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AC/89-D/29

SUB-COMMITTEE ON SOVIET ECONOMIC POLICY

ADDENDUM

to

AC/89-D/29
(dated 20th November, 1959)

LONG TERM ECONOMIC TRENDS IN NATO COUNTRIES
AND IN THE COMMUNIST BLOC AND THEIR IMPLICATIONS
FOR THE ATLANTIC ALLIANCE

This Addendum to the report mentioned above describes the method used in comparing the economies of NATO and the Sino-Soviet bloc countries and in projecting their economic growth.

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METHODS AND SOURCES

I. PREPARATION OF FIGURES ON GROSS NATIONAL EXPENDITURE AT MARKET PRICES FOR 1958 IN DOLLARS

(a) Concepts

1. The definition of gross national product or expenditure (at market prices) used in the report conforms in essentials with that given in "A Standardised System of National Accounts"(1). For the purpose of real product comparison certain modifications are necessary(2) which affect mainly the expenditure classification. These may best be described by giving the expenditure components:

Consumption covers personal expenditures on goods and services, and government expenditures on health and education.

Gross investment covers private as well as public gross fixed asset formation, change in inventories and the surplus or deficit on the current account of the balance of payments.

Military outlay comprises all defence expenditures covered by the NATO definition. The official Russian budget figures have been adjusted as far as is known to include the cost of military police, military instruction and research, military installations and special weapons.

Administration includes all government purchases of non-military goods and services except those for health and education.

(b) Conversion into a common currency

2. For conversion of estimates of national expenditure into a common currency, official exchange rates are unsuitable, and some method such as that used in the OEEC study - "An International Comparison of National Products" - must be followed. This involves securing appropriate quantities, prices and values for as detailed a breakdown of the gross national product as is possible for any two countries to be compared, and then weighing the quantity data of each country with the prices of first the one and then the other. This produces two indices of the real

(1) Published by the OEEC, 1952.

(2) Comparative national products and price levels, Milton Gilbert and Associates.

product relationship which will diverge the greater the dissimilarity of the national outputs and the price structures of the two countries(1). When more than two countries are compared, the number of indices obtained increases and in fact rapidly becomes quite large.

3. It is difficult, therefore, to use this method of revaluation of gross national expenditures in a common currency to obtain straightforward, unambiguous results. The most attractive method - although it is not free from theoretical objections - is to use some method of averaging. This has been tried by the OEEC, which has for example used "average European prices" in comparing the economies of different European countries and of the United States. The OEEC has also proposed to use as the best index of the relative level of two countries' gross national products the geometric average of the ratios between these products, measured first at the first country's prices, and then at the second country's prices.

4. It has, however, not proved possible with existing data and in the time available to experiment with such techniques of comparison. The estimates in the paper are expressed in United States prices, since comparable data on national expenditures in a common set of prices were available only in terms of these prices. These estimates in United States prices give a higher result for the USSR as compared with the United States than a comparison based on USSR prices; similarly they overweight the European NATO countries. It is necessary to allow for this distortion in interpreting the comparisons made.

(c) The NATO countries

5. The data on gross national product and its sectors are based for most of NATO countries on a study prepared for OEEC by Milton Gilbert and Associates: "Comparative National Products and Price Levels" (countries included in that study are: Denmark, United Kingdom, Norway, Belgium, France, Netherlands, Germany, Italy and the United States). For countries not included, account has been taken of the similarities between their economies and those of countries included in the study and having similar economic structure. Data in the OEEC study are expressed in United States \$ 1955; they have been converted to United States \$ 1958 by using appropriate price indices.

(d) The USSR

6. For the USSR, country contributions to this report were used. The figures submitted were expressed at 1957 United States

(1) E.g. the GNP of Italy expressed as a percentage of the GNP of the United States is 10.3% when valuation is made at US prices, and 6.9% when valuation is made at average European prices.

prices; to convert them into 1958 United States prices, Soviet expenditures figures were multiplied by a price index for United States national expenditures in 1958, 1957 = 100.

(e) The Satellites

7. The estimates of satellite gross national product are very rough. On the basis of commodity output figures, an estimate was made of the ratio between USSR and satellite output of industrial and agricultural goods. The coefficient obtained was applied to the total Soviet gross national product in order to estimate roughly the total output of the satellites. (This implies that it is assumed that the ratio between the USSR's and satellites' output of services is the same as for industrial and agricultural goods). The result obtained implies that for the satellites taken as a whole, output per head is about equal to output per head in the USSR.

II. ASSUMPTIONS AND METHODS USED IN THE NATIONAL PRODUCT PROJECTIONS

(a) NATO countries

8. The assumptions underlying the projections are that there will be no major war and that there will be no severe and general economic depression.

9. Projections rest on assumptions about the character of the economic and political situation in the future. It is expected that development in future will generally be in line with growth since the end of the war.

10. For European NATO countries, it is expected that the current high rate of growth, which is much in excess of the long-term trend, will be more or less maintained; allowance has been made however for a slowdown in expansion of Germany, whose rate of growth in the recent past was exceptionally high. The present trend toward a reduction of working hours is expected to continue, and this will also reduce somewhat the increase in the gross national product.

11. The OEEC study: "Gross National Product and its composition in 1965 and 1975" Paris, 30th April, 1959 (DT/E/EN/58.107) prepared by the "Working Party of Energy Advisory Commission" proposes two rates of growth; one more optimistic and one less optimistic. The optimistic projection for European countries has been chosen, (an increase in GNP by 3.2% per year on the average) because it is believed that the continuation of investment at the present level should make possible quite a favourable expansion of output. Furthermore, beneficial results are likely to accrue from present efforts at European economic integration.

12. For the United States and Canada, the projections are largely the same as those in preceding studies by the International Secretariat dated 31st October, 1956 and entitled: "Committee on Soviet Economic Policy, Comparison of Economic Growth in the Soviet Bloc and in NATO Countries", (AC/89-D/11 and its "Addendum 2" and "Annex II", the latter dated 12th November, 1956). These projections assume that the total GNP of the United States and Canada will increase in future by 3.6% per year on the average.

13. It has been considered that the slower growth of the United States economy during the years since the study was due to special short-term factors (1957-58 recession) rather than to a weakening in the basic dynamism of the American economy. Canada and the United States have been treated as an aggregate. While their economy differ in many aspects, their close economic relations justified such a procedure.

(b) The USSR

14. The projection of Soviet economic growth was based on an assessment of future prospects of the Soviet economy, contained in a recent National Planning Association study(1). This assessment is based on the following reasoning:

- (1) it is difficult to find in Soviet history any sustained period of "normal economic growth", on which projection of future trends might be based. The most relevant "normal period" seems to be the years 1951-58;
- (2) over this period, industrial production has risen swiftly, although at a declining rate, amounting to about 10.5% per annum over the years 1951-55, and 9.5% per annum for 1951-58 as a whole. Agricultural output at first stagnated, but began to rise quite rapidly about 1953-54. Estimates of the rate of growth of the national income vary, according to the weight given to agriculture and services; on the whole, however, a fairly good case can be made for an annual increase in national income of 8 to 8.5% per annum, with the more rapid rise in agricultural production in the last few years offsetting the decline in the rate of growth of industry;
- (3) in future, official Soviet plans seem to imply a further decline in the rate of growth of industrial output. For agriculture, faster growth seems called for;

(1) Communist Economic Strategy, prepared by A Nove.

- (4) the expectation of a further decline in the rate of industrial growth seems in fact justified by a number of factors which are likely to retard Soviet economic development:
- (i) reduction in the emphasis on the "growth inducing" heavy industry;
 - (ii) the impact of the low birthrate of the war years on the rate of increase of the labour force. This factor will affect the Soviet rate of growth for a few years only, however; after 1962-63 the population of working age will once again rise rapidly.
 - (iii) development of additional natural resources is becoming more difficult. There are practically no virgin lands left to be opened up for agricultural production; exploitation of the large natural resources of the East will require costly investment to create the necessary infrastructure;
 - (iv) there is less scope than previously for borrowing Western techniques, now that Soviet industrial efficiency has reached a fairly high level;
- (5) the study also lists a number of favourable factors:
- (i) the educational effort will pay dividends, both in improving the quality of the labour force and in facilitating technical development;
 - (ii) Soviet planning, with its great opportunities for standardisation and assured long runs, may prove very suitable for the development of automation. Automation will also be facilitated by the lack of strong workers' organizations;
 - (iii) the development of Siberian resources, although initially very costly, may eventually pay off handsomely;
 - (iv) there remains much surplus labour in agriculture; this represents a hidden reserve on which it should prove possible to draw in future; provided the present more realistic agricultural policies are contained;
- (6) it would be absurd to pretend that these and other factors can be systematically weighted to obtain

scientific predictions of growth rates. The assumptions underlying the study may not be completely fulfilled; unforeseen events may occur. An element of personal judgement must enter into any assessment;

- (7) On the whole, however, it seems warranted to expect that the Soviets will be able to sustain a rate of industrial growth approximately 8% per annum. For agricultural production, the growth rate is unlikely to exceed 4% per annum. The overall rate of increase of output may be around 6% per annum. (In the study, a rate of 5.8% per year has been used).

(c) The Satellites

15. No independent projection was made for the satellite economies; it was felt that the most realistic approach would be to start from the rate of growth projected for the Soviet Union, and to assume that the rate for the satellites would be somewhat lower.

- (1) the satellites have been, and are likely to continue to follow policies closely following the Soviet pattern. Even Poland, which has departed from the Soviet models in some ways, continues to give priority to heavy industry, and followed the Soviet example when Russia decided to speed up the growth of her chemical industry;
- (2) these policies, however, cannot be expected to result in a rate of economic growth matching that achieved by Russia;
- (i) methods of foreign trade in the satellites are inefficient. Progress made in furthering a rational division of labour between various satellite economies has been insufficient, and continues to encounter difficulties. This will slow down the introduction of automation, techniques of mass production, etc.;
- (ii) natural resources in the satellites are limited; they are not shared as they should be between the different countries, because of the inefficiency of foreign trade mechanisms. This will distort the pattern of development of these natural resources, by forcing some satellites to produce goods which might be produced more cheaply elsewhere;

(iii) there is almost no movement of capital and labour between the satellites. Thus East Germany, with a highly developed industry, will suffer from a labour shortage at the same time as Bulgaria suffers from scarcity of capital. In Russia, on the other hand, large transfers of labour and capital across the country can be made freely if necessary to speed up economic growth;

(3) it has been assumed that the GNP of the satellites would grow by 5% per year, i.e. less than the 5.8% rate projected for Russia.

III. POPULATION PROJECTIONS

(a) Total Population

16. The statistics on population for the NATO European countries are from the OEEC report of 30th April, 1959, mentioned earlier. The 1958 figures have been obtained by interpolation.

17. For the United States, Canada, the USSR, the East European satellites and China, use was made of the statistics in the United Nations publication: "Accroissement de la population mondiale dans l'avenir", New York, 1958. The 1958 figures for these countries were also obtained by interpolation.

(b) Population of Working Age (age group 15-64)

18. For NATO European countries, the population of working age was calculated on the bases of the OEEC report: "Demographic Trends in Western Europe" 1956. The ratio between this population and total population for 1951 has been applied to the total population for 1955 (OEEC report of 30th April, 1959) to estimate the population of working age for that year. The 1958 data have been obtained by interpolation. For 1965 and 1975, the changes envisaged by OEEC in its report of April 30th, 1959, have been used in projecting the figures.

19. For Canada and the United States, the statistics on the population of working age are from the OEEC Statistical Bulletin of March, 1959; for Canada, statistics have been extrapolated for 1958, 1965 and 1975, while those for the United States have been extrapolated for 1958 and 1975.

IV. PHYSICAL PRODUCTION

20. The figures for 1957 for NATO countries have been taken from the OEEC General Statistical Bulletin, July 1959. For Russia and its East European satellites, the statistics are from the United Nations Statistical Year Book, 1958 and for certain products from the Soviet Plan Fulfilment Reports.

21. Projections of physical production have been based on the following sources:

- (a) Soviet bloc countries, physical output in 1965: estimates are based on available plans;
- (b) Soviet bloc countries, physical output in 1975: it has been assumed that the % increase in the 10 years 1965-75 would equal the increase planned for the 8 years 1957-65. This allows for some reduction in the rate of industrial expansion;
- (c) for European NATO countries, projections are based on OEEC estimates⁽¹⁾;
- (d) for North American NATO countries, the projections are basically identical with those in the previous study, AC/89-D/11, table 7.

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(1) EAC(58)3, Energy Advisory Commission, Provisional projections of fuel demand and imports in 1965 and 1975.

TABLE I
 POPULATION
 1958 - 1975

Areas (1)	Projections		
	1958 (2)	1965 (3)	1975 (4)
		(millions)	
1. Total NATO	460.5	491.5	534.2
United States and Canada	190.4	210.3	239.3
Other NATO Countries	270.1	281.2	294.9
2. Soviet Bloc	306.1	339.6	391.9
USSR	208.1	234.0	275.0
Eastern European Satellites	98.0	105.6	116.9
3. Communist China	636.0	720.0	894.0
		<u>1958 = 100</u>	
4. Total NATO	100	107	116
United States and Canada	100	110	126
Other NATO Countries	100	104	109
5. Soviet Bloc	100	111	128
USSR	100	112	132
Eastern European Satellites	100	108	119
6. Communist China	100	113	140
		<u>Total NATO = 100</u>	
7. Total NATO	100	100	100
United States and Canada	41	43	45
Other NATO Countries	59	57	55
8. Soviet Bloc	66	69	73
USSR	45	47	51
Eastern European Satellites	21	21	22
9. Communist China	138	146	167

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TABLE II
POPULATION OF WORKING AGE
1958-- 1975

Areas	Projections		
	1958	1965	1975
(1)	(2)	(3)	(4)
		(millions)	
1. Total NATO	299.1	315.8	340.2
United States and Canada	115.0	126.6	147.0
Other NATO Countries	184.0	189.2	193.2
2. Soviet Bloc	208.5	232.6	268.4
USSR	142.5	160.3	188.4
Eastern European Satellites	66.1	72.3	80.0
		<u>1958 = 100</u>	
3. Total NATO	100	105	114
United States and Canada	100	110	128
Other NATO Countries	100	103	105
4. Soviet Bloc	100	111	128
USSR	100	112	132
Eastern European Satellites	100	109	121
		<u>Total NATO = 100</u>	
5. Total NATO	100	100	100
United States and Canada	38	40	43
Other NATO Countries	61	60	57
6. Soviet Bloc	70	73	79
USSR	47	51	55
Eastern European Satellites	22	23	23

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TABLE III
GROSS NATIONAL PRODUCT

A. PROJECTED GROWTH

Areas		Indexes 1958 = 100		
		1958	1965	1975
(1)		(2)	(3)	(4)
1.	Total NATO	100	139	193
	USA and Canada	100	123	182
	other NATO countries	100	159	214
2.	Soviet bloc	100	147	256
	USSR	100	149	264
	Eastern European Satellites	100	140	231
3.	Communist China	100	173	363

Note: In order to show indices of growth for groups of countries combined, it was necessary to convert the national product of each country to a common currency unit. These conversions, or evaluations in a common currency, determine the weight of each country's national product but do not significantly alter the indices of growth shown above. The following table, however, must be interpreted with great care. There are many objections to international comparisons of national product as such, and the figures shown below certainly overweigh both the NATO European and the Soviet bloc countries. The problem of absolute comparisons of the national products of these countries is discussed in Annex.

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TABLE III (Cont'd)

B. PROJECTED NATIONAL PRODUCTS

Areas	1958	1965	1975
(1)	(2)	(3)	(4)
	billion 1958 dollars (United States price weights)		
1. Total NATO	744.4	1,037.5	1,439.6
USA and Canada	476.3	609.9	865.0
Other NATO countries	268.1	427.6	574.6
2. Soviet bloc	253.0	372.0	617.0
USSR	189.0	282.0	499.0
Eastern European Satellites	64.0	90.0	118.0
3. Communist China	55.0	95.0	200.0
	<u>Total NATO = 100</u>		
4. Total NATO	100	100	100
USA and Canada	64	59	60
Other NATO countries	36	41	40
5. Soviet bloc	34	36	45
USSR	25	37	34
Eastern European Satellites	8	9	10
6. Communist China	7	9	14

Note: This table provides the revision of the data contained in the main report on page 11.

TABLE IV

GROSS NATIONAL PRODUCT PER HEAD, 1958, 1965, 1975
(1958 Dollars)

Areas	1958	1965	1975
(1)	(2)	(3)	(4)
1. Total NATO	1,616	2,110	2,694
USA and Canada	2,501	2,900	3,614
NATO Europe	992	1,520	1,948
2. Soviet Bloc	826	1,095	1,651
USSR	908	1,205	1,814
East European Satellites	653	852	1,266
		<u>1958 = 100</u>	
3. Total NATO	100	130	167
USA and Canada	100	116	144
NATO Europe	100	153	196
4. Soviet Bloc	100	132	199
USSR	100	133	199
East European Satellites	100	130	194
		<u>Total NATO = 100</u>	
5. Total NATO	100	100	100
USA and Canada	155	137	134
NATO Europe	61	72	72
6. Soviet Bloc	51	52	61
USSR	56	57	67
East European Satellites	40	40	47

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TABLE V
 PHYSICAL PRODUCTION OF SELECTED BASIC PRODUCTS
 - 1957

Areas	Energy (million tons hard coal equiv- alent)	Electric Power (billion klh)	Hard Coal (million metric tons)	Crude Petroleum (million metric tons)	Pig-Iron Ferro- Alloy (mill.met- ric tons)	Crude Steel (mill. metric tons)	Aluminum Primary (thou- sand met- ric tons)	Copper refined (thou- sand met- ric tons)	Lead refined (thousand metric tons)	Zinc refined (thousand metric tons)	Sulphuric Acid (thou- sand met- ric tons)	Cement (million metric tons)
Total NATO	2,204	1,158	956	787	137	190	2,506	2,424	1,203	1,972	26.8	128
USA and Canada	1,544	806	475	578	76	107	2,000	1,760	678	1,184	15.6	59
NATO Europe	587	352	481	9	61	83	506	664	525	788	11.2	69
Soviet Bloc	837	295	452	110	48	67	636	545	374	499	6.4	44
USSR	559	210	328	98	37	51	530	500	275	325	4.6	29
East. European Satellites	278	85	124	12	11	16	106	45	99	174	1.8	15
TOTAL NATO	100	100	100	100	NATO = 100 100 100		100	100	100	100	100	100
USA and Canada	70	70	50	98	55	56	80	73	56	60	58	46
NATO Europe	27	30	50	2	45	44	20	27	44	40	42	54
Soviet Bloc	38	25	47	28	35	35	25	22	31	25	24	34
USSR	25	18	34	25	27	27	21	20	23	16	17	23
East. European Satellites	13	7	13	3	8	8	4	1	8	9	7	12

Note: The data above were taken from various publications: OEEC and United Nations in particular.

TABLE VI
ENERGY AND CRUDE STEEL PRODUCTION
1957 - 1965 and 1975

Areas	ENERGY ⁽¹⁾			CRUDE STEEL		
	1957	1965 ⁽²⁾	1975	1957	1965 ⁽²⁾	1975
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			million metric tons			
1. Total NATO	2,204	2,590	3,590	190	275	390
US and Canada	1,544	1,900	2,780	107	160	220
Other NATO countries	587	690	810	83	115	170
2. Soviet Bloc	837	1,380	2,312	67	122	222
USSR	559	1,002	1,790	51	93	169
Eastern European satellites	278	380	522	16	29	53
			Index 1957 = 100			
3. Total NATO	100	117	117	100	145	205
US and Canada	100	123	118	100	149	205
Other NATO countries	100	117	138	100	138	205
4. Soviet Bloc	100	165	267	100	182	331
USSR	100	179	320	100	182	327
Eastern European satellites	100	136	188	100	181	331
			Total NATO = 100			
5. Total NATO	100	100	100	100	100	100
US and Canada	70	73	77	56	58	56
Other NATO countries	27	26	31	44	41	43
6. Soviet Bloc	38	53	64	35	44	56
USSR	25	39	49	27	34	43
Eastern European satellites	13	15	14	8	10	13

(1) Production in terms of hard coal equivalent
(2) Plans