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TRANSCAUCASIA SINCE STALIN--THE ECONOMIC DIMENSION

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I. Introduction

From the beginning, the policies of the Soviet government have aimed at rapid economic development in all of its constituent republics. In practice, these policies have entailed high rates of capital formation and an overriding priority for the industrial sector in the allocation of labor and investment resources. The three republics of Transcaucasia, despite relatively poor resource endowments, have undergone rapid economic development as a consequence. In the years before 1950, industrial growth in Georgia and Armenia exceeded that for the USSR as a whole, and agricultural output in all three republics far outpaced the national average growth. Characteristically, rapid economic growth was fuelled by large infusions of investment and labor. In Azerbaidzhan, well over half of total investment was allocated to industry; the share was about a third in Armenia and about 30 percent in Georgia. Despite substantial industrial growth -- from a very low base--, Transcaucasia was still relatively underdeveloped in 1950, with over half of the labor force still occupied in agriculture.

In the post-war period, Soviet policy has continued to foster industrial growth and high rates of capital formation in all republics, but also has accorded relatively greater priority to the development of agriculture and to raising levels of living of the population; both sectors had made little advance under Stalin. The purpose of this paper is to assess the course of economic development in Transcaucasia since 1950. Section II will examine economic growth and the structural change that has occurred, Section III discusses the

allocation of labor and investment and their productivity. Section IV assembles the evidence regarding changes in the level of living of the population, including an assessment of the impact of the illegal or "second" economy on incomes and consumption as conventionally measured. A final section aims to assess the nature and rationality of Soviet government policies in respect to Transcaucasia, to the extent that the murky evidence permits.

The pace of economic development in Transcaucasia is constrained by its natural resource endowments. The three republics occupy somewhat less than 1 percent of the total territory of the USSR and have a little over 5 percent of its population, a share that has risen slowly over the years. The region is largely mountainous, a fact that limits agriculture and hampers the development of land transportation. Mineral wealth consists mainly of the oil deposits in Azerbaidzhan, now being depleted, and of important manganese deposits in Georgia. The region's subtropical climate makes it a leading producer of tropical fruits and permits the growing of other fruits and vegetables, as well. In 1975, Transcaucasia accounted for 3.8 percent of total national income (Soviet concept), 3.6 percent of net industrial output and 5.3 percent of all oil and gas, 22 percent of the manganese ore, 3.4 percent of the electric power and 7.7 percent of the grape wine. In respect to crops, the region produced 5.7 percent of cotton (Azerbaidzhan), 5.6 percent of the vegetables, 16.2 percent of all fruits and berries, and virtually all of the tea. Throughout the Soviet period, economic development has sought to capitalize on the region's natural endowments, and industrialization has involved the development of a rather wide variety of activities related in part to natural resources. Nonetheless, the region must import much of its grain, some energy and many manufactures.^{1/}

II. Economic Growth and Structural Change, 1950-1978

A. The Pace of Development

Economic development has proceeded rapidly in Transcaucasia in the postwar period (Table 1). By Soviet measures, gross industrial output rose during 1950-1978 at an average annual rate of 8.2 percent in Georgia, 9.9 percent in Armenia, and 7.4 percent in Azerbiadzhan.^{2/} On a per capita basis, however, industrial growth in all three republics was well below the average for the USSR as a whole. Even so, per capita industrial output expanded over 6-fold in Georgia and Armenia and over 3-fold in Azerbaidzhan. Agricultural production tripled in all three republics, but rapid population growth reduced these gains markedly on a per capita basis; only Georgia exceeded the national average growth rate. Although the growth of total national income (net material product) provides a more comprehensive measure of development, data are available for only a part of the period. As shown in Table 1, the growth of national income, both total and per capita, in Georgia and Armenia exceeded the national average during 1960-1978, while Azerbaidzhan lagged behind on both measures. Judging from the growth of industrial and agricultural output during the 1950's, it is probable that Transcaucasia lagged the national average for the period as a whole, given the fact that these sectors account for the bulk of national income. It would seem that national income per capita must have grown at an average annual rate of about 3 percent in Azerbaidzhan and about 5.5 percent in Georgia and Armenia, compared with 6.3 percent for the USSR. In comparing these growth rates with those in other countries, it must be kept in mind that Soviet official measures considerably overstate the real growth in output.

Despite fairly rapid progress in most areas, the republics of Transcaucasia lag behind the national average and most other republics in terms of levels of

Table 1

Indicators of Pace and Relative Level of Economic Development in Transcaucasia, 1950-1978

I. National Income

	Total				Per Capita				Relative Levels Per Capita
	1950	1960	1970	1978	1950	1960	1970	1978	1975
USSR	100	199	304		100	176	249		100
Georgia	100	194	310		100	172	256		76
Azerbaidzhan	100	164	254		100	124	187		65
Armenia	100	235	418		100	174	262		85

II. Industrial Production

	Total				Per Capita				Relative Levels Per Capita
	1950	1960	1970	1978	1950	1960	1970	1978	1975
USSR	100	304	690	1146	100	255	512	788	100
Georgia	100	249	538	904	100	211	403	631	61
Azerbaidzhan	100	204	396	744	100	152	222	365	56
Armenia	100	315	850	1403	100	228	457	638	88

III. Agricultural Production

	Total				Per Capita				Relative Levels Per Capita
	1950	1960	1970	1978	1950	1960	1970	1978	1976-78
USSR	100	163	224	262	100	137	166	180	100
Georgia	100	137	213	294	100	116	159	205	79
Azerbaidzhan	100	149	195	334	100	111	109	164	67
Armenia	100	174	242	318	100	126	130	144	54

Sources: Indexes of national income and industrial production are derived from Narkhoz USSR, 1970, pp. 139, 534 and Narkhoz USSR, 1978, pp. 123-124, 386.

Indexes of agricultural production are derived from Narkhoz USSR, 1922-1972, p. 221 and Narkhoz USSR 1978, p. 197.

Relative levels of national income and net industrial output were calculated from data in Narkhoz USSR, 1978, p. 386; Narkhoz Gruzinskoi SSR K 60 letiu velikogo oktiabria, 1977, p. 149; Narkhoz Azerbaidzhanskoi SSR, 1975, p. 262; Narkhoz Armianskoi SSR, 1975, p. 192; and V.K. Airapetian, Otraslevaia Struktura Promyshlennosti Armianskoi SSR; tendentsii eye razvitia, Yerevan, 1978, p. 198. Relative levels of gross value of agricultural output were calculated from data in Narkhoz USSR, 1978, p. 198.

Population data in this and other tables are taken from Godfrey S. Baldwin, Population Projections by Age and Sex for the Republics and Major Economic Regions of the USSR, Bureau of the Census, International Population Reports, Series P-91, No. 26, September 1979. For years after 1975, they are taken from Narkhoz USSR 1977, pp. 10-11 and Narkhoz USSR, 1978, pp. 10-11.

economic development. Armenia, the most advanced of the group, had a level of national income per capita 17 percent below the national average in 1975; the Georgian level was about three quarters and that of Azerbaidzhan about two thirds. In terms of industrial output per capita, levels in the latter republics were considerably lower, while the relative position of Armenia was somewhat higher. All three republics have improved their relative positions a little in the 1970's in respect to national income and agricultural production; Georgia and Azerbaidzhan have also done so in respect to levels of industrial production. Over the period as a whole, however, the relative position of Transcaucasia evidently has deteriorated.

B. Structural Changes

Economic development typically is reflected in well-defined shifts in the structure of the economy. These shifts are expressed in changes in the composition of the labor force and in the composition of national output. The pattern characteristic of modern economic growth everywhere is a transfer of labor from primary activities (agriculture forestry and fishing) into secondary activities (manufacturing and construction) and also into tertiary activities (trade and services). Concomitantly, the share of primary sectors in total national product tends to fall, accompanied by an increase in the shares of the other sectors.^{3/} These familiar structural changes are clearly visible in the development experience of the Transcaucasian republics. Table 2 provides data on the percentage distribution of the labor force by sector during 1950-1975. In 1950, approximately half or more of the labor force was occupied in agricultural and related activities; the shares would be considerably higher, if private agricultural activity could be included. These republics were more agriculturally oriented than the average for the country as a whole. All three experienced fairly rapid

Table 2

Labor Force and Investment in Transcaucasia
1950-1978

I. Labor Force

	Total (000)			Distribution (Percent)								
	1950	1960	1975	Industry and Construction			Agriculture and Forestry			Services		
				1950	1960	1975	1950	1960	1975	1950	1960	1975
USSR	68,020	107,186	117,560	27	34	38	46	39	22	26	31	40
Georgia	1,214	1,437	2,091	21	26	27	52	40	31	27	34	42
Azerbaïdzhan	1,054	1,224	1,809	24	26	28	49	43	30	27	31	42
Armenia	444	599	1,084	24	32	38	50	35	20	26	33	42

II. Investment Per Capita

	1951-60	1961-70	1971-78	1951-60	1961-70	1971-78
	Rubles per Capita			Relative Levels		
USSR	1261	2579	3438	100	100	100
Georgia	888	1773	2188	70	69	64
Azerbaïdzhan	1388	1887	2087	110	73	61
Armenia	993	2532	2680	79	98	78

Sources: Labor force data refer to state employment plus employment on collective farms. They do not include private employment in agriculture. The data were taken from Stephen Rapawy, "Regional Employment Trends in the U.S.S.R., 1950 to 1975," in Joint Economic Committee, Soviet Economy in a Time of Change, Washington, 1979, pp. 603-608.

Total investment in 1969 estimate prices was taken or derived from data given in Narkhoz USSR, 1960, pp. 599, 602; Narkhoz USSR, 1965, pp. 538; Narkhoz USSR, 1967, p. 625; Narkhoz USSR, 1969, p. 509; Narkhoz USSR, 1970, p. 488; Narkhoz USSR, 1975, p. 513; Narkhoz USSR, 1978, p. 349. The investment data on 1976-78 in rubles have not been adjusted for the minor price changes made in 1976.

declines in the share of the labor force in primary activities. In Georgia and Azerbaidzhan, however, the process was slower than the average for the USSR and much slower than in Armenia. In 1975, about two-fifths of the labor force (allowing for estimated private activity) was still engaged in agricultural and related pursuits in Georgia and Azerbaidzhan. Armenia, in contrast, had only about 30 percent of its labor force in that sector. While the share of the secondary sector (manufacturing and construction) rose substantially in all three republics, the increase was most rapid in Armenia. Here, the tertiary sector expanded somewhat faster than the secondary sector, but in the other two republics the difference was much greater. As a whole, Transcaucasia had a somewhat larger share of its labor force employed in services than did the USSR as a whole.

Similar structural shifts are reflected in the pattern of output by producing sector. Unfortunately, the relevant data in respect to Transcaucasia are available for only a part of the period. Change in the composition of output proceeded very slowly in Georgia. Thus, during 1960-1976, the share of the A-sector in national income fell from 31.7 percent to 28.6 percent, while the M-sector rose from 51.7 percent to 51.8 percent, and the share of the S-sector rose from 18.6 percent to 19.6. During 1965-75, the A-sector in Azerbaidzhan retained its share of about one fourth of total national income; the M-sector's share declined from 59 to 57 percent, and the share of the s-sector rose a little. Structural change evidently was much more rapid in Armenia. During 1970-1975, for example, the A-sector dropped from 12.7 percent to 9 percent, while the M-sector rose from 75.7 percent to 77.6 percent and that of the S-sector from 11.6 to 13.4 percent. As compared with the average for the USSR, Georgia and Azerbaidzhan were relatively less industrialized by this measure, and Armenia

relatively more so. Except possibly in Armenia, the pace of structural change, most notably in the slow release of labor from agriculture, has been rather slow in the postwar period by comparison with other countries at similar levels of development.

Industry. Since industrialization is often the focus of economic development, a more detailed look at the industrial sector in Transcaucasia is warranted. As already noted, these republics lack many of the natural resources that are required for modern industry. This situation has not prevented the siting of a diversified array of industrial activities there, including those in heavy industry. Both Azerbaidzhan and Georgia have small steel industries, despite meager supplies of raw materials (except iron ore and manganese in Georgia) and high transport costs. Industrial development in Azerbaidzhan has been much influenced by its diminished status as an oil producer; the gradual depletion of the oil fields near Baku and the Caspian Sea accounts in part for the republic's relatively slow industrial growth. Oil production has been declining in recent years, although natural gas production has risen sharply. The republic has a sizeable machinery and petrochemical industry centering around these fuels. Armenia, too, has developed a sizeable machinery industry, producing electrical equipment, motors, machine tools and many other types of machinery. That branch accounts for a larger share of total industrial output and employment in Armenia than in the other two republics and is about at the USSR average.

Considerable structural change has occurred in Transcaucasian industry in the postwar period. Although the required data are incomplete, the picture is clear. All three republics have shifted from being largely producers of consumer goods to having a diversified product mix, with considerable capacities for machinery production. Nonetheless, the light and food branches account for a larger share

of product and employment in Transcaucasia than in the USSR as a whole. Data are available for Georgia and Armenia in respect to the relative shares of the several branches in total gross value of output.^{4/} In 1950, the light and food branches accounted for 68.2 percent of the total in Georgia and 61 percent in Armenia while machinery and metalworking accounted for 8.9 and 5.9 percent, respectively. In 1975, the shares of the former had dropped to 59.8 and 42.0, and the shares of the latter had risen to 12.7 and 27.8 percent, respectively. In the USSR as a whole in 1975, the light and food industries accounted for 53.9 percent of total output, and machinery and metalworking accounted for 27.8 percent.^{5/} Similar shifts have taken place in the pattern of employment. Nonetheless, in 1975, one-quarter of the industrial labor force was employed in light industry in each Transcaucasian republic, compared with only 15 percent in the USSR as a whole.^{6/} The machinery industries employed 24 percent of the industrial labor force in Georgia and Azerbaidzhan and 40 percent in Armenia, about the same as for the USSR. As is to be expected, the food industry is a major employer in Georgia, as is the fuels industry in Azerbaidzhan.

Agriculture. Despite geographical handicaps, the republics of Transcaucasia possess a rather diversified agriculture. Half of the sown acreage in Georgia and Azerbaidzhan and 40 percent in Armenia is devoted to grain, including wheat and forage crops. Azerbaidzhan is a leading producer of cotton, and Georgia produces nearly all of the tea grown in the USSR. All three republics grow potatoes and a variety of vegetables. Each one is an important producer of fruits and berries; the region as a whole supplies better than a sixth of all such products, including over one-fourth of all grapes. Each republic also has a modest size livestock sector, and the region produces about 4 percent of the nation's wool.

A notable feature of the agricultural sector in Transcaucasia is the relatively large role of the private sector. In 1975, for example, the sector accounted for about two-fifths of agricultural employment and produced some 46 percent of total output in Georgia.^{7/} In Azerbaidzhan the share of output was 28 percent. In that year, nearly one-eighth of total sown acreage in Georgia and nearly one-tenth in Armenia was privately farmed. Compared with a private share of about one-fifth of all livestock herds in the USSR as a whole, the shares were over half in Georgia, about two-fifths in Azerbaidzhan and about one third in Armenia.^{8/} In Georgia, 64 percent of fruits and berries and 51 percent of vegetables were produced privately; in respect to livestock products, the sector produced 64 percent of the meat, 54 percent of the milk, 43 percent of the eggs and 46 percent of the wool -- all considerably above the average for the USSR. The picture is more varied for the other two republics, but in both of them the private share exceeded the national average for meat, eggs and wool. In Georgia in 1976, sales of food on collective farm markets were 14 percent of total retail sales of food, compared with only 4.5 percent for the USSR.^{9/} Although the share of the private sector in total output has been declining, the rate of decline in Transcaucasia seems to have been much slower than for the rest of the USSR.^{10/}

III. Investment and Productivity

Total investment has grown steadily and rapidly in Transcaucasia throughout the postwar period, but the republics have fared rather differently.^{11/} During 1950-1978, total investment rose at an average annual rate of 6.2 percent in Azerbaidzhan, 7 percent in Georgia and 8.8 percent in Armenia; the rate for the USSR was 8.7 percent. In each republic, the growth rate was the same in the 1960's as in the 1950's, despite a considerable slowing

of the national average rate. In the 1970's, investment rates slowed in Transcaucasia, as well as in the USSR as a whole. Growth in Georgia and Azerbaidzhan was somewhat below the national average, but the rate was sharply lower in Armenia -- 3 percent compared with 6 percent. Thus, it is clear that Soviet policy has fostered a high rate of investment in Transcaucasia, despite its relatively poor natural endowments from the point of view of industrialization. When population growth is taken into account, however, the region fared less well. As the data in Table 2 indicate, investment per capita has been well below the national average in Georgia throughout the period, and the relative position of Azerbaidzhan has greatly deteriorated. In Armenia, per capita investment, nearly equal to the national average in the 1960's, has returned to a level of about four-fifths, also its position in the 1950's.

The allocation of investment has differed considerably among the three republics of Transcaucasia. Over the entire period 1918-75, the priority sector, industry, has claimed 45 percent of the total in Azerbaidzhan, 35.6 percent in Armenia, -- about the same as the USSR average--and 29.8 percent in Georgia. In the postwar period, industry's share has been gradually declining in each republic, as in the USSR also. Agriculture has claimed 16.7 percent of all investment during 1918-75 in the USSR and in Azerbaidzhan, 15.5 percent in Armenia and 21 percent in Georgia. Agriculture's share has been rising since 1950; in the Ninth Five Year Plan (1971-75) the sector claimed 23.7 percent of the total in Georgia, 21.4 percent in Azerbaidzhan and 16 percent in Armenia. Judging from incomplete evidence, the sector's share probably continued to rise during 1976-1979. The rest of investment was absorbed by the construction, transportation and service industries. In general, their shares have been rising slowly in all republics since 1950. Georgia and Armenia have devoted a

somewhat larger share of investment to housing than has the USSR as a whole; in Azerbaidzhan, the share has been considerably smaller. Reflecting Khrushchev's policy changes, the share of total investment devoted to housing rose sharply everywhere during 1956-60, but has been declining since then. In 1978, housing claimed only 9.4 percent of total investment in Azerbaidzhan, 14.3 percent in Georgia and 15.5 percent in Armenia. About one fifth of the total represented private housing.

Relatively poor natural endowments, coupled with below average allocations of investment, help to explain the relatively low levels and rates of growth of productivity in Transcaucasia. Measured by national income per worker in 1975, productivity was 75 percent of the national average in Georgia, 80 percent in Azerbaidzhan and 89 percent in Armenia.^{12/} All three republics exceeded the national average in industrial productivity per worker, largely because of the relatively high share of light and food industries in the total; the products of these industries bear high turnover taxes, thus raising their gross value of output. In respect to agricultural output per worker, however, all three republics had values in 1975 less than two-thirds of the national average. Data concerning rates of growth of labor productivity in industry and agriculture are shown in Table 3. Over the period 1951-78, industrial labor productivity in Transcaucasia grew much more slowly than in the nation as a whole. The divergence was much larger in the first two decades of this period. During 1971-78, the growth of labor productivity in Georgia and Azerbaidzhan exceeded the national average, and in Armenia growth was only a little below the average. The reasons for this relative improvement evidently differ among the three republics; to sort out the complex factors is beyond the scope of this paper. A similar phenomenon has taken place in agriculture. In the 1950's, the growth of labor productivity on state and

Table 3

Indicators of Productivity in Transcaucasia

I. Indexes of Labor Productivity in Industry

	1950	1960	1970	1978	Average Annual Rate of Growth 1951-1978
USSR	100	204	339	506	6.0
Georgia	100	167	268	402	5.1
Azerbaidzhan	100	166	238	367	4.7
Armenia	100	178	269	385	4.9

II. Percentage Increase in Labor Productivity in Agriculture

	1951-60		1961-70	1971-78	1961-78
	State Farms	Collective Farms	State and Collective Farms	State and Collective Farms	State and Collective Farms
USSR	72	88	63	28	109
Georgia	3	46	42	46	107
Azerbaidzhan	18	24	38	38	90
Armenia	-31	71	42	23	75

Sources: Indexes of industrial labor productivity (output per worker) are taken from Narkhoz USSR, 1970, p. 363 and Narkhoz USSR, 1978, p. 128.

Data on the growth of labor productivity (output per worker) in the socialized sector of agriculture are taken from Trud. v SSSR, pp. 169-70; Selskoe Khoziaistvo SSSR, 1970, p. 424; Narkhoz SSSR, 1978, p. 284.

collective farms in Transcaucasia was far below the national average. During the 1970's, in contrast, the growth of labor productivity in the public sector rose considerably faster than the national average in Georgia and Azerbaidzhan and only a little more slowly in Armenia. Again, the reasons are too complex to be investigated here.

IV. Levels of Living

On most conventional indicators of relative living standards, the republics of Transcaucasia are below the average for the USSR. In general, Transcaucasia tends to rank above Central Asia, somewhat below the Western Republics and Kazakhstan, and well below the RSFSR and the Baltics. A variety of indicators of levels of living in the postwar period are assembled in Tables 4 and 5. In respect to average money earnings of the state labor force, Transcaucasia not only is below the national average, but its position has deteriorated during 1960-78. Thus, Georgia ranked 14th in 1978, and 9th in 1960; the corresponding rankings are 13th and 8th for Azerbaidzhan and 7th and 10th for Armenia.^{13/} Wage differentials among branches of the economy in Transcaucasia are similar to those for the USSR as a whole, a fact attributable to the large degree of uniformity in wage rates and policies characteristic of Soviet practice. Because of the predominance of non-agricultural branches, relative levels of non-agricultural wages among the republics are closely similar to those for the state labor force as a whole.

The situation in respect to agricultural earnings is harder to determine, because of the absence of satisfactory data on earnings in private agriculture, which is more important in Transcaucasia than in most other republics. Data are available for 1975 in respect to average annual wages paid in the public sectors of state and collective farms. In that year, farm wages were roughly 62 percent of non-farm wages in Georgia and 74 percent in Azerbaidzhan and

Table 4

Indicators of Growth and Relative Levels of Money Incomes and Consumption in Transcaucasia
1960-1978

I. Wages of State Employees

	Rubles Per Month			Percent		
	1960	1970	1978	1960	1970	1978
USSR	81	122	160	100	100	100
Georgia	75	106	154	93	87	84
Azerbaidzhan	77	110	138	96	90	86
Armenia	75	123	153	94	101	96

II. Personal Incomes Per Capita

	1960	1970	1978	Percent Increase of Real Incomes, 1960-78
USSR	100	100	100	118
Georgia	94	89	94	117
Azerbaidzhan	73	66	63	90
Armenia	85	87	87	122

III. Per Capita Consumption

	1960	1965	1970	1978	Percent Increase in Real Per Capita Consumption 1960-78
USSR	100	100	100	100	76
Georgia	95	88	89	90	67
Azerbaidzhan	74	70	69	67	58
Armenia	87	81	86	84	70

Sources: Wage data were obtained or derived from the annual statistical handbooks of the USSR and the republics and from plan fulfillment reports of the republics for 1976-1978.

Personal incomes per capita include incomes from wages, pensions, stipends, grants, interest on savings deposits and loans and income in kind from private agricultural activity. Incomes for 1960 and 1970 were estimated by Alastair McAuley. Economic Welfare in the Soviet Union, Madison, University of Wisconsin Press, 1979, p. 109. Values for 1978 were estimated, using comparable concepts, in Gertrude E. Schroeder, "Regional Living Standards", in I. S. Koropecy and Gertrude E. Schroeder (eds.) Economics of Soviet Regions, New York, Pergamon Press, 1980 (forthcoming). The latter is also the source for the indexes of change in real per capita personal incomes and the estimates of per capita consumption.

Armenia. The differentials, which have been narrowing in recent years, would be considerably reduced by the inclusion of earnings from private activities in agriculture. No data are published concerning such earnings by state farm families; for the USSR as a whole their share in total incomes around 1970 is reported to be about one-fifth, compared with about one-third for collective farm families. The only data available for Transcaucasia pertain to the period 1960-70. Originally given in a Soviet research study, these data have been worked over with meticulous care by Alastair McAuley.^{14/} According to his calculations, private activity provided over half of total personal incomes in Georgia, a little over one third in Azerbaidzhan and somewhat over one fourth in Armenia; the share for the USSR was 34.5 percent. Total personal incomes expressed per capita exceeded the national average in Georgia, but were only 64 percent in Azerbaidzhan and 78 percent in Armenia. When compared with state employees, per capita personal incomes of collective farmers in Georgia were nearly equal (96 percent). In Azerbaidzhan, in contrast, the relationship was 75 percent, and in Armenia it was 69 percent.^{15/} These differentials probably continued to narrow after 1970.

The data on personal incomes per capita given in Table 4 refer to money incomes from all sources (including state transfer payments), plus income in kind from private agriculture. On this measure, Transcaucasia falls below the national average, by more than one-third in the case of Azerbaidzhan. The latter's position has fallen during the period, while that of the others was essentially unchanged. Real incomes more than doubled in Georgia and Armenia however, and nearly doubled in Azerbaidzhan, which lagged well behind the national average growth. The growth of money incomes has entailed a sizeable accumulation of money assets. As the data in Table 5 indicate, savings deposits per capita

have increased tenfold in Georgia and Armenia and exceeded the national average in 1978. They rose more than sevenfold in Azerbaidzhan, but were less than half the national average. Cash hoards, on which there are no data, probably increased also. In addition, a part of the money income was invested in other ways -- state lotteries, insurance and private housing.

The data on per capita consumption shown in Table 4 represent my own attempt to measure that part of personal incomes that represents purchases and consumption in kind of goods and services, plus government current expenditures on education and health. This is the concept that underlies Western indexes of real per capita consumption calculated for the USSR as a whole; these indexes are based partly on physical measures and partly on deflated expenditures.^{16/} In the absence of adequate data for republics, I have estimated consumption indirectly by removing from calculations of total incomes (personal incomes plus state services) that part that did not represent current consumption of goods and services.^{17/} Although the results for the republics certainly are less accurate than those for the USSR, they probably are not seriously wrong, unless, of course, all Soviet data bearing on incomes in the republics are grossly in error. As can be observed, the republics of Transcaucasia fall below the national average on this measure also, in respect to levels as well as rates of growth. Their positions fell somewhat during the period. Georgia ranked 6th in 1960 and 9th in 1978. The corresponding rankings are 8th and 10th for Armenia and 14th on both years for Azerbaidzhan. Judging roughly from recent international comparisons of real per capita consumption, it is clear that Transcaucasia is well ahead of neighboring Iran, but far behind all major countries of Western Europe.

Table 5 assembles a variety of evidence bearing on several aspects of living standards in Transcaucasia. By and large, they corroborate the relative

Table 5

Indicators of Levels of Living in Transcaucasia,
1950-1978

I. "Social Wages" (Per Capita Payments and Benefits from Social Consumption Funds)

	Rubles			Percent		
	1960	1970	1978	1960	1970	1978
USSR	127	263	404	100	100	100
Georgia	107	216	333	84	82	82
Azerbaidzhan	96	188	277	76	71	69
Armenia	107	231	322	84	88	80

II. Retail Sales Per Capita

	1950	1960	1970	1978	1950	1960	1970	1978
	Rubles				Percent			
USSR	200	367	639	924	100	100	100	100
Georgia	182	298	492	752	91	81	77	81
Azerbaidzhan	186	253	397	540	93	69	62	58
Armenia	175	280	507	748	88	76	79	81

III. Urban Housing (Useful Space per Capita)

	1952	1960	1970	1978	1952	1960	1970	1978
	Square Meters				Percent			
USSR	7.1	8.8	11.0	12.6	100	100	100	100
Georgia	8.7	10.3	12.2	14.1	123	117	111	112
Azerbaidzhan	6.7	8.1	9.3	9.9	94	92	85	79
Armenia	N.A.	7.9	9.6	10.8	-	90	87	86

position of Transcaucasia shown by the aggregative measures of per capita personal incomes and consumption. Clearly, the region has not been favored in provision of state benefits, for the republics are well below the national average throughout the period as indicated by official statistics on per capita "payments and benefits from social consumption funds". These statistics include pensions, aid, stipends, state current outlays on health and education, subsidies to urban housing and to recreation, paid leave, and some minor items. Levels and trends in retail sales per capita are generally in line with what one would expect from knowledge of incomes and the extent of urbanization. Georgia's relative position in respect to per capita urban housing space has been high throughout the entire Soviet period. Part of the explanation may lie in the propensity of Georgians to invest in private housing. In 1978, for example, 41 percent of urban housing was private in Georgia, by far the largest in any republic; the share for the USSR was 24 percent.^{18/}

Georgia also stands out on availability of medical services, at least as measured by number of doctors and middle-level professionals per capita, but again, that has been the case from the start. One explanation may be the existence of many spas and health resorts there. As indicated in Table 5, Georgia's relative superiority has been declining steadily since 1950, as have the positions of the other Transcaucasian republics. All three republics show up well on measures of educational attainment, but again their above-average margins are gradually diminishing. Georgia is unique also, in that ethnic Georgians are better educated than the Russians or any other major nationality group living in the republic. In 1970, for example, 754 per 10,000 urban Georgians had at least some secondary education, compared with only 621 per 10,000 urban Russians; the Georgian advantage also held among gainfully occupied persons.^{19/} In Azerbaidzhan

and Armenia, in contrast, the Russians in these republics had markedly superior educational attainments compared with these of the Azeris and the Armenians.

As we have seen, a variety of measures derived from official Soviet statistics indicate that the level of living in Georgia and Armenia is some 10-15 percent below the national average and that in Azerbiadzhan is about two-thirds of the average; the latter resembles Central Asia, and the former are considerably better off than Central Asia, but not as well off as the next most affluent republics -- Kazakhstan and the Western republics. A prevalent opinion holds, however, that Transcaucasia is much better off, relative to other republics, than the official data indicate, because of the presence of a flourishing "second economy" there. This economy takes a variety of forms -- illegal production, theft from the state, black market sales, bribery, extortion, cheating, and abuse of public office. The past decade, indeed, has provided a mass of anecdotal evidence of the prevalence of all of these kinds of illegal activities in Transcaucasia. In Georgia, in particular, there have been wholesale political shakeups aimed at rooting out these kinds of wrongdoings, but they persist under new cadres, as under the old ones. Revelations of a similar kind have also been made in respect to Azerbaidzhan, where numerous dismissals of Party and state officials have occurred. But, as Party Secretary Aliev himself testified in late 1979, "abuses" and "negative phenomena", along with a "private property mentality" are still prevalent.^{20/} Armenia, too, evidently has had its share of scandals, although they have not been featured prominently in the press.

In another paper, I have surveyed a mass of evidence over the past decade pertaining to "second economy" activities in the various republics.^{21/} I have also scrutinized a variety of official data for clues to the above-average presence of illegal activity that would impact on relative levels of living among

Table 5 (continued)

IV. Doctors and Middle-Level Medical Personnel per 10,000 Population

	1950	1960	1970	1978	1950	1960	1970	1978
	Numbers				Percent			
USSR	54	84	100	137	100	100	100	100
Georgia	73	106	127	155	135	126	127	112
Azerbaijani	69	89	101	113	128	106	101	82
Armenia	52	83	91	118	96	99	99	86

V. Educational Attainment

	1959	1970	1976		1959	1970	1976
	Population Age 10 and Over				Labor Force		
USSR	100	100	100		100	100	100
Georgia	104	113	109		114	110	105
Azerbaijani	111	98	99		109	105	101
Armenia	123	107	101		122	107	102

VI. Savings Deposits Per Capita

	1950	1960	1970	1978	1950	1960	1970	1978
	Rubles				Percent			
USSR	10	50	191	500	100	100	100	100
Georgia	8	51	246	568	80	102	129	114
Azerbaijani	7	30	100	223	70	60	52	45
Armenia	6	42	247	566	60	84	129	113

Sources: I. taken or derived from data in annual statistical handbooks of the USSR and republics and in plan fulfillment reports for the republics.

II. Narkhoz USSR, 1960, p. 685; Narkhoz USSR, 1967, p. 717; Narkhoz USSR, 1970, p. 579; Narkhoz USSR, 1978, pp. 508-509.

III. Derived from data in Narkhoz USSR, 1964, p. 610; Narkhoz USSR, 1970, p. 546; Narkhoz USSR, 1978, p. 398.

IV. Taken or derived from data given in Narkhoz USSR, 1967, pp. 844-847; Narkhoz USSR, 1970, p. 690; Narkhoz USSR, 1978, p. 508-509.

V. Educational attainment is measured as the number of persons with at least some secondary education (complete or incomplete) per 10,000 persons. Percentage relationships were calculated from data given in Narkhoz USSR, 1977, p. 21.

VI. Calculated from data in Narkhoz USSR, 1970, p. 564; Narkhoz USSR, 1978, p. 415. The figures represent total end-of-year deposits divided by end-of-year population.

regions. The conclusions that I reached from this study are these: (1) there is no way to assess these activities quantitatively, because their very nature hides them from such scrutiny. (2) while the wrongdoings in Georgia and Azerbaidzhan have received a disproportionate share of press reporting, these regions certainly have no monopoly on sin; (3) the bulk of such activities in Transcaucasia seem to involve bribery, corruption, abuse of office theft, and cheating of customers.

In order to form a judgment as to how illegal second economy activities might impact on relative levels of living among republics, it is first of all necessary to sort out some conceptual matters. Some illegal activities add to the supply of goods and services as conventionally accounted for in measures of real per capita consumption; the main ones are illegal production and sale of consumer goods, illegal personal services, and theft of consumer goods from the state. Private services are already allowed for in these measures for the USSR and implicitly for the republics, on the assumption that the volume of services is roughly proportionate to population. Probably the largest single item of illegal production in the USSR is samogon, which is largely a province of the Slavs. While theft from the state obviously exists everywhere, it is impossible to prove that its incidence is much greater in Transcaucasia than elsewhere. Other activities of the "second economy" merely redistribute existing goods and incomes and raise prices. The most important of this group are bribery (including "reserving" goods in retail trade), extortion, sale of office, cheating customers, and speculation). Such activities could have important affects on relative incomes; for example, earnings in public administration no doubt are increased by pervasive bribery. The widespread practice of "reserving", i.e., bribery, in retail trade increases prices paid by customers, along with the incomes of clerks. Cheating customers through over-pricing, short weights and the like likewise raises prices and incomes. In a word, some people are better off, and others

are made worse off by these transactions; goods are taken away from some people and given to others.

My perusal of the available evidence led me to conclude that the latter type of activities far outweigh the former, and notably so in Transcaucasia. This observation accords with what one might expect of such a region. First of all, it is relatively underdeveloped; in market economies, corruption seems to flourish most widely in Third World countries. In addition, the dominant ethnic groups in the three republics are cohesive and nationalistic; a pervasive preference for favoring "us" over "them" seems highly likely. Finally, it could well be that Transcaucasia does not enjoy much priority in the central allocation of the better quality goods and those most in demand. Such a situation, coupled with relatively inferior goods produced locally and relatively poor distribution networks, provide fertile soil for speculation, cheating and corruption. How much more adept the Transcaucasians are at such endeavors, if at all, is anybody's guess.

In conclusion, I believe that the regional incidence of "second economy" activities is not such as to appreciably alter our perceptions of relative levels of living as reflected in official data. The illegal production of goods and theft from the state would have to be extremely large in a given republic, relative to others, in order to change its position in respect to real per capita consumption. Regarding Transcaucasia, my strong impression is that illegal activities there are primarily redistributive. Favored groups, whether by position or access to goods, are pervasively engaged in extracting money and goods from less favored groups. Both Party Secretaries Shevardnadze and Aliev have testified to such a state of affairs. Their many speeches do not suggest to me that they believe either that the average level of living in their republics is greatly increased

thereby or that above average living standards prevail in their respective republics.

V. An Overview and Conclusions

Without question, the republics of Transcaucasia have experienced rapid economic development in the Stalin era and in subsequent decades. Industrial and agricultural production have risen rapidly, both absolutely and per capita. In the postwar years, economic development has also been accompanied by large improvements in living standards of the population. Throughout the entire Soviet period, notable progress has been made in health care and in educational attainment. When compared with per capita average indicators for the USSR as a whole, however, the relative position of Transcaucasia has not improved and even may have deteriorated somewhat, in part because of more rapid population growth. All three republics rank below the national average on most measures of economic development and well-being. Georgia and Armenia remain well ahead of Azerbaidzhan, in terms of living standards. The former rank with Kazakhstan and the Western republics, whereas the latter ranks with Central Asia.

In an earlier study, Nove and Newth concluded that Transcaucasia, along with Central Asia, had benefitted from being part of a larger entity with an industrializing ideology.^{22/} The feelings of individual nationalities aside, centralized economic decision making from Moscow did succeed in engendering a higher rate of capital formation than would likely have been possible for the republics acting individually. In the Stalin period, in particular, Russian investment and technical assistance flowed to Azerbaidzhan for purposes of exploiting its oil reserves and establishing related industries and infrastructure. Also, the republics benefitted from relatively favorable prices for their specialized agricultural crops (semi-tropical fruits, tea and cotton), and also a large ready market for their surplus produce. In turn,

they were able to import grain and needed manufactures and energy. Finally, national policies and financial support have given a big push to public health and literacy in these relatively backward regions. In summary, the authors state, "The Soviet ideological commitment to creating a native proletariat and combatting backwardness in the national republics caused a diversion of capital to these areas, which, on strictly economic grounds, would have provided a higher return elsewhere."^{23/}

Similar conclusions hold, I believe, for the post-Stalin era. While inter-republic development gaps evidently have not been reduced, Soviet government policy clearly has been to foster continued industrialization and modernization everywhere. As a result, development has continued apace in Transcaucasia, despite a dearth of natural resources suitable to that goal. A large "political" steel mill has been built in Georgia, and each republic has a complement of machinery plants. Investment allocations within the republics seem to have been rather sensible. Georgia, with its comparative advantage in sub-tropical agriculture, has allocated much larger shares of investment to that sector than have the others. In Azerbaidzhan, the dominance of the industrial sector has been diminishing, as oil production has levelled off. In all three republics, as best one can judge from capital stock data, above-average shares of investment evidently have gone to development of the light and food industries. Such priorities seem sensible, not only because of natural endowments, but also because these labor-intensive sectors could provide jobs for rapidly growing workforces.

Have the Transcaucasian republics benefitted from absolute income transfers from the rest of the USSR? The question of such transfers among the USSR's republics has fascinated scholars, especially those who would like to prove economic exploitation of one or another nationality. This question is difficult to answer

even approximately, and, I believe, impossible to answer definitively. We are perforce compelled to employ official Soviet data,-- on such matters as budget incomes and expenditures and comparisons of national income produced with national income used. The former are subject to such obscurities and manipulations as to preclude valid conclusions. The latter are heavily influenced by irrational and changing product prices and the arbitrary way in which turnover taxes are recorded in national income data calculated for the republics. Having said all this, I would not be surprised to learn that these small, highly individualistic and nationalistic republics had, on balance, either benefitted from income transfers, or at the least, had not suffered losses. These are essentially the findings of the latest attempt to deal with the refractory evidence. In a paper prepared for the Joint Economic Committee, James Gillula concludes that Armenia and Georgia apparently have been the beneficiaries of income redistributions during most of the years 1961-1975.^{24/} This conclusion is based on the fact that in these republics national income used exceeded national income produced, estimated directly or indirectly, in much of the period. Azerbaidzhan, in contrast, apparently contributed income to other republics, although the ratios of produced to used incomes declined steadily throughout the period. It is hard to know what to make of this finding in respect to Azerbaidzhan. If that relatively quite backward republic has, indeed, "contributed" income to the rest of the USSR, it must surely be only in some artificial manner linked to the peculiarities of its product mix, the arbitrary pricing thereof, and the random incidence of turnover tax allocations. In any event, all three republics have achieved levels of education and health care that are near or exceed the national average, whereas on most production indicators their positions are well below that average. The region's rather high position in respect to these budget-financed activities, along with the fast growth of investment,

suggest that they may have had "outside" assistance.

In summary, several generalizations seem warranted in respect to the experience of Transcaucasia under Soviet rule in the post-Stalin era. First, economic development and modernization have continued at fairly rapid rates. Second, living standards have improved greatly, compared with their probable stagnation or decline in earlier years. Third, the relative position of the region on most measures remains well below the national average and likely has deteriorated somewhat on a per capita basis. Fourth, in terms of development and levels of living, the region is far ahead of its Middle Eastern neighbors, but well behind Western Europe. Whether such would have been the position of Transcaucasia today, had the three republics developed as independent countries seems doubtful, given their low initial levels and rather poor natural endowments. Whether comparatively faster economic progress under Soviet rule compensates these nationalistic states for the loss of national independence and cultural freedom is a question for philosophers, not economists.

Source References

1. For evidence of the interdependence of Soviet republics see James W. Gillula, "The Economic Interdependence of Soviet Republics", in joint Economic Committee, Soviet Economy in a Time of Change, Washington, 1979, pp. 636-652.
2. Western research has shown that official indexes of industrial production and national income for the USSR as a whole are significantly inflated. This conclusion undoubtedly holds true for individual republics, but the magnitude of the biases is not known.
3. See Simon Kuznets, Modern Economic Growth, New Haven, Yale University Press, 1966.
4. Narodnoe Khoziaistvo Gruzinskoi SSR v 60 - letiu velikogo Oktiabria, Tbilisi, 1977, pp. 48-49.
V. K. Airapetian, Otraslevaia struktura promyshlennosti Armianskoi SSR i tendentsii ee razvitiia, Yerevan, 1978, p. 211 (Appendix 8).
5. Narodnoe Khoziaistvo SSSR v 1975 godu, p. 197.
6. Stephen Rapawy, "Regional Employment Trends in the USSR", in Joint Economic Committee, Soviet Economy in a Time of Change, Washington, 1979, pp. 608-610.
7. Ibid. The private sector share of employment was estimated by me, based on relationships for 1970 given in the 1970 Soviet Census. The share of the private sector in total output was given in a speech by Shevardnadze in Zaria Vostoka, July 25, 1976.
8. Data in respect to the private sector's share of livestock and various products were calculated from data in the statistical handbooks for the USSR and the three republics.
9. Narodnoe Khoziaistvo Gruzinskoy SSR v 60 - letiu velikogo Oktiabria, 1977, p. 176.
Narodnoe Khoziaistvo SSSR v 1978 godu, p. 432.
10. In a speech given in November 1979, Party Secretary Shevardnadze stated that the private sector produced 41 percent of the gross value of agricultural output, compared with 25 percent for the USSR as a whole.
11. All investment data are taken or derived from the statistical handbooks of the three republics and the USSR.
12. Productivity data do not take the private sector into account in measuring employment. Values of national income, industrial production and agricultural output are given in the respective statistical handbooks of the republics and the USSR. Employment data are taken from Rapawy, loc.cit.

13. In interpreting this relative decline in rank, one should note that a general wage reform, carried out region by region, was not completed until the end of 1979.
14. Alastair McAuley, Economic Welfare in the Soviet Union: Poverty, Living Standards and Inequality, Madison, University of Wisconsin Press, 1979, pp. 123-134.
15. Ibid, pp. 128, 139.
16. See Gertrude E. Schroeder and Barbara S. Severin, "Soviet Consumption and Income Policies in Perspective", in joint Economic Committee, Soviet Economy in a New Perspective, Washington, 1976, pp. 620-660.
17. The details of the methodology for obtaining these estimates are given in Gertrude Schroeder Greenslade, "Regional Living Standards", in I. S. Koropecy and Gertrude E. Schroeder, The Economics of Soviet Regions, New York, Pergamon Press (forthcoming).
18. Narodnoe Khoziaistvo SSSR v 1978 godu, p. 399.
19. Data on educational attainment by nationality are given in the 1970 Soviet Census, Volume IV.
20. Bakinskii rabochii, November 24, 1979.
21. I have surveyed and cited some of this evidence in a recent paper to be published in a compendia of research papers on the Second Economy. The paper is entitled "Regional Dimensions of the 'Second Economy' in the USSR".
22. Alec Nove and J. A. Newth, The Soviet Middle East: A Model for Development?, London, George Allen & Unwin Ltd., 1967, p. 122.
23. Ibid.
24. James W. Gillula, loc. cit., p. 634.