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Money Demand, Bank Credit, and Economic Performance in Former Socialist Economies

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Abstract

This paper examines factors determining the allocation of bank credit to the enterprise sector, and the implications of this allocation for aggregate supply and macro-economic performance, in the former socialist economies. It first develops a model to explain how changes in demand for money by the household sector directly influence the availability of working capital, which in turn determines aggregate output and employment. It then examines factors influencing the allocation of bank credit between enterprises and other borrowers, in particular the government. Finally, the paper discusses relative merits of bank finance and equity capital in financing medium- and long-term investment, and constraints on the development of efficient equity markets.

JEL Classification Numbers:

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Summary

This paper examines factors that determine the volume of bank credit allocated to the enterprise sector and the implications of this allocation for aggregate supply and macroeconomic performance in former socialist economies. It first develops a model to explain how changes in the demand for money by the household sector directly influence the volume of loanable funds and credit, which in turn determines aggregate output and employment. The model suggests that if firms cannot obtain sufficient working capital, then production will be cut back. It is shown, however, that attempts to increase credit through inflation may exacerbate the credit crunch because of the effect of inflation on the demand for deposits.

The paper next examines factors that determine how bank credit is allocated between enterprises and other borrowers, in particular, the government. The reasons why banks may prefer to finance government deficits rather than make potentially more profitable loans to enterprises are examined. It is suggested that a preference for lending to the government, while perfectly rational from the perspective of individual banks, may create a vicious cycle of low output, low profits, high fiscal deficit, and, again, low credit to enterprises. The paper considers empirical evidence for a number of Eastern European countries that is consistent with this hypothesis and discusses a number of policy options for increasing the provision of credit to potentially viable enterprises.

Finally, the paper discusses the relative merits of bank finance and equity capital for medium- and long-term investments. In a credit market with imperfect information, liberalization of the banking sector would not necessarily lead to efficient allocation of long-term capital. This is due to the adverse selection effects that occur when debt contracts are used in the presence of asymmetric information. Equity contracts, however, are free from the adverse selection effect and thus could overcome inefficient allocation of capital when the same degree of imperfect information on borrowers exists as in the case of debt contracts. However, a number of important constraints exist on the development and efficient functioning of equity markets in the former socialist economies, and the paper notes some policies that might be implemented to overcome them.

I. Introduction

A salient characteristic of former socialist economies, FSEs, is the strong and persistent fall in (measured) output, which has taken most economists and policy makers by surprise. Although initial output disruptions were expected, their size and persistence were not. In fact, it was expected that the better incentive mechanisms of a market-oriented system would quickly unleash productive power by pushing the economy to its "production frontier".

One possible explanation for the output collapse is that the necessary economic transformation is very profound and, thus, sizable destruction is needed before construction takes place. For this to be so, though, output fall must be concentrated in sectors and activities displaying negative value added. Thus, if aggregate output were correctly measured GDP should rise, not fall. Berg and Sachs (1992), for example, argue that the output fall in Poland in 1990 was substantially less than recorded, but still conclude that the fall was of the order of 7 percent. Thus, it appears that this type of explanation is insufficient.

Another explanation is "market failure." The main argument in that respect is that political events have overtaken economic reforms. There has been very little time to develop the institutions, the information base, and the expertise required for the normal operation of a regular capitalist economy. Market failure has been reflected in a number of inter-related areas such as trade and the provision of credit. Following the onset of the reform process, trade--particularly domestic trade--slowed down markedly, exacerbating the consequences of the collapse of trade among the CMEA partners. Bruno (1992) notes, for instance, that the size of the output decline in Eastern European countries in 1991 was directly related to their dependence on the CMEA market. Thus, according to this line of explanation, the proximate cause for the output decline has been trade implosion.

Given the rudimentary nature of the bond and equity markets, commercial banks, mostly state owned, continue to dominate the financial sector in FSEs, and enterprises are heavily dependent on bank credit for both working capital and investment. A common characteristic of all FSEs has been a massive fall of real credit at the beginning of their transformation programs and, as argued in Calvo and Coricelli (1993), firms resorted to informal and/or illegal devices like cutting wages below the statutory ceiling, falling into arrears with one another, with banks, or the government. Despite these efforts, weak credit may have been an element in output declines, and may continue to be important in the sluggish recovery underway in some of the FSEs in Eastern Europe.

In this paper we will pursue the "market failure" line and, in particular, focus on issues related to the operation of credit markets in the reform process. We examine the conditions under which output declines may reflect inadequate credit, not only at the beginning of the reform process, but also subsequently, and explore two key factors influencing the

provision of credit to the enterprise sector: first, demand for bank deposits, which determines the availability of loanable funds; and second, constraints upon the banking sector, both endogenous and exogenous, limiting the credit which banks may want to extend to productive firms, whether in the state or the private sector, for a given amount of deposits. In this context, the paper explores the policy tradeoff between inflation and output, which is particularly important in the early stages of the transformation process when the liberalization of prices and trade, together with inherited monetary overhang, leads to serious problems of inflation stabilization and balance of payments.

The rest of the paper is organized as follows: Section II provides a brief overview of the performance and policies in FSEs during the transition phase, and notes the salient structural features of the economies. Section III sketches the basic conceptual framework which identifies some key characteristics of imperfect credit markets, paying special attention to their short-run macroeconomic effects, and the tradeoff between inflation, employment and output. Sections IV explores implications of the model for the relationship between interest on bank deposits, money demand, and bank credit. Section V discusses the relationship between the provision of liquidity to the enterprise sector and the financing of public sector deficits. Section VI examines more closely both the incentives and the constraints on the newly created commercial banks, most of which are still state-owned. Section VII briefly discusses the relative merits of debt and equity capital for the longer-term financing needs of the enterprise sector. A last section summarizes the main conclusions of the paper.

II. Policies and Performance : A Synopsis

1. Recent Performance

There are four striking aspects of the performance of FSEs in the transition to a market based system. First, as noted in the Introduction, there has been a sharp decline in output, which in several of the East European countries has ranged cumulatively between 20-40 percent over the last three years (Table 1). While output has begun to recover in Poland and former Czechoslovakia, declines continue, albeit at a much reduced pace, in other central European countries. The decline in output has been accompanied by sharp increases in unemployment--in several countries close to 15 percent of the work force-- compared with virtually negligible open unemployment before the reform process. In the states of the former Soviet Union, which embarked on the transformation process in early 1992, the declines in output appear to be just as marked, if not greater, although open unemployment is as yet limited.

Second, in the period immediately after price liberalization, but not only then, there has been a sharp increase in inflation. While in several Eastern European countries inflation has been reduced markedly, it still remains above 20-30 percent per annum in most countries. In Russia and the

Table 1. Eastern Europe: Output, Investment, and Inflation
(Percentage Change or as Indicated)

	1989	1990	1991	1992
Bulgaria				
GDP	-0.5	-9.1	-11.7	-5.7
Gross Investment	-6.2	-13.6	-58.6	-16.4
Stocks (Change in % of GDP)	-1.5	0.6	-1.0	-4.1
Fixed Investment	-2.3	-19.0	-72.7	23.9
Gross Investment (% of GDP)	32.1	31.5	12.8	14.5
Unemployment Rate	0.0	1.6	15.6	15.0
Consumer Prices	6.4	21.6	333.5	82.0
Czechoslovakia				
GDP	4.5	-0.4	-15.9	-8.5
Gross Investment	29.7	9.0	-31.6	-15.0
Stocks (Change in % of GDP)	-0.2	2.6	-1.7	-5.1
Fixed Investment	32.7	0.0	-29.9	5.1
Gross Investment (% of GDP)	27.7	30.7	26.8	23.1
Unemployment Rate	--	0.8	3.2	5.7
Consumer Prices	1.4	10.8	59.0	11.0
Hungary				
GDP	-0.7	-3.5	-11.9	-4.4
Gross Investment	-0.4	-7.9	-17.0	-24.7
Stocks (Change in % of GDP)	-1.0	-0.3	-3.0	-4.5
Fixed Investment	5.1	-8.7	-5.5	-4.7
Gross Investment (% of GDP)	26.1	25.4	20.8	19.0
Unemployment Rate	0.4	1.7	7.7	12.3
Consumer Prices	17.0	28.9	36.4	23.0
Poland				
GDP	0.2	-11.6	-7.6	1.0
Gross Investment	-10.7	-37.6	-14.2	-2.8
Stocks (Change in % of GDP)	-2.7	-7.5	-1.6	-1.0
Fixed Investment	-2.1	-10.6	-4.5	2.5
Gross Investment (% of GDP)	28.7	27.5	21.5	17.7
Unemployment Rate	2.6	6.2	8.4	14.0
Consumer Prices	251.1	585.8	70.3	43.0
Romania				
GDP	-5.8	-7.4	-13.7	-15.0
Gross Investment	-11.4	-3.5	-0.3	-24.1
Stocks (Change in % of GDP)	-3.1	10.2	5.7	-7.7
Fixed Investment	-0.4	-37.6	-28.8	-
Gross Investment (% of GDP)	26.7	27.8	33.5	25.6
Unemployment Rate	3.4	5.7	2.8	6.4
Consumer Prices	0.9	4.7	161.1	210.3

Source: IMF World Economic Outlook Databank.

Ukraine, inflation rates have exceeded 25 percent per month, and there is a clear possibility of a move toward hyperinflation.

Third, in most countries there has been the emergence or continuation of large fiscal deficits. A key feature has been the dramatic decline of tax revenue, in large part because of the steep drop in output, which has cut tax revenue on turnover and business profits (Tanzi 1993). Business tax revenue was also adversely affected by the collapse of institutional arrangements whereby the government had direct access to state enterprises' profits. The pronounced fall in government revenue has not been matched by an equal drop in public spending, despite the large cuts in public subsidies and in government infrastructure investment implemented in almost all countries (Table 2).

Fourth, while the external current account position improved initially due both to a sharp decline in imports and an increase in exports of goods diverted from the former Comecon markets, it has subsequently worsened in several countries. A deterioration in the current account has, in general, not been offset by any marked increase in capital inflows. The real effective exchange rate of most countries has appreciated significantly since the onset of the reforms, adversely affecting the competitiveness of the industrial sectors.

2. Policies, and Economic Structure

The above stylized facts of performance reflect, and have been affected by, the stabilization and structural reform policies pursued in many countries. The initial focus of macroeconomic policies was on containing inflationary consequences of price liberalization and what was considered to be a significant monetary overhang. Hence, the policy package consisted of a tight monetary and fiscal stance, with strict credit ceilings especially on credit to the enterprise sector. In addition, to reduce inflationary expectations, extensive use was made of nominal anchors including a fixing, or a preannounced crawl, of the nominal exchange rate, and ceilings on nominal wages.

The macroeconomic policies were complemented by major structural reforms to increase competition, improve the micro-economic efficiency of the economies, and to hasten the way to a market oriented system. Major reforms were envisaged, and implemented, in the trade sectors, making the economies more open, and in the fiscal sector, reducing the direct involvement of government in the economy. However, the restructuring and privatization of industrial enterprises, as well as of the financial sector, has in general made little head-way. The privatization of large enterprises, in particular, is proceeding slowly, in part because of the concerns about the further rise in unemployment that would result.

Nevertheless, the structure of the economies is changing, although not nearly as fast as had been anticipated. The share of private sector in total output has expanded sharply in countries such as Poland and Hungary,

Table 2. Eastern Europe: Government Balances and Monetary Variables
(Percentage Change, or as Indicated)

	1989	1990	1991	1992
Bulgaria				
Government Revenue (% of GDP)	57.9	52.5	42.9	36.8
Government Expenditure (% of GDP)	58.5	65.1	50.5	43.3
Capital Expenditure (% of GDP)	5.5	6.6	1.9	1.9
Fiscal Balance (% of GDP)	-0.6	-12.6	-7.6	-6.5
Domestic Credit	9.6	25.0	148.3	54.2
Broad Money	11.6	79.2	44.6	47.8
Short Term Deposits	1.0	4.0	54.0	65.0
Exchange Rates (US$/NC)	-8.2	-13.7	-88.4	-22.1
Real Effective Ex. Rate	--	--	--	--
Czechoslovakia				
Government Revenue (% of GDP)	49.3	47.6	51.8	47.0
Government Expenditure (% of GDP)	52.8	54.0	52.0	50.7
Capital Expenditure (% of GDP)	7.9	7.0	6.3	6.0
Fiscal Balance (% of GDP)	-3.5	-6.4	-0.2	-3.8
Domestic Credit	2.7	9.7	20.3	16.9
Broad Money	3.5	0.5	26.8	16.9
Short Term Deposits	3.0	5.0	11.0	11.0
Exchange Rates (US$/NC)	-4.5	-16.1	-38.1	3.5
Real Effective Ex. Rate	--	--	--	--
Hungary				
Government Revenue (% of GDP)	59.6	57.4	57.9	52.6
Government Expenditure (% of GDP)	60.9	58.2	61.1	60.7
Capital Expenditure (% of GDP)	6.6	5.9	4.2	6.7
Fiscal Balance (% of GDP)	-1.3	-0.8	-2.7	-8.0
Domestic Credit	15.2	11.1	7.2	11.1
Broad Money	14.4	29.6	34.5	27.4
Short Term Deposits	--	--	--	--
Exchange Rates (US$/NC)	-14.6	-6.6	-15.4	-4.8
Real Effective Ex. Rate	1.3	4.1	13.3	7.9
Poland				
Government Revenue (% of GDP)	30.8	33.3	25.8	27.1
Government Expenditure (% of GDP)	36.9	32.7	32.1	34.4
Capital Expenditure (% of GDP)	3.3	2.8	2.4	1.7
Fiscal Balance (% of GDP)	-6.1	0.7	-6.3	-7.3
Domestic Credit	222.7	2746.9	-80.2	72.9
Broad Money	236.0	121.9	36.9	57.5
Short Term Deposits	85.0	145.0	48.0	35.5
Exchange Rates (US$/NC)	-70.1	-84.9	-10.0	-22.5
Real Effective Ex. Rate	12.9	-15.7	54.3	0.6

Table 2. Eastern Europe: Government Balances and Monetary Variables
(Percentage Change or as Indicated)

	1989	1990	1991	1992
Romania				
Government Revenue (% of GDP)	51.1	37.7	34.3	37.6
Government Expenditure (% of GDP)	42.7	37.6	35.4	39.6
Capital Expenditure (% of GDP)	17.6	7.8	4.3	3.9
Fiscal Balance (% of GDP)	8.4	0.1	-1.0	-6.1
Domestic Credit	8.5	19.5	110.2	-1.2
Broad Money	5.6	17.4	100.8	48.7
Short Term Deposits	2.5	3.0	18.0	60.0
Exchange Rates (US$/NC)	-4.3	-33.5	-77.7	-71.7
Real Effective Ex. Rate	-3.2	-31.6	-5.2	-37.9

Source: IMF, World Economic Outlook Databank.

accounted for mainly by newly created, rather than privatized, firms. 1/ Despite this, the bulk of industrial output still originates in the state sectors. Similarly, the financial sector continues to be dominated by the commercial banks, which originating from the mono-bank system, are mostly state owned, and despite a number of significant measures, continue to be saddled with a high proportion of unserviceable loans. 2/ There is an active and rapidly growing government securities market in several countries, while equity and commercial bond markets are in their infancy. As the discussion below shows, the weak loan portfolio of banks, combined with the growth of securities markets, appear to have significant implications for the volume of credit channelled to the enterprise sector as a whole.

III. Basic Conceptual Framework

In this section, a simple model is developed to emphasize the role of working-capital credit in the determination of employment and output. It is motivated by the observation that the transition to the market economy entails a switch from a regime where credit is independent of the demand for money, to a regime where it is dependent on it. The reason for this is elaborated in the model and hinges on the fact that the bulk of credit in the transition economies is provided by the banking sector. The model also illustrates the likely short-run macroeconomic consequences of attempts to increase output by increasing government subsidies to firms.

1. A Model of Money Demand and Credit

Consider the case in which output is produced by labor alone under constant returns to scale. Labor is applied at time t and output is obtained at time $t + 1$. Firms have no initial liquidity, and wages have to be paid at the beginning of the production process (i.e., at time t). 3/ Thus, under this assumption, credit is essential for the firm to be able to operate; if credit is not available output collapses even though the firm may be perfectly viable from an economic point of view.

1/ In Poland, for instance, private sector share of GDP increased from under 30 percent in 1989 to nearly 45 percent in 1992, while in former Czechoslovakia and Hungary respectively, the share increased from under 5 percent to 20 percent, and from 39 to 45 percent. (See Schwartz et al 1993).

2/ In Poland, while there has been a proliferation of private banks, they collectively account for a very small share of banking activity.

3/ Equivalently, one can think of production occurring at time t, when labor has to be paid, but sales revenues do not accrue until time t + 1.

We will denote the average (= marginal) labor productivity by γ. Thus, profits per unit of employment at $t + 1$ are given by the following expression:

$$(1) \quad \gamma P_{t+1} - W_t (1 + i_t) = P_{t+1}[\gamma - w_t(1 + r_t)],$$

where P, W and i are the nominal price of output, wage and bank interest rate on loans, respectively; and r and w is the real interest rate on bank loans, i.e., $1 + r_t = (1 + i_t)P_t/P_{t+1}$, and the real wage respectively.

We assume initially that firms are price-, wage-, and interest rate-takers. Therefore, if profits are positive, profit-maximizing firms will try to expand without limit, which would not be consistent with labor-market equilibrium. 1/ On the other hand, if profits are negative, no production will be carried out. Therefore, equilibrium with positive and finite production requires that the square-bracketed expression in equation (1) be equal to zero; or, equivalently, that

$$(2) \quad \gamma = w_t(1 + r_t) \quad (\textit{factor-price frontier}).$$

Let B_t denote bank loans, in nominal terms, granted at time t. The liquidity-in-advance constraint referred to above takes the following form:

$$(3) \quad B_t = W_t N_t,$$

where N denotes employment at firms.

To close the model, we assume that labor supply is perfectly elastic at real wage $\underline{w}$. Thus, total output, y, satisfies:

$$(4) \quad y_t = \gamma N_t$$

The infinite-elasticity assumption captures a situation in which workers have employment opportunities outside the enterprise sector--the "informal" sector, say. The informal sector is not subject to the liquidity-in-advance constraint because production techniques are more primitive (i.e., labor productivity is lower than in the enterprise sector) and output is obtained within the same period in which inputs are

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1/ For the time being, we will assume that firms intend to honor their contractual obligations.

applied. 1/ Thus, total output (at steady state) falls when resources are shifted away from the enterprise sector (i.e., when N falls). 2/ (Below we will offer another, perhaps more plausible, interpretation.)

By liquidity-in-advance equation (3) and the labor-supply equation, we have

$$(5) \quad \frac{B_t}{P_t} = \underline{w} N_t .$$

Consequently, by (4) and (5), real credit determines employment at enterprises and output: the larger is real credit, the larger is employment at enterprises and national output.

Another scenario that would give essentially the same relationship between real credit and output is one where total employment at enterprises is constant (= 1, say), but effort is variable and proportional to the real wage. Thus, equation (5) would become $B_t/P_t = w_t$. Moreover, we would interpret variable N as effort, and assume $N = w/\underline{w}$ (i.e., proportionality between effort and the real wage). These assumptions, in conjunction with equation (4), would yield

$$y_t = \frac{\gamma}{\underline{w}_t} \frac{B_t}{P_t},$$

which is also implied by equations (4) and (5). This alternative interpretation is attractive, because it implies a low (here, zero) response of employment to a fall in output, which is a salient characteristic of FSEs during the first stage of the transformation process. Also, if less effort is equivalent to more shirking, equation (4) would fully capture the standard GDP concept. 3/

1/ Thus, the informal sector may not appear to be an adequate way of modelling the emerging private sector in these economies, since the latter is supposed to be more efficient than traditional enterprises. However, in the context of the present model, since the informal sector is more labor intensive, labor productivity might fall (even though total factor productivity might increase).

2/ Under this interpretation, total output should also include output from the informal sector. However, given the productivity differentials between the formal and informal sectors pointed out above, output as given by equation (4) is positively correlated with the all-inclusive output measure (which includes informal-sector output).

3/ For a more explicit shirking model with variable effort, see Calvo and Wellisz (1979).

We will now endogenize real credit. Assuming, for simplicity, that commercial banks hold no wealth or foreign assets, we have

$$(6) \quad B_t + H_t = M_t,$$

where H and M are bank reserves (held in the form of high-powered money) and deposits (assumed to be entirely held by households). Thus, assuming that neither households nor firms hold cash, M can be identified with money supply. Moreover, at equilibrium, H equals total high-powered money.

We assume that the minimum-reserve requirement, δ, is binding. Thus, $\delta M_t = H_t$, for all time t. Moreover, by (6),

$$(7) \quad \frac{B_t}{P_t} = (1 - \delta)\frac{M_t}{P_t} = (1 - \delta)L(\bullet),$$

where $L(\bullet)$ denotes the demand for real monetary balances, M/P.

2. Implications of the Model

We can illustrate the main implications of the model in the special case in which the demand for real money is a constant, ℓ. Combining equations (5) and (7), we get the following employment-determination equation:

$$(8) \quad N_t = \frac{1 - \delta}{\underline{w}}\ell.$$

Thus, a fall in the demand for money, ℓ, provokes a fall in employment at enterprises and, by (4), in GDP. Notice that we get a contractionary effect from a decrease in the demand for money even though prices and wages are assumed to be perfectly flexible. The fundamental reason for such a relationship is that credit is essential for undertaking production at enterprises, and the real value of credit is intimately linked to the demand for real monetary balances by the public.

One way the government may try to increase output is via inflation. For instance, the government could increase subsidies to firms, and finance these simply by printing high-powered money, H. Recalling that $\delta M_t = H_t$, we have

$$(9) \quad P_t = \frac{H_t}{\delta \ell}.$$

So, in the present setup, inflation is proportional to the rate of growth of high-powered money, H. The liquidity-in-advance condition is now (normalizing the total number of enterprises to unity)

$$(10) \quad \frac{B_t}{P_t} + \frac{H_{t+1} - H_t}{P_t} = \underline{w} N_t,$$

where $H_{t+1} - H_t$ is the subsidy. Thus, under inflation, the employment-determination equation becomes

$$(11) \quad \underline{w} N_t = (1 - \delta + \delta \pi_{t+1}) \ell,$$

where $\pi_{t+1} = P_{t+1}/P_t - 1$ = inflation rate between periods t and $t + 1$. The second term on the right-hand-side of equation (11) reflects the fact that government is using the inflation tax to "finance" the enterprise sector.

Equation (11) illustrates an important policy tradeoff between inflation and employment and output. The tradeoff is more relevant in the short run when the demand for money, ℓ, is inelastic with respect to inflation. Eventually, however, the demand for money adjusts in a direction opposite to inflation. Thus, lower inflation eventually results in higher ℓ and possibly, recalling equation (8), *higher* employment and output. Notice, incidentally, that the employment-maximizing inflation rate (at steady state), for $\delta < 1$, is less than the rate that maximizes revenue from inflation (i.e., the value of π that maximizes $\delta \pi L(\bullet)$); moreover, if the reserve requirement, δ, is low enough, the employment-maximizing inflation rate (at steady state) could be zero or negative. 1/ 2/

1/ Russia has recently been the paramount example of trying to employ the inflation strategy to prop up output, with no visible success.

2/ This discussion has disregarded the fact that the existence of positive government subsidies to enterprises implies that firms will now exhibit positive profits. The latter would help to relax the liquidity constraint in future periods. This topic will be picked up in Section IV.

IV. Banks and Arrears

We will now examine the operations of commercial banks, in particular the constraints and the incentives facing them, more closely. For simplicity, we assume that the operational costs of running banks are negligible. Therefore, if loans are fully serviced, nominal bank profits in the period from t to $t + 1$ are

$$(12) \quad i_t B_t - s_t M_t = [i_t(1 - \delta) - s_t]M_t,$$

where s_t is the nominal deposit interest rate for the period from t to $t + 1$. By factor-price frontier (2), if, as assumed, $\underline{w} < \gamma$, then the real interest rate on bank loans, r, will be positive. Consider now the realistic case in which inflation is non-negative. Then, the nominal interest rate on bank loans, i_t is also positive (since $1 + i_t = (1 + r_t)(1 + \pi_{t+1})$). Thus, if the deposit interest rate, s_t, is zero, banks will display positive profits, unless the reserve requirement is 100 percent (i.e., $\delta = 1$). Therefore, there is room for banks to offer positive interest rates on deposits without violating their budget constraints (zero bank-profits $s_t = (1 - \delta)i_t$). Since the demand for real monetary balances is an increasing function of the deposit rate, a possible employment-increasing policy is to pay interest on bank deposits. The tradeoff here is that if banks' profits are subject to taxes, higher interest on deposits by reducing bank profits would reduce tax liability and increase the fiscal deficit.

As noted in the Introduction, firms in FSEs reacted to the credit crunch by falling into arrears with each other, banks, or the government. Thus, in our example above, firms may choose not to repay their bank debts, implying that the liquid funds available to enterprises at the beginning of period $t + 1$--assuming that no new credit is extended to the delinquent firm--will be $B_t(1 + i_t)$, which may well exceed the amount of credit received by firms if they had repaid their bank debt in full. However, firms' nonpayment may be counterproductive because it may fuel inflation and firms' <u>real</u> liquidity may fall, undermining enterprises' ability to increase employment and output. 1/ We will expand on this point in the following discussion.

1/ Although massive default may be counterproductive for enterprises, the individual firm may still find it optimal to default. This is so because the price level is determined by the market, not by the individual firm. The latter takes prices as given by the market, and in that context failing to repay bank debts adds to the firms' liquidity and ability to employ labor. This rationalizes the possibility that atomistic firm behavior may result in massive default on bank credit, even though, at the end of the day, no firm benefits from such action.

Consider first the case in which interest on bank deposits, s, equals zero. Then default on B_t drives bank profits to $-B_t$. However, banks would not go bankrupt in period $t + 1$, as long as the demand for bank deposits does not decline (i.e., if $M_{t+1} \geq M_t$). The latter condition is likely to be satisfied if inflation is non-negative and no panic (specifically, bank run) is produced. In this scenario, banks make "bad" loans, but the ultimate claimants (i.e., depositors) do not, on average, call them (by not withdrawing their bank deposits). However, even under these extremely favorable conditions, macroeconomic difficulties may occur. In the first place, it is unlikely that banks would have incentives to lend any further to enterprises, since they are likely to expect firms also to default on new bank credit. 1/ Besides, normally bank profits are heavily taxed. Therefore, default on bank credit lowers fiscal revenue and increases fiscal deficit. The latter, if monetized, increases inflation, undermining the firms' benefit from default, as noted earlier.

We will now consider the polar case in which the interest rate on bank deposits is set so that bank profits are zero (this would be their equilibrium level if banks operate under perfect competition and there is no risk of default). Under these circumstances, banks may run into difficulties if depositors fail to increase their demand for money (i.e., deposits) in period $t + 1$ to at least $M_t(1 + s_t)$, i.e., to its level in period t plus interest accruals. Moreover, the same argument shows that if the situation remains unchanged, deposits will have to keep increasing at a rate at least equal to the interest rate on bank deposits. Thus, in order for this to happen, the rate of inflation will also have to be equal to s_t--if the demand for real monetary balances remains constant--or higher if the demand for money falls with inflation--thus tending to invalidate the employment-enhancing effects of default in period $t + 1$, and causing a deterioration of the firms' real liquidity position later on.

The central policy dilemma is whether government intervention is called for under these circumstances. Not intervening likely implies higher inflation and lower output, as suggested by the above discussion. Furthermore, eventually banks are likely to sue delinquent firms, threatening to paralyze the enterprise sector and provoking a sizable fall in output and employment in the short run.

Alternatively, government may intervene by bailing out banks saddled with non-performing loans. For example, this may take the form of the central bank lending new money to banks in exchange for their non-performing loans. This is directly inflationary. Thus, if firms are not restructured

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1/ This issue is discussed in detail in Section VI below where additional constraints on bank lending to firms are discussed. Here notice that even if, in principle, banks are capable of "riding the storm," they would run against bank regulations. Experience shows that banks are likely to try hiding their "bad" loans from the regulator, but they are eventually caught (by the regulator or by reality).

and banks refuse to lend new funds to them, real liquidity at enterprises will fall, giving rise to higher unemployment. Therefore, to be successful, the bailout operation must also involve some kind of debt forgiveness that initially lowers enterprises incentives to default. However, the main drawback of this rescue operation is that it entails "moral-hazard"-- it may lead firms to expect similar operations in the future, resulting in a loss of control on money supply. The latter, in turn, by fueling inflationary expectations, lowers the demand for money and, by (11), lowers employment at enterprises even further.

To recapitulate, our discussion has revealed that if enterprises are heavily dependent on bank credit for their day-to-day operations, then output is likely to be very sensitive to changes in the stock of real monetary balances. Thus, this approach helps to rationalize the fall in output that occurred in conjunction with price liberalization. As shown in Calvo and Coricelli (1993) real bank credit suffered a precipitous fall immediately such reforms were implemented. Moreover, as the evidence in the following sections illustrates, real bank credit to firms has continued to decline even during the last year or two, although the reasons for this decline are somewhat different.

Our approach also sheds light on why it may be so difficult to improve output performance without igniting hyperinflation. Even though, in our interpretation, one cause for low output is low enterprise liquidity, injecting more liquidity through Central Bank credit could be counter-productive. Conceivably, more *nominal* credit could result in more *real* enterprise liquidity and, thus, output; however, more nominal credit implies higher inflation, which reduces the demand for money and the *stock* of real bank credit and, thus, output. The latter effect of higher inflation is likely to swamp the first one beyond relatively low inflation levels. It is, of course, the case that in the short-run, an increase in output because of higher nominal credit could lead to an increase in the demand for money, thus dampening the inflationary consequences. Nevertheless, even in this scenario, the effect on inflationary expectations could be substantial. Thus, inflation does not seem to be a promising strategy.

An unrealistic feature of the above example is that firms would (at equilibrium without default) exhibit zero profits. If profits were positive, reflecting in part the continuing oligopolistic structure of industry, then firms would be able to accumulate liquidity over time which, as argued in Calvo and Coricelli (1992), would help output recovery. As noted in Calvo and Coricelli (1993), however, this process of recovery could be slow if *inter alia* inflationary expectations remain high. This is so because firms themselves may prefer to operate at low output levels if the opportunity cost of holding liquid assets is high, and, in addition, there are uncertainties engendered by the speed and the extent of the privatization process.

The process of enterprise liquidity accumulation could be enhanced in a non-inflationary way by endowing firms with an initial stock of liquidity.

However, if a further rise in the initial price level is to be prevented, simultaneously households' liquidity will have to shrink. This could be achieved, for example, by an initial partial confiscation of households' bank deposits. The main difficulty with such policy is that if not swiftly carried out, it may give rise to high inflation (which, as argued above, does not bode well for an output-recovery program). This is so because the moment the public anticipates a sharp price rise or deposit confiscation, it will try to get rid of most of its monetary balances.

The latter difficulty explains the general reluctance to increase enterprise liquidity at the beginning of reform programs. However, our discussion suggests that the government should avoid burdening firms with liquidity-using transactions in the short run. For example, if firms start with a stock of debt (possibly acquired in the context of central planning) which has to be serviced in the short run, a case could be made for debt rescheduling.

V. Bank Credit and Fiscal Deficits

The above analytical framework can readily be extended to help shed light on an important but puzzling feature of recent economic performance in several Eastern European countries: that is how, despite increasing fiscal deficits, inflation stabilization has been relatively successful. As discussed below, the answer to this puzzle lies mainly in increased private saving, or perhaps more accurately, a rechannelling of private saving into the financial sector. That is, an increase in money demand led to an increase in loanable funds, which were used to finance government deficits.

The factors behind the increase, or continuation, in fiscal deficits are similar across countries. In all countries the share of government revenue in GDP has fallen considerably following tax reforms, which lowered tax burdens. In addition, falls in consumption squeezed consumption tax revenues, and the plummeting activity in the enterprise sector reduced revenues from state enterprise profits taxes (Table 2). 1/ Tax liabilities of the emerging private sector have been, in any case, difficult to monitor, and avoidance and evasion have been common. With regard to government expenditure, although subsidies and current and capital expenditures have been cut, social safety net expenditures (including pensions, unemployment benefits, and social assistance) have increased

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1/ In Poland in 1990 and the former Czechoslovakia in 1991 enterprise profits were artificially inflated by the revaluation of inventories, and, as there was little or no inflation adjustment in the profits tax, most of these paper profits were transferred to the government. As Schaffer (1992) shows, about half of the swing in Poland' budget position, from a surplus of 3 percent of GDP in 1990 to a deficit in 1991 of over 5 percent of GDP, was accounted for by the fall in profit taxes (due in large part to a decrease in the inflation bias).

rapidly. Therefore, in general, the share of expenditure in GDP has remained rather stable. The net result has been a marked increase in fiscal deficits in countries such as Poland and Hungary where in 1992 they exceeded 7 percent of GDP.

Although the countries differ considerably in their access to foreign financing, the key to the above puzzle lies in the surge, or quite likely, a rechannelling in private saving intermediated through the banking sector. Private financial saving increased in part due to an increase in precautionary saving, and cessation of subsidized mortgage loans (Schwartz *et al* (1993)). For instance, household financial saving as a share of disposable income in Hungary rose from 6 percent during 1989-90 to 14 percent during 1991-2, while in former Czechoslovakia money incomes less expenditures increased to 7 percent of income in 1991-2, from about zero in 1990.

As money remains by far the most important financial asset and instrument of saving, the increase in saving manifested not so much by direct lending to the government but through a growing demand for broad money, intermediated through the banking system. 1/ There has been a noticeable decline in money velocity in several countries during the last year or two (Chart 1). The fall in inflation in Hungary and Poland, together with interest rate deregulation, initially pushed up deposit rates in real terms and played an important role in inducing larger holdings of financial assets (Chart 2).

However, these financial assets were by no means denominated only in domestic currency. As Table 3 illustrates, at end-1991, in both Poland and Hungary foreign currency deposits accounted for around 30 percent of total deposits, with this ratio declining somewhat over the following year or so. From the perspective of public finance, such dollarization has a number of offsetting implications. On the one hand, dollarization would be expected to reduce the domestic monetary base and aggravate inflationary impact of government deficits. On the other hand, as Rostowski (1992) suggested, such dollarization may actually increase total money supply (domestic plus foreign) which, in the framework of our model, could help maintain the level of output, and hence be beneficial from a fiscal perspective.

However, as Calvo and Végh (1992) point out, dollarization also has important implications for the banking sector. In the limit, banks will be forced to operate without a lender of last resort, and would be particularly vulnerable to a mismatching of assets and liabilities in terms of currency or maturity. Moreover, to the extent that dollar deposits have higher reserve requirements, or have to be paid higher interest, lending rates would increase. Higher lending rates would, in turn, increase the problems

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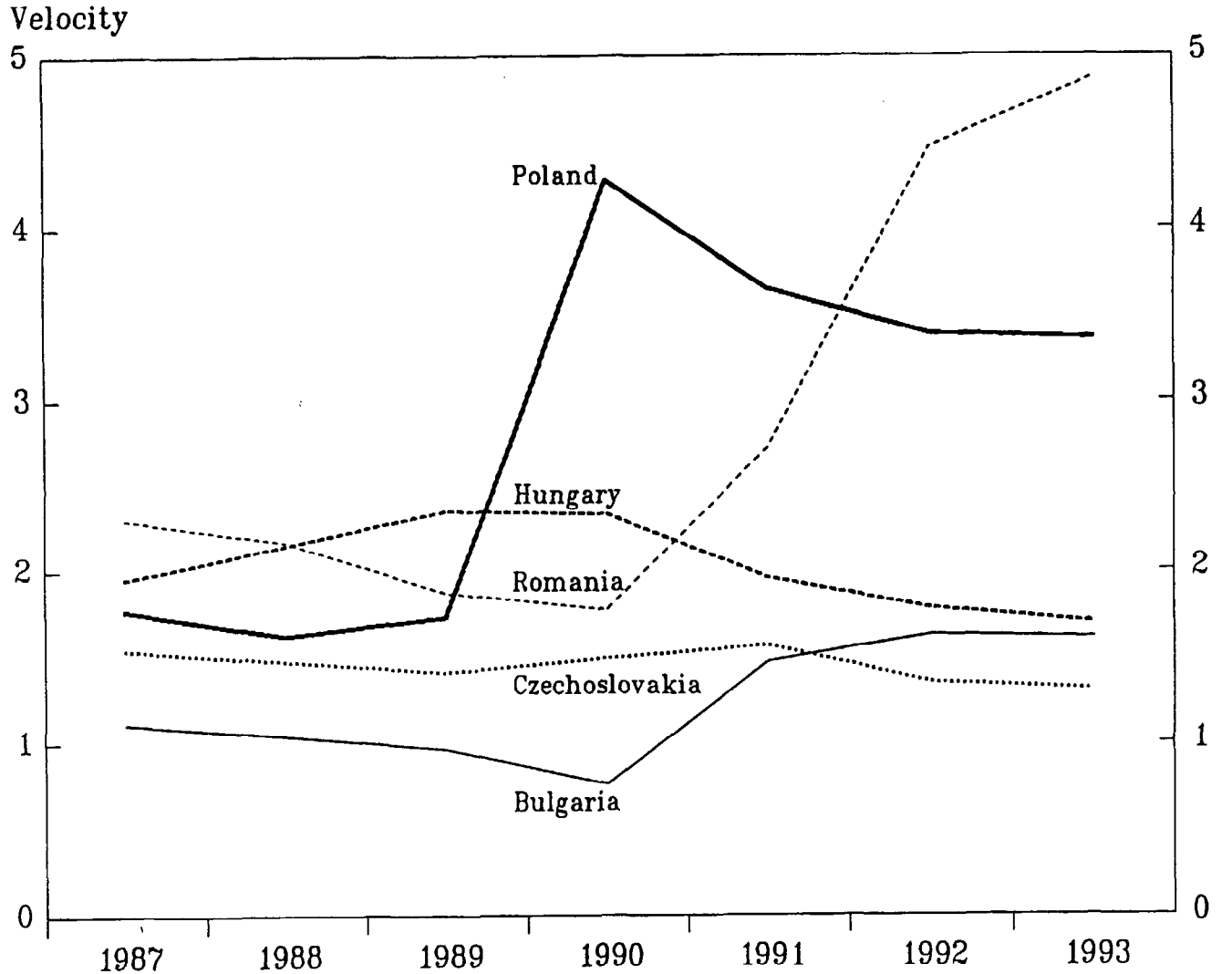
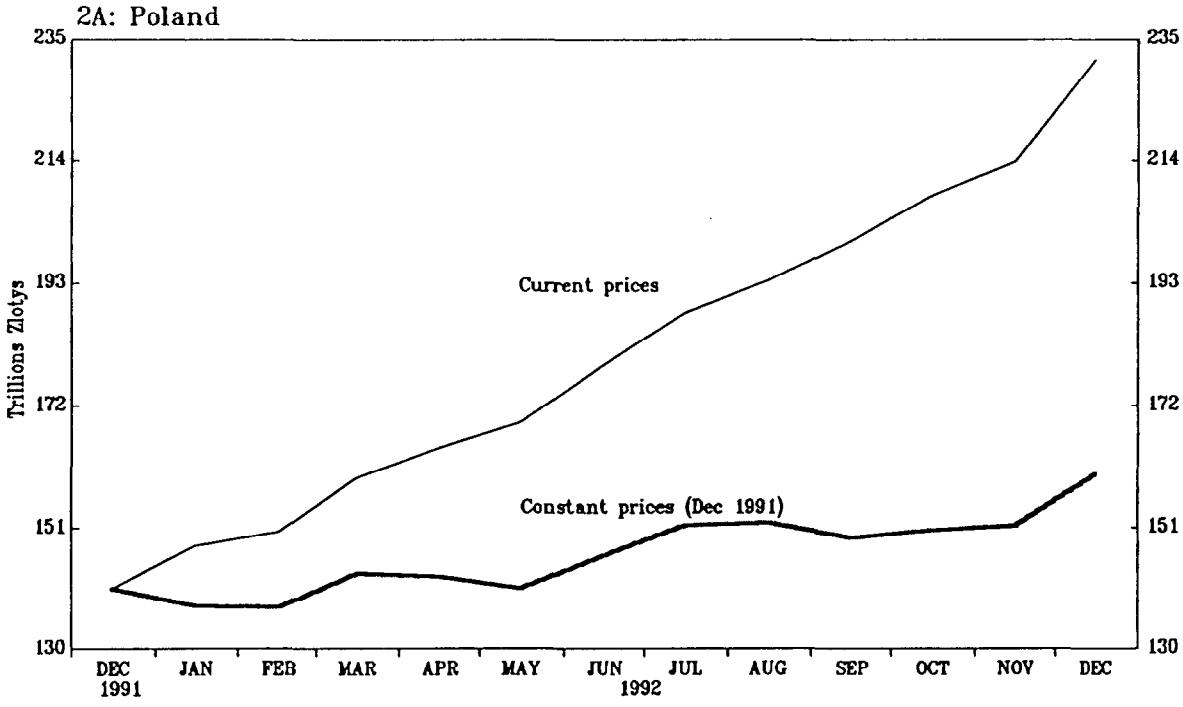
1/ Even where the public can directly subscribe to government bonds, as for instance in Hungary, the share of government securities in total household savings remains very small.

Chart 1: Money Velocity in Eastern European Countries, 1987-1993 1/

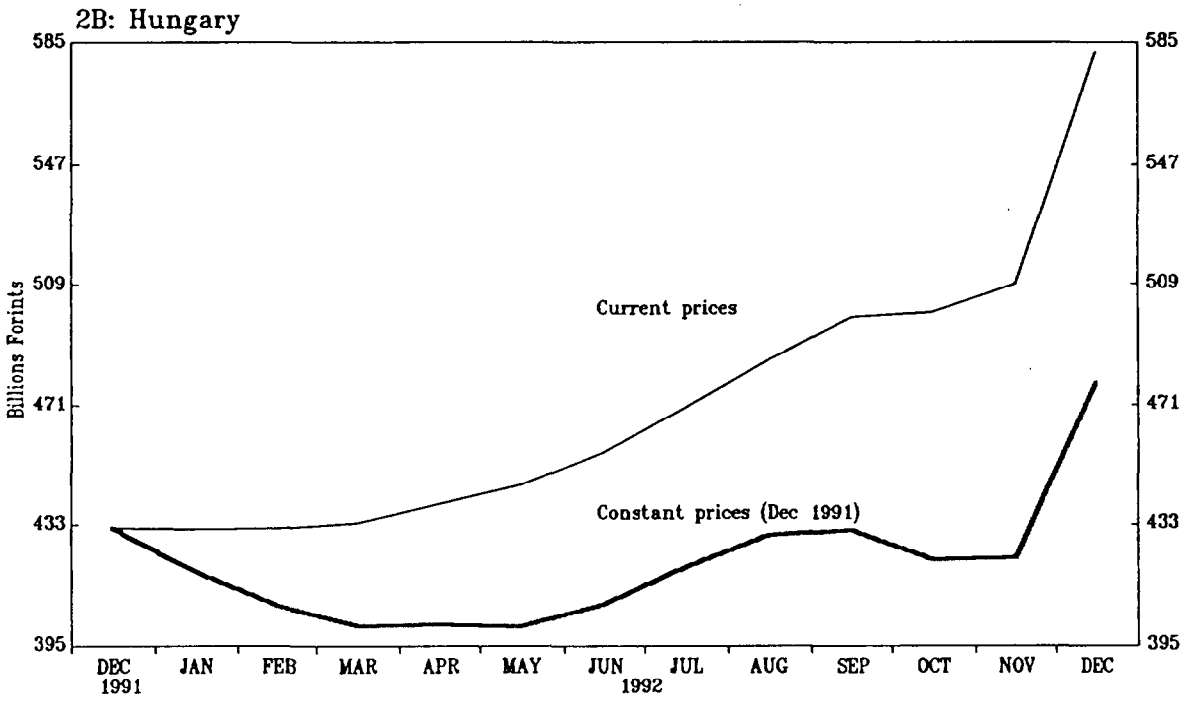


Source: IMF World Economic Outlook
1/ Velocity is measured as Nominal GDP/Average of Broad Money (M2).

Chart 2: Household Deposits in Poland and Hungary



Source: Narodowy Bank Polski, Information Bulletin, various issues.



Source: National Bank of Hungary, Monthly Report, various issues; and Monthly Bulletin of Statistics.

Table 3. Domestic and Foreign Currency Deposits--Poland and Hungary

Date (End of Period)	Poland 1/			Hungary 2/		
	Domestic Currency	Foreign Currency	Foreign as a % of total	Domestic Currency	Foreign Currency	Foreign as a % of total
December 1991	139836	57386	29.1	302	130	30.1
March 1992	159089	69348	30.4	317	136	30.1
June 1992	178084	71943	28.8	352	140	28.5
September 1992	199543	79012	28.4	398	153	27.8
December 1992	230606	90799	28.2	430	152	26.2
March 1993	287095	108849	27.5	478	170	26.3

Source: Nordowy Bank Polski Information Bulletins, and National Bank of Hungary Monthly Reports.
1/ Data, in billions of zlotys, are for deposits of the non-financial sector.
2/ Data, in billions of forints, are for savings deposits of the household sector.

of moral hazard, and the probability of default. To counteract these factors, banks may prefer relatively liquid, and safe assets, which in the context of the Eastern European countries, would essentially amount to investing in government securities. 1/

In terms of the analysis in Section III above, equation (6) can thus be extended to include lending to the government, so that

$$B_t + H_t + G_t = M_t,$$

where G_t denotes purchase of government securities by the banks. This, of course, raises a number of additional questions relating to the factors determining the distribution of bank credit between government and the productive sector. 2/ These factors are discussed in the following section where several specific constraints on bank lending to firms are examined.

Whatever the reasons for those constraints, it is the case that as part of the transition to a market economic system, there is, now a sharper separation between government and state enterprises than under central planning. Therefore policies that channel bank credit to central government could end-up having a negative effect on enterprise liquidity and output. This would obviously be the case if, as at present, the government finances a larger share of its deficit, or accumulates international reserves, through the issuance of public debt. Public debt instruments are guaranteed by the State and, therefore, are likely to be more attractive than enterprise debt--particularly under the present circumstances in which enterprises are in a legal limbo, and ownership is still to be properly defined.

As Table 4 shows there has indeed been a noticeable increase in credit to the government relative to the credit extended to the enterprise sector in Hungary; a similar development has taken place in the other Eastern European countries. Specifically, there has been an increase in both Poland and Hungary in the share of government securities in banks' asset portfolio. (Chart 3). 3/ This evidence probably understates the relative decline in

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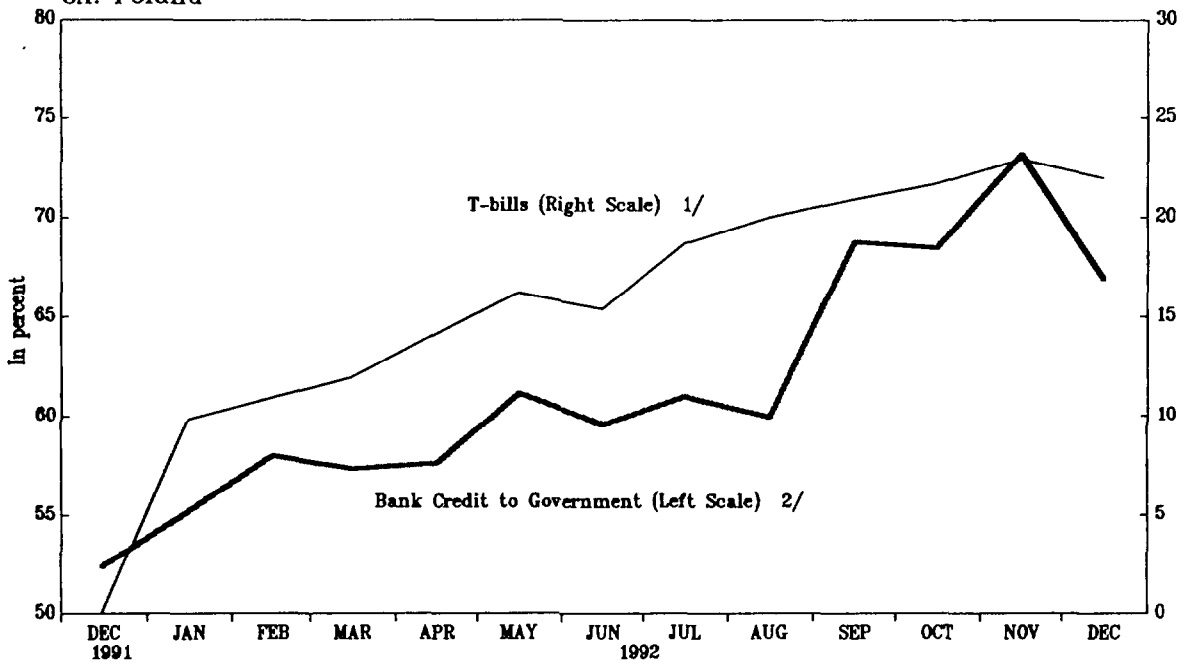
1/ In Russia too, similar factors have led to the banks keeping a large proportion of their assets liquid, but in the form of holdings of US dollars (see Easterly and da Cunha (1993)).

2/ Quite apart from the distributional concern, there is a concern about the sustainability of current saving rates, especially given that some of the factors underlying the initial increase in private saving may now be waning. (See, for instance, Gomulka 1993).

3/ The data for Hungary in Chart 3 are adjusted for various credit consolidations and changes in classification which inflated outstanding credit to government.

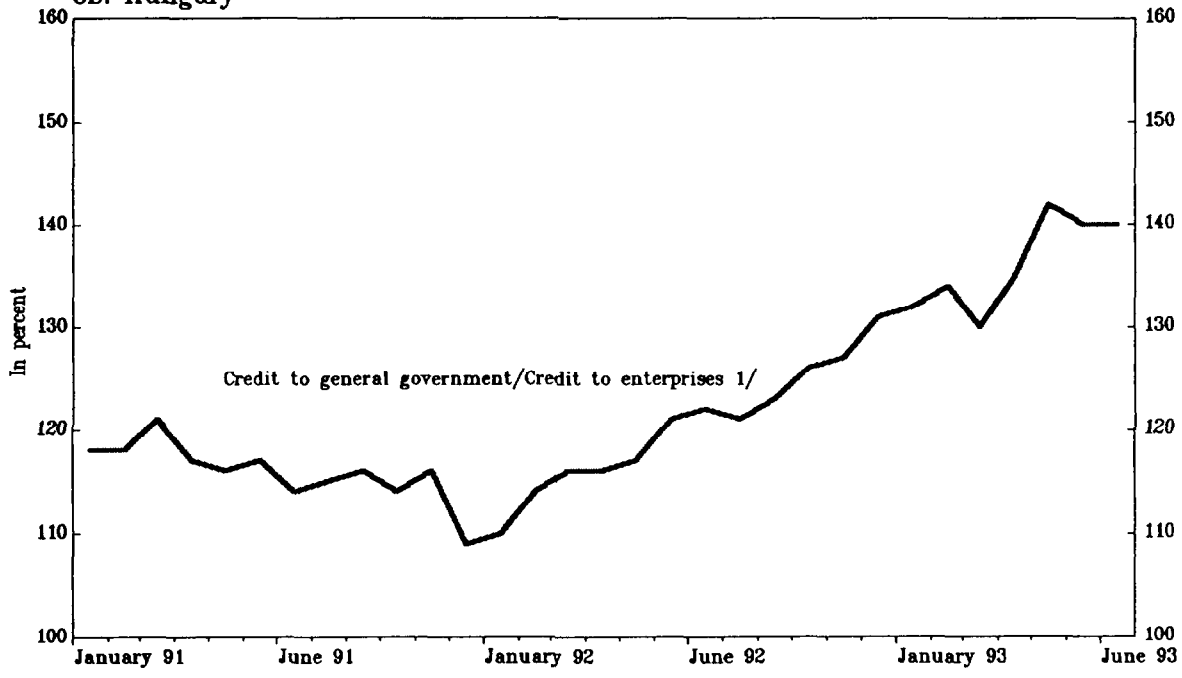
Chart 3: Bank Credit to Government and Enterprises in Poland and Hungary

3A: Poland



Source: Narodowy Bank Polski, Information Bulletin, various issues.
1/ TBills held by banks as a percent of credit to enterprises.
2/ Bank credit to government as a percent of credit to enterprises.

3B: Hungary



Source: National Bank of Hungary.
1/Data are adjusted for loan consolidation and reclassification of loans to the government in April 1991, December 1992, and March 1993.

Table 4. Hungary: Composition of Lending Portfolio of Commercial Banks and Specialized Financial Institutions
(In percent of total)

Dates	Enterprise Sector	General Government	Households	Non-Residents	Total
1992 January 1	73.8	7.2	9.9	9.1	100.0
1992 December 31 1/	62.5	22.0	8.0	7.5	100.0
1993 January 1 2/	51.2	26.5	15.2	7.1	100.0
1993 July 31 3/	51.9	29.1	12.0	7.0	100.0

Source: National Bank of Hungary: Monthly Report, 8-9/1993.
1/ Without credit consolidation.
2/ These data differ from those of December 31 because of credit consolidation and changes in classification.
3/ Preliminary data.

real credit to the enterprise sector since a proportion of the nominal increase in enterprise credit consists of a capitalization of interest arrears. Moreover, although there is no detailed evidence, it also appears that the relative share of the newly emerging private sector in total credit may have declined the most (see Varhegyi 1993).

Redirecting credit from enterprises to government could actually give rise to tax arrears. The initial effect of such redirecting will be lower output, which will increase the firms' incentive to default on any obligation they may have as, for instance, taxes. 1/ Tax arrears, in turn, worsen the fiscal deficit and--if money supply is kept under control--induce further public debt growth, possibly setting the economy on a vicious cycle. Large amounts of tax arrears have already accumulated, particularly in the state enterprise sector. As of early 1993, these arrears are estimated at 3 percent of GDP in Hungary and 2 1/2 percent of GDP in Poland. As illustrated by Chart 4, in Poland tax arrears as a proportion of total enterprise liabilities increased by nearly 50 percent between August 1991 and December 1992. 2/

VI. Portfolio Problems and Credit Allocation

A key feature of the banking sector in FSEs is that the state banks, which by far dominate the banking sector, are undercapitalized, and their asset portfolios contain a large proportion of non-performing loans (see Calvo and Kumar 1993). A high proportion of the bad loans stem from the pre-reform system when credit was extended without regard for the performance of enterprises, or their ability to service debts. Moreover, subsequently, the collapse of CMEA trade, declines in output, and significant changes in relative prices have adversely affected the profitability of enterprises and compounded the difficulties for the banks' balance sheets. Some of the bad loans also stem from the extension of new credits to inviable enterprises. This occurred in part due to the banks own inability to distinguish between the riskiness of different enterprises in a rapidly changing economic and financial environment, as well as, in some

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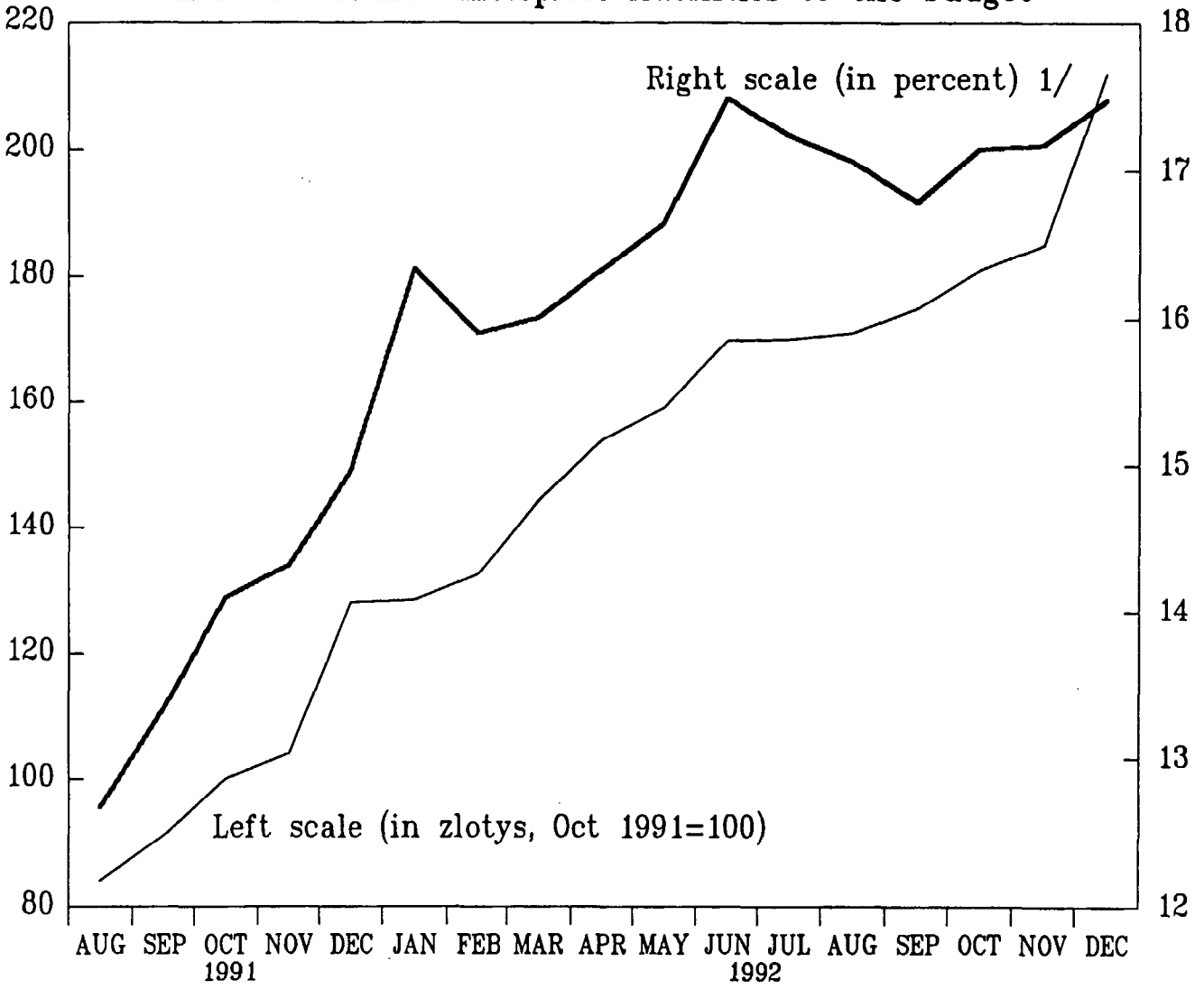
1/ Section VI below provides some impressionistic evidence on the positive relationship between the lack of availability of credit and declines in output in Poland in 1992, consistent with the evidence provided for an earlier period by Calvo and Coricelli (1993).

2/ The irony here is that barely a year or two ago, the development of government securities markets was regarded as likely to bestow significant benefits for financing fiscal deficits. (For a discussion of the issues, see Calvo and Kumar 1993).

Chart 4: Poland: Enterprise liabilities to the budget



Source: Biuletyn Statystyczny, various issues.
1/ Liabilities to the budget as a percentage of total liabilities.

cases, due to external pressures on banks to lend to specific enterprises for essentially political reasons. 1/

While the precise magnitude of the portfolio problem is difficult to assess, there is a general consensus that it is significant, and that instead of diminishing over time, it may actually have increased. 2/ In Poland, for instance, at the end of 1992, some 20 percent of the large banks' assets were estimated to be substandard, a somewhat higher figure than at the end of 1991. Similarly in Hungary, some 30 percent of bank loans were regarded as unserviceable at end-1992, markedly higher than two years earlier, while in Bulgaria, the share of bad loans, already high, is also considered to have increased. 3/

The balance sheet difficulties of banks are related to the problem of inter-enterprise claims. These claims, which derive largely from arrears to suppliers, have accounted for a sizable proportion of enterprises' debt; in countries like Romania and Russia, the arrears have exceeded overall bank credit or broad money. (For a discussion of the arrears problem in Romania, see Clifton and Khan (1993)). 4/ The beginnings of the reform process brought about a sharp increase in these arrears, essentially as a result of attempts by enterprises to increase their liquidity and circumvent the strict credit ceilings. Although a large proportion of the debts could be netted out within the enterprise sector, a considerable share corresponded to an increase in the enterprises' net debt to banks; if one enterprise did not repay another, the latter was not able to repay interest on its bank credit, increasing further the share of nonperforming loans.

It is worth emphasizing that the problem of these arrears is not simply that of separating out "good" from "bad" firms; i.e., firms with and without high net arrears. Given the chain links between enterprises, with most firms having both debts and credits of similar magnitudes, the enterprise sector as a whole is affected (see Calvo and Coricelli (1993)). Moreover, as the experience of Romania and Russia illustrates, unless the incentives and constraints facing enterprises change in a credible way, that is, unless

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1/ There is by now a considerable literature on the portfolio problems of banks, and the policies which have been, or should be, adopted to deal with them. In addition to Calvo and Kumar (op.cit.), see Fries and Lane (1993), and Varhegyi (1993).

2/ The difficulties in accurately assessing the bad loan problem arise, in part, from inadequate information about the current and prospective performance of enterprises, as well as simply inadequate bank auditing procedures.

3/ These estimates are derived from Hogan et al (1993) for Poland; Buyske and Vogel (1993) for Hungary; and Davis et al (1993) for Bulgaria.

4/ For a broader discussion of issues relating to interenterprise arrears, see Calvo and Coricelli (1992), Clifton and Khan (op.cit.), and Rostowski (1993).

expectations of a bail-out changes, even when eliminated through money creation, arrears can reappear very quickly.

The low quality of loan portfolios, exacerbated by the arrears problem, has led to an understandable concern about the broader impact on the transition process of insolvent banks. This concern, together with the desire to prepare banks for eventual privatization, has led several countries to implement major policy initiatives towards recapitalization of banks, and their loan consolidation. While some of these policies may appear to yield short-term specific benefits for improving banks' books, their implications for the performance of banks themselves, for the allocation of credit to the enterprise sector, and for government finances have not been given adequate attention.

The policies adopted by different countries for strengthening bank balance sheets vary considerably, but all entail a fiscal burden. In general, while no resource flows may be involved in the balance sheet clean-up operations, the replacement of bad loans with government debt does imply an ensuing debt servicing burden. 1/ In Poland, for instance, which has recently adopted a "decentralized" approach to the portfolio problem (noted below), the recapitalization plan currently under consideration would nevertheless be financed largely by domestic bond issues. 2/

In addition to this direct government effort, the banks are, to varying extent, also required to provision against bad loans, and as a result are paying markedly less in profit taxes. For instance, in Hungary, where bank provisioning is the highest, the impact on the budget in 1992 has been estimated at 2 percent of GDP (Table 5). This is, of course, not to suggest that adequate provisioning is not desirable or necessary, especially from a longer term perspective; only that in the short-term it can have considerable implications both for output and the budget which should be taken into account in assessing the cost of bank restructuring.

Moreover, the process of recapitalization and loan consolidation appears to have made banks excessively cautious in lending to enterprises for a number of reasons. First, as in Poland, state banks have been required to complete restructuring of their loan portfolios by March 1994. Towards this end, banks have been warned and discouraged against extending credit to enterprises with bad or doubtful debts, unless such credit is

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1/ It is worth noting that a substitution of bad loans for government bonds may not necessarily have any short-run implications for liquidity to the enterprise sector (banks would now receive interest which they may then use to buy more bonds) but it would have significant fiscal implications in the long-run.

2/ The plan aims to increase capital to asset ratios for large banks to 12 percent or more. In addition to the bond issue, the plan may also draw on the $1 billion stabilization fund originally instituted in 1990 by bilateral donors.

Table 5. Hungary: Loan Loss Provisions 1991

	Operating Profits	Provisions		Pre-tax profits	
	Forints (millions)	Forints (millions)	Percent of operating profits	Forints (millions)	Percent of operating profits
Five large banks	52,209	35,585	68	16,624	32
Medium-sized banks	13,929	2,647	19	11,282	81
Large and medium-sized banks	66,138	38,232	58	27,906	42
Total	75,320	41,129	55	34,191	45

Source: Computed from Varhegyi (1993).

given as part of a "conciliation" agreement to reschedule claims, write-off part of them, or convert them into equity. 1/ Given banks' limited expertise in assessing riskiness of enterprises, complicated by the problem of inter-enterprise arrears, these exhortations have essentially led to a dampening of banks' overall lending to the enterprise sector, and in particular to the medium- and small- firms. That is, instead of distinguishing between the degree to which firms would be potentially profitable, and solvent, and adjusting the terms of the loans accordingly, banks appear to have retrenched in terms of their lending.

In Poland, the above process could have been exacerbated by the new incentives given to banks' management. This has taken the form of a provision of generous stock options to bank executives to be exercised upon privatization, which would in turn depend on the health of banks' balance sheets. This has had the result of further propelling banks to hold an increasing proportion of their assets in government securities and building liquidity.

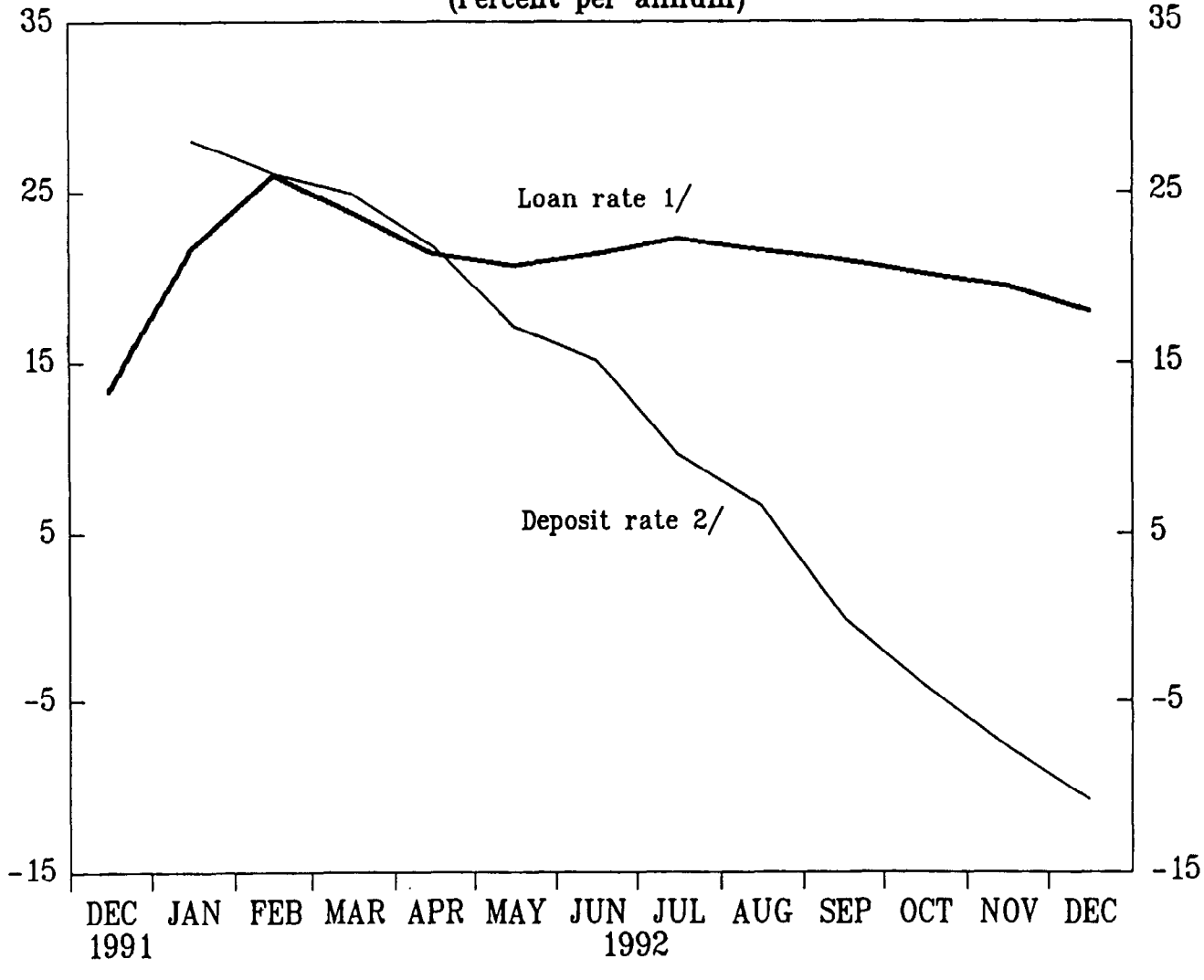
A similar development appears to be evident in Hungary, where the 1992 bankruptcy law (which has since been amended) led to a large number of small and medium-sized firms, which may have had short-run liquidity problems, being declared insolvent. However, this outcome, far from benefitting the banks, actually exacerbated their portfolio problem given the inter-linkages between firms, and was an element in the sharp increase in provisioning noted above. To the extent that credit in nominal terms has increased, it reflects largely the capitalization of interest arrears, and some new lending to a few, not necessarily the most efficient, large enterprises.

At the same time, the above factors, combined with limited competition in the banking sector, have led to marked increases in lending margins. As Charts 5 and 6 suggest, while deposit rates in real terms have declined, there has been virtually no equivalent decline in the loan rates, resulting in high or increasing margins. High loan rates may exacerbate the adverse selection problem whereby inefficient firms or essentially insolvent firms, which are most likely to default, are the ones which end-up obtaining credit.

As illustrated by the model in Section III above, and by the evidence in Calvo and Coricelli (1993), lack of credit has an adverse effect on firm output. Some further evidence on this is provided in Table 6 which examines the relationship for Poland in 1992 between bank credit, profitability, and output across 25 major sectors of the economy. This shows a clear and robust positive relationship between changes in real credit and in output, taking into account differences in profitability. While this evidence may only be regarded as illustrative, given the methodological problems inherent in this type of analysis, it nevertheless underscores the importance of working capital for sustaining activity.

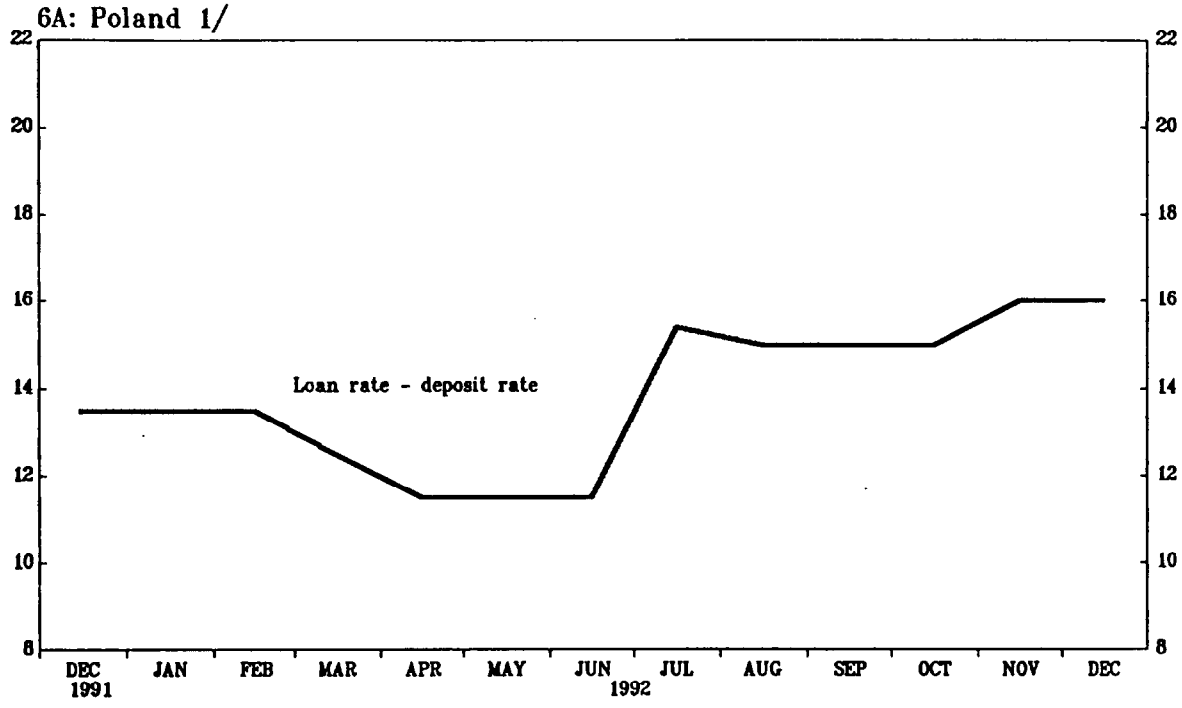
1/ For details of this restructuring strategy, see Hogan et al (1993).

Chart 5: Poland: Real Interest rates
(Percent per annum)

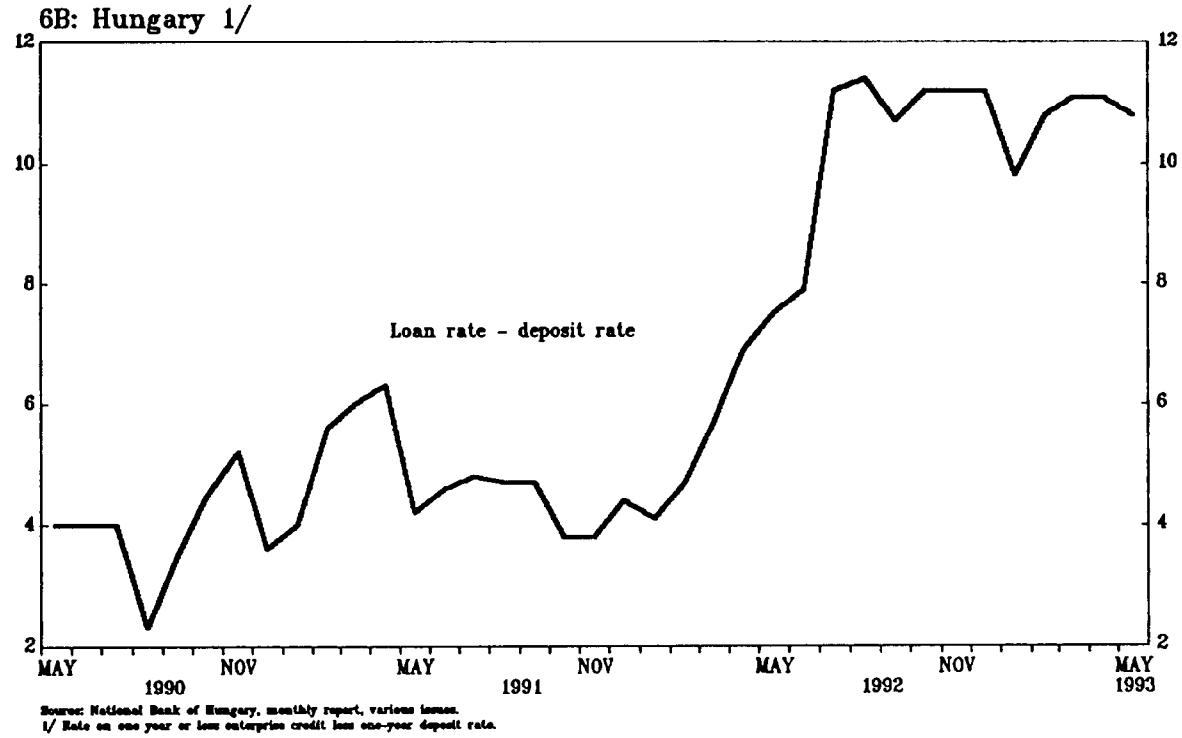


1/ Nominal loan rate adjusted for changes in producer price index.
2/ Nominal deposit rate adjusted for changes in consumer price index.
Source: Narodowy Bank Polski, and Biuletyn Statystyczny, various issues.

Chart 6: Commercial Bank Interest Rate Spread in Poland and Hungary



Source: Narodowy Bank Polski, Information Bulletin, various issues.
1/ Rate on lowest risk credit less 3-month deposit rate.



Source: National Bank of Hungary, monthly report, various issues.
1/ Rate on one year or less enterprise credit less one-year deposit rate.

Table 6. Poland: Changes in Output, Credit, and Profitability 1/

Equation: $\Delta \text{ output}_{ti} = \alpha + \beta \Delta \text{ Credit}_{ti} + \gamma \text{ Profit}_{t-1i} + \epsilon_{ti}$

Sectors	α	β	γ	$\bar{R}^2$
All (25)	0.007 (5.330)	0.261 (2.008)		0.149
	0.007 (5.192)	0.261 (1.962)	0.001 (0.189)	0.151
Sectors with Moderate Inflation (21)	0.008 (5.231)	0.272 (1.947)	0.002 (0.210)	0.150

1/ Dependent variable is the change in real output in 1992 in 25 (or 21) major sectors of the economy. The explanatory variables are change in real credit, and the average profit rate in 1991; 't'--statistics are provided in parentheses.

What are the options for increasing credit and output? As shown above, a macro-policy of loosening monetary policy stance is likely to be counter-productive. An increase in inflation which such a policy will entail would end-up reducing, not increasing, real credit. To the extent that inflation generates uncertainty, and makes it even more difficult to assess firm creditworthiness, it could further exacerbate the credit crunch. A reduction in fiscal deficits could, of course, lead to less credit being preempted by the public sector, but for the reasons noted earlier, it may not automatically lead to any corresponding increase in credit to the firm sector.

A possible solution could be to modify the strategy for reform of the banking sector, so that banks are encouraged to lend to enterprises, so long as that does not lead to excessive risk for themselves. Thus this is not to say that the resolution of the portfolio problem should be neglected, but that the specific policies for doing so should be reexamined. More importantly, policies should be implemented to encourage banks to become much more adept at assessing risk than they have been till now. Both these aspects of the problem could be tackled by privatizing the state owned-banks, allowing much greater participation by foreign banks, and by obtaining additional external expertise in assessing and pricing credit risk.

VII. Credit, Equity Capital, and Investment

The analysis of bank credit as a source of working capital can be extended to the use of such credit by firms in FSEs for financing investment, and undertaking product and market diversification in the medium- and long-term. While in the short-run bank loans provide virtually the only formal source of credit, over a longer time horizon, other sources of finance such as venture and equity capital may also be available. Over such a horizon, issues related to the relative merits of these alternative sources of finance become important and are briefly discussed below.

At present, as the earlier discussion has emphasized, given the banks reluctance to lend even for short-term working capital, credit for longer term investments in several of the Eastern European countries seems virtually unavailable. However, it has been argued that, once the commercial banks are fully restructured, and placed on a sounder footing, they could actively participate in the provision of term- finance (Brainard 1991). Moreover, as they build-up information and expertise in evaluating operations of firms borrowing from them, banks could play an active role in screening, monitoring, and restructuring these firms. This is especially so since the equity-ownership of firms being privatized is likely to be highly diffused, and the individual owners may have neither the information nor the incentive to exercise corporate governance.

Even if the current constraints on banks were removed, it is unclear, however, that they will be able to oversee management decisions in a

constructive way. More fundamentally, there could be endogenous constraints in credit markets, resulting from asymmetric information, adverse selection and incentive problems, which would prevent banks from providing investment finance. These constraints have been analyzed at length in the existing literature on financial sector liberalization in developing countries. They are contingent, in part, on the possibility that a bank's return from lending to a specific group of borrowers may not be monotonically increasing function of the interest rate it charges to borrowers (See Stiglitz and Weiss(1981) and Cho(1986)). This is so for two reasons: first, the adverse selection effect--higher interest rates discourage the safe borrowers which the banks prefer; second, the incentive effect--if borrowers have choice of projects, they will tend to favor projects with higher probability of default when the interest rate is increased. These two effects could discourage banks from raising their interest rates in response to an excess demand for credit.

The above constraints have the implication that banks avoid financing new, productive group of borrowers, who may be perceived to be risky even when the banks are risk neutral and free from interest rate ceilings. The difficulty that new productive customers have in obtaining finance from banks comes essentially from the fixed-fee contract nature of bank loans (see Stiglitz 1991 and Diamond 1991). The borrowers are concerned about the upper tail of the distribution of investment outcome while the lenders are concerned with the lower tail of the distribution. Under this situation, banks may totally avoid lending to specific groups of potential borrowers unless they have information that enables them to rank each borrower, and charge appropriate interest rates according to each borrower's riskiness so that they can ensure a profitable expected return.

The issue then is whether, in the absence of this information, equity markets could play a role in supplying investment capital to enterprises. It could be argued that precisely because of the above constraints and the risk-return trade-off, enterprises might be more able to raise capital from equity markets since equity holders would be concerned with the entire distribution of returns. In addition, for the privatization of enterprises or banks to make any headway, development of equity markets is essential. However, in practice, as the experience to-date has shown, the development of equity markets in the FSEs is proceeding at a much slower pace than had been anticipated. For instance, as of end-August 1993, despite a sharp increase in equity prices, market capitalization of the Polish Stock Exchange was less than $1 billion with only 20 firms quoted, and very limited active trading. Similarly, the Hungarian exchange had a

capitalization of less than $1/2 billion, and also very limited activity. 1/

There are a number of reasons why equity markets in Eastern European countries have not developed rapidly enough. First, it is due to the slow pace of the privatization program itself, which has severely limited the supply of equity. 2/ Second, the regulatory regime, in particular the enforcement of legal requirements and regulations, remains weak, engendering uncertainty and imposing high transactions costs. This is exacerbated by the weak accounting, and opaque reporting standards of firms' financial information. For the potential domestic investor, there is not enough reliable information about the current, much less the future, prospects of quoted companies for him to be able to take rational decisions about investing in equities. These factors also explain why the inflow of foreign portfolio capital has also, in general, remained very limited.

If it is accepted that banks may not be able to provide adequate investment finance, and that the equity markets can make a contribution in this regard, a number of policy measures need to be implemented to encourage the growth of these markets: in addition to speeding-up the privatization process, accounting and reporting standards of firms need to be improved dramatically; initial public offerings need to be priced realistically; and finally, to increase confidence in the market operations, there should be stringent regulations against insider trading, and an enforcement of laws ensuring that private contracts are honored.

VIII. Concluding Remarks

The main focus of this paper has been on analyzing factors in FSEs which are likely to determine the volume of bank credit allocated to the enterprise sector, and the implications of this allocation for aggregate supply, and macro-economic performance. The paper developed a model to explain how changes in the demand for money by the household sector directly influence the volume of loanable funds and credit, which in turn determines output and employment in the productive sector. If firms cannot get sufficient working capital, then production will be cut back. It is shown, however, that attempts to increase credit by inflation may end up actually exacerbating the credit crunch because of the effect of inflation on the demand for deposits.

1/ For a discussion of issues relating to the role of equity markets in FSEs, see Brainard (1991), Borensztein and Kumar (1992), and Calvo and Kumar (1993). For a discussion of the issues relating to the importance of equity markets in developing markets see, for instance, Singh and Hamid (1992).

2/ The important exception in this regard is the Czech stock market where since June 1993 shares have been traded in a large number of companies following their privatization through the voucher schemes.

The paper also examined factors which determine the allocation of bank credit between enterprises and other borrowers, in particular the government. The reasons why banks may prefer to finance government deficits rather than make potentially more profitable loans to enterprises include limited information about enterprises' current performance, considerable uncertainty about their future prospects, lack of expertise in evaluating risk, and pressure from the government to improve the quality of banks asset portfolio. These reasons for preferring credit to government, while perfectly rational from the perspective of individual banks, may end up creating a vicious cycle of low output, low enterprise profits, high fiscal deficits, and again low credit to enterprises. Empirical evidence for a number of Eastern European countries seemed to be consistent with the analysis. A number of policy options for increasing the provision of credit to potentially viable enterprises were noted.

Finally, the paper discussed the relative merits of bank finance and equity capital in financing medium- and long-term investment. In a credit market with imperfect information, liberalization of the banking sector would not necessarily lead to efficient allocation of term capital. This is due to the adverse selection and moral hazard effects that occur when debt contracts are used in the presence of asymmetric information. Equity contracts, however, are free from the adverse selection effect and thus could overcome inefficient allocation of capital when the same degree of imperfect information on borrowers exists as in the case of debt contracts. However, a number of important constraints exist on the development and efficient functioning of equity markets in the FSEs, and the paper noted some policies which might be implemented to overcome them.

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