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2. Title or Subject (31)
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3. Analyst(s) & Other Contributors (31)
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Manhours: 15

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4. Requester and Purpose (39)
Line 1   Senator William Proxmire
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Classification (39)

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5. Precis (39)
Line 1   Response focuses on Senator
Line 2   Proxmire's questions
Line 3   regarding comparisons of con-
Line 4   sumption in the US & USSR with
Line 5
Line 6   particular reference to the
Line 7   fields of health & education.
Line 8

APPROVAL:

Branch (if less than 10 manhours)	Date
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Director (for special requesters)	Date

Note: Numbers in parentheses indicate the maximum number of characters and blanks to be inserted in a line—i.e., (16) means no more than 16 spaces.

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RESPONSE TO QUESTION 14

Background

Question 14 concerns the methods and results of our comparisons of consumption in the US and the USSR, with particular reference to the fields of health and education.

In the transcript of last year's hearing, pages 52 to 55 relate especially to Question 14. The estimates on page 52 give Soviet per capita consumption as a percent of US per capita consumption in 1972 as follows:

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Total . . . . . . . . . . . . . 34%
    Education ., . . . . . . . . . 63%
    Health  . . . . . . . . . . . 32%
    Personal services . . . . . . 32%
    Durable goods . . . . . . . .  9%
    Soft goods. . . . . . . . . . 19%
    Food. . . . . . . . . . . . . 60%
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General Comments on Results

These results stem from analytical work extending back more than a decade. Each comparison is our best judgment of a single number that represents a range of possible estimates. Because of conceptual ambiguities and the incomplete nature of both Soviet and US data, however, the numerical results can only be approximations that support the following generalizations: (a) Soviet per capita consumption is a fraction of US per capita consumption, with "about one-third" being a handy representation of the

relation; and (b) Soviet per capita consumption -- which is governed by the leaders' decision, not by free choice in the marketplace -- is comparatively high in certain categories (food and education), comparatively low in others (durable goods and soft goods).

Summary of Method

To estimate Soviet per capita consumption as a percent of US per capita consumption, we take the geometric mean of (1) Soviet per capita consumption valued in rubles as a percent of US per capita consumption valued in rubles, and (2) Soviet per capita consumption valued in dollars as a percent of US per capita consumption valued in dollars. The attached report (A Comparison of Consumption in the USSR and the US, CIA, January 1964) describes the methods and underlying data in a good deal of detail. The comparison can be summarized in the following formula:

$$X = 100 \cdot \frac{N_{US}}{N_{USSR}} \cdot \sqrt{ \frac{\Sigma P_{US} \cdot Q_{USSR}}{\Sigma P_{US} \cdot Q_{US}} \times \frac{\Sigma P_{USSR} \cdot Q_{USSR}}{\Sigma P_{USSR} \cdot Q_{US}} }$$

"X" = Soviet per capita consumption as a percent of US per capita consumption

"N" = population

"P" = unit price of a given consumption good or service

"Q" = quantity of that good or service

Since we cannot identify the prices and quantities for all of the goods and services consumed by the Soviet and US populations, we start with categories of consumption -- representing both private and public expenditures as reported in the Department of Commerce accounts for US GNP and as estimated from published Soviet data. We then value US consumption in rubles and Soviet consumption in dollars to obtain the comparisons described above. The purchasing-power-parity ratios (ruble-dollar ratios) derived in the attached report serve as the bases for these conversions. Calculated from an extensive sample of consumer goods and services in 1955, the ruble-dollar ratios have been updated year-by-year on the US side with price indexes published by the US Department of Commerce. Because Soviet consumption is estimated in constant 1955 ruble prices, the Soviet side of the price ratios does not need to be updated.

Comments on Method

Even if specifications, quantities, and prices of US and Soviet goods were perfectly known, calculations of relative consumption would vary depending on which price system is used for valuation. In general, the comparison using ruble prices favors the United States, and the comparison using dollar prices favors the USSR. This is so because ruble-dollar ratios tend to be high on goods and services which the US produces relatively more efficiently

and low on goods and services which the USSR produces relatively more efficiently. The geometric mean of comparisons in two different sets of prices is a compromise commonly used in making international comparisons.*

In fact, the establishment of specifications, quantities, and prices of Soviet goods is a painstaking task. Years of work by government and academic specialists have only partially overcome the serious deficiencies in the Soviet data and the inherent difficulties of comparing two quite different economies. In particular: (1) the Soviet economy is not designed to respond to price signals so that certain kinds of goods are not available (for example, a large number of additional housing units could be sold at existing or higher prices), (2) the range of choice is a key aspect of consumer welfare, and the question of choice still is not taken into account in our comparisons; (3) Soviet goods and services are generally of lower quality than US goods and services, notable examples being housing, construction, health and education services, and maintenance and repair services. The allowances made for quality in our comparisons probably err on the conservative side; in the case of labor services in health and education, we apply a 20% quality

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* See, for example, Paul Samuelson, "Analytical Notes on International Real Income Measures," Economic Journal, September 1974, p.600.

discount based on a consideration of standards of training. A 20% quality discount is also applied to the machinery and construction components of new fixed investment.

Certainly the main problem with the method is its reliance on benchmark data almost 20 years old. The price indexes that are used to update the 1955 ruble-dollar ratios become less reliable as time passes. We have therefore been engaged in a general revision of all of our ruble-dollar ratios, including those for consumer goods and services. The new ratios will reflect Soviet and US prices of the early 1970s.

The 1973 Comparison of Health and Education Services

The comparison of consumption of health and education services in the USSR and the United States covers current purchases of material goods and labor services; investment in buildings and equipment is classified in the new fixed investment component of GNP by end use. In the 1973 comparison, our procedure resulted in the following ruble and dollar comparisons:

Current Public and Private Expenditures on:	Billion 1955 Rubles		Billion 1973 Dollars	
	USSR	US	USSR	US
Health	7.2	30.9	57.8	83.1
Education	12.3	21.0	77.7	77.4

Clearly, the USSR does much better in a dollar comparison than in a ruble comparison. The reason is that (1) the ruble-dollar ratios for wages of employees in health and education (.07 and .11, respectively) are much lower than the ruble-dollar ratios for material purchases (.71) and (2) the United States spends far more on material purchases per employee in health and education. Therefore, a ruble valuation gives greater weight to the heavy US outlays on material purchases while a dollar valuation gives greater weight to manpower, favoring the USSR.

In health and education, as in the measurement of many services, comparisons must be made in terms of inputs -- man years of labor and supplies of materials. The consequences of health and education services -- healing, prevention of illness, training, knowledge -- defy measurement. Although the USSR may approach or even surpass the US in the provision of individual inputs such as number of doctors, elementary school teachers, or hospital beds, these are poor indicators of the total quantity of inputs allocated to health or education. In the United States, for example, the range of services provided by hospitals and the equipment and drugs that are available for patient care markedly exceed the capabilities or the operating procedures of the typical Soviet school.*

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* Because of the change in the range of services provided, measuring the real expenditures on health and education in the US in 1950 and 1975 by the number of doctors and the number of teachers would also result in a substantial understatement of the difference in the volume of services provided.

Attachment: CIA report, as noted.