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Soviet Bloc Currency Conversions  
Edward Ames

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## Soviet Bloc Currency Conversions

August 4, 1953  
Edward Ames

Since December 1947, five Soviet bloc countries have undergone currency conversion operations.<sup>1/</sup> These conversions differ from those in countries having market economies, since neither the total level of output nor the allocation of output as between investment, consumption, and exports need necessarily be affected. Moreover, prices will be affected only to the extent that the conversion operation itself changes them. In these circumstances, it might appear that the conversion is of no economic importance. Actually, however, it does appear to be a means whereby the government of a Soviet-type economy can correct for maladjustments between purchasing power and the availability of goods in an economy. The terms of the conversion reflect both the intentions of the government and the conditions prevailing prior to the conversion. A study of the conversions, therefore, gives some information as to the economic processes of Soviet-type economies, even though the available information concerning the purposes of the government and the basic economic situation within the individual countries involved is usually scanty.

Reduced to its simplest terms, the currency conversion occurs, in Soviet-type economies as elsewhere, because the note circulation is too large. The government exchanges old bank notes for new in such a ratio as to reduce the currency outstanding. The reason for doing this usually develops (speaking in terms of the central bank balance sheet) because bank credit has expanded too much, or because budget revenue has been too small in relation to expenditures. The problem of defining "too large" or "too small", however, involves defining the "right" amount of money which should exist, given existing incomes, outputs, and prices; implicitly it also involves defining what incomes and prices should be, given existing output plans. Soviet-bloc literature is largely silent concerning these problems, and the student must develop his theories about Soviet bloc monetary and credit policies largely on the basis of the actions of the authorities, rather than on the basis of any reasoned explanation which they may make concerning their actions.

The conversions, however, are in part operations designed to "clear the books" of extraneous elements. The pre-communist public debt may (as in Czechoslovakia) be wiped out, or blocked accounts representing compensation for

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<sup>1/</sup> The USSR, in December 1947; Poland in October 1950; Rumania in January 1952; Bulgaria in May 1952; and Czechoslovakia in June 1953. Other conversions within the bloc are discussed briefly by J. G. Gurley, in *Excess Liquidity and Monetary Reform*, American Economic Review, March 1953. These are not discussed in this paper as they were designed either to liquidate the consequences of the war and German occupation, or to cope with hyperinflation occurring prior to the final consolidation of communist power.

nationalized property written off (as in Rumania, Bulgaria and Czechoslovakia). These operations amount simply to a recognition of the fact that the governments of the countries feel no responsibility for the claims of "bourgeois elements"; these groups, insofar as they had not actually been "liquidated" at the time of the conversion, had undoubtedly abandoned hope of any genuine compensation for their property. Conversions are also related to the problem of organizing an effective financial and monetary system, from the point of view of the authorities, and in this paper, attention will be concentrated on this aspect of the conversions.

### The currency conversion in the consumer sector

Elements appearing in most of the currency conversions now under examination include: (1) an exchange of old currency for new in a ratio which will drastically reduce the number of currency units in circulation; (2) the abolition of rationing and multiple prices in the consumer sector; (3) wage adjustments offsetting part of the losses which favored groups suffer from the changes in the retail price system; and (4) a general proportional reduction in money wages and retail prices as determined by these adjustments. The last of these changes is obviously of no particular importance to the consumer sector as such. The other three, however, affect considerably the consumer sector of the economy. It will be noted that they have two functions: (1) a reduction in accumulated and presumably unspendable purchasing power; and (2) a change in the relation of current earnings and spendings of the population, through changes in the relation of prices to money wages.

#### A. Background of the conversions

Multiple price systems in Soviet-type economies result from excess consumer purchasing power. Wage payments are typically on a piecework basis, so that increased output means increased money wage payments (See Table 1).<sup>1/</sup> On the other hand, output of consumer goods does not rise as rapidly as money wage payments, since most increases in output takes place in the capital goods industries.

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<sup>1/</sup> Since 1947, the USSR has been an exception to this rule. In 1947, the Soviet piecework system was changed to a system of "progressive norms", in which piecework quotas are automatically increased as labor productivity rises, so that money wage rates remain stable. The satellite governments have as yet been unable to introduce such automaticity, although they periodically raise work quotas.

Table 1

Employment, Average Wages, and Total  
Wage Bill in the Non-Agricultural  
Sectors of Five Soviet Satellites  
(1948 = 100)

	1949 <u>a/</u>	1950 <u>a/</u>	1951 <u>a/</u>	1952 <u>b/</u>
<u>Bulgaria</u>				
Employment	110	119	126	n.a.
Average money wage	108	114	122	n.a.
Total wage bill	119	136	154	n.a.
<u>Czechoslovakia</u>				
Employment	102	110	114	119
Average money wage	110	130	140	155 <u>c/</u>
Total wage bill	112	142	159	184
<u>Hungary</u>				
Employment	112	127	140	154
Average money wage	117	133	147	180
Total wage bill	131	169	206	277
<u>Poland</u>				
Employment	117	126	142	151
Average money wage	122	143 <u>d/</u>	180 <u>d/</u>	n.a.
Total wage bill	143	180 <u>d/</u>	256 <u>d/</u>	n.a.
<u>Rumania</u>				
Employment	118	146	159	169
Average money wage	130	144	n.a.	n.a.
Total wage bill	153	210	n.a.	n.a.

n.a. Not available.

a/ Based on year-to-year changes reported in the Economic Survey of Europe Since the War, Economic Commission for Europe, 1953, page 33.

b/ From annual reports on plan fulfillment.

c/ Industry only.

d/ These figures are apparently net of changes in the general level of wages and prices effected in the currency conversion of October 1950.

Complete data are not available, but for several countries it is clear (Table 2) that the goods available to consumers increased less rapidly than money wages over this period.<sup>1/</sup> Since saving cannot be expected to have risen sufficiently, this means either that consumer goods prices must have risen steadily, or, to the extent that they were fixed by price control (as was usually the case), that the population was forced to hold unspendable currency. This latter outcome obviously is true of Rumania, where wages more than doubled from 1948 to 1950, while total retail transactions increased only 9 per cent.

Table 2

The Relation of Consumption  
and Money Wages in Four  
Soviet Satellites, 1948-1951 a/  
(1948 = 100)

	1949	1950	1951
<u>Czechoslovakia</u>			
Consumption, constant prices	108	118	131
Wage bill	112	142	159
<u>Hungary</u>			
Consumption, constant prices	122	134 b/	152
Wage bill	131	169	206
<u>Poland</u>			
Consumption, constant prices	101	118	126
Wage bill	143	180	256
<u>Rumania</u>			
Retail trade, current prices	90	109	111
Wage bill	154	210	n.a.

a/ Economic Survey of Europe Since the War, op. cit., pages 24 (data derived by subtraction), and 31n; and Table 1.

b/ In view of the severe drought in 1950, this figure seems questionable.

The natural result of this type of situation is that commodity shortages appear. In order to assure the distribution of goods, the authorities

<sup>1/</sup> These data overstate the increase in goods available to consumers, since (apart from technical deficiencies in the indices themselves) these countries tend to export consumer goods to the USSR, receiving capital goods and industrial raw materials in exchange. They are used because they are the most convenient tabulation available.

establish rationing. Since the prices of rationed goods are fixed and since consumers cannot spend all their incomes at the rationed goods stores, the state typically opens stores selling unrationed goods (often called "commercial stores") at high prices, in order to absorb a part of this purchasing power. A secondary objective of the unrationed goods stores is to hold down prices in free markets, to keep the kulaks, or "rich peasants" from "speculating" by selling on these markets.

Reasons for price unification — Whatever the reasons for introduction of rationing into a Soviet-type economy 1/, the maintenance of a rationing and dual price presents various difficulties to the government of a Soviet-type economy. Without attempting to document in detail official statements in all countries which have found it advisable to abolish rationing, it is possible to list various undesirable consequences of a rationing and dual prices system.2/

1. The rationing and dual price system is extremely cumbersome, and requires an elaborate bureaucratic apparatus.

2. It leads to speculative buying by "speculators" anticipating price increases in the free markets.

3. It leads to "arbitrage" by persons buying on ration cards for resale in free markets, and thus to a distribution of goods and money incomes which the government does not want.

4. It reduces incentives to increased industrial productivity, since a rationing system tends to nullify the effects of piecework wage systems. In extreme cases, it may actually lead to decreased industrial output.

5. It leads to misuse of scarce goods since, for instance, bread and bread grains may be used to feed livestock if bread prices are controlled through the rationing system, while fodder prices are not.

6. It increases the purchasing power of the peasants relative to the city population, causing unwanted social redistribution of incomes through the free market system.

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1/ These may range from drought (Hungary and Rumania, 1950), decline in farm output due to collectivization (USSR, 1930), war (USSR, 1941), or inflationary pressures upon available supplies caused industrialization and export programs.

2/ This discussion is based upon Rakosi's address of December 1, 1951, on the abolition of rationing in Hungary; the Polish Decree of January 4, 1953 on the abolition of rationing, and the commentary of the same date by Edward Ochab, secretary of the All-Polish Committee of the National Front; and P. M. Pavlov's book, *O planovykh rychagakh sotsialisticheskogo gosudarstva*, Moscow, 1950.

7. It tends to aggravate excess consumer purchasing power since not all incomes can be spent and it therefore tends to place the distribution system under continually increasing pressure.

Not all of these undesirable effects are of equal importance in all economies, and they do not all become apparent at the same time in any country. In particular, points 3, 5 and 6 do not seem to have been as true in Czechoslovakia as they may have been in the less industrialized countries of the bloc. However, the complaints about rationing systems are sufficiently similar in the various Soviet bloc countries that this list would seem to be a fairly typical list of the difficulties to which they lead.

Incidence of price unification — The output of consumer goods in Soviet-type economies is fixed by the economic plan rather than by market forces. Abolition of rationing will not necessarily affect this output (except to the extent it increases labor efficiency). The abolition of the discriminating rationing system 1/ has, however, complicated effects upon the distribution of purchasing power.

Persons without ration cards, or having small rations, who had been dependent upon supplies of unrationed goods selling at high prices, presumably benefit from the fact that the unified prices are lower relative to money wages than the former prices of unrationed goods. Peasants formerly selling on free markets suffer from reduction in free markets, but they gain from the fact that they no longer have to purchase at free market prices (their ration cards for industrial goods being normally small or nil). Workers in the preferential ration categories suffer from the fact that they must now purchase at the higher "unified" prices. However, the groups receiving preferential ration cards typically receive relatively high money incomes as well, and therefore have more to spend in the unrationed stores than workers in the intermediate ration categories. A part of their loss from the increase in prices from the rationed level is offset by a gain from the reduction of prices in the unrationed categories, and by wage increases.2/ Workers in the medium ration-classes are mainly in low and medium income groups. They are the most seriously hurt by the price unification, since they were the most dependent

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1/ In Czechoslovakia, for instance, a differential rationing system was introduced in December 1951, with differentials between heavy and light industrial labor, office workers, and dependents. In 1952 "capitalist remnants" and "kulaks" (peasants owning more than about 20 hectares of land) were deprived of ration cards; such persons and their families were deprived of ration cards even if they were employed in jobs normally entitled to them.

2/ In some cases, decrees have specifically given workers in the better ration categories larger wage increases than those in smaller ration categories.

upon the lower (rationed) prices. Finally, if the price unification is successful, the population as a whole will be able (or forced) to spend its entire income and will no longer be able (or forced) to accumulate holdings of currency. If unification of prices is accompanied by a currency conversion, the population loses to the extent that part of its accumulated cash savings (which may represent voluntary or involuntary holdings) is largely eliminated.<sup>1/</sup>

The combined result of price unification and currency conversion, therefore, depends upon the structure of the economy. Czechoslovakia is an industrialized country with a food deficit, whereas Rumania and Bulgaria are agrarian countries with food surpluses. It would seem likely, therefore, that the Czech government, through its control over imports, could hold down the price of free market food more effectively in the pre-conversion period than the other governments. Likewise, spendings on unrationed goods in Czechoslovakia would probably tend to be concentrated more in state stores, while such Rumanian or Bulgarian purchases would tend to be mainly in free peasant markets. Therefore, there would be less tendency in Czechoslovakia than in the other countries for currency overhang to be concentrated in rural areas. The impact of the Czech conversion would be more heavily concentrated in urban areas, while in the other countries, the peasants would be the main losers. Since communist support is, if anything, urban, and its opposition rural, the Czech conversion would perhaps have more serious political consequences than the others, where the chief sufferers from the conversion were already hostile to the regime.

A price unification also changes the nature of incentives within an economy. Under a multiple price system a worker may be more interested in his ration category than in his money income. He may have little incentive to work hard or regularly, since he may be unable to spend all of his money income, and since ration card administration is less flexible than piecework wages. In the circumstances, exhortation and in some cases legislation punishing absenteeism, limiting labor turnover, etc., may be necessary. The unification of prices and the abolition of rationing serve to change incentives in two ways. By raising retail prices from ration levels, they make money income the determinant of how many goods the worker can buy. By making his money income (rather than his ration category or accumulated currency) the determinant of his purchasing power, they give him an incentive to produce more. This incentive is probably more effective than police measures involved during periods of a dual price system.

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<sup>1/</sup> Savings deposits are a method of saving favored by communist governments. They are normally given relatively favored treatment, being reduced in the same proportion as money wages (or deposits of state enterprises) rather than in the same proportion as outstanding currency. There is sometimes a graduated conversion rate favoring small deposits. The importance of savings deposits varies with the degree of economic maturity of the individual country.



B. Analysis of conversion operations

The Soviet currency conversion of December 1947 is the case which can most usefully be studied as an example of how the ratio of conversion of old currency to new may be selected by Communist monetary authorities. Information on the Soviet economy of 1947-48 is relatively accessible, and the conversion itself is simpler than the others in that basic money wages were not affected by the conversion. Its purpose seems to have been to reduce the level of currency outstanding to the average amount which consumers might be expected to have outstanding, assuming that (1) Soviet workers are normally paid twice a month (as is known); (2) their cash income at one payday should normally be spent in state and cooperative stores by the following pay day; (3) the average amount of currency "required" for normal trade operations is therefore equal to half of the anticipated value of retail trade during a half-month period; (4) the conversion ratio between old currency and new is determined by the ratio of the existing volume of currency to this "required" amount.

In the Soviet case, quantitative verification of this hypothesis is in some degree possible. Retail trade turnover in 1947 and 1948 may be estimated at 335 and 365 billion rubles respectively <sup>1/</sup>; these represent turnover of 14 and 15.2 billion rubles in an average half-month pay period in these two years. Assuming that workers' spending is normally distributed evenly over the interval between pay periods, an average of 7 to 7.6 billion rubles of currency outstanding would be required to maintain this volume of trade. If in fact, the currency conversion at the rate of 10:1 was designed to leave 7 - 7.6 billion rubles of currency outstanding, then currency outstanding would have been 70 - 76 billion rubles prior to the conversion.<sup>2/</sup>

It is possible to reconcile such an estimate with other information, in such a way as to obtain a rough estimate of the State Bank balance sheet prior to the conversion, as shown in Table 3. While this demonstration is not in any sense conclusive, being based upon somewhat elusive computations, it serves at least to show that it is consistent with independently computed estimates of trade turnover and credit. It would seem, therefore, that the currency conversion ratio in the Soviet currency conversion of 1947 was fixed by the authorities in such a way as to reduce the volume of currency outstanding to the level required by the plans for retail trade turnover. It is not possible, because of inadequacies of data, to perform similar computation for the satellite countries, but the same reasoning may have governed the authorities in fixing conversion rates.

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<sup>1/</sup> These figures are revisions of estimates contained in this Review, December 4, 1951.

<sup>2/</sup> The BIS annual report for 1948 (page 36) estimates currency in circulation prior to the conversion at 420 billion, but its calculations cannot readily be reconciled with other data.

Table 3Estimated Balance Sheet of  
the State Bank of the USSR, December, 1947

<u>Assets</u>		<u>Liabilities</u>	
Loans to enterprises <u>a/</u>	67 - 76	Deposits of enterprises <u>a/</u>	9
Loans to Government <u>b/</u>	26	Notes <u>c/</u>	70 - 76
Total	93 -102	Ministry of Finance <u>d/</u>	14 - 17
		Total	93 -102

a/ "Current Assets and Liabilities of Soviet Enterprises", This Review, April 29, 1952. The range of the loan estimates is given by the 1947 and 1948 estimates of total loans in this paper.

b/ The total budget cash deficit, 1942-1943. Aleksandrov, A. M., Finansy i Kredit SSSR, Moscow, 1948, page 51.

c/ See discussion in text.

d/ Balancing item.

If money wages are reduced at the time of the currency conversion, the conversion rate will presumably be affected. Thus if the USSR had reduced money wages to half their former level, it presumably would have had currency "requirements" only half as great as the 7 - 7.6 billion estimate given above. It might then have used a conversion ratio of 20:1 in currency rather than 10:1.

It is possible, therefore, to compare the pre-conversion currency overhangs of the four countries in question by a comparison of the reduction in money wages to the reduction in currency outstanding, as shown in Table 4.

Currency conversions and price unification -- It has been indicated that currency conversions are carried out because retail trade transactions are insufficient to absorb the current money earnings of the population. "Excessive" currency holdings of the population can be eliminated either by increasing consumer goods output or raising retail prices, so that consumers must use all of their cash resources (current incomes plus accumulated cash holdings) to maintain their current spendings. If such measures are possible, rationing and multiple prices can be abolished without a currency conversion, as has been done twice in Poland (1949 and 1953) and once in Hungary (1951). Thus a rationing and multiple price system can be eliminated without a currency conversion, in some cases at least.

Table 4

The Currency Overhang at the  
Time of East European Currency Conversions

	<u>USSR</u> <u>Dec. 1947</u>	<u>Poland</u> <u>Oct. 1950</u>	<u>Rumania</u> <u>Jan. 1952</u>	<u>Bulgaria</u> <u>May 1952</u>	<u>Czechoslovakia</u> <u>June 1953</u>
New currency units per 100 units of old	10.00	1.00	.25 - 1.00	1.00	2.00 <u>a/</u>
New money wages per 100 units of old	100.00	3.00	5.00	4.00	20.00
Indicated currency over- hand, as multiple of normal requirements under new price system <u>b/</u> 10		3	5	4	10
Indicated currency over- hand, in months of re- tail trade turnover <u>c/</u>	5	1.5	2.5	2	5

- a/ Workers in certain ration categories were permitted to exchange small amounts of currency at rates ranging up to 100:20. The rate given here applies to other holdings of currency, and was probably close to the general rate.
- b/ Item in row 2 divided by corresponding item in row 1. In the Czech and Rumanian cases, where there was a sliding scale in currency conversions, the average conversion rate is not known, and these estimates are extremely provisional.
- c/ On the assumption that normal requirements are equal to half of the amount of currency paid out at each pay period, and that workers are paid twice monthly. In Czechoslovakia, workers were paid monthly until May 1953, when the twice-monthly system was introduced. There may therefore be some error in this estimate to the extent that the new pay system had not been universally adopted. The other countries pay their workers twice monthly.

Table 5

The Relation Between Currency Conversions  
and Unification of Retail Price System

	Unification of retail prices	Maintenance of multiple retail prices
Conversion of currency	USSR, Dec. 1949 Poland, Oct. 1950 <u>a/</u> Bulgaria, May 1952 <u>b/</u> Czechoslovakia, June 1953	Rumania, Jan. 1952
No conversion of currency	Poland, Jan. 1949 Hungary, Dec. 1951 Poland, Jan. 1953	

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- a/ Poland unified its price system in 1949. The Polish conversion of 1950 is the only case considered where there was no rationing system in effect at the time of conversion.
  - b/ The number of goods rationed was considerably reduced in March 1951, but a rationing and dual price system continued, especially in foodstuffs, until the conversion.
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In the five currency conversions under study, however, only in one case (Poland 1950) was there no multiple price system prior to the conversion, and in only one case (Rumania, 1952) was the multiple price system continued after the conversion. "Usually", therefore, there is a multiple price system prior to the conversion; and "usually" there is a unified price system after the conversion.

Table 6 suggests that the greater the scope of the dual price system in any of these countries prior to the conversion, the greater was the indicated currency overhang at the time of conversion. However, in the Rumanian case, the pre-conversion dual price system was as extensive as in pre-conversion USSR and Czechoslovakia, but the currency overhang was less, and the dual price system was retained after the conversion.

Table 6Currency Conversions and Multiple Prices

Case	Pre-conversion Price system	Post-conversion Price system	Currency Over- hang at time of conversion in months of trade turn- over
Poland, Oct. 1950	Unified	Unified	1.5
Bulgaria, May 1952	Dual prices in foodstuffs only	Unified	2
Rumania, Jan. 1952	Dual prices	Dual prices	2.5
Czechoslovakia, June 1953	Dual prices	Unified	5
USSR, Dec. 1947	Dual prices	Unified	5

These observations suggest that: (1) The currency overhang is the result of decisions originating outside the consumer sector of the economy, since "too high wages" or "too few goods" or "too low prices" reflect developments elsewhere in the economy. (2) When the currency overhang increases unduly in relation to retail trade turnover, the authorities may either increase the number of items subject to rationing, in order to conserve existing supplies, or, especially if all consumer goods are already rationed, it may carry out a currency conversion. (3) The greater the currency overhang a country has, the greater must be the number of rationed goods (the scope of the dual price system). (4) Therefore, the greater the scope of the multiple price system prior to the conversion, the greater will be the currency overhang at the time of the conversion.

This set of propositions would tend to explain why the indicated currency overhang at the time of conversion was greater in countries with more elaborate multiple price systems. They would also explain the Rumanian case, since a multiple price system can operate with a greater note circulation than is compatible with a unified price system. They do not, however, explain why Hungary (in 1951) and Poland (in 1949 and 1953) abolished rationing and multiple prices without having a currency conversion, whereas the cases under particular study did undertake such conversions.

Currency conversions and the level of unified prices → An explanation of why some countries can unify their retail price systems without currency conversions while others cannot, may be found by comparing the level of unified prices with the prices of unrationed goods before the conversion. This comparison leads to three conclusions:

1. Where price unification has been achieved without a currency conversion, the level of the unified prices has been at about the former level of unrationed prices. This can be shown in three cases.

When Poland unified prices at the beginning of 1949 (Table 7), the index of Warsaw retail prices (the most continuous index available) showed no decline in 1949 as compared to 1948. The index purports to be a cost-of-living index 1/, but since it does not include the prices of rationed goods in 1948, it obviously is not. What it does show is the relation of unrationed prices in 1948 to the unified prices of 1949. If the prices of rationed goods had been included in 1948, the increase in prices in 1949 would, of course, have been larger.

When Hungary unified prices in December 1951, Prime Minister Rakosi stated that:

"We propose that simultaneously with the abolition of rationing scheme, the price of bread, flour, sugar and some other articles of food, and of clothing and other goods should be increased. This increase in the price of foodstuff should in most cases be below the free market price but above the price on the controlled market . . ." 2/

This statement implies that some food prices, and most prices of industrial consumer goods were fixed above the free market prices, and suggests that the unified price level was approximately equal to the former free market level.

The decree announcing the Polish price unification of January 1953 stated that:

"The government decision lays down a new relation between the prices of agricultural products and the prices of industrial products, taking into account the existing structure of free market prices, but at a somewhat lower level." 3/

This statement seems to say that the unified prices were somewhat lower than free market prices. Taken literally, however, it means that a) free market prices were the basis of the new system, and that b) food prices were lowered relative to industrial goods prices, which also means that industrial goods prices were raised relative to food prices. This statement, therefore, means the same thing as Rakosi's statement given above.

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- 1/ The index was published in several variations, the differences among which are not clear. They all support the general thesis here given.  
2/ Speech of December 1, 1952.  
3/ Decree of January 3, 1953 by Polish Council of Ministers.

Table 7

Retail Prices of Goods and Services Purchased by Wage

Earners' Family in Warsaw

1948 - 1950

(1947 = 100)

	<u>Index A</u>	<u>Index B</u>	<u>Index C</u>	<u>Index D</u>
<u>Prices of un-</u>				
<u>rational goods</u>				
1947 - December	104			
1948 - March	107	107	106	
June	104	104	103	
September	105	104	104	
December		105	105	104
<u>Unified Prices</u>				
1949 - March		109	109	109
June		110	112	111
September			106	105
December				111
1950 - March				116
June				118
September				117
December				121 <u>a/</u>

a/ Presumably after adjustment for the effects of the currency conversion in October 1950.

Source: Wiadomosci Statystyczne

Index A is given in No. 3, 1949, with the note: "Index numbers of prices published at present differ in their structure from those published until now. Prices of rationed articles are not taken into account."

Index B is given in No. 7, 1949, with the note: "Since November 1948 certain changes have been introduced in the index scheme concerning bread-flour articles in connection with the cancelling of rationing of these articles. Besides some changes have been introduced in reference to articles of foodstuff industry and vegetables. The last have caused a recalculation of indexes for 1948." Index C is given in Nos. 9, 11, and 13, 1949 with the same note. Index D is given beginning No. 2, 1950 with various notations, such as that given in No. 5, 1951: "Figures of the Central Statistical Office based on quotations of prices in the socialized and private trade until the end of 1950 . . ."

2. In cases where the level of the unified prices has been below the former level of unrationed goods prices, price unification has been accompanied by currency conversion.

The cases supporting this statement are the Soviet unification of December 1947 1/; the Bulgarian unification of 1952 2/ and the Czech unification of 1953 3/. However, when Bulgaria abolished rationing of industrial goods (but not foodstuffs) in 1951, the unified prices in this category were 10 - 45 per cent below former unrationed prices 4/. This case is apparently the only exception to the rule. 5/

3. Currency conversions therefore seem to be necessary when the equilibrium level of unified prices (taking into account both current incomes and accumulated currency holdings) would substantially exceed the existing prices of unrationed goods.

There is no economic reason why prices after unification should not exceed the former level of unrationed goods prices. There are, however, political reasons why the authorities may make such a decision. There is a strong tendency for communist propaganda and the communist police to treat as "speculators" the peasants who sell their goods on unrationed markets during periods when rationing is in effect. For the government to set unified prices above the unrationed price levels is either to justify the former activities of the peasants, or to convict the government itself of speculation. Second, the ostensible purpose of "commercial stores" (state stores selling unrationed goods) is to force down the price in these peasant markets. Since the peasants must actually meet government competition, the commercial store system actually has the effect of holding down prices in the peasant markets although it may discourage the supply of goods by the peasants and also hold down the inflow of currency from retail stores into the banking system. If the government admits that the "free market" prices were too low, it admits also that its own policies, rather than the pernicious activities of speculators, is responsible for the shortages of goods.

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- 1/ According to P.K. Pavlov, unified prices of food and industrial goods were reduced, respectively, to 30 and 40 per cent of their former "commercial" (unrationed) level (O planovykh rychagakh sotsialisticheskogo gosudarstva, Moscow 1950, page 90). There may be question of the magnitude of the changes, but not of their direction.
  - 2/ The decree of May 11, 1952, of the Bulgarian Council of Ministers, lists numerous individual price reductions from former free market prices. Rabotnicheska Delo of May 15, 1952 says that the prices of "most" industrial goods are reduced 5 to 45 per cent.
  - 3/ According to Premier Siroky (speech of May 30, 1953 to the National Assembly), "the new retail price index will be up to one-third less than the prices on the present free market". The new prices are in many cases given in the currency conversion decree of the same date, but no comparison with former free market prices is made.
  - 4/ Pravda (Moscow), March 21, 1953
  - 5/ The Rumanian currency conversion of January 1952 involved some reduction of prices, but did not unify the price system. It is therefore not pertinent to this discussion.



Satellite governments may also hesitate to widen the spread between rationed and unrationed goods prices, or to unify prices of levels exceeding former unrationed goods prices because they are imitating Soviet practice in circumstances where it may not be applicable. The Soviet Union was able to eliminate rationing in the mid-1930's without a currency conversion by a gradual process of bringing "commercial" (unrationed) prices closer to rationed goods prices. Similarly, during the period from 1944 through 1947, the Soviet Government gradually reduced the spread between the two sets of prices, although it was eventually forced to carry out a currency conversion. In Soviet experience, there has never been a case where multiple prices in state stores were maintained, and where the spread between the price levels increased.

The basic reason why the Soviet Government was able to unify prices in 1935, however, was the gradual recovery of agriculture from the levels prevailing in the worst period of collectivization in 1932-3. The basic reasons for the reduction in the spread between "commercial" and ration prices between 1943 and mid-1946 were the recovery of the grain surplus areas of the Ukraine after the German retreat, and the reduction in military expenditures at the end of the war. In 1946-7, however, the combination of a bad harvest and (apparently) excess credit expansion tended to offset these factors, making it impossible to repeat the 1935 performance. By this time, however, the Soviet Government was committed to a reduction of the spread between rationed and unrationed goods prices, and the conversion operation became necessary.

In the satellites, in contrast to the USSR in 1932-1935 and 1943-1946, there has been a constant intensification of inflationary pressures as the various industrialization and export programs were expanded. A literal application of the doctrine that the prices of unrationed goods must be decreased (or at any rate not increased) would therefore lead to an intensification of disequilibrium in the consumer sector of the economy. The fact that the Polish price unification of 1949 and the Bulgarian reduction of rationing in 1951 were followed by currency conversions in 1950 and 1952, respectively, suggest that in fact such literal applications of Soviet practice were mistaken under satellite conditions. 1/

#### Currency conversions and the enterprise sector

The enterprise sector, in a Soviet-type economy, makes most of the wage payments through which currency is put into circulation. Tendencies for increases in wage rates, which have been shown to be characteristic of the Soviet satellites since 1948, thus originate within the enterprise sector. The note circulation itself is a liability of the central bank; most bank assets consist of loans to enterprises; and enterprise borrowing has therefore an effect on the currency in circulation. An analysis of the enterprise sector may therefore cast some additional light upon the processes which make necessary the

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1/ It may be noted in passing that Soviet unified retail prices were steadily increased from 1935 to 1941, so that Poland (Table 7) could raise its own prices in 1949-1950 without violating Soviet example. Polish increases, however, seem to have been inadequate in the light of the 1950 currency conversion.

currency conversions, and may serve to explain in part why the conversions take the form which they have. This explanation will be conducted largely in terms of how the funds available to enterprises (which are kept in the form of deposits, rather than currency) will vary, both under pre-conversion and post-conversion conditions.

The particular problem to be explained is the following: enterprises can bid up money wages only if their cash resources increase. Likewise, they can increase current output only if their cash resources increase. The latter statement is true because a large portion of any profits accruing to enterprises is either allocated to construction or taxed away, since the government tries in general to keep deposits fairly small in relation to current transactions. Given these propositions, how is it possible to explain the ability of the enterprises to obtain the funds necessary to raise money wages and increase output at a time when liquid funds are on balance continuously moving into the consumer sector?

The funds available to enterprises depend upon 1) the amount of profit currently earned by the enterprises; 2) the amount and structure of budget revenue and expenditures; 3) the level of inventories and 4) the amount of credit extended to them by the central bank. The role of a currency conversion in changing the level of the enterprises' funds; which are overwhelmingly in the form of deposits 1/, will now be discussed.

It is useful in discussing Soviet-type economies to make a distinction between "accumulation" and "profits". In these economies, levels of consumer prices are high relative to the cost of producing consumer goods. A portion of this difference enters the revenue of producing enterprises, and is called "profits". The remainder, however, goes directly to the Ministry of Finance in the form of a "turnover" or sales tax. From an accounting point of view, it is not profit, since it has never been a part of the revenue of the producing enterprise. From an economic point of view, it has the same function as profit would have, since the producing enterprises are state property, and since their profits could therefore be paid out in any proportion to the state. The government, however, would prefer to have accumulation in the form of turnover tax revenue rather than in the form of profits, because enterprises can more easily build up excessive inventories or finance unplanned construction if they have large profits than they can if the budget absorbs as turnover tax revenue a large portion of "accumulations".

Enterprise transactions with individuals - During the period prior to a currency conversion, notes in circulation tend to increase since money wages exceed money expenditures by individuals, and since additions to savings deposits are typically small. Moreover, a part of the money expenditures of individuals represent turnover tax payments, so that the net outflow of funds

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1/ Enterprises other than retail stores receive their revenue in the form of drafts. Retail stores receive notes, which they are required to deposit as they are received. There is, therefore, a clear separation between notes and currency, which are held by individuals, and deposits, which are held by enterprises.

from enterprises to individuals will exceed the net additions to the currency holdings of individuals. Other things being equal, enterprises should be increasingly short of funds prior to a currency conversion.

A currency conversion, it has been noted, reduces the purchasing power of current wages by increasing prices relative to wages. This means that individuals will no longer add to their holdings of cash after the conversion. This change, however, does not necessarily affect the outflow of funds from the enterprise sector to individuals. The conversion normally contains a provision reducing deposits and wholesale prices by a stated percentage; wages are reduced somewhat less than this figure; so that all (or more than all) of the additional accumulation from the increase in retail prices relative to wages will go into turnover tax revenues rather than into the income of enterprises. From the point of view of the enterprise sector, the currency conversion increases, and does not decrease the outflow of funds from the enterprise sector to individuals.

Enterprise transactions with the Treasury - Treasury transactions in a Soviet-type economy always tend to reduce the funds of individuals, since turnover and direct taxes, and borrowings (if any) are greater than Treasury payments to individuals. Likewise they tend to increase the funds of enterprises, since the Treasury purchases most of the output of heavy industry for construction and armament programs, and receives relatively small revenues from enterprises in the form of profits taxes. However, under conditions prevailing prior to a currency conversion, the addition to enterprise funds by the Treasury must be less than the drain on enterprise funds by individuals. This is true because the Treasury normally operates with a cash surplus (Table 8) so that its addition to enterprise funds is less than its drawing down of the funds of individuals. <sup>1/</sup> These additions, in turn, are less than the drain on enterprise funds, since a characteristic of the pre-conversion period is that cash holdings of individuals, on balance, tend to increase.

As a result of higher consumer goods prices, the effect of a currency conversion will be to increase turnover tax revenue. If the Treasury cash surplus increases by the same amount, the conversion will have no effect on the net flow of funds from the Treasury to enterprises. If, however, budgetary expenditures on construction and armament rise, the flow of funds to enterprises will increase. However, unless currency holdings of individuals decline by an amount greater than the Treasury cash surplus, enterprises, on balance, will continue to lose resources to the Treasury and individuals, taken together.

Decreases in inventories could provide cash resources to enterprises, since they would provide them with revenue without necessitating additional payments. Such decreases would not necessarily alter the Treasury cash position, but they would presumably decrease the currency held by individuals. The effect of an inventory decrease is thus to reduce the cur-

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<sup>1/</sup> The Polish budget deficit of 1949, of course, may have played a role in establishing the basis for the 1950 currency conversion.

Table 8

Budget Surpluses in Soviet Satellites  
1948 - 1953

(In billions of currency units and per cent of total revenues)

	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u> (plan)
<u>Bulgaria</u>						
Total revenue	100.8	169.4	219.0	12.4 <u>a/</u>	15.8	19.0
Surplus of revenue over expenditure	5.5	18.0	11.0	1.2 <u>a/</u>	1.0	1.0
Surplus, as per cent of revenue	5.5	10.6	5.0	9.7	6.3	5.3
<u>Czechoslovakia</u>						
Total revenue	62.5	89.3	131.9	166.5	324.3	435.2
Surplus of revenue over expenditure	-16.6	0.0	.4	.3	.8	4.3
Surplus, as per cent of revenue	-26.5	0.0	.3	1.8	.3	1.0
<u>Hungary</u>						
Total revenue	9.4 <u>b/</u>	9.3	24.0	33.2	43.0	52.7
Surplus of revenue over expenditure	.3 <u>b/</u>	.1	.1	.2	.3	.8
Surplus, as per cent of revenue	3.2	1.1	.4	.6	.7	1.5
<u>Poland</u>						
Total revenue	451.2	637.0	<u>c/</u>	56.0 <u>a/</u>	74.9	101.1
Surplus of revenue over expenditure	45.1	-28.3	<u>c/</u>	4.1 <u>a/</u>	17.1	4.0
Surplus, as per cent of revenue	10.0	-4.4	<u>c/</u>	7.3	22.8	4.0
<u>Rumania</u>						
Total revenue	108.6 <u>d/</u>	272.3	399.0	491.8	34.2 <u>a/</u>	38.5
Surplus of revenue over expenditure	12.7	38.9	17.7	57.7	5.5 <u>a/</u>	1.0
Surplus, as per cent of revenue	11.7	14.3	4.4	11.7	12.1	2.6

a/ In post-conversion currency units for given and later years.

b/ For the 17-month period August 1, 1947-December 31, 1948.

c/ These figures have apparently never been released. This may be either because of problems of adjustment, in connection with the October conversion, or because of a desire to conceal a deficit for the year as a whole.

d/ For the 9 months ending December 31, 1948.

rency held by individuals, and to increase the cash resources of the Treasury and enterprises. It is difficult to suppose that decreases in inventories have occurred under pre-conversion conditions, since the note circulation is increasing rather than decreasing. Even under post-conversion conditions, inventories may not decline since output does not decline; there may also be a tendency, under Soviet bloc conditions, for inventories to increase with output.

Increased borrowing is therefore the way in which enterprises obtain the funds necessary to bid up money wages and increase output under Soviet bloc conditions. The reasoning so far, which has been a process of elimination, can be supported directly in several cases.

In the USSR, the available data point to increases in inventories between 1943 and 1947, which were apparently to a considerable extent the result of increased credit. These increases in credit and inventories offset budget surpluses to such an extent as to necessitate the currency conversion of December 1947, rather than a simple abolition of rationing as in 1935. 1/

In Poland, publication of statistics on credit stopped in the first half of 1949. Prior to that time, there was a steady increase in credit as shown in Table 9. If the increase continued until October 1950, it would support the hypothesis advanced here.

Table 9

Expansion of Polish Credit and Deposits, 1947 - 1949 a/  
(In billion zlotys)

	Bank credits <u>b/</u>	Total deposits
December 31, 1947	169.7	62.8
June 30, 1948	261.0	84.2
December 31, 1948	383.1	112.3
June 30, 1949	372.1 <u>c/</u>	n.a.

a/ Wiadomosci Statystyczne.

b/ Excluding direct credits by the National Bank.

c/ This decrease appears to be the result of consolidations in the banking system rather than of an actual contraction of credit. An alternative breakdown into "short-term" and "medium-term" credits gives totals of 461 billion at the end of 1948 and 688 billion in June 1949 (Wiadomosci Narodowego Banka Polskiego data).

In the case of Rumania, the problem is simplified by the fact that Rumania purged the Minister of Finance shortly after the conversion of January 1952. Since the purge was only in part motivated by his

1/ See a fuller discussion in Current Assets and Liabilities of Soviet Enterprises, op. cit.

fiscal and monetary policies, it was accompanied by a torrent of abuse blaming him, in effect, for all of the country's difficulties. The following excerpt, however, seems to support the contention that credit expansion was one of the factors responsible for the conversion.

. . . "The Ministry of Finance took no pains to improve methods for the calculation of financial norms of enterprises and of the financial norms for working capital . . . All this led to above-norm inventories . . . Between 1949 and 1951 there was no connection between financial planning through the profit-and-loss accounts drawn up by the Ministry of Finance, on the one hand, and the planning of credits by the State Bank . . . This led to disproportions between the "own resources" and the borrowed resources of enterprises, the latter being far too high . . . The situation was made even worse by inadequate control over the granting of credits by the State Bank." 1/

#### Investment, credit and price policy

In most countries, a restriction of credit will affect both construction and inventories, since both are in part financed through the commercial banking system. In the Soviet bloc, credit restrictions will not affect construction, since the central (commercial) bank does not finance construction activity and credit for construction is financed solely through an investment bank deriving its resources from tax revenue, centralized amortization funds and retained profits.

A change in the amount of credit, therefore, will affect directly only that portion of investment which goes to inventories. It may have an indirect effect upon consumption or construction, to the extent that inventory changes affect the volume of resources available for these other purposes. Communist literature on inventories indicates that plans are based upon the assumption that inventories will not exceed a certain number of days' supply for any particular plant, depending upon the distance it is from its suppliers, the frequency of deliveries of supplies, etc. Speculative changes or any other changes which are not directly the result of changes in the level of output of the plant in question are not ordinarily countenanced in the planning process. For this reason, any other changes in the level of credit tend directly to lead to disruptions in the planned flow of goods.

The discussion of the enterprise sector dealt with the background of currency conversions in terms of credit policy: a currency conversion became necessary because enterprises received too much credit. This argument amounts, of course, to saying that investment in inventories became too high relative to construction and consumption. On the other hand, the discussion of the consumer sector formulated the background of the currency

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1/ Niculeanu, Some Aspects of Right-Wing Deviation in the Financial and Banking System, Probleme Economice, No. 6-7, 1952.

conversion in terms of price policy: the conversion was necessary because prices were too low relative to wages. Putting this argument in terms of resources, it would be said that the reason consumer goods supplies were too low may have been because too much production went into inventories. If these interpretations be correct, control over investment in inventory may have been the weak point of Soviet bloc planning, since so many bloc countries have had difficulties originating in this sphere.

The problem may be formulated in terms of policies, rather than in terms of economic activity. From this point of view, the currency conversions can be avoided if controls over retail prices are removed, or if controls on credit are intensified. It is easy to move from this proposition to another: currency conversions are necessary because the authorities in Soviet-type governments underestimate the importance of credit controls and overestimate the importance and usefulness of direct controls.

Price controls, however, are an essential feature of Soviet-type economies, since they serve to force enterprises to hold down their costs, and to assure the government of adequate investible funds through controls over turnover tax revenue. If it were not for them, such economies would find it difficult, if not impossible, to maintain the level and direction of their investment programs. Such economies will presumably have difficulties in holding down wage levels, unless the regimes are as strongly organized as the USSR. In these circumstances, increases in credit would be necessary, even under optimal conditions, if enterprises are to meet payroll requirements. A further problem is that as output increases, the minimal volume of inventories required to prevent bottlenecks and stoppages will also increase. Thus a country of this sort may well expect some increases in the level of credit and deposits. The difficulty is that retail prices seem less flexible than wage rates, so that there is always a tendency for the note circulation to rise too much; moreover, it is difficult to determine the maximum credit expansion permissible at any given moment. Only if wages can effectively be frozen (as they were in the USSR after 1947-8) can there be much assurance of effective credit controls. A wage freeze seems to be much more difficult to enforce than price controls.

#### Exchange rate changes and currency conversions

All the currency conversions under study, except that of the USSR in 1947, have involved changes in exchange rates 1/. The analysis of the change of exchange rates is complicated by the fact that in these cases there have been simultaneous changes in the general level of wholesale prices, and it is useful to consider both changes together. An earlier article in this review 2/ has shown that although the foreign trade program of a Soviet-type economy is not de-

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1/ The USSR raised its exchange rate from 5.3 to the dollar to 4.0 to the dollar on March 1, 1950. This change was not associated with a currency conversion, and will not be discussed in detail here.

2/ "The Exchange Rate in Soviet-type Economies", March 24, 1953.

terminated by market considerations, and although the exchange rate has therefore no effect upon the trade program itself, it has several effects upon the money supply of the country because:

1. A trade imbalance is normally not accompanied by any change in central bank holdings of foreign exchange, since it represents a planned capital movement or transfer.
2. This imbalance will normally be financed in a manner amounting to the purchase of clearing ruble surpluses from the central bank, or the sale of deficit rubles to the central bank by the Treasury. These represent the domestic currency equivalent of the international credit which is received or extended because of trade imbalances. These transactions affect the cash position of the Treasury, and they depend upon the exchange rate.
3. The effect of the trade program upon the money supply thus depends upon two factors, the second of which is affected by the exchange rate:
  - a. transactions which the Ministry of Foreign Trade carries on with domestic enterprises, which may add to or reduce their available funds;
  - b. transactions in clearing rubles between the Treasury and central bank, which affect the tax revenue needs of the former.

A change in domestic wholesale prices affects the order of magnitude of the first type of transactions; a change in exchange rates affects the order of magnitude of the second. If the price of a clearing ruble changes in the same proportion as wholesale prices, the net effect of a particular trade program upon the money supply will change proportionally, but since the money supply changes by the same proportion, such a change will be of no economic importance. Changes in the price of a clearing ruble relative to wholesale price levels, however, do affect the impact of the program upon the money supply, and it is these which are of interest. Table 10 shows the effects of the currency conversions and exchange rate changes upon this relationship. In three of the four cases, the ruble was depreciated relative to the satellite currency. The following discussion will attempt to explain why these different changes may have taken place.

NOT FOR PUBLICATION



Table 10

International Trade Aspects  
of Satellite Currency Conversions

	<u>Poland</u> (Oct. 1950)	<u>Rumania</u> (Jan. 1952)	<u>Bulgaria</u> (May 1952)	<u>Czechoslovakia</u> (June 1953)
Post-conversion demand deposits, per 100 units of pre-conversion deposits	3.00	5.00	4.00	20.00
Post-conversion net flow of funds between Ministry of Foreign Trade, in per cent of pre-conversion flow <u>a/</u>	[Not available, but probably close to figures in first row.]			
Post-conversion net flow of funds into or out of Treasury in connection with international transactions in per cent of pre-conversion flows <u>b/</u>	1.00	7.47	2.38	14.40
Ratio of clearing ruble to domestic wholesale prices (pre-conversion ratio equals 100) <u>c/</u>	.33	1.49	.60	.72

a/ The reduction in wholesale prices.

b/ The domestic currency price of one ruble, in per cent of the pre-conversion rate.

c/ Row 3 divided by row 1.

It is to be presumed that measures undertaken at a time of currency conversion will be designed to hold down the money supply, since the conversion itself is an effort to correct excessive money holdings by individuals and (to a lesser extent) enterprises. The problem is therefore to determine the conditions under which the particular exchange rate changes would have a tendency to reduce the flow of funds to enterprises, or to increase the flow of funds from enterprises arising from foreign trade operations. The operations of the Ministry of Foreign Trade with enterprises will not be affected by the change in exchange rates, since they will be affected only by the re-

relative size of purchases and sales carried on by the Ministry. On the other hand, the operations undertaken by the Treasury in connection with the planned capital movements are affected by the exchange rate. Table 11 shows how exchange rate changes affect the Treasury cash position under conditions of export and import surpluses. It will be assumed for convenience that the Treasury will respond to changes in its cash position by changing its taxes, rather than by changing its outlays.

Table 11  
The Effects of Exchange  
Rate Changes on the Treasury

If the clearing ruble balance shows

For any given trade program, valued in clearing rubles

An export surplus

An import surplus

[The Treasury "buys" the clearing - ruble surplus to finance the capital export]

[The Treasury "sells" clearing rubles representing capital imports]

If the ruble/wholesale price ratio rises

Treasury purchases and its tax revenue needs go up

Treasury revenue goes up, and its tax revenue needs go down

If the ruble/wholesale price ratio falls

Treasury purchases and its tax revenue needs go down

Treasury revenue goes down and its tax revenue needs go up

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It might normally be expected that a country showing an export surplus in clearing rubles would show an export surplus in its domestic accounts. That is, if the value (in clearing rubles) of exports exceeds the value of imports, the value of the goods which the Ministry of Foreign Trade purchases from domestic enterprises for export purposes should exceed the value of imported goods which it sells to domestic enterprises. If the Soviet-type economy were a market economy, this would be true because domestic prices and clearing ruble prices would tend to be equal. This condition, however, is not necessarily met, and prices may be so distorted that a trade program which shows an import surplus in clearing ruble accounts can have an inflationary effect internally.

The case of Rumania seems to be relatively "normal". Rumania is known to be paying reparations to the USSR under the terms of the peace treaty

of 1947. 1/ In other words, it has an export surplus. "Normally", as has been indicated, an export surplus in a country's clearing ruble account will be accompanied by a tendency for the money supply to increase, since the Ministry of Foreign Trade will buy more from enterprises (for export) than it sells to them. In this situation, a country such as Rumania wishing to reduce the inflationary effects of these transactions will raise the exchange rate (and taxes) so as to increase the amount of funds used in the purchase of clearing rubles from the central bank, for any given volume of reparations deliveries.

The other three countries all showed declines in the ruble-wholesale price ratios at the time of the currency conversion. This, according to Table 11, would be associated with an import surplus, on the assumption that the change was designed to accompany increased taxation of the funds of enterprises. 2/ If the relation between domestic and clearing-ruble prices in these countries were "normal", however, an import surplus would tend to decrease the funds of enterprises, since they would be purchasing more from the Ministry of Foreign Trade than they sold to it. In these circumstances, a reduction in the ruble-wholesale price ratio would hardly seem necessary. If, however, clearing-ruble prices are so far out of line from domestic wholesale prices that trade programs have inflationary effect even though there are "deficits" in terms of clearing rubles, it would be possible to account for this combination of circumstances. In this "abnormal" situation, then, the import surplus would result from an over-pricing of Soviet goods, relative to satellite goods. The exchange rate change, instead of being inflationary, would in these peculiar circumstances be deflationary.

#### Currency conversions, national income, and the price level

The foregoing discussion has shown that many of the provisions of a currency conversion affect the consumer and enterprise sectors of the economy. They do not, however, indicate how the various wage and price changes may be related to each other, or how they may be related to the disequilibrium prevailing in the economy before the conversion. Moreover, they give no explanation of why the conversions in the satellites involved general changes in the level of wages and prices, apart from adjustments in wage-price relationships.

There is no clear explanation in Soviet-bloc literature as to how the decisions as to the price and wage levels are made in fact. It is possible, however, to advance a hypothesis as to how they may be made, using a simple national income analysis.

The national income in a closed Soviet-type system may be represented as the sum of consumption and investment goods output, as in other types of economies. However, savings in general are not made by individuals but by

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- 1/ Rumania and Hungary were to have completed reparations payments at the end of 1952. Hungary made an announcement that reparations payments had been completed in January 1953, but Rumania has made no such announcement.
- 2/ The assumption that these countries have import surpluses in clearing rubles does not seem unreasonable, as all of them have received medium-term credits from the USSR.

the state—in the form of "accumulations", which include both the profits of enterprises and the turnover tax. There are thus two ways of looking at the national income either in terms of goods produced, or in terms of wages and accumulations. These may be written respectively as:

$$Y = C + I \quad (\text{as in ordinary economic writings})$$

$$Y = W (1 + a)$$

where W = wage payments  
a = the rate of accumulation,  
i.e., savings as a percentage of wage payments.

When there is a currency conversion, wages and prices are adjusted for a conversion factor  $k$  (thus in Czechoslovakia, prices and wages were reduced to one-fifth their former level, and  $k = .2$ ). In addition, prices of capital goods and consumer goods, wages, and the rate of accumulation are also changed. Thus, after a conversion, the quantities given above will be changed, so that the national income is shown by:

$$Y' = (k + c) C + (k + i) I$$

$$Y' = (k + w) W (1 + a + a')$$

1. Under what may be called "equilibrium" conditions, consumption will equal wage payments (it being assumed that there is no voluntary individual saving). However, this is not necessarily the case, and if there is a difference between the two, it will reflect a change in currency holdings of individuals. One of the purposes of a currency conversion is to establish equilibrium in the consumer sector, so that, at the new price-wage levels, wages will equal consumption, or that:

$$(k + c) C = (k + w) W$$

This in turn implies that:

$$\frac{(k + c)}{(k + w)} = \frac{W}{C}$$

or that the increase in consumer goods prices relative to wages (the left-hand side of the equation) equals the ratio between wages and consumption (i.e., the unspendable income of the population) before the conversion. The greater the excess purchasing power (the ratio of W to C) before the conversion, the more must prices increase relative to wages in the conversion.

2. Similarly, under "equilibrium" conditions, investment must equal accumulation. If this equality is not attained, it will be because credit expands more than "accumulation", or because some accumulation is used to reduce the amount of credit in the economy. One of the purposes of a conver-

sion may be to establish equilibrium in the capital sphere, so that:

$$(k \downarrow i) I = (k \downarrow w) W (a \downarrow a')$$

which implies that:

$$\frac{(k \downarrow i)}{(k \downarrow w)} = \frac{W (a \downarrow a')}{I}$$

The relation between the change in capital goods prices ( $k \downarrow i$ ) and the change in wages ( $k \downarrow w$ ) thus depends upon the relation between wage payment and investments prior to the conversion, and the rate of accumulation which the government wishes to achieve after the conversion. If the government does not wish to change the rate of accumulations ( $a' = 0$ ), the ratio of the change in investment goods prices to the change in wage rates will equal the proportion of investment which, prior to the conversion, was financed from current accumulation (as opposed to credit).

3. These two objectives of a currency conversion determine the changes in "real purchasing power" of wages and the "real price" of capital goods (in terms of wages), but they do not explain why there should be any change in the general price level as such. They offer no clue as to why the Czechs should have lowered the general price level by 80% (setting  $k = .2$ ), while the Soviets left it unaltered (setting  $k = 1$ ). The following analysis shows how and why a currency conversion may involve a reduction in the general level of prices and wages.

A currency conversion may involve a change in the rate of accumulation ( $a' \neq 0$ ). It also involves changes in the general price-wage level ( $k \neq 1$ ), and in wage rates ( $w \neq 0$ ). Suppose that the authorities wish to change "real" accumulation (money accumulation adjusted for the change in the general price level  $k$ ) by some factor  $F$ . This means that:

$$(k \downarrow w) (a \downarrow a') W = F (kaW)$$

This expression can readily be solved for  $k$ :

$$k = \frac{-w (a \downarrow a')}{a (1 - F) \downarrow a'}$$

When "real" accumulation is to be held constant ( $F = 1$ ) this expression simplifies to:

$$k = \frac{-w (a \downarrow a')}{a'}$$

This formula indicates that a change in the general price-wage level would be necessary if the real level of accumulations (saving) is to be maintained when money wages and the proportion of the national income going into accumulation are changing. It is, of course, not known whether a calculation of this sort is actually made by Soviet-bloc authorities in deciding how much to change the general level of prices and wages in the conversion process.

The purpose of this demonstration is simply to show that the decision to alter the general price level does not seem to be irrelevant to the other decisions made simultaneously, and may be explainable in some terms such as those given here.

### Summary and conclusions

The currency conversions of Soviet-bloc countries represent attempts to adjust purchasing power to the availability of goods. The latter are determined by industrialization and armaments programs, so that the entire adjustment must be made on the side of purchasing power. In the absence of adequate statistical or explanatory data from official sources, the reasons for the selection of measures included in any particular currency conversion can only be surmised, but available data suggest that:

1. The rate at which old currency is exchanged for new seems to be designed to reduce the note issue to the amount normally required to carry out planned retail trade requirements.
2. The greater the scope of the rationing and multiple-price system existing prior to the conversion, the greater will be the amount of excess purchasing power (currency in circulation) which an economy can support without a currency conversion. Such systems, however, tend to impair incentives and to have undesirable effects upon the distribution process, so that the authorities ultimately wish to abolish them.
3. Rationing and multiple prices can be abolished without a currency conversion if the level of consumer goods prices which will absorb current earnings and accumulated currency is not higher than the highest prevailing level of prices. Apparently, however, the authorities decide to have a currency conversion when they feel that prices would have to exceed this level if they were to absorb existing purchasing power. This decision will probably become necessary if the price of unrationed goods has been held too low, because the authorities wished to hold down peasant incomes, or because they had misapplied Soviet experience, or because an unplaned expansion intervened to block the downward movement of unrationed prices.
4. Under conditions prevailing in a Soviet-type economy, increases in the currency in circulation will normally lead to decreases in the deposits of enterprises, unless there have been budget deficits or credit expansions. Such decreases in deposits would normally make increases in money wages and output impossible. However, money wages have increased steadily (except in the post-conversion USSR), output has increased in all countries, and budgets have usually shown a cash surplus. Credit expansion is thus the reason for the increase in note circulation, and hence of the need for currency conversions.
5. In theory, the Soviet-type government could avoid a currency conversion by relaxing price controls or by strengthening credit controls. Given credit controls, price control may be unnecessary, but given price controls, credit expansion may be unavoidable. Since price controls are an essential feature of the Soviet system, serving to regulate costs and the availability of investment funds, there may be an inherent tendency toward credit inflation in this type system unless a wage freeze can successfully be introduced.

6. The changes in exchange rates which occur at the time of currency conversions may be designed to neutralize the effect on the money supply of foreign trade programs. The direction of the various changes may be accounted for in terms of known balances of trade and of the differences which may be presumed to exist between clearing-ruble prices (in which trade agreements are computed) and the internal price structures of the various countries.

7. Finally, several plausible suggestions can be made as to the changes in internal price structure which accompany currency conversions:

a. The greater is the proportion of current earnings which cannot be spent by individuals prior to the conversion, the greater will be the increase in consumer goods prices relative to wages at the increase in consumer goods prices relative to wages at the time of the conversion.

b. The greater the proportion of investment financed from bank credit before the conversion, the less will wholesale prices rise relative to wages at the time of the conversion.

c. The greater the desired increase in the proportion of savings (accumulation) in the national income, the greater will be the reduction in the general level of wages and prices effected at the time of the conversion.