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Implications of the
Current Economic Slowdown

Gregory Grossman

Paper No. 2, September 1985

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In future chronologies of Soviet history the year 1979 deserves a modest place as a watershed of sorts, the year in which the Soviet economy began its present period of low growth and associated difficulties, now in its seventh year. There is little need to expand here on the well-known economic facts. In a few words: the six years, 1979 through 1984, have been characterized by (historically) low growth, over-all and in a number of sectors, which promises to persist until at least the end of the decade; by relatively lower rates of capital formation; by six bad or mediocre grain crops in a row, causing unprecedentedly large imports of food and fodder; by levelling-off of energy production; and by growing difficulties in earning hard currency. These and other "real" developments have received ample attention in the West. Also noted in the West has been the plight of the Soviet consumer: unusually widespread shortages of goods, especially food; longer queues; informal and local formal rationing of certain major staple goods and other articles; higher prices in the open (kolkhoz) and black markets; spread of under-the-counter payments and of outright bribes; and growing corruption and slackening discipline all around, at least until Andropov's harsh campaign against them in early 1983.

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The standard explanations for empty shelves and high free-market prices offered in the Western press and by unofficial as well as official Soviet sources point to shortfalls in supply. The Soviet press has been conveniently playing up criminal diversion of supplies into the black market by "greedy" trade personnel, which may well have been the case under the circumstances, but is hardly the root cause of the shortages. On the other hand, official Soviet production and foreign-trade data provide no strong support for the popular impression of a serious decline in the availability of foodstuffs--not to say all consumer goods--in the recent period, though official data do show modest declines in per capita consumption of specific foods in certain recent years.² Of course, one must not take Soviet statistics at face value, particularly in a period such as the one under review. But could there be other factors at work to help bring about the observed phenomena?

Belaboring the obvious, let us remind ourselves, first, that physical shortages and their concomitant phenomena cannot arise and persist unless prices are fixed, which is indeed the Soviet case, and second, that a rise in effective demand, with prices fixed and supply unchanged (or, more generally, a change in the supply-demand balance in the appropriate direction), will also bring about empty store shelves, etc. But the ordinary consumer and the casual observer, faced with empty shelves and rising free-market prices, naturally, blames the shortage on shortage, i.e., on insufficiency of supply or production and not on an excess of money in the pockets of his/her fellow shoppers nor on unduly low (official) prices.

In this paper we argue (1) that, since 1979, the Soviet Union has experienced not only low growth rates of a number of real indicators but also an acceleration in the rise in the money supply, and particularly in currency in circu-

lation; (2) that this monetary development is at least in part a systemic consequence of the unanticipated slowdown in real growth; (3) that it has further worsened the economy's performance in real terms; (4) that certain important social and political consequences have stemmed therefrom, including a significant redistribution of private income and wealth; and (5) that these developments have aggravated the task of managing the economy and ruling the country, and have seriously complicated the prospect of a meaningful economic reform. Needless to say, to focus on the monetary nexus of social and political consequences of low growth is not to deny or ignore the other ways in which low growth may translate into socio-political problems, some of which indeed are discussed in other contributions to this volume.

The Mechanics of Currency Issue

First, a few elementary observations about money in the USSR (and other Soviet-type economies) as they relate to our thesis. Currency is almost the only means of payment by households for purchases of goods and services in official outlets and among themselves. State firms and institutions are permitted to use currency only for very small payments--other than for wages--and to hold only minimally necessary amounts on hand. (However, anecdotal evidence suggest that they may hold substantial concealed amounts for illegal purposes.) An important exception are the collective farms, which seem to possess considerably greater latitude to use and hold currency. Yet another important exception, of course, is the underground economy, which--as in other countries--relies almost exclusively on currency, for obvious reasons. The other major means of payment in the USSR is bank money, which is used solely within the socialist sector and consists of the clearing deposits of enterprises (raschetnye scheta, "settlement accounts"), other enterprise deposits, and the current ac-

counts (tekushchie scheta) of kolkhozes and so-called social organizations. Soviet bank money functions somewhat like the checking or gyro accounts in the West, but its payment circuit is deliberately separated and to considerable extent insulated from the currency circuit.

As already noted, there is almost universal price control, for both producer and consumer goods. In the household sphere the only lawful exceptions to price control are (1) most everyday transactions between individuals,³ and (2) transactions in the kolkhoz market, but even here sporadic though mostly unsuccessful attempts at price control take place. The kolkhoz market deals mostly in foodstuffs, produced mostly by peasants and state-farm workers on their private account. Finally, there is a large black market, where, by definition, prices are free.

Any increase in the stock of currency in circulation must be created. In the USSR, as elsewhere, money is created by the banking system in the process of net lending. Since Soviet banks lend almost exclusively to the socialist sector rather than to households, nearly all newly-created money initially has the form of bank money (supra). However, the bulk of the firms' payments is ultimately for labor, which must be in currency; hence, most newly-created bank money is soon converted into currency and enters the household sector. In sum, an increase in bank-loans outstanding is soon largely transformed into an increase in currency in the public's hands, unless offset in some manner (e.g., by an increase in the budget's cash receipts).

What, then, determines the aggregate volume of net bank lending to enterprises in a given period? According to Soviet textbooks, it is the "credit plan", part of a comprehensive national financial plan for the period, which in turn is

supposedly drawn up in coordination with the national economic plan. The credit plan is disaggregated to set the limits of lending to each bank branch, and, hence, for the set of firms attached to a given bank branch. Yet, more careful reading of the relevant Soviet literature and interviews with knowledgeable persons in the emigration lead to a somewhat different conclusion; namely, that the bank will typically lend to a firm to the extent of its needs to pay wages, settle with suppliers, and, in general, to stay solvent so as to keep operating.⁴ In sum, the banking system lends to ensure that production is not interrupted and workers retain their jobs, credit plan or no. In this sense it acts as an active custodian of some of the most important values of the Soviet order--primacy of politico-administrative power over money, unhampered production growth, full employment, and the individual's job security--though at the risk of excessive credit--and money--expansion. At the same time, thanks to the bank's accommodating stance, the state firm faces a "soft budget constraint" (Kornai). For this, it does not need--nor is in fact allowed--to hold large money balances, as either currency or bank money; the bank's lending window is generally open to it for any lawful (or pseudo-lawful) need.

Finally, a budget surplus (deficit)--in a cash sense--increases (decreases) the treasury's deposits with the banking system, and should to a comparable though probably smaller amount reduce (increase) currency in circulation.

A Hypothesis: The Effect of Supply Shocks on Bank Lending

In the event of significant and unanticipated supply shocks, the just-described financial and monetary arrangements may virtually automatically turn into a mechanism for additional and presumably undesired money creation. In a price-controlled, resource-constrained economy, such as the Soviet, supply shocks

tend to translate themselves into specific shortages and production bottlenecks. Production slows down in a number of industries and firms. For example, the major shock to the Soviet economy from the malfunctioning of the railways in 1979 had almost immediate negative effects on production in such industries as heavy chemicals, forest products, construction materials, and iron and steel, with further repercussions on the whole economy. Moreover, under Soviet conditions, setbacks to the production of finished goods cause neither a decline of over-all labor employment (job guarantee), nor of the acquisition by firms of material inputs other than those in diminished supply at the given moment. Instead, the shortages cause imbalances in inventory composition on the micro-level as between different materials, as between material supplies and finished goods, and as between labor employment and rate of production. Indeed, the inventories of materials which, at the moment and place, do not limit production may well accumulate enough to compensate for the decline of those of "deficit" materials, especially since hoarding of all materials now becomes more attractive to the firm. Yet, as noted, the bank virtually automatically furnishes currency to pay labor and bank-money to pay for those supplies that keep arriving, extending additional credit where necessary. And the additional credit may indeed be necessary should a firm's sales decline owing to supply shortages.

We hypothesize, therefore, that unanticipated supply shocks under Soviet conditions tend to increase the amount of bank loans outstanding. ("Unanticipated", because anticipated supply shocks can presumably (?) elicit timely corrective action to forestall, or at least restrain, the surge in bank credit by redirecting supplies to minimize bottlenecks and scaling down production targets.) Moreover, as already mentioned, the structure of bank loans by purpose would tend to change: the proportion of loans extended to finance the holding of inventories of materials and goods-in-process, and for general

liquidity purposes, would tend to rise; that of finished goods (at each stage of production) would tend to diminish.

We have so far spoken of supply shocks. But shocks can also come from sudden changes in the leaders' priorities. A war in Afghanistan, an emergency operation to support the Polish economy, a response to American re-armament--such demand shocks may also generate additional bank credit, not only to the positively affected industries but also to those whose supplies are interrupted by the shift in priorities and, of course, to the treasury.

Credit Expansion, 1979-1983

We now turn to the statistical evidence. Table 1 summarizes the evolution of loan balances in the domestic economy (excluding any loans to the treasury) and of goods inventories at enterprises against the background of real GNP growth (CIA series). All data are in current prices.⁵

From 1966-70 through 1979 the pattern is clear: almost steady decline in growth rates of all four series (lines 2., 4., and 5.), though in any period the rate of growth is invariably highest for loans, second for inventories, and lowest for GNP. However, the difference ("excess") between the rates of growth for loans, particularly short-term loans, on one hand, and of the real rate of growth of GNP or inventories, on the other (lines 8a. and 8b.), steadily widens, bearing a hint of excessive currency issue (in relation to the first economy) in the years 1966-1979. That this should have been the case need not intuitively surprise anyone familiar with the Soviet economy, but we owe it to Igor Birman to have attempted numerical estimates of currency issue in those years,

Table 1

USSR: Basic Data on Bank Loans, Inventories, and GNP, 1970-1983

(billions of rubles (BR), end of year, and percent increase for period^b)av. of
1980-
1983

	<u>1970</u>	<u>1975</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	
1. Long- and short-term loans to socialist enterprises and to households ^a	132.2	222.9	302.6	329.8	376.5	455.2	487.4	515.8	
2. percent increase ^b	11.3 ^c	11.0	10.7	9.0	14.1	20.9	7.5 (8.8) ^f	5.4	11.8 12.2
3. Ditto, short-term loans only ^a	110.6	179.4	233.7	254.4	295.4	369.0	398.8	423.5	
4. percent increase ^b	9.4 ^c	10.2	9.2	8.9	16.1	24.9	8.1 (9.7) ^f	6.2	13.5 (14.0) ^f
5. Goods inventories ^d	163.4	234.3	286.5	302.6	321.9	360.4	390.2 ^e	417.1	
6. percent increase ^b	8.7	7.5	6.9	5.6	6.4	11.9	8.3 ^e	6.9	8.4
7. Real GNP: percent increase ^b	5.3	3.7	3.8	0.4	1.7	2.1	2.6	3.0	2.3
8. Excess growth over GNP growth, percentage points ^b :									
a. of short-term loans									
(4. minus 7.)	4.1	6.5	5.4	8.5	14.4	22.8	(7.1) ^f	3.2	11.2
b. of inventories									(11.6) ^f
(6. minus 7.)	3.4	3.8	3.1	5.2	4.7	9.7	5.7 ^e	3.9	6.0

Sources:

Lines 1., 3., and 5.: official Soviet statistics as reported in various Nar. khoz. volumes, except for our inclusion of data on loans by Vneshtorgbank.

Line 7.: U.S. Central Intelligence Agency, Handbook of Economic Statistics 1984, Washington, 1984, p. 64.

Notes to Table 1.

- a. By USSR State Bank (Gosbank), USSR Investment Bank (Stroibank), and USSR Bank for Foreign Trade (Vneshtorgbank). Regarding the last-named, see note a. to Table 3.
 - b. For 1970 and 1975, average annual rate of increase over five years ending December 31 of the indicated year. For 1978, ditto but for three years. For 1980-1983, ditto for four years. For all other years, increase for the year.
 - c. These figures for 1966-70 were computed omitting Vneshtorgbank loans, which were less than five percent of all loans in that period.
 - d. Inventories (zapasy tovarno-material'nykh tsennostei) held by business firms, except kolkhozes.
 - e. Owing to the resetting of nearly all wholesale prices as of January 1982, the comparability of this figure with those for earlier years is questionable.
 - f. The figures in parentheses are rates of growth of loans taking into account the 6.0 BR of loans forgiven to kolkhozy in 1982; see note g., Table 3.
- n.a. = not available
- p. Figures in this column may be preliminary.

using a method different from ours, and to Wiles for carefully proofing them (Birman 1980, 1981; Wiles 1983).

In 1979 there was an initial significant drop in the rates of growth of inventories--from 6.4 to 5.6 percent per year (if we can trust the statistics)--and of loans--from 10.7 to 9.0 percent per year. However, GNP growth fell to a mere 0.4 percent in that year (if the CIA is correct), causing the "excess" rate growth of short-term loans over real GNP to jump to 8.5 percentage points, and over inventories to 5.2, respectively.

After 1979 the picture changes drastically. The rate of growth of inventories turns up moderately in 1980 and sharply in 1981, to 6.4 and 11.9 percent per year, respectively. These figures are surprisingly high for what were depressed years, and may indeed reflect the aforementioned unbalanced-inventories effect under conditions of automatic accommodation by the banking system. And, in fact, the growth of loans--especially short-term loans, which accommodate wage demands and inventory purchases--was extraordinary in 1980 and 1981. Short-term loans increase by 16.1 percent in the course of 1980 and by 24.9 percent in 1981, while the "excess" rate of growth of short-term loans over real GNP jumps to 14.4 percent and 22.8 percent respectively (Table 1). Later on, as we analyze in some detail the components of this, as it were, explosion of short-term loans outstanding, we shall relate it to two major factors: the unbalanced-inventories effect, as hypothesized, and a seemingly independent steep rise in short-term loans to the contract construction industry.

In 1982 and 1983 (the latest year for which bank statistics are available at this writing) the loan picture shows another sharp turn-around. In 1982, the increase in short-term loans suddenly drops to 8.1 (or 9.7; see line 4. of Table

1) percent, i.e., well to its average historical level before 1980. And in 1983 it drops even further--to 6.2 percent. But because GNP growth, while clearly improving in 1982 and 1983, is still historically low, the "excess" rate of growth of short-term loans is still historically high in 1982--but notably low (3.2 percent) in 1983. Why the sharp decline in the growth of bank lending, beginning with 1982? We do know that the aforementioned re-financing of contract construction by the banking system was completed by 1981. But could the explanation also lie with mere improvement in the economy's real growth which helped re-balance inventories, break bottlenecks, unclog production lines, and thus speed the repayment of loans? Or was it a deliberate policy of credit tightening supported (as it would have to be) by a determined redistribution of supplies? Or was it the effect of the new--and generally higher--producer goods' (wholesale) prices that were introduced across the board on January 1, 1982? The higher prices increased aggregate profits in the economy and to this extent should have reduced resort to bank credit.⁶ Or, which is likely, each of the three explanations is valid in some measure. Yet, we cannot be sure because much of the previously published detail on bank loans disappears from print after 1981.

Nevertheless, despite the sharp deceleration of lending in 1982 and 1983, the entire four year period 1980-1983 still exhibits a major acceleration compared with, say, 1971-1978 (last column of Table 1 compared with the second and third columns): for short-term loans, 13.5-14.0 percent per year as against an average of 9.8 percent per year during 1971-1978. The contrast is even more marked in terms of the "excess growth" of short-term loans over real GNP: 11.25-11.65 percent versus 6.0 percent.

A closer look at the structure of bank loans during the crucial years 1980 and 1981 can be had in Table 2. These are consolidated figures for Gosbank and Stroibank only; no such detail is published for Vneshtorgbank. Only short-term loans are shown in the table. Long-term loans are omitted because they are not germane to our credit-inflation hypothesis, except in the negative sense that they exhibited no unusual behavior during 1980-1981 rising on the average only about 6 percent per year. (The last is worth noting for a different reason. The reform measure of July 1979 provided for a greater role for banks in financing fixed-capital investment; this did not happen, apparently.)

Table 2 presents, for each type of loan, the average annual rate of increase during the three years just before 1979 (i.e., 1975-1978), the ruble amount of loans outstanding at the end of 1979, the same at the end of 1981, and the average annual rate of increase over the two years following 1979, i.e., 1980-1981. In addition, the same information is shown for construction (line 5.)⁷, and for all activities (sectors) other than construction (line 6.).

The reason for singling out construction in the table is that it attracted a highly disproportionate amount of short-term credit from 1975 through 1981. At the end of 1975, construction accounted for less than 8 percent of all short-term loans to the economy; by the end of 1981, the figure had risen to nearly 26 percent. After 1981, loans for construction increased only at approximately the same moderate rate as loans to the whole economy, as already noted. By channeling so much bank credit into construction during 1975-1981 the authorities aimed to reduce sharply the role of customers' advances in financing the notorious "unfinished construction" and "uninstalled equipment" and thereby to bring these wasteful phenomena under better control.⁸

Table 2

USSR: Short-term Bank Loans^a by Purpose, 1975-1981
(amounts at year-end)

	<u>1975-1978</u> avg. annual increase, % (1)	<u>1979</u> million rubles (2)	<u>1981</u> million rubles (3)	<u>1980-1981</u> avg. annual increases	
				percent (4)	mill. r. (5)
1. Bank loans, ^b short-term, total	8.7	225,020	327,348	20.6	51,164
2. of which:					
2. to finance goods inventories	8.2	154,186	234,017	23.2	39,915
2.1 production materials	5.7	43,663	61,879	19.0	9,108
2.2 goods in process [unfinished output]	30.5	11,252	59,862	130.6	24,305
2.3 finished goods	1.9	4,163	4,522	4.2	179
2.4 equipment for installation in construction ^c	17.3	8,177	8,978	4.8	400
2.5 inventories in retail and wholesale distribution ^d	4.8	67,481	77,337 ^e	7.1	4,928
2.6 other goods ^f inventories	21.3	19,450	21,439	5.0	994
3. against payment documents ^f	4.1	33,510	36,319	4.1	1,404
4. for other purposes ^g	17.7	37,324 ^h	57,012	23.6	9,844
5. to construction industry	18.7	31,175	84,620	64.7	26,722
6. to the rest of the economy	7.4	193,845	242,728	11.9	24,441
7. Summary: to finance unfinished output: (2.2 + 2.4)	23.8	19,429	68,840	88.2	24,705
8. production inputs: (2.1 + 4.)	10.0	80,987	118,891	21.2	18,952
9. finished goods and trade inventories: (2.3 + 2.5 + 3)	4.4	105,154	118,178	6.0	6,512

a. kolkhozes included

b. Gosbank and Stroibank only

c. held by construction contractors

d. to vary

e. this item went up 15.0 percent in 1981 alone, probably
in part owing to retail price increase in the year.

f. i.e., shipment of finished goods.

g. for the meaning of this category see text.

h. this item had the largest increase
of all items in 1979, 33.3 percent.

During 1980 and 1981, short-term loans to construction increased by the enormous sum of 53.5 BR, accounting for over one half (52.2 percent) of the absolute increase in total short-term loans to the economy over the two-year period.⁹ We can find no evidence that this extraordinary outpouring of credit was substantially offset by net revenue in the (admittedly murky) budget accounts.

But construction alone does not explain the great credit expansion of 1980-1981; loans for all other sectors taken together (line 6.) also turned up considerably after 1979--from an average annual rate of growth of 7.4 percent in 1975-1978 to one of 11.9 percent in 1980-1981. This increase should be seen against the background of the over-all slowdown in real economic growth between the two periods. Applying our term in this context, we find that "excess" growth of short-term loans to all non-construction sectors together was 3.6 percentage points per year in 1975-1978, and 10.0 (!) percentage points per year in 1980-1981.

The next three lines of the table may be of some interest in relation to our hypothesis of credit-inflation during a slowdown. Line 7. combines two types of loan--to finance unfinished output (goods in process) and uninstalled equipment--that would tend to turn up, as we supposed, thanks to bottleneck formation during the slowdown. But these are also types of loan that are in large measure destined for construction and, hence, may be unduly inflated by the special case of that industry. Line 7. does indeed shoot up--from 23.8 percent per year before 1979 to 88.2 percent after 1979-- but the heavy influence of construction clouds its meaning for our hypothesis.

Line 8. is the sum of loans to finance production materials and "for other purposes". (The latter is apparently a composite of various types of loan es-

entially aimed to maintain a firm's solvency.) Thus, the category on line 8. is also of the kind that may be expected to grow relatively fast in response to an unexpected slowdown. On the other hand, the composite loan category on line 9. finances finished goods of various kinds (including those in transit to customers) we expect it to grow relatively less rapidly under the same conditions, and it does. Indeed, as a comparison of lines 8. and 9. indicates, the two categories do behave in a manner not inconsistent with our hypothesis. The average annual rate of growth of line 8. more than doubles between 1975-1978 and 1980-1981; that of line 9. increases only by 36 percent of itself, i.e., only one-third as fast.

Effects of Credit Expansion on Currency Issue

The Soviets have not published an absolute figure for currency in circulation for nearly half a century, or any relative figure that would permit direct extrapolation beyond January 1, 1958. Igor Birman has estimated currency circulation (actually, household currency holdings) by reconstructing the cash flow between the household and the socialist sectors; his figure for 1979 is 54 BR.¹⁰ The interested reader is referred to the Appendix to this paper for a discussion of different methods of estimation.

In an earlier paper (Grossman, 1983) we used the method of partial reconstruction of the consolidated balance sheet of the banking system to obtain changes in net liability residuals which might serve as indications of annual increments in currency circulation--or, more correctly, indications of annual changes in the increments. That paper carried the figures only through 1980 (with a postscript for 1981), but it did already bring out vividly the beginning of what was apparently to be a remarkable surge in currency issue. In the

present paper we return to the method, carry the estimates to 1983, and introduce several modifications (see Table 3). First, we now complete the coverage of the Soviet banking system by rectifying the omission of the Bank for Foreign Trade (Vneshtorgbank)¹¹, whose loans, which we assume to be short-term exclusively, add 10 to 13 percent to the total of short-term loans by the other two domestic lending banks, Gosbank and Stroibank, during 1975-1983. Second, for lack of recent data we now omit several minor categories of liabilities,¹² an omission and simplification that hardly affects the larger picture at all.

In cases of ambiguity we try to deliberately err on the "conservative" side, i.e., on the side of understating the suspected increase in currency circulation. Thus, we omit from consideration increases in long-term loans to enterprises on the "conservative" supposition that they are offset by corresponding budgetary appropriations to the banks.¹³ We assume that the nominal budget surplus is a true cash surplus which increases the treasury's balance with Gosbank, despite strong specialist opinion to the contrary.¹⁴ We overlook the high likelihood--especially in hard times such as those under review--of significant net bank loans to the treasury (which Soviet practice presumably includes and conceals in the budget receipts total); in any case, we have no data for such loans. (Bank loans to the treasury would, of course, be money-creating, like any bank loans.) To the extent that these assumptions are false, currency issue estimates are understated by the method of balance-sheet residuals. (However, the omission of the changes in the smaller types of bank liability mentioned in the footnote to the preceding paragraph works in the opposite direction, though slightly.) Finally, we omit fluctuations in bank holdings of monetary gold and foreign exchange, and in external indebtedness--none of which is likely to be a serious exception to our "conservative" approach to currency estimation.¹⁵

Table 3. USSR: Selected Aggregate Financial Data, 1970-1983
(billions of rubles)

A. Absolute Amounts (end of year)

	<u>1970</u>	<u>1975</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
1. Bank loans, short-term, total	110.6	179.4	233.7	254.4	295.4	369.0	398.8	423.5
of which by:								
Gosbank and Stroibank ^a "to the national economy"	(104.7)	(160.5)	(206.1)	(225.0)	(261.4)	(327.3)	(354.9)	(377.4)
Vneshtorgbank ^b	(5.9)	(18.9)	(27.6)	(29.4)	(34.0)	(41.7)	(43.9) ^c	(46.1) ^c
2. "Monetary means of enterprises" ^d	16.5	27.3	33.3	35.0	38.4	40.1	46.6	47.6 ^p
3. Savings deposits of individuals ^e	46.6	91.0	131.1	146.2	156.5	165.7	174.3	186.8

B. Annual or Average-Annual Increments

	<u>1971- 1975</u>	<u>1976- 1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1980- 1983</u>
4. Bank loans, short-term	13.8	18.1	20.7	41.0	73.6	29.8	24.7	42.3
5. Bank loans, short-term, to kolkhozes, cancelled in 1982						6.0 ^g		1.5
6. "Monetary means of enterprises"	2.2	2.0	1.7	3.4	1.7	6.4	1.0 ^p	3.0
7. Savings deposits	8.9	13.4	15.1	10.3	9.2	8.6	12.5 ^h	10.1
8. Budget surplus (for the year or annual average) ^f	3.1	5.4	5.1	8.1	10.8	9.9	3.7	8.1
9. Lines 4.+5.-(6.+7.+8.), R	-0.4	-2.7	-1.2	19.2	51.9	10.9	7.6	22.6
Memoranda:								
10. Goods inventories of enterprises (increments)	14.2	17.4	13.3	22.1	38.5	29.8	26.9 ⁱ	31.7
11. Savings deposits plus budget surplus	12.0	18.8	20.2	18.4	20.0	18.5	16.2	18.1

n.a.- not available

p - preliminary

Sources: Narodnoe khoziaistvo SSSR v ... g., various years, except as stated.

Table 3 - Notes

- a. USSR State Bank and USSR Investment Bank, respectively.
- b. USSR Bank for Foreign Trade. All its loans are assumed to be short-term. Figures include "commitments (obiazatel'stva) received against guarantees and acceptances", amount unknown, and to this extent may overstate the amounts of loans proper. Sources: Vneshniaia torgovlia (Moscow), 1978:8, 1974:9, 1976:10, 1977:10, 1978:9, 1979:11, 1980:9; Den'gi i kredit, 1972:12, 1973:8; Press Bulletin, Moscow Narodny Bank (London), 7-15-1980, 8-18-82, 6-20-84.
- c. We are unable to find Vneshtorgbank balance-sheet data for the end of 1982 (or 1-1-1983). The figure given here is the mean of "total assets" for 1-1-1982 and 1-1-1984, multiplied by 0.84, the ratio of "loans, etc." to "total assets" that obtained fairly steadily for several years previous. The same factor is applied to "total assets" on 1-1-1984 to obtain "loans, etc." at the end of 1983.
- d. Not further explained: presumably consist almost entirely of bank money on deposit in the three banks; cf. Finansovo-kreditnyi slovar', 1984, p. 352, col. 2. Computed from data in the Nar.khoz. yearbooks and Vestnik statistiki (1983:10, p. 76; 1984:12, p. 74) relating to working capital (oborotnye sredstva) of firms, excluding kolkhozes, and to proportion of different liabilities financing the working capital.

- e. Includes the very small individual deposits in Gosbank.
- f. Actual reported surplus, not increment.
- g. In 1982, loans to the amount of 9.7 BR owed by kolkhozes were forgiven as part of the launching of the Food Program (Pravda, 25 May 1982). Since the loans in question might have been long-term as well as short-term, it is necessary for the present purpose to estimate the short-term component. By casual inspection of the time series of loans (short- and long-term) to kolkhozes outstanding (Narodnoe khoziaistvo SSSR v 1982 g., p. 526, and corresponding data in earlier editions of the statistical yearbook) we conclude that the amount of short-term loans cancelled in 1982 must have been at least 6 BR. If the loans had been not forgiven or nonetheless remained unrepaid, the amount of loan increment on line 4. would have been correspondingly larger, with the same effect on currency in circulation. Hence, we add line 5. to line 4. to compute the residual on line 9.
- h. Savings deposit increment in 1984 - 15 BR (Pravda, 26 January 1985); average increment for 1980-1983 - 11.3 BR.
- i. See note (e) to Table 1.

We are left (Table 3, Panel B) with increments of one type of asset, short-term loans (STL), and of three types of liability, "monetary means of enterprises" (MM), presumably nearly equivalent to what we have called here "bank money", savings deposits (SD), a liability of Gosbank since 1963, and the annual budget surplus (BS), which here stands in proxy for (gross) annual increases of the treasury's deposits with Gosbank. For any year or for the average of two or more years: increment in listed assets minus increment in listed liabilities equals residual (R). Or, letting Δ stand for "annual increment of", we write $\Delta\text{STL} - (\Delta\text{MM} + \Delta\text{SD} + \text{BS}) = \text{R}$; see line 9. of Table 3. "R" can be thought of as unexplained change in net liabilities of the banking system. Its absolute value in itself has little meaning because our reconstruction of the banks' consolidated balance sheet is partial; and it certainly should not be identified with currency issue. But, on the assumption that the increments of omitted assets and liabilities are either largely mutually offsetting or relatively small, we may associate major annual changes in R as being indicative of major changes in the same direction of such a major unpublished item on the liability side as currency in circulation, i.e., the annual currency issue.

The behavior of R in our table is rather striking. From 1971 through 1979, R is small (actually, negative) and changes little--which does not indicate that annual currency issue is small, only that the year-to-year changes in currency issue may have been small. Then, in 1980, it shoots up by over 20 (=19.2-(-1.2)) BR and in 1981 by over 30 BR again, to 51.9 BR, only to drop sharply (by 41.0 BR, to 10.9 BR) in 1982, and moderately in 1983 to 7.6 BR; though the last figure is still 9 BR above that of 1979. For the years 1980-1983 taken together (last column of Table 3) R is 22.6 BR per year on the average, some 24 BR higher than the annual average for 1971-1978. These are large figures in relation to the national economy. Every 10 BR swing in the bank balance-sheet residual equals

2.2 percent of the national income (462.2 BR) for 1980, 3.4 percent of total budget expenditures (294.6 BR), and 2.1 percent of total state and cooperative retail sales (470.5 BR), all as per Soviet official statistics. The fluctuations in R must--by accounting identity--be offset somewhere in the banks' consolidated balance. Since it seems unlikely that the treasury's account with the banks would be growing to this extent during the difficult conditions of 1980-1983 (it will be recalled, we have already taken account of the officially indicated budget surplus), or that extra-budget foreign transactions, expressed in domestic rubles, would fluctuate this much over short periods of time, it is difficult to escape the impression that the currency-issue account may have grown substantially during 1980-1983.

We are left, then, with a presumption that the rate of currency issue accelerated considerably in 1980 and further in 1981, and decelerated sharply in 1982 and moderately in 1983, and increased significantly over the whole four year period. (Note that even in 1983 the value of R, 7.6 BR, is 8-10 BR higher than in the pre-1980 years shown in Table 3, and thus may betoken a larger annual currency issue than in the period from 1971 to 1979.) In view of the comparatively low real GNP growth during these years, this suggests a not insignificant increase in the currency overhang--mostly household currency holdings--with regard to the official retail price level. Finally, it should be remembered that the public's savings deposits increased by 40.6 BR (27.7 percent) during 1980-1983. Altogether, the household sector would seem to have gained considerably in asset liquidity in the early 1980's, even after allowing for a likely rise in transactions balances proper.

Unfortunately, Soviet secretiveness in regard to currency circulation precludes a more definitive conclusion. Perhaps some day we shall know more, and will

be able to either confirm our lucubrations or utterly refute them. Yet, two pieces of circumstantial evidence do tend to give some support to our deduction from the partial bank data that there may have been a significant acceleration in currency issue in the early 1980s. First, as we noted at the outset, Soviet consumer markets have behaved quite consistently with this conclusion. Second, the specialized Soviet literature of the 1980s on money and credit hints strongly--and, of course, it may do no more in the face of censorship--at a serious problem of currency over-issue, and as often as not connects the development with insufficiently controlled bank lending. Perhaps the most succinct and unambiguous statement of this sort is in a December 1983 article by N. P. Fedorenko, Director of the Central Economic Mathematical Institute (TsEMI): "Every bank loan is, first, credit creation, and second, because the loan [directly or indirectly - G.G.] pays wages, an act of currency issue".¹⁶

A paradox remains to be resolved. If indeed currency holdings rose unusually rapidly from 1980 on, there should have been an upturn in the annual increments to savings deposits as households adjusted their personal "portfolios" in a "normal" way. Instead, after rising moderately in 1979, they declined quite steeply beginning with 1980. The figures are (again, annual increments): 1978--14.4 BR, 1979--15.1 BR, 1980--10.3 BR, 1981--9.2 BR, 1982--8.6 BR.¹⁷ The cumulative decline in annual increment from 1979 to 1982 was 6.5 BR. (However, in 1983 the annual increment rose sharply, to 12.5 BR, and to 15 BR in 1984, thus restoring the whole decline since 1979. We shall return presently to the 1983 upturn.)

The answer to the paradox, of course, lies in the fact that in the Soviet case there are two necessary conditions for depositing currency in savings accounts; namely, the "normal" condition that households have the currency to deposit

(according to their portfolio preferences), and second, that the currency be obtained in a legal manner so as not to incriminate the depositor. The second condition is crucial and becomes particularly important at times such as those under review. Anticipating the discussion below, let us point out that at a time of rising black market prices, growing bribery, etc., and redistribution of income, currency tends to gravitate from "honest" to "dishonest" hands, and the average (let alone marginal) propensity to deposit currency holdings in savings banks may well decline. This, then, would resolve the paradox. But what about the 1983 and 1984 upturn? Perhaps it can be explained partly in the same way: a dampening of the redistribution from "honest" to "dishonest" hands, owing to the campaign against economic crime and corruption begun by Andropov and continued by Chernenko, as well as to some improvement in the availability of consumer goods in the first economy.¹⁸

At this point we might note a curiosum: beginning with 1976-1978 and through 1983, the sum of annual increments in saving deposits and the officially stated budget surplus remains virtually constant at 18-20 BR, with the exception of a minor dip in 1982; see line 11. of Table 3.

Some Socio-Political Consequences of the Inflation

The consequences of the sharp drop in Soviet economic growth that occurred in 1979 and the persistence of relatively low rates of growth since can be viewed and dissected from a variety of standpoints. We have chosen a particular point of view, that of the financial and monetary effects of the slowdown. We have argued that a major and unanticipated slowdown under Soviet systemic conditions is likely to lead to an upturn in bank loans, so as to allow firms to continue to pay wages and to build up inventories of material inputs (albeit unbalanced

owing to shortages), and that the upturn in loans is likely to lead to an accelerated issue of currency, rendering the household sector more liquid. We find support for this view in both the sharp rise of the total of short-term loans outstanding and in the structure of the loans, during 1980 and 1981 (though a deceleration of the "credit inflation" in 1982 and 1983). And on the basis of very limited data we have found some presumptive evidence of a likely acceleration of currency issue during the early 1980s, supported by circumstantial indications of a different sort. If our deductions are correct, what further observable, or at least inferrable, socio-political as well as economic phenomena of the early 1980s can our findings help explain?

Effects on "Plan Discipline". In the socialist sector, faced with growing shortages of inputs and multiplying bottlenecks, firms have been increasingly resorting to illegal methods in order to meet their targets and indicators, such as bartering goods and services; dealing on the black market; acquiring cash by means of padded payrolls and kickbacks; collecting bank-money from other firms for work not done; etc. (Cf. Grossman, 1982.) Illegal transactions on socialist account generate illicit income for individuals. What greases the wheels of the system greases private palm. Pushers, fixers, brokers, and middlemen of all sorts proliferate. More tasks are farmed out by socialist firms to private individuals and groups; cf. shabashniki in construction, gektarshchiki in agriculture, "non-staff" workers everywhere.

Much of this activity is plan-benign (to use Wiles's phrase): it serves to further official objectives and plans, albeit by illegal means. It also tends to shift a fair amount of the burden of coordination and balancing under conditions of growing economic complexity from the planners to the impersonal ad-

justment mechanism of the socialist underground. It points to a spontaneous decentralizing, marketizing reform of sorts.

But the system of rule suffers from illicit diversion of energies and resources, distortion of official information, slippage of effective governance of the economy, decline in the respect for the plan, the law, and the whole official system, a general spread of cynicism and self-servingness, and, not the least, from an uncontrollable redistribution of private income and wealth and the consequent effects on regime corruption.

The Private Underground and Redistribution of Income and Wealth. In the household sector, the currency inflation translates into a combination of shortages in official outlets and price increases in the free markets, stimulates illegal private activity and augments private income therefrom. And since little underground economic activity takes place in the Soviet Union without paying off some authorities, we can safely assume an upturn in bribes and graft as well. The net result is a substantial redistribution of private income and wealth especially from illegal sources, and not just between individuals but also between social groups, regions, and ethnic groups.

Who has gained from the recent economic slowdown and the attendant inflation? Obviously, all those who have physical or administrative power of disposal over material values and can realize the potential gain, those who (in part for the same reason) are in a position to produce goods and services on their own account, and those authorities, large and small, who are able to extract graft and tribute from the first two groups. Among the gainers may well be many peasants, thanks to the rise in open-market food prices. These--as it were--are "Brezhnev's new rich", a heterogeneous class, to be sure.

Who has lost? Those who lose in any inflation anywhere: students, pensioners, fixed-wage and fixed-salary recipients, provided they have no opportunities for illicit gain and/or privileged access to "closed distributors" of consumer goods. However, ability to benefit from the second economy or from bribes is not sufficient; one must benefit enough to offset the rising cost and difficulty of living.

The resultant redistribution of income--and the even greater redistribution of private wealth--has been a major theme in the Soviet press for the last few years (albeit often obliquely presented), in the emigre press, and in the reports of recent arrivals from and visitors to the USSR. All sources seems to agree that grasping, hustling, wheeling-and-dealing have been gaining ground in everyday life.

Policy Problems. Andropov took over from Brezhnev not only a country in the midst of economic stagnation and major social change, but also one in which public opinion, including elite opinion, was in the danger of becoming seriously polarized on issues of socio-economic policy, morality, equity, and ideology. His earliest measures--employing repressive means against indiscipline, lack of order, and corruption--aimed to stem the processes of social dissipation below and loss of control above. Of course, such extreme measures could at best be temporary. Andropov did not live to attempt lasting solutions, if indeed such were within his power to carry out.

Under Chernenko--at this writing Gorbachev has barely succeeded to the supreme position--the country returned to "normalcy", but not a static normalcy. Left alone, society will slowly encroach upon vlast' (political power) and poriadok (order). The second economy will continue to take advantage of the inflation,

open and repressed, will steadily push against the limits of the possible, and will grow. Corruption will not stay within its bounds. The monetary overhang does not have to keep expanding in order to continue to corrode the formal economic mechanism, further demoralize the public, and undermine the legitimacy of the official order. The wealth of the "new rich" will breed on itself, as wealth always does. Social tensions will persist, perhaps intensify. Will the regime find within itself the consensus and the courage to perform the major surgical operation of confiscating a large part of the liquid assets in private hands by means of a drastic currency conversion possibly with a partial confiscation of savings deposits, as in 1947? That it may not is suggested by Jaruzelski's failure to do the same in Poland in the first months after his coup in December 1981, when the need was even greater and the moment certainly more propitious than for Gorbachev today. In good part the new, illicit wealth is concentrated in the hands of the ruling elite and its clients; and moreover, the inter-regional, inter-national, inter-ethnic inequities of any such expropriation will be large and politically serious.

But without such a surgical operation, the chances that effective systemic reform will be attempted, let alone carried out, would seem to be low, though even this necessary step is, of course, far from sufficient. Take, for instance, a modest expansion of the legally permitted scope of private activity; a rather sensible measure on its own merits, if only because it would legalize some of the already existing underground activity. Yet in view of the excess purchasing power, it would look like legalizing wild self-enrichment, inviting more corruption, and upsetting orderly labor markets and stable wage levels. Or take a reform entailing some degree of marketization of the socialist sector. Managerial autonomy under conditions of strong inflationary pressure may be seen as a license for diverting resources from officially desired ends, putting

greater strain on price and wage controls (or, alternatively, fueling open inflation), and leading to even more misappropriation of state property, statistical legerdemain, self-enrichment, and corruption.

The economic slowdown would seem to call for radical systemic solutions, but--if this paper is not in serious error--the recent currency inflation, the slowdown's near-automatic consequence, may be placing an additional obstacle to such a reform and its successful realization.

POSTSCRIPT: Shortly after the present paper was completed, there appeared a brief article by V. Alkhimov, Chairman of the Board of USSR Gosbank, which sheds additional light on some of our arguments. ("Bankovskii kredit i raschety" [Bank Credit and Payments], Ekonomicheskaya gazeta, 1985:21, p. 13.) Alkhimov cites 1-1-1985 figures for aggregate Gosbank loans outstanding -- 384 BR for all loans, 316 BR for short-term loans [indicating 1984 increases of 20 BR and 17 BR, respectively, approximately equal to those of each of the preceding two years]. He proceeds to imply that these increases are excessive, and to blame, in the first instance, the unwarranted accumulation of goods inventories by enterprises. The growth in loans outstanding during the year took place despite dishoarding by enterprises of 2 BR worth of inventories under Gosbank pressure, and a 30 BR cutback by the Bank of loan requests by ministries and other departments.

Next, Alkhimov turns to "payment credit", advances to buyers to pay sellers' invoices, a practice identified in this paper as a significant cause of inflation. His remarks are worth quoting verbatim: "As is known, payment credit may be granted only in the event of temporary insufficiency of funds on the buyer's part. And yet, many enterprises avail themselves of it over considerable periods of time as a way of filling gaps in their financial condition... Our proposals to restrict the use of payment credit to reasonable time periods have run into resistance by certain business executives and scholars, who contend that such loans need not have a limited term. From this latter standpoint, the Bank in effect becomes the universal buyer and paymaster [vseobshchii pokupatel'-platel'shchik]. This kind of approach is entirely inconsistent with any principles of businesslike management [khozraschet] or of [proper] lending, and would result in immense above-norm goods inventories."

One might add: also in immense increases in loans and in currency in circulation.

APPENDIX

The last published Soviet figure for the absolute amount of currency in circulation pertains to 1 January 1938--1,518 million new (post-1960) rubles.¹⁹ All absolute figures for later dates remain a state secret to this day. There are, data permitting, five methods to estimate the amount of currency in circulation on later dates, or at least the change in the amount between selected dates. They are:

(1) Extrapolation with the help of time-relatives or other ratios revealed in Soviet sources. In this way, on the basis of a few bits of none-too-precise information, Powell estimated currency circulation to have been 3.70 billion rubles (BR) on 1-1-1951 and 5.60 on 1-1-1956.²⁰ (Since Powell obtained these figures by interpolation from an indirect Soviet statement referring to 1958, it is possible to extrapolate to 1-1-1958. Doing so, one obtains the figure of 8.26 BR.) In an unpublished doctoral dissertation, completed in the year of publication of Powell's estimates, Christine Wollan (now Williams) uses the same Soviet statements to obtain a very similar figure for 1958, and to interpolate linearly for the preceding years.²¹ To our knowledge, Soviet sources have revealed no information to permit us to directly extrapolate the amount of currency beyond 1-1-1958.

(2) Another method relies on the fact that any excess of households' receipts of cash from the socialist sector over payments to the socialist sector in a given period must add to the households' holdings of currency, or very nearly so. Developing and employing this method, Igor Birman finds cumulative excess of household receipts over payments, during 1960-1978, to have been 79.4 BR.²² Adding to this an assumed (small) amount in circulation at the beginning of the

period and adjusting downward, to be on the conservative side ("quite arbitrary", "more on intuition than on precise knowledge"), he arrives at an estimate of aggregate household currency holdings of 54 BR in 1979.²³ Birman states that four fifths of this amount was holdings in excess of households' transaction balances.²⁴ The 54 BR in 1979 (really, end of 1978) corresponds to 41 percent of the total value of savings deposits as of that date. Wiles thoroughly proofs and occasionally adjusts Birman's calculations and arrives at the broad conclusion that "cash is now [?] one half deposits".²⁵

Note: After the present paper had been completed and revised, we came across a very interesting paper by Gavin Peebles (1983), in which the author, using essentially the same method as Birman, calculates currency holdings by Soviet households from 1957 through 1979 (beginning-of-year data). His figure for 1979 is 43.3 BR, somewhat smaller than Birman's.

(3) Reconstruction of the State Bank's balance sheet. Soviet currency consists of notes and coins, but the relative value of coins must be quite small and we ignore it henceforth. The notes are issued by the State Bank of the USSR (Gosbank) and, as in the case of any bank of issue, appear as a liability on the Bank's balance sheet, where it must be a large item. Hence, in principle it should be possible to approximate the value of notes in circulation by reconstructing the balance sheet, if the values of its other main items are known. Several such attempts have been made. In their works already cited, Powell and Wollan attempted just that; Powell for several years from 1928 to 1967, Wollan annually from 1932 to 1970 (excluding the war years). It must be stressed, however, that neither Powell nor Wollan attempted to estimate the amount of notes in circulation in this way; rather, both used method (1), as already mentioned. The reason is that their reconstructed annual balance sheets, though

quite detailed, still yield a difference between the debit and credit sides of the ledger that cannot be easily identified with the item "notes outstanding".

(4) A variant of the preceding method--which we may call the method of balance-sheet increments--is the reconstruction of annual changes in those items of the Bank's balance sheet for which such data are available or estimatable, hoping that the unexplained residual change (credit or debit) will approximate the change in the value of notes in circulation. The underlying premise is that certain balance-sheet items for which no current data are available may also change relatively little from year to year (e.g., the capital account), while other unknown items may be too small to matter. Naturally, this method cannot yield an estimate in the amount of notes outstanding at any given date, but at best only an approximation of the change in this amount. But this may still be an important statistic, especially if in any year the value of the change deviates drastically from a known trend. Thus, a sharp increase from one year to another in the difference between the total of known increments of assets and the total of known increments of liabilities--i.e., a sharp increase in the second difference between successive absolute amounts--may signal an unusual increase in the unknown liability item "notes outstanding".

An attempt of this kind was made by Ames for 1956 through 1960,²⁶ calling the residual "apparent change in Soviet deposits and notes", for his known items did not include enterprise deposits. In three of the five years the residual was negative, i.e., the known increments in liabilities exceeded those in assets. Ames did not carry the attempt further, to our knowledge.

As was just noted, the method of balance-sheet increments has the major drawback of being incapable of yielding absolute estimates of the amount of notes out-

standing, and, therefore, also of relative (percentage) changes in notes outstanding. It can only suggest absolute changes in notes outstanding, and relative changes of changes. But should these results suffice, then it does have some significant advantages over the balance-sheet reconstruction method. First, as indicated, it need not be concerned with balance-sheet items which are large in themselves but change (absolutely) little from year to year and may not be available or easily estimatable. Second, it can utilize data available only as flows (as against stocks), which, however, can be taken as proxies for changes in certain stock categories (i.e., balance-sheet items); for example, the budget surplus or deficit, which might be taken as a proxy for change in the treasury's account with the Bank ("Budget Account")--though, as will be assumed below, the proxy relationship may not be very dependable in the Soviet case. Such an attempt at obtaining an indication of changes in increments in currency in circulation for recent years was made by us (Grossman, 1983).

(5) Lastly, the survey technique. Emigrants from the USSR can be asked to estimate the amount of currency which their families had on hand at a particular point in the past while still in the USSR. This was done in the Ofer-Vinokur survey of Soviet emigres in Israel,²⁷ and more recently in a similar survey undertaken in the United States by the present author jointly with Professor V.G. Trembl of Duke University, now in progress. As a way of estimating Soviet currency circulation this method faces some considerable difficulties, such as the problems of recall by respondents and of generalizing from a sample to the total population of the USSR. The data collected by the Grossman-Trembl survey are being analyzed.

FOOTNOTES

1. We are grateful for research assistance to David Sedik and Kathleen O'Brien, and for valuable and extensive comments to Drs. Joseph S. Berliner, Igor Birman, and Vladimir G. Trembl. We are also pleased to acknowledge the financial and material research support of the Ford Foundation and of the following units within the University of California, Berkeley: the Department of Economics, the Center for Research in Management, and the Center for Slavic and East European Studies. All responsibility is the author's.
2. There is, however, a good deal of scattered information to the effect that the quality of foodstuffs sold in official outlets may have appreciably declined.
3. Some transactions between individuals are subject to price control; e.g., dwelling-space rentals, used car purchases. In both cases the controls appear to be widely disregarded.
4. For automatic lending by the State Bank (in the form of the so-called payment credit [platezhnyi kredit]) in the event of a firm's lack of funds to pay suppliers, and that such loans in effect are of indefinite term [bessrochnye] and are as often as not overdue, see Lisitsian:1984, p. 3 and n. 3. For the tendency of State Bank branches to automatically furnish currency for wage payment so as not to hamper production, regardless of the governing regulations, see Bunich:1982, p. 9. There are also reports of bribery of bank officials by enterprises; see Radio Liberty: 1984, pp. 4-5.

5. The inventories series is probably less reliable than the loans series. The latter originates with the banks and is likely to be quite accurate, especially since the politically sensitive loans to the treasury are not part of it. The inventory series, on the other hand, no doubt originates with the enterprises, which have every reason to fiddle the figures.
6. Total profits in the economy (excluding kolkhozes) rose from 119,194 mil.r. in 1981 to 133,746 mil.r. in 1982, up by 22.2 percent. Agriculture's turn came the following year: from 1982 to 1983, net value added of kolkhozes (yalovoi dokhod) rose from 21.8 BR to 35.4 BR, while profits of state agricultural producing firms (sovkhozes and others) rose from 709 mil.r. to 11,579 mil.r., thanks to raised procurement/purchase prices and increased subsidies from the budget. (Nar. khoz. 1983, pp. 273, 536.)
7. In bank statistics, in contrast to inventory statistics, "construction" refers not only to the construction industry proper--the contractor firms--but also to building and installation done for themselves by non-construction firms.
8. Cf. Rol' banka ... (1980, pp. 140-142). Inasmuch as bank loans to the construction industry replaced over time customers' advances to construction, the same customers were relieved of a financing role to a similar extent, and thus of a need to themselves borrow from the banking system. While noting this much, we still treat bank loans to construction as distinct from such to other branches of the economy, which in yet another way contributes to a "conservative" test of our hypothesis.

9. The 53.5 BR corresponds to 21 percent of the short-term loans outstanding at the end of 1979, and close to 9 percent of the Soviet 1979 GNP.
10. Birman: 1981, Ch. VI, esp. pp. 120-121.
11. Bank money on deposit with Vneshtorgbank is probably part of the item "monetary means" in Table 3, though surely a minor one. If so, to this extent Vneshtorgbank was also represented in Table 1 of our earlier paper.
12. The following liabilities were included in the calculation of the "residual" in our earlier paper (Grossman: 1983, Table 1) but are omitted in Table 3 of this paper: current accounts of trade unions, social and other organizations; current and special accounts of kolkhozes; "indivisible funds" of kolkhozes; Gosbank inter-branch float.
13. Soviet sources intimate that a large part of the growth in long-term loan balances is offset by budgetary appropriations to banks for this purpose. See, for instance, Finansovo-kreditnyi slovar' (1984), p. 379, col. 2.
14. E.g., Birman:1981, Wiles:1983.
15. Soviet net lending abroad, nearly all to communist countries, CMEA banks, and less-developed countries, is likely to have been positive during 1979-1983, i.e., to have increased the nominal assets of domestic banks, and therefore our residual R. Its omission is yet another contribution to the "conservative" nature of our estimates of R.

16. Fedorenko:1984, p. 17. Perhaps the clearest conception of the currency creating nature of Soviet bank credit is Melkov's; see his works listed at the end of this paper, especially 1983b, passim. See also Belkin/Ivanter: 1982, and Lisitsian: 1984.
17. Nar. khoz., various years.
18. We are indebted to Professor V. G. Trembl for another possible explanation of the decline in savings-deposit increments after 1979 may lie in the increase in payments to the state for new personal automobiles, in part occasioned by the raising of official car prices in that year. The figures are, rounded: 1979--7.7 BR, 1980--8.8 BR, 1981--10.7 BR, 1982--19.7 BR, and 1983--11.7 BR. (Nar. khoz. for the various years.) The cumulative increase in annual payment for cars between 1979 and 1982 was, thus, 3.0 BR--over half of the cumulative decline in increments to savings deposits of 5.8 BR (Table 3). Savings deposits (and currency hoards) compete with cars as a form of wealth, though the relationship between the one and the other need not be 1:1, of course. (However, 1983 witnesses the opposite: both payment for cars and increment in savings deposits rise, by 1.0 BR and 3.9 BR, respectively.)
19. Powell:1972, esp. Table 17.1, p. 404. For a survey of estimates of Soviet currency circulation see Garvy:1977, Appendix B.
20. Wolfan:1972, esp. Table 16, pp. 285ff.
21. Birman:1981, Ch. VI. It should be noted that strictly speaking this method pertains only to that portion of currency which is held by households. It

does not take into account extra-bank currency held by state and cooperative firms, "social organizations", kolkhozes, government (budget) agencies, and the like. However, household holdings subsume currency held as transactions and other balances by private underground businesses.

22. Ibid., pp.120-121.

23. Ibid., p. 127.

24. Wiles:1983.

25. Ames:1965, p. 168.

26. The data on currency holdings have not yet been published. Related findings on household savings patterns were published in Ofer/Pickersgill: 1980.

27. Ofer/Pickersgill: 1980.

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