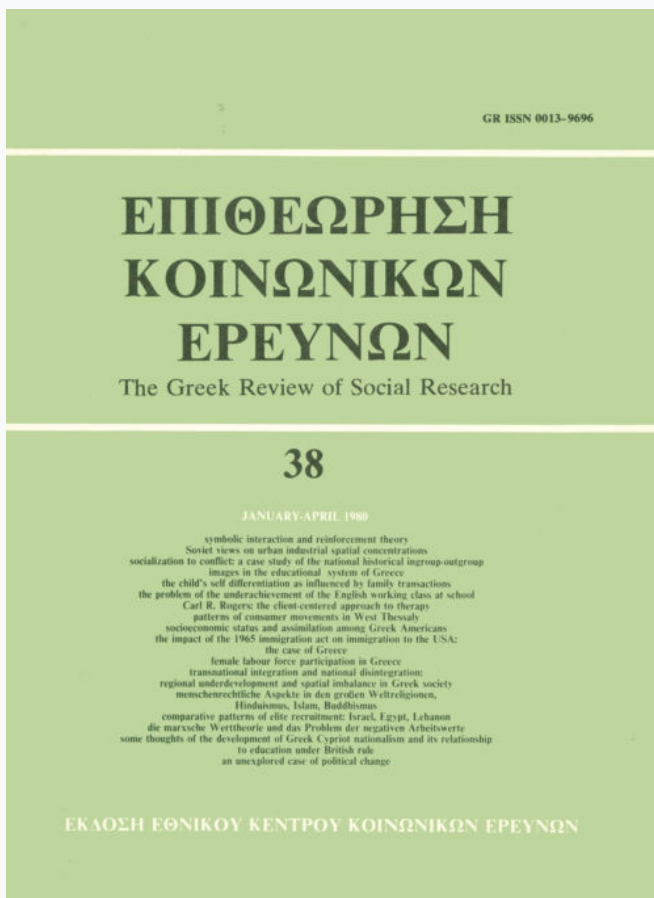


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### Soviet views on urban-industrial spatial concentrations

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# Soviet views on urban-industrial spatial concentrations

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The purpose of this paper is to review and discuss attitudes of Soviet regional scientists concerning uneven spatial distributions of population and economic activities. It should be noted that there is considerable evidence suggesting convergence of views between Soviet and Eastern European regional scientists.<sup>1</sup>

Basically, Soviet regional scientists are confronted with the task of explaining significant urban-industrial spatial concentrations within an ideological framework which views them as impediments to full-fledged communism. Excessive concentrations of economic activity and presence of large urban agglomerations were viewed initially as aberrant remnants of the pre-socialist, capitalist socioeconomic structures. However, their persistence necessitated intermittent elaboration and revision of pertinent communist dogma that denounces their existence. Probably, as a result, the tone of the literature on the subject has been polemical and until recently noticeably devoid of methodological substance capable of addressing the problem.<sup>2</sup> In its general formulation, the objective of Soviet regional policy has been to achieve and maintain social justice, as reflected in the spatial uniformity of income levels and living conditions. The evaluation criterion has been attainment of the highest feasible productivity of social labor. Predictably, this has caused most of the theoretical debate to revolve around region definition and regional boundary delineation.

As in several western nations, the spatial maldistribution of economic activity and people has acquired noteworthy proportions in the Soviet Union.<sup>3</sup> In-

1. For a broad overview of Eastern European regional economic development see M. M. Zhirminskiy, «Economic Regionalization in the People's Democracies», *Soviet Geography*. There are numerous country-specific articles. Among some of the more outstanding are the following: S. Leszczyczy, «Scientific Research for the Spatial Development of the Country in People's Poland», *The Review of the Polish Academy of Sciences (RPAS)*: 2, 1970; W. Nowacki, «Science and Regional Development of the Country», *RPAS*: 1-2, 1974; M. Jagielski, «The Crucial Perspective Problems of the Socio-Economic and Spatial Development of the Country», *RPAS*: 1-2, 1974; and R. Selncky, «The Economic Equalization of Slovakia with the Czech Lands», *Czechoslovak Economic Papers*: 3, 1964.

2. It should be pointed out that while there is no dispute concerning the rigor of Soviet regional analysis methods, some authors have criticized their relevance. The main criticism is that regional analysis has been employing methods developed in macro and international economics without adapting them to the idiosyncracies of regions as units of analysis. For a discussion of this and other related topics, see H. W. Richardson, *Regional Growth Theory*, J. Wiley & Sons, London 1973.

3. For a description of Soviet population and industrial agglomeration patterns see:

1. V. V. Pokshishevskiy, V. V. Vorob'yev, Ye. N. Gladysheva and V. I. Perevedentsev, «On Basic Migration Patterns», *Soviet Geography*, 5, 1964, pp. 3-18.
2. V. G. Davidovich, «Urban Agglomerations in the USSR», *Soviet Geography*, 5, 1964, pp. 34-44.
3. Ye. N. Slastenko, «The Distribution of Productive Forces and the Efficiency of Differences Between Town and Country-side», *Soviet Geography*, 5, 1964, pp. 24-32.

terestingly, there are some surprising similarities between western regional scientists and their Soviet counterparts in the perception of the etiology behind these phenomena. Also, there is some evidence suggesting an interesting convergence in the choice of analytic methods and policies to deal with them.

In western economies, urban-industrial spatial concentrations have been attributed to various factors. Prominent among them are initial differences in factor endowments,<sup>4</sup> the cumulative effects of external economies,<sup>5</sup> the existence of economic «poles of croissance»<sup>6</sup> (growth poles) and regional differences in production functions and/or in the demand for regional exports.<sup>7</sup> Moreover, it has been noted that regional economic growth disparities in developed economies are slowly disappearing.<sup>8</sup> Thus, with...

«...growing urbanization and improved transport-communication networks, intense regionalism will gradually yield as an ideological expression to a more pervasive cosmopolitanism».<sup>9</sup>

According to this point of view,...

«...public policy may still be addressed to the problem of lagging regions, but this will be regarded as a welfare problem stemming from the immobility of human resources rather than as a key issue for national economic growth».<sup>10</sup>

However, regional disparities, either in terms of economic growth or living conditions, are not necessarily the result of underdevelopment nor are they uniquely associated with countries where the rate of urbanization exceeds that of socioeconomic development. As a matter of fact, excessive urbanization can be found in nations at various stages of development, as evidenced by the observation that rank-size and primate city size distributions cannot be accounted for by developmental

conditions alone.<sup>11</sup> Rapid urbanization has been a characteristic of many developing nations where significant social costs, diseconomies of scale in the production of urban services, and resource shifts from purely productive activities have been pronounced.<sup>12</sup> The recurrence of these phenomena has strengthened the misconception that high urbanization rates are developmental in origin.

Historically, regional policies in western nations have assumed two distinct forms:

1. Regional integration policies which are conventional economic development activities aimed at raising incomes, employment, labor force participation and productivity levels of lagging regions. These policies often reinforce the spatial concentration of production if unique regional resource and locational advantages are to be maximized.
2. Regional equalization policies (less conventional) the objective of which is equalization. They are aimed primarily at controlling the size of urban agglomerations.

In the few cases where both types of policies have been systematically linked the results of equalization efforts have strengthened the impact of integration policies. Others, notably France, have had a long but not especially successful history of involvement with efforts to combine the two types of policies.

#### a. regional growth and regional differences

According to communist doctrine regional growth differences are the product of «bourgeois» society in the sense that the hinterlands are dominated by urban centers much like the ruling classes dominate the «proletariat».<sup>13</sup> Early communist writers viewed the spatial separation of «industry» from agriculture as a phenomenon closely related to class differentiation. Thus, excessive spatial concentrations of either agriculture or «industry» were and still are perceived as contradictory to communist goals.

11. B. J. L. Berry, «City-Size Distributions and Economic Development», in J. Friedmann and W. Alonso, *op. cit.*, pp. 138-152.

12. There is a small but well-defined body of literature dealing with the economic effects of over-urbanization. In one study, for example, it is noted that, given Sydney's traffic congestion, each additional resident increases social costs by £32.4. If diverted to the city of Waga, the same person would increase costs by only £0.1. See G. M. Neutze, *Economic Policy and the Size of Cities*, Canberra, The Australian National University Press, 1965.

13. See D. G. Khodzhaev and B. S. Khorev, «The Conception of a Unified System of Settlement and the Planned Regulation of City Growth in the USSR», *Soviet Geography*, 13, 1972, pp. 90-98. Western—especially American—literature, both for and against urban agglomerations, is vast and goes back to the days of Thomas Jefferson. For a brief review of this literature, see E.-G. Vakalo, *A Minimum Expectations Method of Classifying Urban Centers with Special Emphasis on Michigan SMSAs*, unpublished M.R.P. thesis, Cornell University, Ithaca, 1977.

4. A.M. Tideman and G.S. Ronkin, «Regional Planning Problems in the Soviet Far East», *Soviet Geography*, 12, 1971.

5. T. Shabad, «Inter-censal Migration in Major Economic Regions in the RSFSR», *Soviet Geography*, 16, 1975.

4. See H. Perloff and L. Wingo, «Natural Resource Endowment and Regional Economic Growth», in J. Friedmann and W. Alonso (eds.), *Regional Development and Planning: A Reader*, Cambridge, MIT Press, 1964, pp. 224-225.

5. G. Myrdal, *Economic Theory and Underdeveloped Regions*, London, Gerald Duckworth & Co., Ltd., 1957.

6. F. Perroux, *Théories et politique de l'expansion régionale*, Brussels, 1961.

7. G. H. Borts, «The Equalization of Returns and Regional Economic Growth», *American Economic Review*, 1, 1960, pp. 319-374. See also R.E. Baldwin, «Patterns of Development in newly Settled Regions», *Manchester School of Economic and Social Studies*, 24, May 1956.

8. J. G. Williamson, «Regional Inequality and the process of National Development: A Description of Patterns», in L. Needleman (ed.), *Regional Analysis*, Middlesex, Penguin Books, pp. 99-158.

9. J. Friedmann and W. Alonso, «Introduction», in J. Friedmann and W. Alonso (eds.), *Regional Development and Planning: A Reader*, Cambridge, MIT Press, 1964, pp. 10-13.

10. *Ibid.*, p. 6.

The «antagonism» produced by the spatial separation of «industry» from agriculture was originally postulated by Engels.<sup>14</sup> Man is subordinate to nature in the countryside while in the «town» he is unnaturally divorced from it. Engels predicted that in the future, unified system of settlements, man will be merged harmoniously with nature. This position was adopted later by Marx and Lenin,<sup>15</sup> who suggested that, in the process of communist development, differences between urban and rural environments will disappear. They postulated that the merging of agriculture and «industry» can be achieved through:

1. Management of productive forces according to a single, centrally administered set of policies.
2. Achievement of uniform distributions of industry and population.
3. Establishment of strong internal links between «industrial» and agricultural production.
4. Expansion and improvement of transportation networks.
5. Reduction of the population in large urban centers.

With the introduction of the New Economic Plan (NEP) in 1921, the pursuit of Soviet economic regionalization was temporarily suspended.<sup>16</sup> The basic thrust of NEP was to industrialize rapidly the Soviet economy through the concentration of production in sectors and regions with demonstrably superior developmental advantages. Simultaneously, Aleksandr-drov suggested the formation of economic regions. The details were to be worked out by the Kalinin Commission (1921-22) and by the Gosplan's regionalization commission. The GOELRO electrification plan was perhaps the earliest attempt at regional development.

In spite of the advantages centrally planned, Soviet-type economies enjoy over western economies in influencing the spatial allocation of resources and in implementing regional growth policies, efforts to alter existing location patterns have reportedly had little success in the Soviet Union.<sup>17</sup> According to Shabad<sup>18</sup> the

total population outflow from rural areas during the 1950s was 10.9 million in the Russian Republic alone (RSFSR). This figure includes reclassifications of rural places to urban status.<sup>19</sup> During this decade, however, a natural increase of approximately 9.1 million in rural areas offset rural-urban migration. During the 1960s rural-urban migration in the RSFSR increased to 13.5 million. Moreover, the rate of natural increase dropped substantially. Rural population during the 1960-70 period...

«... declined by 6.8 million, or 12 percent, with the rate of decline growing steadily during the decade. The rural population decline results mainly from a decreasing gross birth rate as young people leave for the cities. The 20-29 age group in RSFSR rural areas in 1970 was less than one-half of the 1959 level».<sup>20</sup>

Using data from preliminary press releases of the 1970 Soviet population census, Shabad constructed urban-rural population change matrices for each of the ten economic regions.<sup>21</sup> Table 1 shows these results. As in western economies, rural-urban migration flows appeared to Shabad to reflect perceived employment opportunities and amenities offered by large metropolitan environments.

Soviet reasoning concerning the formation of excessive urban-industrial spatial agglomerations is based on a concept of social cost that is defined as the ratio of productive to non-productive investment. When this ratio is distorted by the presence of large urban-industrial spatial agglomerations, Soviet planners can remedy the imbalance without concerning themselves with the conceptual and operational difficulties of balancing private and social valuations of resource allocation decisions to which western planners have to resort. The concern with balancing private and social valuations of resource allocation decisions which traditionally has been the cornerstone of western regional decentralization policies is perceived by communist regional scientists as a contradiction in western economic thought. Moreover, Soviet authors reject the notion that excessive concentrations of economic activity are a function of location and scale economies. Instead, they attribute spatial concentrations to inefficiently managed by the planning apparatus allocations of economic activity and population. Invariably, solu-

14. See D. G. Khodzhaev and B. S. Khorev, *op. cit.*

15. *Ibid.*

16. For a thorough discussion of the N.E.P., see chapter 4 and especially pp. 49-52 of A. Baykov, *The Development of the Soviet Economic System: An Essay on the Experience of Planning in the USSR*, The MacMillan Co., New York, 1948.

17. K. Mihailovic, «The Regional Aspect of Economic Development», *Eastern European Economics*, 2, Fall-Winter, 1963-64, p. 32. For more recent accounts of some of the problems confronting regional planners in the USSR, see:

1. «The Resolutions of the 24th congress of the Communist Party and the Tasks of the Geographical Sciences», *Soviet Geography*, 13, 1972, pp. 1-7.
2. A. F. Kurakin, «Problems in the Spatial Concentration of Industry», *Soviet Geography*, 16, 1975, pp. 145-154, particularly the reference to M. Bakhrakh's article, «Indices of the Economic Use of a Territory», *Vopr. Ekonomiki*, 6, 1971.
3. A. Batoryov, «Principal Trends in the Development of Urban Places in the Kara Kum», *Soviet Geography*, 16, 1975, pp. 275-281.

18. T. Shabad, «News Briefs», *Soviet Geography*, 16, 1975, pp. 466-472.

19. «Promoting» a rural place to urban status is a common practice in the USSR.

20. T. Shabad, *op. cit.*, pp. 466-467.

21. The 10 major economic regions are: Central, Central Chernozem, East Siberia, Far East, North Caucasus, Northwest, Urals, Volga, Volga-Vyatka, West Siberia. For the location and subregions composing each of these economic regions, see P. B. Slater, «A Hierarchical Regionalization of RSFSR Administrative Units Using 1966-69 Migration Data», *Soviet Geography*, 16, 1975, pp. 453-465 (especially pp. 457-465).

TABLE 1. *Urban-rural population changes between 1959 and 1970 in the RSFSR (in 000's)*

Region	1959		1970			1959-1970		Change Rural
	Total	Urban	Rural	Total	Urban	Rural	Urban	
Northwest	10,805	7,023	3,842	12,157	8,913	3,244	+1139	-883
Central Russian	25,719	15,287	10,432	27,652	19,703	7,949	+3133	-3,015
North Caucasus	11,601	4,961	6,640	14,281	7,106	7,125	+1522	-625
Volga Region	15,975	7,348	8,627	18,373	10,482	7,891	+2079	-2033
Far East	4,834	3,205	1,569	5,781	4,132	1,649	+143	-191
Central Choznem	7,769	2,117	5,625	7,998	3,214	4,784	+844	-1341
Volga-Vyatka	8,252	3,215	5,037	8,348	4,412	3,936	+796	-1621
Urals	14,184	8,863	5,321	15,185	10,440	4,745	+376	-1296
West Siberia	11,251	5,724	5,527	12,109	7,431	4,678	+881	-1668
East Siberia	6,473	3,414	3,059	7,463	4,612	2,851	+2618	-753
RSFSR	117,500	61,600	55,900	130,100	81,000	49,100	+8100	-9800

Notes: The difference between urban and rural net migration represents net migration out of the region. In the case of the entire RSFSR, about 1.7 million people outmigrated to other republics.

Source: T. Shabad, «Intercensal Migration in Major Economic Regions of the RSFSR», *Soviet Geography* 16, September 1975, pp. 466-471.

tions to such problems in the Soviet Union involve «readjustments» of planning mechanisms and authorities. Once «faulty» planning results in spatial over-concentration, shifts in productive investment follow. Non-productive investments increases up to the point when urban demand generated by excessive concentration necessitates the consumption of resources earmarked for productive purposes. Occurrences such as these are labeled «social diseconomies» and are considered detrimental to the development of lagging regions where investment profitability is marginal.

«Social diseconomies» are frequently ignored in western economies, either because social costs are not fully understood and/or specified or because social «losses» are frequently offset by private gains. In western economies, concern with excessive urban-industrial spatial concentrations has traditionally arisen when the balance between their contribution to the Net National Product and their demand on national resources is disturbed in favor of the latter.

In the west this has occurred only in the case of extremely large agglomerations. In contrast, the effect of spatial concentrations of economic activity and population in Soviet-type economies has been much more pronounced probably due to the absence of a private sector. It is conceivable then, that relatively small urban centers in Soviet-type economies can be as costly as much larger urban agglomerations in western economies. For example, Kiev with a 1959 population of 1.3 million, could have the same relative effect on the Soviet national economy as Paris had on the French national economy with a 1960 population of 7.3 million.

As mentioned earlier, Soviet regional policies have been closely linked to the method by which economic

regions are delineated. Concern with the «objective» existence of a region stems from Aleksandrov's notion that regions represent economic areas the size and boundaries of which are determined according to the principle of maximum labor productivity.

Drawing from Lenin's works, Aleksandrov<sup>22</sup> suggested that if a configuration of regional boundaries could be shown to maximize labor productivity it could be assumed that this region had been defined in an economically efficient way. According to Aleksandrov the attainment of regional economic efficiency depends on centrally directed efforts to optimize the spatial distribution and use of natural and human resources.<sup>23</sup> This suggests that the criterion for determining regional boundaries is the presence of an optimum mix of resources insuring maximum labor productivity and hence social product at a number of localities. Moreover, in a static sense, it means that labor and capital should be allowed or induced to locate in existing regions in sufficient amounts to produce the optimum mix. In a dynamic sense, this implies the formulation of a procedure by which capital, being more mobile than labor, can be allocated over time and across space in a way that does not alter an already established optimum resource mix.

For example, as the use of natural resources increases disproportionately to the other factors in a given region, the flow of capital and/or labor can be reduced or increased and diverted into other regions. The size and delineation of regions then depends on a relatively

22. Aleksandrov's work was based primarily on Lenin's *Development of Capitalism in Russia* (1898) and *New Economic Trends in Peasant Life* (1902).

23. For an incisive discussion of a related topic, see A. F. Kurakin, *op. cit.*

fixed factor, the resource stock. Guided by the maximum labor productivity principle, increases in labor and capital eventually diminish regional disparities in labor productivity. When this occurs, the system is fully integrated and regional space becomes national economic space. Furthermore, equalization in labor productivity leads to wage equalization and uniform population distributions.

The notions reflected in the example of the above paragraph have guided Soviet planning efforts and have served as the framework for launching regional developmental efforts in the eastern portion of the country which is rich in natural resources but deficient in labor and capital. These efforts were aimed primarily at the establishment and strengthening of economic links between the East<sup>24</sup> and the West.<sup>25</sup> According to official pronouncements, the labor, capital and technology needed in the East would be imported from the West. In return, the East would supply the West with raw materials and power.<sup>26</sup> As noted above, the success of such efforts depends on the validity of regional boundaries. Predictably, the debate has focused on this issue because failures were attributed to false regional definitions. Persisting urban-industrial spatial concentrations were blamed on the failure of planners to understand the complexities of spatial economic systems. In the voluminous literature concerning these efforts consensus is encountered only in the rejection of western regional delineation schemes.<sup>27</sup> Specifically, the criteria employed by western regional scientists were viewed by most Soviet analysts as «totally irrelevant», expedient and intended solely for the analyst's convenience.<sup>28</sup> Alampiyev,<sup>29</sup> for example, reported that the regional definitions established by Gosplan in 1921-22 rejected...

«...a method, proposed by some specialists, for superimposing a system of purely statistical regionalization schemes, each based on a single criterion. A region is not simply the sum of various factors, but a single economic whole...».<sup>30</sup>

Alampiyev's interpretation of the multivariate character of Gosplan's regional delineation scheme was criticized by Saushkin,<sup>31</sup> who noted that a «single-objective system of regions» exists and that this system is not based on internal economic relations. Saushkin stated that...

«... an economic region is an area with a law-governed combination (complex) of productive forces. The development of the regional territorial complex of productive forces is the basis of the objective process of growth and increasing complexity of the structure of the economic region, the development of the region's national specialization, and its internal and external economic relation».<sup>32</sup>

More recently, some errors committed by Soviet analysts have, in fact, been attributed to their acceptance of Western regional delineation methodologies. Noteworthy examples are Kolosovskiy,<sup>33</sup> who attributed economic regionalization to sociohistorical processes.<sup>34</sup>

Another issue of importance to communist regional growth is that of industrial location. The location of production is linked to the principle of the territorial division of labor which is viewed as promoting maximum productivity. The interesting innovation in con-

pp. 16-26, who used a modified version of the localization coefficient to measure specialization.

3. A. Ye. Probst, «National Income as a Measure of Regional Efficacy», *Soviet Geography*, 15, 1974, pp. 347-352. After criticizing Isard's use of personal income as a growth indicator at the regional level as incompatible with Marxist theory, the author suggests that the use of input output tables could be helpful in measuring «regional efficacy».

4. A. G. Topchiyev, «The Use of Q-Mode Factor Analysis for Regionalization», *Soviet Geography*, 17, 1976, pp. 94-100. The author employs this technique to define agricultural regions in Crimea.

5. V. P. Perepechenko, «Techniques for Investigating the Economic Base of Cities», *Soviet Geography*, 17, 1976, pp. 477-482. Application of economic base theory to 15 small towns in the Vologoda oblast to determine whether the provision of services to these towns is adequate.

29. See P.M. Alampiyev, «The Objective Basis of Economic Regionalization and its Long-Range Prospects», *Soviet Geography*, 2, 1961, pp. 64-74.

30. *Ibid.*, p. 68.

31. See J. G. Saushkin, «On the Objective and Subjective Character of Economic Regionalization», *Soviet Geography*, 2, 1961, pp. 75-81.

32. *Ibid.*, p. 76.

33. N.N. Kolosovskiy, *Principles of Economic Regionalization*, Moscow, 1958. For a criticism of Kolosovskiy's theory of cyclical industrial behavior see A. G. Lis, «On the Question of the Composition of Economic Territorial Complexes», *Soviet Geography*, 16, 1975, pp. 20-27. See also *Journal of Regional Science*, 3, 1961, pp. 1-25.

34. I. I. Belousov, «On the Role of Transportation in Economic Regionalization», in *Problems in the Economics of the Food Industry*, 1957.

24. Programmed in 1921-22 by Gosplan, the East consists of nine regions: West Siberia, Kuznetsk-Altai, Yenisei, Lena-Angora, Yakutia, West Kazakhstan, East Kazakhstan, Central Asia and Far East. Since then there have been several boundary reshufflings. There has also been a tendency toward the creation of more regions.

25. The West consists of twelve regions: Northwest, Northeast, West, Moscow (Central-Industrial), Central-Black Earth, Vyatka-Vetlyga, Mid-Volga, Urals, Southwest, Southern Mining, Southeast and Caucasia.

26. For an account of official views on this topic, see «The Resolutions of the 24th Congress...», *op. cit.*

27. For criticism of the practice of geography in western economies, see J. G. Saushkin's review of D. Harvey's book *Scientific Explanation in Geography: A General Methodology of Science and the Methodology of Geography*, *Soviet Geography*, 16, 1975, pp. 538-546.

28. In spite of these criticisms analytical methods employed by western regional scientists have been used extensively by Soviet analysts in recent years. Noteworthy examples are:

1. A. F. Kurakin, *op. cit.*, who used a modified version of the localization coefficient and Lorenz curves to examine the spatial concentration of economic activity.

2. I. V. Nikolskiy, «The Role of Economic Sectors in the formation of Regional Production Complexes», *Soviet Geography*, 13, 1972,

sidering the «rational» location of production is its labor saving aspects and not transport cost savings. This is consistent with Lenin's concept of industrial location being the locality where minimum labor losses are incurred in passing from one production state to another. In short, these are localities where maximum labor productivity<sup>35</sup> is attained and where the role of transport costs is not predominant. The treatment of transport costs by Soviet regional scientists as a labor-saving device promoting regional specialization is due to constraints imposed by the importance of the role of labor in regional growth.<sup>36</sup> In contrast, according to the western viewpoint, for regional specialization to have meaning, transport costs must be such that regional production exceeding local demand can be exported to other regions thus providing the exporting region with the incentive to specialize. This has been acknowledged by some writers, such as Belousov<sup>37</sup> and Nekrasov,<sup>38</sup> and has led to some skepticism as to whether the labor

productivity criterion reflects regional specialization. It is conceivable that Soviet location theory will ultimately adopt the criteria of transport costs and external economies in some modified form in order to explain the spatial distribution of economic activity in the USSR.<sup>39</sup> The skepticism concerning labor productivity has been encouraged by official pronouncements of the communist party. Apparently perplexed by the similarity between regional development patterns in the Soviet Union and those in western nations, the party broadened the scope of its regional economic policy to prepare for the transition to «full-fledged» communism. One of the pertinent passages states:

«The full-fledged construction of communism requires a more rational location of industry that would insure savings in social labor, integrated development of regions and specialization of their economy, eliminate extreme concentration of population in large cities, promote the elimination of substantial differences between town and countryside, and further equalize the levels of economic development of regions».<sup>40</sup>

The latter portion of this passage could have originated in the Committee for Economic Development describing development policy for the Appalachian region, the French Ministry of Economics complaining about the size of the Paris region, the British Ministry of local government heralding a renewal of interest in new towns or the Cassa per il Mezzogiorno establishing new policy objectives for the Italian South. Similarly, the twenty-fourth Congress of the Communist Party called for accelerated development of the most effective natural resources in the East portion of the USSR coupled with improvement in the «sectoral and spatial» proportion of industry in the West.<sup>41</sup>

#### b. relationship between urban and regional growth

The weakening economic linkages between the east and west portions of the Soviet Union and the continuing disproportionate interregional flows of economic activities which have thwarted spatial integration, have been related recently to Soviet urban growth patterns. Specifically, increasing attention is being focused on rural-urban migration flows.

As of the early 1970s, Soviet planners began to realize that regional industrialization investments

35. Additional references to the problem of regionalization in the USSR can be found in:

1. P. M. Alampiyev, «Tendencies in the Development of Major Economic-Geographic Regions», *Soviet Geography*, 1, 1960, pp.43-51.
2. I. V. Komar, «The Major Economic-Geographic Regions of the USSR», *Soviet Geography*, 1, 1960, pp. 31-43.
3. J. G. Saushkin and T. M. Kalashnikova, «Current Problems in the Economic Regionalization of the USSR», *Soviet Geography*, 1, 1960, pp. 50-60.
4. O. A. Konstantinov, «The Present Status of Economic-Geographic Studies of the Economic Regionalization in the USSR», *Soviet Geography*, 1, 1960, pp. 36-59.
5. V. V. Pokhishevskiy, «The Role of Population Geography in Problems of Economic Regionalization of the USSR», *Soviet Geography*, 1, 1960, pp. 28-35.
6. P. M. Alampiyev, «Problems of General Economic Regionalization at the Present Stage», *Soviet Geography*, 1, 1960, pp. 3-16.
7. A. G. Kurakin, «Economic Administrative Regions, Their Specialization and Their Integrated Development», *Soviet Geography*, 3, 1962, pp. 29-38.
8. A. M. Moshkin, «What is a Territorial Complex?», *Soviet Geography*, 3, 1962, pp. 49-55.
9. Ya. G. Feygin, «Problems in Improving the Regionalization of Production and Consumption of Industrial Output», *Soviet Geography*, 5, 1964, pp. 33-38.
10. I. V. Nikol'skiy, *op. cit.*
11. Ye. Ye. Leyzerovich, «Key Problems in Economic Microregionalization», *Soviet Geography*, 15, 1974, pp. 81-93.
12. M. M. Ismailova, «On the Comparative Effectiveness of the Economic Structure of Regions», *Soviet Geography*, 15, 1974, pp. 341-346.

For a quick review the reader is also referred to: V.M. Gokhman and Ur. G. Lipets, «Some Trends of Soviet Regional studies», *Papers of the Regional Science Association*, 18, 1966.

36. J. G. Saushkin, «The Construction of Economic Models of Regional and Local Territorial-Production Complexes», *Soviet Geography*, 2, 1961, pp. 60-66. In this article, Saushkin is presumably quoting from Lenin's *Draft of a Plan for a Scientific and Technical Work*.

37. I. I. Belousov, «Transportation and the Formation of Economic Regions», *Soviet Geography*, 5, 1964, pp. 19-23.

38. N. N. Nekrasov, «Scientific Principles for a General Long-Range Scheme of Location of the Productive Forces in the USSR», *Soviet Geography*, 5, 1964, pp. 13-18.

39. A. Ye. Probst, «Calculation of the Economic Effect of Regional Productive Specialization», *Soviet Geography*, 5, 1964, p. 34. See also M. M. Ismailova, *op. cit.*

40. P. M. Alampiyev, «New Aspects of the Location of Production in the Period of the Full-Fledged Construction of Communism», *Soviet Geography*, 3, 1962, p. 50.

41. «The Resolutions of the 24th Congress...», *op. cit.* Also see O. V. Larmin, V. M. Moiseyenko, and B. S. Khorev, «Social Demographic Aspects of Urbanization in the USSR», *Soviet Geography*, 13, 1972, pp. 102-103.

strengthened the domination of large urban centers over rural and quasi-urban areas. This was accompanied by apparent reductions in the investment of resources toward «social development» of these areas.<sup>42</sup> On the surface, this suggests that efficiency considerations like transport cost economies, proximity to sources of primary inputs, and access to large pools of skilled, mostly (urban) labor have taken precedence over the objective of maximizing the productivity of social labor. However the resolutions of the 24th Communist Part Congress specifically forbade further relocations of industrial activity in large urban centers and explicitly placed greater emphasis on improving the level of living. The emerging policy appears to favor the development of a large group of cities that could become regional production or service centers within *oblasts*.<sup>43</sup> These are to function as major destinations of migration from rural areas. The hope appears to be that they will ultimately develop into «a middle-level managerial structure» between the oblast capital and the administrative seats of *rayons*.<sup>44</sup>

The major disequilibrating force in the Soviet network of urban centers then appears to be the movements of population who respond less to employment opportunities and a great deal more to real or perceived high standards of living rather than the efficiency of major industrial investments. The resulting demographic imbalance is not so much an economic threat—in the sense that production levels of existing industries may be compromised—as it is an impediment to economic growth projects for which the requisite amounts of labor cannot be secured. This is crucial to Soviet economic development as the demands of the extractive and energy sectors, and the subsequent opening of underexploited territories intensify over time.

Data on population distributions in the Soviet Union are scarce. The available fragmentary information reveals large disparities not only among regions within a given republic but also between oblasts and their cor-

responding urban centers and rural hinterlands.<sup>45</sup> In general, it seems that the Soviet Union is considerably less urbanized than most economically advanced nations. As of 1970, about 56 percent of its population lived in urban places. The share of the seven largest cities of the population living in the cities of more than one million people fell from 60 percent in 1926 to 23.4 percent in 1970.<sup>46</sup> Within regions and oblasts maldistributions are more pronounced. For example, in 1961 Leningrad, the second ranking urban center, accounted for 82 percent of the industrial output of the entire Leningrad economic region. During the same year, Yaroslavl', the thirty-fifth ranking center, accounted for 70 percent of the industrial output of the Yaroslavl' oblast. As a matter of fact, among the forty largest Soviet urban centers, none accounted for less than 50 percent of the industrial output of their corresponding oblasts. Even more disconcerting is the fact that per capital industrial output in major Soviet urban centers is two to three times greater than the national average.

The highest concentration of economic activity can be observed in the Central region.<sup>47</sup> In 1961, for instance, the city of Moscow and the Moscow oblast alone accounted for 29 percent of the national cotton textile output. At the same time, the Central region was producing 36 percent of the nation's machinery output, 80 percent of its cotton cloth, and 50 percent of its chemicals. Perhaps, more significantly, this region accounted for 78 percent of the national construction activity in spite of the ban on construction activities in urban centers like Moscow. While the Central region appears to be economically robust, some of its oblasts exhibit low levels of industrial development, others appear to be losing population and still others display the paradox of surplus agricultural labor force with a relatively high percentage of farmers abstaining from state-owned farms that guarantee employment.<sup>48</sup>

More recent information substantiates the suspicion that spatial concentrations of population and economic activity in the Soviet Union persist in spite of official efforts to reduce them. Specifically, Kurakin's calculations of the spatial concentration of industrial activity revealed low concentrations in the eastern portion of the USSR. Specifically, the Central economic region exhibited a coefficient of concentration of 3.7, while East Siberia and the Far East had coefficients of .11 and .06, respectively.<sup>49</sup> Another writer, Mayergoyz, compared the Far East with the American West (the state of

42. A. M. Tideman and G. S. Ronkin, «Regional Planning Problems in the Soviet Far East», *Soviet Geography*, 12, 1971, pp. 124-132. V. V. Pokshishchevskiy, «Social-Geographic Problems in the Regulation of Settlement Systems in a Developed Socialist Society», *Soviet Geography*, 14, 1975, pp. 28-40. V. S. Leont'ev, «On the Linkage Between the Demographic Processes and Economy of a Region (with particular reference to Pskov Oblast)», *Soviet Geography*, 13, 1972, pp. 569-573 and K. P. Kosmachev and K. M. Losyakova, «Graph Modeling of the Evolution of Structures of Territorial-Production Complexes in New Pioneering Areas», *Soviet Geography*, 17, 1976, pp. 468-476. The latter paper proposes a methodology that can predict the structure of urban places based on initial decisions concerning the location of production projects.

43. Hierarchically, oblasts constitute the largest planning unit in the Soviet Union. They are succeeded by *okrugs*—equivalent to civil divisions—*rolots* and *rayons*.

44. O. V. Larmin, V. M. Moiseyenko and B. S. Khorev, «Social-Geographic Aspects of Urbanization in the USSR», *Soviet Geography*, 13, 1972, pp. 99-108.

45. The source of this information is Ye. N. Slastenko, *op. cit.* Each region consists of several oblasts. Some oblasts are composed of a single urban center, as in the case of Leningrad.

46. D. G. Khodzhaev and B. S. Khorev, *op. cit.*

47. The Central region consists of the city of Moscow and the following oblasts: Bryansk, Vladimir, Ivanovo, Kalinin, Kaluga, Kostroma, Moscow, Orel, Ryazan', Smolensk, Tula and Yaroslavl'.

48. Ye. N. Slastenko, *op. cit.*, pp. 26-27.

49. A. F. Kurakin, *op. cit.* His data are for 1969.



California).<sup>50</sup> He noted that even though the two areas exhibit significant resource allocation similarities the Far East section of the Soviet Union accounted for only 2 to 2.5 percent of its total population and industrial production while California contained 12 to 15 percent of the population and industrial production of the United States and was second only to New York State. Vorob'yev suggested that until the year 2000 net immigration to the Soviet East will not contribute significantly to its supply of labor.<sup>51</sup> This is due to the fact that past labor surpluses from the West no longer exist and also because poor living and climatic conditions are deterrents to eastward migration flows. An example of the conditions prevailing in the East was provided by Merkusheva and Veronkova.<sup>52</sup> As of 1969 the Irkutsk oblast had a mean population density of 3 persons per square kilometer.<sup>53</sup> The maximum difference, however, between mean population densities among the subregions (rayons) composing the oblast was 50. For example, the Irkutsk rayon, had 32.7 percent of the oblast's population but accounted for only 1.9 percent of its area. Similarly, 11 percent of the population was concentrated in the Bratsk rayon, which accounted for 4.3 percent of the area of the same oblast.

It is not entirely clear how Soviet authors interpret the consequences of spatial concentrations of economic activity and population. Less politically oriented regional scientists attribute the weakening of socioeconomic interregional links, slowing down of regional specialization trends and the polarization of employment opportunities across space to spatial concentrations. These factors are perceived as obstructing efforts to develop the Soviet East. More politically oriented writers have blamed the spatial maldistribution of population and economic activities for slowing down the State's transition from socialism to «full-fledged» communism. Predictably, this charge affected the formulation and implementation of policy by Gosplan and, in a way, precipitated the Communist Party's pronouncements concerning long-range regional growth policy.

It is interesting to note that the definitions of excessive spatial concentrations formulated by Soviet authors are dependent on the notion of optimum city size. Appropriately, this notion is shared by proponents of urban decentralization in western economies.<sup>54</sup> As a

TABLE 2. Population of the 40 largest Soviet Urban Agglomerations and Other Related Data, 1961

Central City	Population (in 000's)	Number of cities		Population of Satellites (As a % of Agglomeration)
		Central Places	Satellite Cities	
Moscow	7,884	40	132	36%
Leningrad	3,579	13	52	19
Danetsk	1,409	9	43	50
Gorkiy	1,372	6	25	31
Kharkov	1,322	6	47	30
Kiev	1,281	6	18	14
Kuybyshev	1,134	5	10	29
Tashkent	1,070	2	9	14
Baku	1,025	1	47	38
Dnepropetrovsk	1,001	5	17	34
Chelyabinsk*	987	3	4	30
Sverdlovsk*	971	3	23	19
Novosibirsk	944	1	4	6
Kazan	780	X	X	18
Tbilisi	773	X	X	10
Volgograd	701	X	X	16
Saratov	697	X	X	17
Gorloulka	634	X	X	57
Perm	682	X	X	8
Odessa	675	X	X	2
Rostov-on-Don	664	X	X	10
Riga	664	X	X	6
Nadiyevka	602	X	X	70
Omsk*	579	X	X	12
Minsk*	575	X	X	11
Karaganda*	571	X	X	30
Yerevan	547	X	X	7
Ufa	546	X	X	44
Tula	545	X	210	36
Novokuznetsk	506	X	X	26
Voronezh	496	X	X	9
Alma-Ata*	472	X	X	3
Zagorozhye	465	X	X	6
Lvov	460	X	X	11
Yaroslavl'	452	X	X	10
Krivoy Rog	451	X	X	14
Kramatorsk	420	X	X	73
Krasnoyarsk*	417	X	X	2
Vladivostok*	413	X	X	31
Prokopyevsk	411	X	X	31%

\* These cities are located east of the Urals in the Soviet East.

X means that, first, no central places exist outside a particular central city, and second, people living out of central cities do not live in settlements large enough to be called «satellite cities». The case of the city of Tula, with 210 satellite cities, is not explained in Davidovich's text. The suspicion is that since Tula is the only large city in its region all smaller settlements are somehow assigned to its gravitational field.

Source: V. G. Davidovich, «Urban Agglomerations in the USSR», *Soviet Geography*, V, No. 9 (November 1964), and «Satellite Cities and Towns of the USSR», *Soviet Geography*, III, No. 3 (March 1962).

matter of fact, the Symposium of Planning and Development of New Towns, held in Moscow in 1964 and sponsored by the ILO, UNESCO and WHO, produced a number of policy recommendations for new

54. For a brief review of some criticisms of American literature on optimum city size, see E.G. Vakalo, *op. cit.*, pp. 35-38.

50. I. M. Mayergoz, «The Unique Economic-Geographic Situation of the Soviet Far East and Some Problems of Using It Over the Long Term», *Soviet Geography*, 16, 1975, pp. 428-434.

51. V. V. Vorob'yev, «The Population Dynamics of East Siberia and Problems of Prediction», *Soviet Geography*, 16, 1975, pp. 584-593.

52. L. A. Merkusheva and T. B. Voronkova, «On the Geographic Study of Social Dynamic Systems», *Soviet Geography*, 16, 1974, pp. 99-104.

53. The Irkutsk oblast is part of the East Siberia economic region.

towns to which both western and communist planners subscribed fully.

On the basis of sanitation requirements, living conditions, commuting patterns and municipal facilities, Davidovich established the optimum size of the average «satellite» city between 30,000 and 80,000 persons. Industrial «satellite» or central cities could have populations ranging between 100,000 and 400,000.<sup>55</sup> In fact, the average urban center (industrial «satellite») in the USSR had a population of 234,000 and the average size of «satellite» cities was 30,200. Therefore, both are within their respective acceptable ranges. More recently, in connection with official efforts to reverse the growth of large urban centers through the use of satellites, it has been proposed that optimum population size for satellite cities be set at 100,000 and that they should be settled so that no more than two hours of commuting time elapse on any trip from perimeter to center.<sup>56</sup>

Table 2 attempts to organize information that is useful in obtaining a clearer view of Soviet urban center size distributions. Several conclusions can be drawn from this table. First, Soviet city size distributions are of the intermediate type, due largely to the size of Moscow and Leningrad. Second, the ratio of population in central cities to the size of the total agglomeration is not related to agglomeration size. Third, for the

thirteen largest urban centers, the number of «satellite» cities appears to be related to the size of the agglomeration. In contrast, the total number of «satellites» (that is, cities and towns) is not related to agglomeration size. Perhaps the degree of economic diversification of the central city portion of the entire agglomeration can account for the number of «satellites» attached to the central city. This may be due to the higher stratification of employment, along income lines which may, in turn, be producing «satellite» cities specializing in meeting different housing, cultural, social and economic requirements of people with diverse means. Though there are no data substantiating such a hypothesis, Davidovich does mention that the economic functions of central cities and their satellites are complementary. Significantly, «day-time» populations increase drastically in larger central cities because about 30-42 percent of the residents of «satellite» cities commute to work.

In conclusion, it appears that spatial concentrations of economic activity and population are as common in the Soviet Union and Soviet-type economies as in several western economies. Moreover, in spite of disclaimers voiced by some Soviet regional scientists and geographers, significant similarities seem to exist between the analytical methods and techniques they employ and those used by their western counterparts. From the admittedly limited, both in breadth and depth, information available, neither the strong ideological foundation on which regional policy is based in the USSR nor the advantages inherent in centrally directed planning have ameliorated the problem. This may be interpreted as, among other things, further indication of the existence of systemic properties underlying the magnitude and spatial distribution of economic activities and population. It is quite possible that neither political ideology nor the type of planning practiced can alter these properties.

55. V. G. Davidovich, «Satellite Cities and Towns of the USSR», *Soviet Geography*, 3, 1962, pp. 3-35. The distinction between «satellite» and «industrial satellite», is that the former is a commuters' city while the latter has a manufacturing economic base and is primarily a place of employment. English translations of Russian texts often use the term «urban agglomerations» to denote smaller urban systems of either of the above varieties.

56. F. M. Listengurt, «Criteria for Delineating Large Urban Agglomerations in the USSR», *Soviet Geography*, 16, 1975, pp. 559-569. The term «monocentric» is frequently used by Soviet writers to characterize the presence of a large city which dominates the economic and social activities of a cluster of smaller settlements.