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TRANSCAUCASIA WITHIN THE ECONOMY OF THE USSR:
A PRELIMINARY ASSESSMENT

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I. Introduction

The nature of the economy of Transcaucasia is heavily influenced by its geographical setting, which makes it poor in natural resources, creates problems in transportation and hampers industrial development. In 1978, the three republics of the Transcaucasus -- Georgia, Azerbaidjan and Armenia -- occupied less than 1 percent of the total territory of the USSR and had a little over 5 percent of its population. Despite the geographical handicaps, all three republics have experienced rapid rates of economic development in the post-war period, whether measured by national income, industrial production or agricultural production. The urban population now constitutes over half of the population in all three republics. The area makes an important contribution to the Soviet economy. In 1977, the region produced about 3 percent of all oil and gas, 3.5 percent of the electric power, 3.7 percent of the value of total agricultural output, 5.8 percent of the cotton, 7.2 percent of the vegetables and 17.9 percent of the fruits and berries. Georgia is a major supplier of manganese ore. The pattern of agricultural contribution, of course, reflects the climatic suitability of the region for growing fruits and vegetables. Industrialization has entailed development of a fairly wide variety of activities, related in

part to the raw materials available in the region. Nonetheless, Transcaucasia is still a net importer of grain, energy and many raw materials and manufactures.

II. Economic Development, 1950-1978

Although Transcaucasia has experienced rapid economic growth in the post-war period, it remains below the USSR average on nearly all measures of economic development. Table 1 presents some of the relevant data. The three republics show diverse patterns. In respect to growth of national income (net material product), the most comprehensive production measure, all of them had more rapid growth during 1960-1978 than did the USSR as a whole. On a per capita basis, however, Azerbaidjan fell well below the national average growth rate, and all three republics had per capita levels under 80 percent of the national average in 1970. In that year their relative rankings were 9th (Armenia), 10th (Georgia) and 13th (Azerbiadjan). In 1978, the respective rankings were 8, 10 and 11. Nonetheless, national income per capita nearly doubled in Azerbaidjan during this period and increased more than two and a half times in the other two republics. General economic development has been reflected in fairly rapid structural change in the composition of output and of the labor force. For example, 47-52 percent of the labor force was occupied in agriculture in the three republics in 1959; in 1970, the range was 27-37 percent. In 1975, industry and construction contributed well over half of national income in all three republics.

During the 1950's, industrial production grew much less rapidly in Georgia and Azerbaidjan than in the USSR as a whole, and Armenian growth only slightly exceeded the average. In the following two decades industrial growth significantly exceeded the average in all three republics. Again, however, on a per capita basis Azerbaidjan's relative advantage was eliminated because of rapid population growth. Each republic has developed a fairly diversified industrial structure, including machinery and chemical products related to particular natural resources. Thus, Azerbaidjan a major oil producer, has large capacities for refining, petro-chemicals and for producing petroleum-related machinery. A wide variety of consumer goods are also produced, especially in Georgia, where light and food industries predominate. In 1970, the value of industrial output per capita in all three republics was well below the national average, with Armenia ranking 7th on this measure, Georgia 9th and Azerbaidjan 11th. The rankings probably were similar in 1978.

As shown in Table 1, agricultural output in Transcaucasia also has increased substantially during 1960-78, faster than for the nation as a whole. The three republics ranked lowest however, as measured by value of output per capita in 1970. Construction of hydro-electric facilities has promoted irrigation in this largely dry area and has led to expanded acreages in orchards, vegetables and cotton (in Azerbaidjan). All three republics now produce a variety of food crops, including grain.

Table 1
Measures of Economic Performance in Transcaucasia
1960-1978

I. National Income							Relative
	Total			Per Capita			levels
	1960	1970	1978	1960	1970	1978	1970
USSR	100	199	263	100	176	221	100
Georgia	100	194	309	100	172	253	73
Azerbaijan	100	164	278	100	124	182	62
Armenia	100	235	421	100	174	260	76

II. Industrial Production							Relative
	Total			Per Capita			levels
	1960	1970	1978	1960	1970	1978	1971
USSR	100	227	325	100	201	273	100
Georgia	100	216	364	100	191	296	64
Azerbaijan	100	194	365	100	132	238	54
Armenia	100	270	492	100	200	305	77

III. Agricultural Production							Relative
	Total			Per Capita			levels
	1960	1970	1978	1960	1970	1978	1970
USSR	100	138	156	100	122	131	100
Georgia	100	155	215	100	137	175	69
Azerbaijan	100	131	225	100	99	147	47
Armenia	100	139	187	100	103	116	49

Sources: National income indexes were derived from indexes in constant prices given in Narodnoe khoziaistvo SSSR (hereafter referred to as Narkhoz) v 1970 godu, p. 534, Narkhoz 1977, p. 404, and plan fulfillment reports for the USSR and the 3 republics in 1978. Population data underlying the per capita measures were taken from various Narkhozy.

Industrial production indexes were derived from indexes given in Narkhoz 1975, p. 203, Narkhoz 1977, p. 126 and plan fulfillment reports for 1978.

Agricultural production indexes were derived from Narkhoz 1922-1972, p. 221, Narkhoz 1977, p. 205 and plan fulfillment reports for 1978.

Relative levels of National income per capita were calculated from ruble values for total national income produced given in Narkhoz Latviiskiy SSR v 1971 godu, p. 56 and mid-year population data.

Indexes of relative levels of industrial and agricultural production per capita are given in T.V. Checheleva and N. S. Kozlova, Problemy ekonomiki razvitiya sotsializma v SSSR, Alma Ata, 1974, p. 137.

Table 2 provides some summary indicators of the way in which labor resources have been allocated and also shows total allocations of investment to the region, expressed per capita. As can be seen, the region devotes more labor to the primary sector (agriculture) than does the nation as a whole and also more to the tertiary sector (services), while relatively less goes to the secondary sector (manufacturing and construction). These results are to be expected, given the relative levels of development thus far achieved. The relative share of agriculture would be shown to be even larger, if data for employment on collective farms and in private agriculture were added. In respect to investment, allocations to the Transcaucasus have tended to be well below the national average, both in total and when expressed per capita. For the three Five-Year Plan periods during 1960-75, investment per capita in Georgia was about two-thirds of the national average, and her relative position fell from 8th to 13th. Allocations to Azerbaidjan fell relatively throughout the period, and her rank dropped from 10th to 14th. Armenia's position also deteriorated, falling from 6th to 8th. Nonetheless, all received substantial increases in investment -- 62 percent, 42 percent and 74 percent, respectively.

Poor natural endowments, coupled with below-average allocations of investment no doubt explain much of the relatively low levels of productivity in Transcaucasia. According to the assorted indicators given in Table 3, the three republics are

Table 2
Labor force and Investment in Transcaucasia
1960-1975

I. State labor force

	Total (000)		Distribution (Percent)					
	1960	1975	Industry and Construction		Agriculture and Forestry		Services	
			1960	1975	1960	1975	1960	1975
USSR	62,032	102,160	44	44	12	10	44	46
Georgia	940	1,733	38	32	8	17	54	51
Azerbaidjan	748	1,506	38	33	6	16	56	51
Armenia	427	991	44	42	9	13	47	45

II. Investment (per capita)

	Total (rubles)		1971-75	Relative levels		
	1961-65	1966-70		1961-65	1966-70	1971-75
USSR	1093	1486	2008	100	100	100
Georgia	721	1052	1255	66	71	63
Azerbaidjan	857	1030	1214	78	69	60
Armenia	1024	1508	1656	94	101	82

Sources: State labor force: Narkhoz SSSR, 1960, pp. 640-641 and Narkhoz SSSR 1975, pp. 536-537.

Investment: Total investment in 1969 estimate prices obtained or derived from data given in Narkhoz SSSR 1965, p. 538; Narkhoz 1967, p. 625; Narkhoz 1969, p. 509; Narkhoz 1970, p. 488; Narkhoz 1975, p. 513. Population data taken or derived from Narkhoz 1962, p. 9; Narkhoz 1968, p. 12; Narkhoz 1972, p. 16; Narkhoz 1973, p. 9.

Table 3
Indicators of Productivity in Transcaucasis

I. Growth of industrial labor productivity

	1960	1970	1975	1978	Average Annual Rate 1960-78
USSR	100	166	239	249	5.2
Georgia	100	161	230	243	5.1
Azerbaidjan	100	143	210	221	4.5
Armenia	100	152	210	216	4.4

II. Relative levels of productivity in 1970

	GNP per Worker	National Income per Worker	Factor Product- ivity in Industry	Labor Product- ivity on Farms Collective State	
USSR	100	100	100	100	100
Georgia	63	68	123	61	57
Azerbaidjan	79	88	99	52	51
Armenia	91	92	107	69	53

Sources: Indexes of industrial labor productivity. Narkhoz SSSR, 1970, p. 163; Narkhoz 1977, p. 132; plan fulfillment reports for 1978.

GNP per worker: GNP estimates are those of I.S. Koropecjy in Zbigniew M. Fallenbuecl (ed.), Economic Development in the Soviet Union and Eastern Europe, Vol. 1, New York, Praeger, 1974, p. 373. Employment estimates in the state and private sectors were derived as explained in Gertrude E. Schroeder, ACES Bulletin, Fall 1974, p. 17.

National income per worker: Sources given in Table 1 and Ibid.

Factor productivity in industry: F. Douglas Whitehouse in V. N. Bandera and 2. L. Melnyk (eds.), The Soviet Economy in Regional Perspective, New York, Praeger, 1973, p. 157.

Labor productivity on farms: Sel'skoe khoziaistvo SSSR, 1972, pp. 496, 592. Figures represent output per manday, valued in 1965 prices.

well below the national average on all measures but one -- factor productivity in industry. A major explanation for the relatively high productivity in industry may be that these republics produce high-valued products (oil in Azerbaidjan) and alcoholic beverages with high turnover tax rates in Georgia and Armenia. As measured by labor productivity alone, all three republics failed to keep pace with the average growth for the USSR. Despite above-average levels on this measure, Georgia still ranked 7th among the republics in 1970. Armenia ranked 9th and Azerbiadjan 14th. Similar rankings probably prevailed in 1978.

III. Personal Incomes and Levels of Living

Table 4 assembles the available data relating to incomes of the population in Transcaucasia. In 1978, average monthly wages of the state labor force (workers and employees) were below the national average in all three republics. In that year, Armenia ranked 7th, Azerbaidjan 13th and Georgia 14th. Their respective rankings in 1960 were 10th, 8th and 9th. Wage differentials among the various 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 practices. 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.

Table 4
Indicators of Wages and Incomes in Transcaucasis
1960-1978

I. Wages of State Employees

	1960	1970	1978	1960	1970	1978
	Rubles per month			Percent		
USSR	81	122	160	100	100	100
Georgia	75	106	134	93	87	84
Azerbaidjan	77	110	138	96	90	86
Armenia	75	123	153	94	101	96

II. Agricultural and Non-agricultural Wages, 1975

	Non-agricultural Branches	State Agri- culture	Collective Farms	Non-agricul- tural bran- ches	State Agri- culture	Collective Farms
	Rubles per year			Percent		
USSR	1775	1522	1099	100	100	100
Georgia	1510	953	919	85	63	84
Azerbaidjan	1558	1196	1128	88	79	103
Armenia	1724	1217	1399	97	80	127

III. Relative levels of Total Annual earnings, 1970

	Total Earned incomes per Capita	Earned incomes on Collective Farms Per family	Per capita
USSR	100	100	100
Georgia	93	122	112
Azerbaidjan	65	101	65
Armenia	89	122	73

Sources: All data relating to wages paid to state employees and to wages paid to collective farmers were taken or derived from information given in annual statistical handbooks and plan fulfillment reports. In respect to III, agricultural incomes include earnings from private plots. For the methodology see: Gertrude E. Schroeder, ACES Bulletin, Fall 1974, pp. 9-13. The underlying data for collective farm incomes is given in M.I. Sidorova, Vozmeshchenie Neobkhodimykh zatrat i formirovanie fonda vosпроизводства rabochey sily v kol'hozakh, 1972, pp. 100-137. Size of collective farm families is given on p. 115 (for 1969).

Information on earnings of agricultural workers is much harder to come by and much less satisfactory. Table 4, II provides data for 1975, in respect to wages paid by state and collective farms for work in the socialized sector; the data do not include earnings in cash and in kind from private agricultural activities. Earnings differentials between farm and non-farm workers have been narrowing rapidly in the USSR in the post-Stalin period, although the process evidently has been taking place at different rates among the republics. The data to sort this out are not at hand. In 1975, average earnings of both state and collective farmers were still well below those paid in non-agricultural branches in Transcaucasia, as well as in the USSR as a whole. Farm wages were 61-63 percent of non-farm wages in Georgia, 72-76 percent in Azerbaidjan and 71-81 percent in Armenia. In the latter two republics, collective farm wages exceeded the national average. Georgia ranked lowest among the republics in respect to state farm wages, Armenia ranked 10th and Azerbaidjan ranked 12th. Data on collective farm wages are not available for all republics. As would be expected, differentials in agricultural wages are much wider than for non-agricultural wages. The former are affected by a wide variety of natural and climatic factors, as well as by product prices, which differ greatly among regions and also from year to year.

In order to assess regional differences in personal incomes, one must take into account the substantial incomes in cash and in kind received by rural families from work on their private plots. These earnings differ widely among the republics for many reasons, and the data needed to assess these differences are meager indeed. Virtually the only systematic regional data available pertain to 1970 and earlier. Table 4, III provides some data for the Transcaucasian republics in 1970. The concept of "earned income" used there includes incomes from private plots as well as wages paid for work in the socialized sector of the farms. Earnings from private plots provide a much larger share of total incomes for collective farmers than they do for state farmers -- about one-third for the former and about one-fifth for the latter around 1970 in the USSR as a whole. ^{2/} The shares differ widely among republics. In 1966, the most recent year for which complete data are available, private plots provided 59 percent of total family income of collective farmers (including state-provided benefits) in Georgia, 36 percent in Azerbiadjan and 29 percent in Armenia. In Georgia, private plot incomes exceeded wages paid in the socialized sector. When earnings from both sources are combined and expressed per family, earned incomes on collective farms exceeded the national average in the three republics of Transcaucasia; when expressed per capita, only Georgia exceeded that average. All three ranked in the lower half of the republics.

The data given in Table 4 on "total earned incomes per capita" combines earnings of all workers from wages and estimated earnings from private plots; it is the most comprehensive measure that can be put together with available data. On this measure, all three republics had earned incomes below the national average in 1970. Georgia ranked 6th, Azerbidjan 15th and Armenia 9th. The first two were relatively worse off in rank than in 1960, and the latter was the same. These measures cannot be brought up to date, but the relative positions probably have not changed much.

A matter of considerable interest is the impact on these money earnings including the so-called "social dividend" or "social wage", as it is sometimes called. In Soviet-published statistics the latter is measured by "payments and benefits from social consumption funds", a concept that includes government expenditures on health and education, the urban housing subsidy, pensions and aid of all kinds, depreciation on the capital stock of state institutions serving the population, paid leave, and a few other expenditures of the state and other organizations. These payments expressed per capita are given in Table 5, 1. They add about one-third to total real incomes on the average. As the data indicate, the Transcaucasian republics fall below the all-union average on this measure as well -- 69 to 82 percent in 1978. The position of all three republics deteriorated somewhat during 1960-78, as did their relative rankings, which

fell from 6, 7 and 9 to 9, 10, and 14. When, for the year 1970, our measures for "earned income per capita" and for the "social wage" are combined, we find that the rankings are little changed -- 8, 9, and 14. These rankings also obtained in 1978, according to a recent study that uses roughly comparable methodologies. ^{3/} In that year, Georgia ranked 8th with per capita income at 91 percent of the national average. Armenia ranked 9th with 89 percent, and Azerbiadjan ranked 14th with 71 percent. The latter resembles Central Asia; the first two fall between Kasakhstan and Moldaria. In each case, the relative position had deteriorated somewhat since 1960. Similar results are obtained, when these incomes are expressed per adult-equivalent instead of per capita.

Money incomes are good indicators of relative levels of living, among regions, provided that significant cost of living differentials do not exist. The information on this matter for the USSR is skimpy indeed. Regional price differences prevail for most basic foods and beverages and for some other products. A recent source states that Zone II prices for foods and some other goods apply in Transcaucasia, and that Zone II prices for food average 8.5 percent above those in Zone I (Ukraine, Baltics and others). ^{4/} We know nothing systematic about regional differences in prices on collective farm markets, In terms of extra living expenses occasioned by climatic factors, Transcaucasia would seem to be favored. On balance, based on the fragmentary information

available, it seems likely that the picture of relative republic incomes given by money incomes is not greatly altered by regional differences in the cost of living. But we cannot be certain of this conclusion. Finally, revealed regional disparities in incomes might be altered significantly, if activities of the so-called "second economy" could be taken into account. From a casual reading of the press and from scattered emigree reports one gets the impression that the republics of Transcaucasia may have a comparative advantage in these semilegal and illegal activities, with resultant relatively higher incomes. Confirmation or rejection of this fascinating hypothesis must await the results of a systematic investigation, in which the author is currently engaged.

The relative position of Transcaucasia as shown by measures of money income is substantially corroborated by other indicators of relative levels of living. Four major indicators are given for 1960-78 in Table 5 -- pertaining to retail sales, urban housing, medical personnel and savings. In respect to retail sales per capita, Georgia and Armenia, with sales some 20 percent below the national average in 1978 ranked 9th and 10th, and Azerbaidjan, with sales over 40 percent below the average ranked 14th. Retail sales, of course, correlate most closely with money incomes. On other indicators the three republics fare somewhat better. Georgia exceeds the national average in 1977-78 in respect to urban housing space per capita, availability of trained medical

Table 5
Indicators of "Social Wages" and Levels of Living in Transcaucasia

I. "Social Wages" (Per capita payments and benefits from social consumption funds)						
	1960	1970	1978	1960	1970	1978
	Rubles			Percent		
USSR	127	263	404	100	100	100
Georgia	107	216	333	84	82	82
Azerbaidjan	96	188	277	76	71	69
Armenia	107	231	322	84	88	80
II. Retail sales per capita						
	1960	1970	1978	1960	1970	1978
	Rubles			Percent		
USSR	367	639	917	100	100	100
Georgia	298	492	738	81	77	80
Azerbaidjan	253	397	540	69	62	59
Armenia	280	507	751	76	79	82
III. Urban Housing Space (useful space) per capita						
	1960	1970	1977	1960	1970	1977
	square meters			Percent		
USSR	8.8	11.0	12.3	100	100	100
Georgia	9.9	12.2	13.8	112	111	112
Azerbaidjan	8.1	9.3	9.9	92	85	80
Armenia	7.9	9.6	10.6	90	87	86
IV. Doctors and Middle-level Medical Personnel per 10,000 people						
	1960	1970	1977	1960	1970	1977
	Numbers			Percent		
USSR	84	100	136	100	100	100
Georgia	106	127	147	126	127	109
Azerbaidjan	89	101	113	106	101	84
Armenia	83	99	117	99	99	86

Table 5 (cont.)

	V. Savings deposits per capita					
	1960	1970	1978	1960	1970	1978
	Rubles				Percent	
USSR	51	192	501	100	100	100
Georgia	52	247	553	102	129	110
Azerbaidjan	30	101	229	59	53	46
Armenia	43	249	577	85	130	115

- I. Data on total payments and benefits were taken from annual statistical handbooks of the USSR and the republics and from 1978 plan fulfillment reports.
Population data are mid-year values.
- II. Narkhoz SSSR 1960, p. 685; Narkhoz 1970, p. 579; Narkhoz 1977, p. 455; 1978 plan fulfillment reports.
- III. Narkhoz SSSR 1970, p. 546; Narkhoz SSSR, 1977, pp. 11, 416.
- IV. Narkhoz SSSR 1970, pp. 690, 693; Narkhoz SSSR 1977, pp. 534-535.
- V. Total savings deposits are given in Narkhoz SSSR, 1970, p. 564 and Narkhoz SSSR 1977, p. 434. The increase in 1978 is given in 1978 plan fulfillment reports. Total deposits were divided by mid-year populations.

personnel and savings deposits. This relatively favorable position has been preserved throughout the period. Armenia, too, exceeded the national average in 1978 in respect to per capita savings, but fell 14 percent below the average on the other two measures, and her relative position deteriorated somewhat during the period. Azerbaidjan's relative position in respect to urban housing and medical personnel also fell during the period and was well below the national average in 1978. The behavior of Adjerbiadjan in respect to savings deposits per capita, however, contrasts strikingly with that in the other two republics. Per capita deposits were less than half the national average in 1978, compared with 59 percent in 1960. In this respect, Azerbaidjan resembles the republics of Central Asia.

NOTES

1. This paper relies extensively on work done by the author in several previously published (or to be published) papers. Detailed sources and methodologies are given in these papers. They are: "Regional Differences in Incomes and Levels of Living in the USSR," in V. N. Bandera and Z. L. Melnyke, Praeger, 1973, pp. 167-195; "Soviet Wage and Income Policies in Regional Perspective," ACES Bulletin, Fall 1976, pp. 3-20; "Soviet Regional Development Policies in Perspective," in NATO, The USSR in the 1980's, Brussels, 1978, pp. 125-142; "Some Indicators of Regional Differences in Incomes in the USSR in the 1970's," in NATO, Soviet Regional Development, 1979 (forthcoming). The author is also committed to write three other papers dealing with regional aspects of the Soviet economy, including a major one on Transcaucasia. The present paper is, therefore, strictly preliminary.
2. These shares are calculated using a concept of total "income" that includes payments and benefits from state social consumption funds (pensions, health and education expenditures and others). When this type of income is excluded, private agricultural incomes provided almost 45 percent and 30 percent of annual incomes for collective and state farmers, respectively, in 1970. The shares were much smaller in 1978, but still substantial.
3. Martin G. Spechler, "Regional Developments in the U.S.S.R., 1958-78," in Joint Economic Committee, The Soviet Economy in a Time of Transition, 1979 (forthcoming).
- 4, M. V. Kokorev, Tseny na tovary narodnogo potreblenia, Moscow, 1978, pp. 185-186.