be attributed to each of these developmental paths. The first development path is certainly the neoclassical (more precisely, neoliberal) one. The most important underlying assumption of this transition path is that the economy is flexible and there is a high degree of substitution among both commodities and factors of production. Applied to a socialist economy, disequilibrium is viewed either as a result of "wrong" prices (disequilibrium or testable excess demand models) (Davis and Charemza, 1989), or soft budget constraints (Kornai, 1980).

The second possible Soviet development path may be derived from the pessimistic version of the structuralist view, the most complete statements of which may be found in the works of Latin American economists.¹¹ As it is well known, it concentrates on the role of rigidities of supply and demand in various factor and product markets. From the point of view of this school of thought, the current huge Soviet monetary overhang is a culmination of various structural deficiencies (small high-tech sector vs. huge capital-intensive primary sectors, etc.), rather than just an increase of the money supply as an endogenous variable.

Since the beginning of perestroika the comprehensive planning which, however inefficiently and short-term, offset these structural deficiencies was no longer in operation, and the current chaos is the major manifestation of the lack of necessary regulation. In order to break the vicious circle of financial instability and structural deficiencies, stabilization programs must focus on both remedying structural deficiencies and on restricting the money supply, freeing prices and curbing government expenditures. Because of the profound structural problems of the Soviet economy, it is hardly possible to escape stagnation without a strong industrial policy, which, paradoxically may itself be strong only in a flexible market environment. From this perspective the supply disintegration of 1989-91 of the Soviet economy has little to do with inflationary monetary policy.

11 For a review of some controversies, see Hirschman (1961) and Baer (1967).

It would have set in sooner or later (perhaps with different manifestations) in any event because of the insurmountable inertia of self-reinforcing structural deficiencies and rigidities (see also Glaziev, 1990; Gaidar, 1989).

This view is obviously an exaggeration with respect to agriculture, where supply disruption was produced by the delay of the much-needed introduction of price decontrol, but it provides useful insight into the causes of supply disintegration in the continuous processes industry with high wear and tear of capital stock (metallurgical and chemical industries). Any adverse supply shock in these industries, as well as in infrastructure, causes a cumulative process of output disruption. To be sure, during the past fifteen years the supply disintegration of 1989/91 is not the only one. The unusually cold winter of 1978/79 provided a shock strong enough to launch the cumulative shock propagation from transportation and energy supply to intermediate output and capital goods production. At that time a special increase in foreign supply averted further shock propagation (see Lavrovsky, 1983, for the story of power supply and ferrous metallurgy). In 1989 the usual buffer of shipments from abroad was no longer available.

The third path is based on an evolutionary Schumpeterian approach (Nelson and Winter, 1982; Murrell, 1990a, b), which emphasizes various institutional rigidities, existing organizational routines and habits. The Soviet situation is unique because the last three generations have no conception of the "conventional" market, and learning even the basics of market behavior will require a considerable time.¹² These are general considerations, but there are also specific problems of the Soviet economy that will make this learning of market extremely painful and dramatically slow (in contrast with Poland). Learning by doing is basically learning from one's own mistakes and failures. But the profound structural problems in the Soviet economy virtually leave no room for failures. The railroad system, for example, is functioning beyond the margin of its full capacity and excessively rapid market moves (not necessarily in infrastructure) may bring the whole system to collapse.

In other words, the problem of how to internalize externalities is the major problem of the Soviet market transition. One should be aware that in a "stable" Soviet planned economy, externalities were internalized in industrial enterprise's production routines by regional authorities, such as local party organs and regional wholesale supply headquarters. Essentially this was a bargaining process, as the following example illustrates: in exchange for providing services for railroad authorities, industrial enterprises were rewarded in many different ways. We emphasize that in a Soviet infrastructure plagued by enormous structural deficiencies, the coordination problem most will probably *not* correspond to the case of Coase's theorem. Non-monetary and non-economic interest must very often be involved, otherwise the prisoner's dilemma or a stagnation trap is unavoidable.

12 Within the framework of learning, the famous concepts of "Big Push" in development economies and shock therapy in current stabilization debates are quite similar. Just like the "Big Push" requires simultaneous developments on many fronts for which underdeveloped countries should have resources already available to employ, the shock therapy has focused on an implicit assumption that behavioral routines of the market economy are already in place in post-planned societies. What is needed, then, is to apply the standard macroeconomic tools to employ them to achieve macroeconomic stabilization. Hirschman (1958, p. 57) noted that the "balanced growth doctrine...is the application to underdevelopment of a therapy originally devised for an underemployment situation." Similarly, the shock treatment, from the evolutionary point of view, is the application to short-run crisis management of post-planned economies of a therapy devised to cope with excess demand in mature market economies. Actually, Rosenstein-Rodan's (1961) concept of the "Big Push" looks more respectable because the additional profits from scale economies could potentially finance the investment required for the "Big Push" (Taylor, 1991). While it is unclear how enterprise managers and the population will acquire routines of market behavior virtually overnight. The rationale for shock therapy lies in the sphere of politics and psychology. Given the widespread "fracasomania" mentality (if it can fail, it will fail) prevalent currently in Soviet society, the shock might be needed to change both pessimistic and inflationary expectations of the public and "dragging" as routines of bureaucracy.

Consider the following real-life example. The automatic traffic control (green light, you may go; red light, you must not) is a principal railroad technique. In some regions of the USSR where there is both intensive traffic and at the same time high concentrations of chemical production, it does not work. The lights on the tracks are always red. Chemical freight, through numerous holes in rail cars, penetrates the ground and triggers the electrical circuit, as in the Berezniki area in the Perm region in Russia (Ardaev, 1982). How would one safeguard traffic in this situation? One might try to find cargo cars without holes. This should be ruled out. It is obviously a structural decision; it would require the repair or replacement of all cars, so it is a long-term problem of capital formation. Can one find a technology that allows control devices to function even when the electrical circuit is completed? Fine, but during such a search, what is one going to do? Usually this would mean the workers of all the enterprises in the region every day in the spring removing the chemicals from the rail track. Let's add the specifying conditions from reality. The cost of such an additional operation (removal of the chemical waste) increases the average cost of production 30-40%. The state budget normally incurs the losses. There are substitutes for the output in question and there are also competitive producers (second source).

In the neoclassical vision, there are only two solutions to this problem - either to close all the chemical enterprises in the region as apparently ineffective, or allow the state to bear the losses stemming from the inefficiencies in infrastructure. In the first case the whole region would come to a standstill. In the second the basic principles of monetary stabilization would be undermined - the inefficiency of other enterprises is similar in its own way. Making an exception in this case you would need to do it in every other. Anyway, the second-best solution is unavoidable - to allow (temporarily?) workers to clean the tracks as before. But with huge additional costs (around 30% of unit costs) incurred by every production unit, there will may be a coordination failure of the prisoner's dilemma type, in particular if the state would not provide funds for railroads to incur the necessary costs because of the budget deficit.

The Coase (1937) theorem reasons that if the needs of trade demand it, an appropriate financial or institutional vehicle will appear. Kindleberger (1984), reviewing the economic history of Western Europe, shows that sometimes a Coasean solution emerges and sometimes not. If Coasean solutions failed to emerge even in the Western European market environment, one might suspect that their emergence in the Soviet case will be very slow. To complicate matters even more, the question of whether a Coase solution would appear or not depends upon technological and structural constraints in the economy in question. The more unbalanced the pattern of economic growth, the more remote is the probability of emergence of a successful Coase solution.

This railway example helps to illuminate the differences between neo-structuralist and neo-evolutionary approaches to the Soviet market transition. The neo-structuralist believes that the numerous imbalances of Soviet economies are so profound that they themselves would induce specific institutional evolution, which monopolize factor markets, and labor markets in particular. In this example workers who cleaned up the track realized their power, repeatedly threatened to disrupt traffic,¹³ and in some cases actually did so. Accordingly, Soviet economic disintegration is viewed as a long-term phenomenon which can hardly be overcome by standard monetarist recipes. Supply disintegration on the microlevel is in many cases the direct result of external strangulation which was caused by the adverse foreign revenue shock of the 1986-88 fall of oil prices. Since the majority of imported items cannot be substituted by internal production, the enterprise had to turn to foreign suppliers on its own, which, of course, produced the "debt crisis" of 1990 when Soviet enterprises became increasingly insolvent. This debt crisis indicated that the Soviet economy, in order to maintain its integrity, has to embark on debt-led growth since it is

13 This is a personal observation, so the author cannot cite references.

highly dependent on foreign components in industrial production.¹⁴ From the demand side for foreign credits, the story is quite similar to the Latin American deep phase of import-substitution and the resulting dependency on foreign finance (Griffin-Jones and Sunkel, 1986). The supply side is unfortunately different. Capital markets are not currently buyers markets as they were in the '70s because of the recycling of Middle Eastern oil revenues.

The other cause of the supply side disintegration are recurrent demands to close this or that enterprise because of the tremendous pollution it produces. Environmental claims were the first to trigger the emergence of sporadic labor unrest. In fact, not unlike in Western countries, they actually broaden the labor movement and initiate new labor claims. The historic coal miners' strikes of 1989 are the first but not the last to disrupt Soviet fixed economic proportion (with no possibility for factors substitution) economy. Growing labor militancy is a long-term problem that will substantially influence (if not impede) Soviet market transition.

Problems of external strangulation and adverse impacts of labor power on market institutions are just two topics chosen almost at random from the vast array of the market transition problems that would make a structuralist pessimistic about the outcome of any shock therapy program. The experience of Latin America, whose problems, from the Soviet perspective were much easier to solve, also stand as a discouraging reminder. The evolutionary economist is more optimistic. He would view the growing labor movement as a stimulus rather than a handicap to economic transition, viewing a corporatist coalition between business, government and labor like that in Sweden or Austria (Katzenstein, 1984) as a necessary prerequisite for reform. He would downplay the structural and institutional rigidities emphasized by a structuralist, indicating the current chaos itself would somehow mitigate them. In the imaginary "structuralist/evolutionary dialogue" the remaining two sections will present the presumed points of consensus of two schools of thought.

5. Stabilization and market transition strategy within the framework of market-oriented development strategy

One of the Cold War legacies is the division of economic theory into the theory of a capitalist market economy, a planned economy, and a Third World economy, with virtually penetrable boundaries between them. Planned economies were thought of basically as anti-market economies. The current experience of the USSR and other post-socialist systems reveals that a planned economy is something more than a rigid hierarchy with an incentives structure which excludes allocative efficiency. Gradually as the administrative system crumbles, it becomes clear that a competitive market has only one antipode and it is not an administrative planning system but rather the incomplete and "inflexible monopolistic market of a developing country.

To put it another way, to interpret current systemic change in postplanned economies as a disequilibrium process of transition from a locally stable but globally unstable point called "planned economy" to the other point called "capitalist market economy" is a simplification which was perfectly suitable as long as the trajectory was in the vicinity of local asymptotic stability of the starting point. Since it is already clearly not the case any longer and the trajectory is not yet in the area of stability of the desired attractor, we do need to add the additional dimension. Along with the competitive market attractor of the Walras-like Pareto-efficient equilibrium there is also a stagnant market attractor - Nurkse low-level equilibrium.¹⁵

14 More than 60% of chemical machinery, 80% of the equipment for the pulp and forest industry, and more than 60% of the equipment for light industry and consumer durables was imported by the USSR in 1988 (*Technicheskii Progress*, 1989). Note that these figures are higher than similar Brazilian indicators (Adler, 1987).

15 Resorting to the non-linear dynamics notion in three-dimensional space, unlike the plane case, there need not be any clearly defined attractor. Chaotic or semi-chaotic movement in a broad area may become the attractor itself; this

The notion of transition strategy, which implicitly assumes that there is a relatively well-defined area of transition, is hardly operational. It is more fruitful to think about the current systemic change in post-planned economies in terms of development strategy - just as for developing countries. This is not just a change of titles; it implies dramatic change in the research program. Issues that deserve special attention are the following.

a. Inducement mechanisms to generate efficient entrepreneurs

Hirschman's (1958) point that developing countries do not lack entrepreneurial ability in general, but rather that local entrepreneurs focus on rent-seeking at the expense of innovation and capital expansion, applies equally to the Soviet transition. Our description of the emergence of the duality of the Soviet industrial structure gives some idea how pressures of Soviet unbalanced growth generated innovative entrepreneurship in spite of the stifling environment of planning. During the transition to the market the state should continue to play the role of entrepreneur and exert pressure on enterprises to export. Market incentives will play a much greater role in channeling entrepreneurship towards production and innovation, but the state and "voice" might be equally important.

Disequilibrium growth and transformation vs. expansion precludes trivial dichotomies between market and state, competition and monopoly, government intervention and private entrepreneurship. The vast experience of the semi-industrialized countries shows that these relationships might be inverse (the state banks of India are more efficient than the private banks of Argentina; the state in Korea was the major entrepreneur and exerted very strong pressure on *chaebols* to export). A stronger hypothesis might be suggested. The generation of efficient entrepreneurship comes from a variety of sources, and the fast and sustained growth it produced was based entirely on a specific configuration of economic perversities of the type outlined by A. Amsden (1989, p. 153) for Korea, where "fast growth is an unexpected result of government intervention, high productivity is an unexpected result of fast growth, and competition is an unexpected result of monopoly."

From this point of view the major challenge of the transition to market is to recognize in economic reality these growthpromoting perverse causalities and to encourage them to operate on a larger scale by subtle government intervention. Incidentally, this means the shift of research focus from proper sequencing of the *future* or ongoing transition to the study of entrepreneurial behavior *before* the transition, since pre-reform organizational routines on the microlevel that should be modified to make the market operational are still largely unknown.

b. Initial structural conditions and second-best solutions

If terminal conditions are obscure, initial conditions do matter. Any aspect of initial conditions - structural features or explicit and implicit endowments - is important. What is the sectoral composition of an economy? What is the industrial composition (by branches of industry)? What is the age structure of assets? To answer these questions is one of the ways to get an idea of the basic problem - what market is going to emerge.

is called a "strange attractor." This is the formal approximation of the outlined third trajectory. It is noteworthy that another title for strange attractor is dynamic chaos. But well-defined attractors - points or cycles - are in no way better: they may be locally asymptotically stable and the economy in transition will be trapped in such a point for a long time. That is why one can call this triangle with these three equilibria as the apexes the Bermuda Triangle.

Given the initial structural conditions, one may expect the Soviet transition to fall into the category of disequilibrium growth that exhibits significant departures from conventional neoclassical assumptions. Only the "theory of second best" became relevant since for various reasons, the optimal (equilibrium) solution is unattainable. The central problem of the USSR market-oriented development strategy is how to find in each specific case satisfactory second-best solutions, which typically entail the choice between two evils.

c. Relevance of analytical and historical perspectives of development economics

We will adopt a broad notion of development economics, incorporating into it the "new growth theory" (Lucas, 1988, 1990; P. Romer, 1990) which seeks to provide a rigorous explanation of poorly understood development phenomena. The advantage of development theory is the joint analyses of structural and technological transformation on the one hand, and formation and performance of highly imperfect and segmented markets plagued by various structural rigidities on the other. We tried to show that in the case of the Soviet Union it is hardly possible to separate these two processes - transition to market and structural transformation.

Nor is it possible to separate the short-term crisis-management (stabilization) and more long-run institutional transition to a market. The structural features of the Soviet economy outlined below are likely to require a whole succession of stabilization episodes, each stabilizing the economy in one respect but destabilizing it in another. That is why the standard approach to transition, which amounts to sacrificing growth in recessionary stabilization in the expectation of future market take-off, is methodologically flawed. The links between persistent shortrun crisis management and growth through market transition still need to be established.

This is why it seems plausible to think of development strategy as a theoretical notion providing the interrelations between them. Adopting this perspective, we can make the emphasis on both issues - how highly imperfect or barely existing markets affect the process of structural transformation and on monetary problems - how existing rigidities and structural inertia affects market formation.

The major thrust of the development economics outlook, and in particular of its structuralist variant, is the claim that the market structure of the economy which is the main determinant of economic efficiency is highly inertial, being determined by a variety of institutional and cultural factors. From this point of view the standard discourse of recent years whether to adopt shock therapy or a gradualist approach in stabilizing the economy is largely irrelevant.

If there are reasons to believe that a substantial share of the economy will continue mark-up pricing after price decontrol, and exports will be inelastic in the short run with respect to the exchange rate and more elastic only in the longer run as a consequence of erosion of technological duality, then the genuine controversy amounts to the following. First, in the short run the stabilization episodes (there will be many of them in the years to come) should be devised as a mix of orthodox (neoclassical) and heterodox (structuralist) shocks. Second, in the longer run the development strategy should be targeted primarily at elimination of the numerous rigidities and pervasive inelasticities that inhibit neoclassical adjustment. Some very preliminary outlines for the latter problem are given below.

6. Market Transformation in a Dual-Dual Economy Framework

Let us start from the example considering the rise of the market forms in the modern sector of the Soviet economy as a result of defense industry conversion.

The major problem of conversion of manufacturing processes in the short run is the lack of profitable production opportunities. In a rapidly disintegrating economy this problem is the crucial one. The major goal of production cooperatives instituted by defense manufacturers is to perform the function of establishing the whole technological chain embracing the slack industrial capacities of one defense-oriented enterprise, the unused inputs from another, excess labor from a third, etc. This semimarket behavior might entail the formation of efficient civilian manufacturing processes converted from defense ones. Such cooperatives, however, are highly dependent upon the mothercompany defense-oriented plant that instituted them. That is why one would consider it a profit-maximizing internal venture rather than an independent economic agent.

Desperate to find satisfactory conversion technologies, constrained by numerous restrictions imposed by planners, unable even to disclose its own identity because of secrecy limitations, those defense industry managers who are smart and far-sighted enough would establish a cover company. This company is seemingly independent (and thus free from the usual behavioral constraints), but in fact performs the functions which are vital for the mother company during conversion. The major objective of the cover firm is, of course, production of civilian goods on the basis of unutilized capacities of the mother firm. Thus something very important for genuine market transition is emerging: organizational competition between a large-scale firm and its own internal venture - a semi-market cooperative. If "market" organization turned out to be more efficient in the search for new civilian production routines, the wages of its employees would be higher, and one might expect the transfer of labor from the state-controlled part of the large plant to the marketoriented (internal venture) part. As long as the internal venture produces civilian output utilizing the slack capacities of the defense firm which otherwise would have been idle and the output of the internal venture counts for the conversion effort of the defense firm, its manager supports such resource transfer. Indeed, that has already happened in Soviet practice. In evolutionary terms the internal venture performs the Schumpeterian creative destruction of the state-controlled part of the large plant. Significant wage differentials in state-controlled and market sectors of the enterprise in question provide the labor transfer incentive.

Let us interpret this situation in a development economics perspective. The large-scale defense-oriented plant in question has a dual local labor market. Because of the fall of defense demand and the lack of production possibilities for civilian production, the marginal product of labor in the state-controlled market is close to zero. (Its marginal benefits are, of course, higher than zero if the firm receives state subsidies.) There is also the dynamic market sector in this firm, with highly limited employment but very high wage rates which are higher than the state sector benefits. The labor supply of the state sector is "unlimited" in the sense that when the market sector offers additional employment opportunities at the existing wage rate, the numbers willing to work at the existing wage rate will be greater than the demand: the supply curve of labor is infinitely elastic at the prevailing wage.

It might be tempting to extend this microcase into the macrolevel and view the market transition in the dual economy framework within which the market sector creates a variety of new private organizations based on capitalist "animal spirit" and performs the creative destruction of the state sector. Gradually, as the transition proceeds the market sector does supplant the state one. Peter Murrell, in his lecture in Moscow in October of 1990 explaining the rationale under the similar evolutionary scheme, emphasized that since market institutions cannot be created overnight the

state sector (provider of basic goods and services) will maintain the short-term stability, while a competitive market sector will be growth-enhancing in the long run. A tightly controlled predominately state sector which absorbs market failures is squeezed, providing both physical and financial resources for the capitalist one. The idea seems viable for East European countries, but not for the Soviet transition.

As we have already shown, the tremendous capital heterogeneity of the Soviet economy might result in a high share of the fixed-supply sectors (in the medium term) in the emerging market. That is why in the Soviet case the dichotomy between government and market failure is largely academic. Most likely there will be both government and market failure. This creates the need for second-best solutions (in the presence of both market and government failures) mentioned in the previous section.

Let us come back to the example. Cooperatives and small private ventures in question which produce items with very high opportunity cost such as spare parts for agricultural machinery or instruments for railway track repair entered the business because it provides monopoly profit. They mitigate the unbalanced growth constraint of inelastic supply and feed the inelastic demand. As is well known, the founder of the modern evolutionary tradition, Schumpeter, favored temporary monopoly as a major entrepreneurial incentive to switch to the new "state of circular flow" (Schumpeter, 1934). In the highly unstable and chaotic Soviet macroeconomic environment the costs of exit would be much higher than in standard conditions with readily available credit and a uniform rate of social return. Thus, following Williamson (1975), to facilitate entry "more permanent" monopolies should be tolerated and allowed to be maintained. The potentially very high amount of sunk cost in case of failure is influenced also by the issue of inappropriate technology¹⁶ in the first decade of transformation of the necessarily underdeveloped capital markets, etc.

Let us come back to the example again. The rationale for the defense industry manager in facilitating formation of internal ventures and cooperatives is to escape the search efforts of conversion technologies. The "lazy" monopolist revoking Hirschman's (1970) notion creates some limited opportunities for competition by encouraging profit-maximizing monopoly just to rid himself of burdensome state orders or other customers. In the sectors with no or a small number of potential entrants (certain defense industrial facilities requiring large lump capital investment, for example), there might be no competition at all. This competition that fails to emerge is yet another indicator of the underdevelopment which is a legacy of highly unbalanced growth. Creating the conditions for entry might involve policies to transform "lazy" monopolies whose organizational routines are based on quality deterioration and supply reduction into profitmaximizing capital-stretching ones.

The Soviet economy is already highly monopolized. To tolerate monopoly creation as the major tool to squeeze the fixedsupply (inelastic to price) sector will undoubtedly result in the rise of a mark-up price sector with high monopoly power. This is the second-best dichotomy between two types of market failure: the first is the inability of the fixed-price sector to provide price-elastic supply adjustment, and the second is the monopolydriven market failures of the mark-up pricing sector. As usual, these market failures stem from the presence of monopoly power. The first is "lazy" monopoly market failure, while the second is market failure stemming from capital-stretching monopoly. In the medium term the policies to eliminate the first type of market failure aggravates the second type, and vice versa. How this trade-off should be resolved depends upon the current macroeconomic situation and the specific composition of the economic growth imbalances. There is no such trade-off, however, in the long run. The notion of the long run is

16 In the defense industry, "internal ventures" costs of production are extremely high, and because of small output economies of scale and technical considerations dominate technical choice almost regardless of factor prices.

defined as a time span required to eliminate structural segmentation of the economy: its bifurcation into relatively high-tech "modern" and obsolete traditional sectors.

The elimination of this structural rigidity puts an end to another structural rigidity - the price-inelastic supply of certain types of output. In a modern well-integrated economy there is no need to tolerate monopolies in any market other than in the highly R&D and capital-intensive markets in order to pool scarce R&D resources (as was the case of the semiconductor consortium Sematech in the USA). A temporary monopoly in new product markets will continue to exist as an indication that the economy proceeds from one disequilibrium to another, but this applies only to R&D-intensive products and not to the whole economy. So in the Soviet case there is a double transformation: from a structurally segmented to a modern well-integrated economy, and from highly imperfect markets with different types of market failure to the market with (ideally) a neoclassical adjustment mechanism. Within this long-run transformation there is bound to be a medium-term cycle of alternating prevalence of certain types of market failures, ups and downs of government intervention, and other manifestations of the complex dynamics discussed in the previous two sections.

The above considerations are particularly relevant for noncontestable markets of large integrated high-tech systems such as oil drilling equipment, machinery for semiconductor manufacturing or markets with output with elastic export supply. To encourage entry into these market segments which create supply inelasticities elsewhere, the state might grant subsidized credit to enterprises with the relevant expertise - normally defense industrial enterprises. An additional rationale under the policies of granting temporary monopoly is economies of scale or scope. Too many entrants would not exploit these economies, creating upward price pressure. If the economy is growing, growth itself discourages monopoly and creates an oligopolistic market structure by inviting enterprises to diversify.

Thus the following dynamic is possible. After initial stabilization, expansionist macropolicy is pursued which attracts entrants into missing markets of output that are the bottleneck of the Leontieff-type fixed proportion Soviet economy. Price increases stemming from newly emerged monopoly powers is offset by decreased costs resulting from bottleneck elimination. Sustained growth will exploit economies of scale and scope further, and stimulate new entrants to once-monopolized markets. Decreasing costs may offset inflationary pressure from expansionist macropolicy (Kaldor, 1982; Amsden, 1989; Romer, 1990).

Government intervention, in different forms, should be required in each of four subsectors (Table 2). Antitrust policy and market regulation considerations might justify state ownership. As Sappington and Stiglitz (1987) show, if the cost of supervision of the industry is high enough, outright ownership might be more efficient than indirect regulation. Potentially there are many reasons to allow even extreme forms of government intervention - state ownership, which, no doubt, will be subject to government failures. But again, one should be looking for a fine gradation of these failures, which are presumably unavoidable because of numerous imperfections of the market which emerges in an economy plagued by various rigidities of sixty years (since 1929) of unbalanced growth rather than outright rejection of state interference.¹⁷

17 A. Fashlow (1991, p. 166) correctly notes that "the principal deficiency of the neoclassical approach ... is its failure to inform about the conditions under which the state can play a positive role.... It is a central theme of late-comer development that is not casually dismissed." This remark is equally relevant to the state in the Soviet which played the major role in the economy.

Transformation of the market is basically evolution of its distortions from the macro and industry level to the micro and localized cases. More research is needed to find the relevant second-best policies which explicitly incorporate structural features of Soviet economic growth. The crude set of policies in the dual-dual economy¹⁸ framework is given in Table 2.

7. Conclusion and Directions for Further Research

The purpose of this article, which obviously provides no more than crude caricatures of both neo-structuralist and neoevolutionary approaches to the Soviet economic transformation, was to pose urgent questions rather than provide ready answers to them. The import-substituting unbalanced growth has the features common to both semi-industrialized Latin American countries and the newly emerging ex-Soviet states, and this is one of the reasons why one should view Soviet market transition as a market-oriented development strategy. We should emphasize that the focus of the article was the Soviet Union and not Eastern Europe. Comparative economics treats these two areas as being very similar, to the extent that the phrase "Soviet and East European market transformation" has become a cliché. The article argues that this is an inadmissible oversimplification. The reason, of course, is not that the Soviet Union has broken apart, although political, cultural and ethnic problems do complicate the picture. Even if one put aside these complications and concentrate on purely economic problems in the Russian Federation, Soviet economic development was different from that of Eastern Europe.

As a result of post-war military-led high-tech industrialization and the Soviet version of the Dutch disease, Soviet economic growth is much more unbalanced than East European economic development. Conclusions about technological segmentation of the Soviet economy (section 2) and fragmentation of its market structure, with the dominance of the inelastic supply and mark-up pricing sectors (section 3) are definitely not applicable to the majority of the Eastern European countries. Because of the specific structural heritage, the Russian challenge for market transformation is more daunting in the medium term, but by the same token, the long-term Russian economic prospects are brighter.

In the medium term a wide range of problems arise, because even in a pre-shock situation the Soviet economy was not uniformly supply-constrained. Excess demand was apparent in such diverse industries as electronics or agricultural machine-building. However, after price decontrol and restrictive stabilization some sectors will still remain supply-constrained. Thus a mix of orthodox and heterodox stabilization packages is required, or a carefully prepared "compulsive" sequence of stabilization episodes. This is Hirschman's unbalanced growth approach to stabilization: each stabilization episode creates new imbalances, which is a positive factor as long as stabilization as a whole is self-propelling. The problem is how to link these short-run crisis management situations coming one after another with the long-term development strategy.

The development economics perspective is useful to understand the institutional evolution after the long awaited price and macroprice decontrol. Starting from the notions taken up in the article, we shall provide a purposely random list of problems of the Soviet economic transformation to which development economists have much to contribute.

a) Fragmentation of the emerging Soviet capital market.

Rapid development of commercial banks became the characteristic feature of the recent Soviet transition. Many banks are formed on the basis of the former ministries and this discriminates

18 The term dual-dual economy was coined by Thorbecke (1990).

against credit-seekers outside the old ministry in question. The dispersion of the real rate of interest on loans is remarkable for the reasons of shortage of information quite similar to those taken by McKinnon (1973). His definition of economic development (*ibid.*, p. 9) as the reduction of the great dispersion of social rates of return to existing and new investments under domestic entrepreneurial control is of high relevance for the current Soviet problems.

b) Entrepreneurial and innovative vs. rent-seeking behavior in the course of market transformation: evolution of defense industrial interest groups.

In the disequilibrium sector of Soviet industry (where the technology gap with the West was considered to be critical) the incentive to innovate was achieved by maintaining a strong correlation between the outcomes of rent-seeking (plan-influencing, investment lobbying) and successes in innovative and entrepreneurial behavior. That was the essence of the constant institutional and individual turnovers between "traditional" (low priority) and "modern" (disequilibrium) sectors of the economy (Kuznetsov, 1991). Technical change in such an economy may not necessarily be military-driven, but it continues only as long as various technological elite groups are able to reproduce themselves through large-scale state-sponsored R&D projects, the results of which they rarely share with anyone else. Thus ambitious military space projects are currently undergoing transformation into civilian projects that are technologically challenging but equally economically disastrous. Evolution of the defense industrial interest groups in the conversion environment is a matter of primary interest.

The transformation of rent-seeking routines will be influenced by the highly peculiar Soviet economic structure discussed elsewhere in this article. In an economy where, if estimated at world market prices, 60% of machine-building output is military hardware and only 5% is consumer durables (Morozov, 1991), a specific pattern of consumption based on a high-cost, high-quality consumer durables industry is bound to emerge. In this way the consumer durables sector established with the involvement of defense enterprises as a result of conversion will bear some generic features of defense technology with its high-quality, high cost characteristics. If so, some form of inflationary-financed growth based on heavily subsidized credit for a "privileged consumer" will have to emerge. Former defense industry interest groups will push for extensive consumer credit and inflation-financed expansionary economic policies. One should be ready for such unexpected transformations, which are certainly standard in, for example, Latin American development (A. Hirschman, 1979).

c) Transformation of the current Soviet industrial segmentation and need for specific incentives for self-sustaining growth.

The latter point reminds one of an intriguing parallel with the Brazilian economic boom of 1968-1974 which was highly dependent on high income consumption. Moreover, the continued dynamism of technologically advanced industries depended on the maintenance or even on an increase in the concentration of income (W. Baer, 1989, p. 90). Finally, the new dualism "Belgium in India" situation has emerged, characterized by highly uneven income distribution. Which kind of dualism will replace the defense/civilian industry dualism as the result of economic demilitarization?

The appeal of P. Streeten (1984) to revitalize development economics by broadening its subject and making it the economics of development in general, rather than economics of the less developed countries, now has new relevance. The challenge of the Soviet market transformation is a good opportunity to put this into practice.

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Characteristics of the Emerging Soviet Market Structure

	Traditional sector: Agriculture and vertically integrated industrial sector producing primary resources.	Modern sector: Vertically integrated industry, producing both civilian and defense high-tech output.	Demand-supply adjustment mechanism	Government intervention
Fixed supply, elastic demand and mark-up pricing High level of capacity utiliza- tion	Bottlenecks to over- come for which substantial social overhead investment is needed. E.g., chemical and metal- lurgical products - environmental investment. Output of natural monopoli- es. E.g., some ferrous metallurgy products.	High-tech output with prohibitively high foreign cur- rency component because of COCOM restrictions. E.g., high-quality semi- conductor equip- ment.	Via change in variable mark-up. Traditional subsector: very powerful labor that makes mark- up grow slower than wages. Shift of income distribution towards labor (wage-led adjust- ment): insufficient sav- ing to overcome fixed- supply bottleneck. In modern sector (weak labor) shift of income distribution towards profit (profit-led adjust- ment. Real wages fall is possible.	Substantial government intervention in the tradi- tional sub- sector.
Output deter- mined by demand. Mark-up pric- ing.	Heterogeneous product with oligop- olic market with relatively easy entry and exit. E.g., agricultural machin- ery. Capital goods sector.	Markets with rela- tively easy entry and exit (semi-contest- able markets). E.g., microproces- sors and computers of medium quality.	Via output adjustment.	Antitrust policy within the context of industrial policy (breaking up monopolies).
Fixed supply, inelastic demand. Com- petitive pricing.	Agricultural and capital-intensive primary products. On the microlevel currently all "kolhoz markets" in large cities where there is substantial market power that limits supply.	Civilian high-tech goods designed only on the basis of military output, i.e., goods produced on the fixed capacities of former defense enterprises with substantial foreign exchange compo- nents but with easily available imported substitutes. E.g., consumer electron- ics.	Via change in price. Monopoly profit in modern sector encourages entrants from demand-driven sector.	Selective credit poli- cies (subsidi- zied inter- est rate) may be required to stimulate entry.
Output deter- mined by demand. Com- petitive pricing.	Contestable markets with private owner- ship. E.g., retail trade and services (currently), non- capital intensive homogeneous prod- ucts (in the future).	Capital goods and computer equipment for consumers for which a contestable market does exist. E.g., microcom- puters (currently), consumer durables (in the future).	Neoclassical adjustment.	Antitrust regulation.