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# Saving in Transition Economies

## The Summary Report

*Patrick Conway*

Savings in transition economies have declined since independence, but something else has happened, too: Financial assets have shifted from bank deposits to alternative financial instruments, including foreign currency, "trust company" shares, and private loans. Governments are not typically prepared to borrow savings from these new instruments since they are denominated in foreign currency or are offered only at positive real interest rates. That attitude must change if governments are to make needed investments in infrastructure and to avoid creating inflationary credit.

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## Summary findings

The stimulation of private saving is essential to both stabilization and structural adjustment in the transition economies.

Private saving in these countries has declined sharply since independence, and this decline has been a factor in the onset of extreme inflation because governments have resorted to an inflation tax to finance deficit spending.

Conway examines evidence on spending in Belarus, Georgia, Kazakhstan, and Ukraine. He examines decisions about whether to save, and in which specific financial or real instruments. He summarizes the evolution of financial sectors in these countries to provide a history of the success or failure of financial institutions to intermeditate between private savers and the government as borrower.

He concludes that private saving has indeed declined since independence, but less than is indicated by banking-system statistics. Concurrent with this downturn has been a shifting of financial assets from bank deposits to

alternative financial instruments, including foreign currency, "trust company" shares, and private loans. The financial sector has reacted slowly to this change, but the most successful commercial banks have recognized the change in demand for financial instruments and have accommodated the savers. The state commercial banks — especially the successor to the Soviet Saving Bank — have been slow to adjust to the new environment. As a result, the near-monopoly that bank once held on deposits has been rapidly eroded.

Government methods for mobilizing funds must change, contends Conway. Governments are not typically prepared to borrow savings from these new instruments, since they are denominated in foreign currency or are offered only at positive real interest rates. That attitude must change if governments are to make needed investments in infrastructure and to avoid creating inflationary credit.

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# Saving in Transition Economies

## The Summary Report

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**Saving in Transition Economies**  
**The Summary Report**

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## **Executive Summary**

Encouragement of private saving is a central feature of economic success for the transition economies in both the short run and the long run. The transition economies are those former republics of the Soviet Union that are introducing the infrastructure for market activity into the economic environment. In the short run these economies have been characterized by extreme inflation and are implementing stabilization programs: the current burden of these programs will be less onerous on the citizens if the government can finance part of its expenditures through private saving. In the long run, private saving will be the precondition for the investment necessary to introduce technological improvements into the production processes of these countries. Stimulating private saving is thus a *sine qua non* of both stabilization and structural adjustment.

Private saving has unfortunately declined sharply in the period since independence for these countries. This decline has itself been a factor in the onset of extreme inflation, since as private saving was reduced the governments resorted to the inflation tax to finance deficitary spending. In this research report I summarize the available evidence on saving from four of these countries: Belarus, Georgia, Kazakhstan and Ukraine. I examine the saving decision as well as the related decision to place the saving in specific financial or real instruments. I also summarize the evolution of the financial sectors of these countries to provide a history of the success (or failure) of financial institutions to intermeditate between private savers and the government as a dominant borrower.

I conclude that private saving has indeed declined in the period since independence, but to a lesser extent than is indicated by examination of banking-system statistics. There has concurrently with this downturn been a shifting of financial assets from banking deposits to alternative financial instruments, including foreign currency, "trust company" shares and individual lending. The financial sector has reacted slowly to this change, but the most successful commercial banks have been those that recognized this change in demand for financial instruments and have accommodated the savers with appropriate instruments. The state commercial banks, and especially the successor bank to the Soviet Saving Bank, have been quite slow in adjusting to this new environment. As a result, the near-monopoly that this bank once held on deposits has been eroded rapidly.

This shift in financial instruments for saving implies a shift in government methods for mobilizing these funds. The government is typically not prepared to borrow the saving in these new instruments, since it is denominated in foreign currency or is only offered at positive real interest rate. This attitude must change if the governments are to avoid inflationary credit creation and to make the necessary infrastructural investments for the future.

This report has three novel components. There is a dynamic theory of saving for transition economies that is not found elsewhere. There is a summary of original surveys conducted in Georgia and Kazakhstan (with greater detail in Conway (1994b)) to determine the degree of household saving. There is also a summary of macroeconomic statistics on saving in the financial system that has not been pulled together elsewhere. The text of the report provides a summary of results, while greater detail can be found in the Annexes and in the earlier report "Saving Mobilization in Transition Economies". An annex of detailed financial information from specific financial institutions has been excluded from this published version, but can be obtained from the author.

## **I. Definition of saving.**

Private saving is at the center of both present and future concerns for the economies of the former Soviet Union. Stabilization programs currently in place are contingent on sufficient private saving to offset continued public sector borrowing requirements. Projections for future economic growth are contingent upon a strong private saving and investment response to the planned cutbacks in public investment. Despite its centrality, there has been no attention paid to the motivations and incentives to private saving in these economies in current economic research. I provide an analytical and empirical examination of the macroeconomic characteristics of private saving behavior in transition economies in this research project. The analysis is new, in that it addresses the specific features of the transition process; the empirical evidence on the pattern of saving observed in Belarus, Georgia, Kazakhstan and Ukraine is new as well.

### **The theory of saving.**

Saving behavior has received extensive attention in the theoretical and empirical economic literature. However, this literature has paid little attention to the dynamic evolution of saving, especially when beginning from disequilibrium. There has also been little attention to the specific incentives to private saving in transitional economies due to the inherited Soviet financial institutions and markets. These two features are crucial to the proper understanding of present saving behavior in the economies of the former Soviet Union.

In the following sections I provide an overview of the theory of private saving. For those parts that are original to this report, I provide mathematical restatement in Annex A.

### **Previous literature.**

The determinants of saving have been examined extensively in the literature both for developed and developing countries.<sup>1</sup> Most recent analyses recognize the intertemporal nature of the saving decision and begin with the life-cycle or permanent-income hypothesis (Giovannini (1985), Fry (1988), Campbell (1987), Ostry and Reinhart (1992)). Desired saving (or its "residual", desired consumption) is derived from an Euler equation defining the evolution of saving over time. In theory such saving is positively related to the real interest rate through both wealth and substitution effects, and positively related to increases in real wealth. These analyses are missing, however, the evolution of private saving out of the steady-state equilibrium.<sup>2</sup>

The importance of the real interest rate in the determination of saving was also debated in the literature on financial deepening. McKinnon (1973) introduced the notion that economies with "deep" financial markets -- those providing financial instruments that attracted substantial saving flows into the formal financial sector -- would have more impressive economic growth than those that did not.

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<sup>1</sup> Most macroeconomic textbooks devote a chapter to the various theories of the consumption function; for given levels of income and tax liabilities, this becomes a theory of saving as well. Blanchard and Fischer (1989) provides an overview of life-cycle theories of saving. Smith (1990) is a recent review with empirical evidence for advanced countries.

<sup>2</sup> Campbell (1987) does consider such adjustments in an error-correction framework, but it takes the real interest rate as exogenous and unchanging in its analysis.



McKinnon saw positive real interest rates as the most direct method to encourage financial deepening. The concurrent increase in saving and reduction in the relative price of present consumption derived in the following models illustrate this point, although the real interest rate is properly endogenous. Van Wijnbergen (1983) and Buffie (1984) demonstrate one channel for that endogeneity: government policies that artificially limit interest rate in the formal sector will encourage the growth of informal sector intermediaries.

#### **In the former Soviet Union.**

These analyses are suggestive, but do not provide a satisfactory framework for research in the former Soviet Union. Despite the liberalization of prices and partial decontrol of financial-sector institutions, substantial institutional rigidities remain. These can either block directly the market outcome or provide undesirable incentives to savers and intermediaries. Further, an appropriate theoretical structure for this study must be one which allows the tracking of stocks and flows of domestic financial assets so that the "ruble overhang" phenomenon can be explained simultaneously with the continuation of saving.

Empirical investigation of private saving behavior in these formal institutions must acknowledge that the observed quantities do not correspond to equilibrium at market-clearing interest rate. Cottarelli and Blejer (1992) provide estimates of the ruble overhang using an appropriate methodology for the period 1986-1990, and conclude that it was a substantial phenomenon during the period. This analysis was not carried forward into the period of independence.

The Soviet financial system was historically one of private saving and government dissaving. The government did not cover all investment expenditure from taxation, and the financial sector intermediated to ensure that private saving was made available to finance the excess. Nominal interest rates on this were fixed.<sup>3</sup> Private saving includes both household saving and private enterprise saving. Private enterprises have historically been a minor source of saving, although the evolution of this mix of sources of private saving is an important part of this study.

A key feature of the Soviet system in its final years was the existence of "forced saving". The unavailability of goods at the prices fixed by the state led to currency holdings and financial deposits in excess of what the private sector would have chosen at those prices. This forced saving accumulated in the financial institutions as deposits and under mattresses as currency, and grew to such proportions that it was tagged the "ruble overhang" (e.g., Nordhaus (1990)). It represented an accumulation of purchasing power by the population that was to be redeemed for future production.

Financial deepening as commonly measured was quite advanced in the republics of the Soviet Union in the years preceding its dissolution; for example, household saving deposits in 1989 were 36.2 percent of GNP while a comparable figure in the US was 33.7 percent.<sup>4</sup> Interest rates were low

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<sup>3</sup> Especially in later years government excess expenditure exceeded private saving. In the absence of a flexible nominal interest rate this led to central-bank acceptance of government debt. The consequent inflationary pressure was suppressed by the fixed-price market mechanism.

<sup>4</sup> The Soviet figure is drawn from McKinnon (1991, p. 121). The US figure is taken from the Economic Report to the President 1992. Household saving is the total of demand deposits, other checkable deposits, money market funds and saving deposits (Table B-66) and is divided by GDP.

in nominal terms, but inflation was repressed to even lower levels. Further, measured financial deepening did not necessarily reflect desired holdings of financial assets because of the forced nature of saving. Although the Soviet government achieved one benefit of financial deepening -- channeling of saving -- it did not achieve the efficiency of investment because of the command nature of the investment process.<sup>5</sup>

A second feature of the former Soviet economy is important in the comprehension of the quantity of deposit holdings -- the evolution of prices and inflation. The usual solution from the research on "fix-price" equilibria is to specify a separate dynamic that translates excess demand into price increases. As Conway and Gelb (1988) illustrate, the evolution of the nominal commodity price can be modeled as a sluggish tatonnement process in the goods market. Immediate price adjustment to eliminate excess demands is a limiting case of this more general specification.

#### **A theoretical specification of saving in the transition.**

The theory of private saving is best viewed as an intertemporal choice for the allocation of real resources. In this section I begin with a two-period model to illuminate the basic economic forces determining private saving. I then turn to an extension of the framework in which the dynamic of transition is explicitly derived.

##### **The two-period model.**

The private sector will be modeled as equating the present value of expenditure over the two periods to the present value of after-tax income and the wealth carried forward from the past. The present value of after-tax income includes income in both periods, with period-one income subject to a production shock (represented by  $\alpha$ ). The material balance in the period-one consumption good is then

$$c^1 + g - y^1(\alpha) = \beta(p) \quad (1)$$

The government has its own expenditures ( $g$ ) in period one that are not necessarily financed completely out of taxation receipts and contribute nothing to utility.  $\beta$  is the volume of international borrowing (i.e., the negative of the current account surplus) undertaken by the households. The relative price of period-one goods is denoted  $p$ ; it can also be thought of as the real interest rate relevant to saving decisions.<sup>6</sup> International lenders are assumed to have a positive  $p$ -elasticity of international borrowing, with the volume of available financing rising with  $p$ .<sup>7</sup>

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This understates financial deepening in the US in that equity holdings are ignored.

<sup>5</sup> Conway and Gelb (1988) concluded similarly for Algeria -- saving rates were astronomically high, but the subsequent investment had very low returns in terms of output.

<sup>6</sup> The relative price  $p$  is defined as  $P^1(1+r)/P^2$ , with  $P^i$  the price of goods in period  $i$  and  $(1+r)$  the relevant nominal discount or interest rate to intertemporal substitution.

<sup>7</sup> Rising  $p$  indicates that the real interest rate that the home country pays on international debt is rising. This specification was chosen to provide a parameterization of two extreme cases: an economy with unlimited access to world capital markets at given price  $p^*$  (infinite  $p$ -elasticity) and an economy with no access to world capital markets (zero  $p$ -elasticity). Those special cases are derived

Saving of the households in period one is defined as

$$s = y^1(\alpha) - c^1 - \tau \quad (2)$$

and as combination of (1) and (2) indicates is identical in equilibrium to the difference of the government budget deficit ( $g - \tau$ , with  $\tau$  denoting tax revenues) and foreign borrowing  $\beta$ . There are thus three sets of determinants to real saving. The first is the government fiscal policy, as summarized by the fiscal deficit. The second comprises shocks to earnings capacity, as indicated by the shock  $\alpha$  to period-one product. The third is the relative price  $p$ . While the first two are exogenous, the third is jointly determined with real saving; I examine this joint determination in the following sections.

Consider the illustration of two-period equilibrium in Figure 1. I illustrate three equilibria corresponding to three  $p$ -elasticities of foreign borrowing. The indifference curves  $u_0$ ,  $u^*$  and  $u(p)$  correspond to three different cases. At equilibrium A the volume of foreign borrowing is fixed at  $\beta_0$ . Given  $y^1$  and  $g$ , then,  $c^1$  is fixed as well. The domestic real interest rate  $p$  adjusts to equilibrate period-one and period-two consumption demands, and is given by the (negative of the) slope of the indifference curve  $u_0$  passing through A.<sup>8</sup> It is higher than the international real interest rate  $p^*$ , indicating that the economy will borrow more if given the opportunity at the real interest rate  $p^*$ . At equilibrium B the economy is given the opportunity to borrow unlimited quantities at the rate  $p^*$ , and chooses to obtain  $\beta^*$  in this way. At that quantity of borrowing, the real interest rate  $p^*$  is just equal to the (negative of the) slope of the indifference curve  $u^*$ .

In the intermediate case the economy can borrow along the schedule  $\beta(p)$  illustrated in Figure 1. It will thus choose a level of foreign borrowing intermediate between  $\beta_0$  and  $\beta^*$  at a real interest rate falling between  $p_0$  and  $p^*$ . This is illustrated at the point E on indifference curve  $u(p)$ . In this example the greatest amount of saving (equivalently, the lowest period-one consumption) is associated with the highest  $p$ , while the smallest amount of private saving is associated with the lowest  $p$ . The rise in  $p$  is coincident with the attraction of greater private saving, as two products of the increase in net demand for such saving. The source of this demand is the government budget deficit, while the availability of foreign borrowing provides a source of funds substitutable for private saving.

Real saving is rising with an increase in  $g$ , although not in a one-for-one manner if foreign borrowing is possible. It is falling with an increase in the accumulated stock of wealth and rising with an increase in real taxation. It is falling with negative output shocks in period one.<sup>9</sup> Those

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directly in Annex C.

<sup>8</sup> In this case, if there is (as illustrated in Figure 1) a differential between the domestic and international real interest rates, then the definition of  $\Omega$  in equations (1) must be expanded to include the term  $(p - p^*)\beta_0$ . This does not change the analysis, but incorporates the windfall gain from foreign borrowing at the relatively low international interest rate.

<sup>9</sup> This last effects are not ambiguous, and provide an interesting contrast with the impact of increased government expenditure. All increase the excess demand in the goods market in period one, but the government's marginal propensity to consume in period one is unity. Given the private marginal propensity of  $\delta$ , the impact of the output shock or taxation effect is reduced and can be

exogenous factors that cause an increase in real saving do so through crowding out private consumption; the mechanism is the rise in real interest rate  $p$ .

The flexibility of access to international financial markets is important in this result. Consider the extreme case of  $\beta_p = 0$ , or access to international finance totally insensitive to the domestic interest rate. Then only shifts in government expenditure, taxation or period-one output matter to saving, and these enter in a one-for-one manner. The resource constraint is completely binding, as in equilibrium A in Figure 1. At the opposite extreme, with  $\beta_p$  (and  $\Delta$ ) approaching infinity, the relative price domestically is equated to the international relative price ( $p = p^*$ ), and  $\beta$  is the endogenous variable. Under that alternative specification the results are quite different. The results depend critically in this case upon  $\delta$ , the marginal propensity to consume in period one. Saving is falling with an income shock, with an increase in carried-over wealth and with an increase in tax. This reduction is not one-for-one with the shock, however, since a portion of the shock is carried over into period two through foreign borrowing. A government expenditure increase has no impact on saving, as the trade deficit is increased one-for-one with this increase.

As indicated in equation (2), private saving in equilibrium is equal to the sum of the fiscal deficit and the trade surplus. The channel by which this equality is achieved, however, can differ according to the structure of the economy. If the fiscal deficit is taken as exogenous, then the two (not mutually exclusive) adjustment channels were outlined above: external borrowing or an increase in private saving. There are further a number of methods for mobilizing private saving. One method is through rationing of consumption at fixed price and nominal interest rate; given the lack of other uses for private income, "forced" saving will occur. Another is through adjustment of  $p$ , the relative price of goods in the two periods. For given period-two price, there are two channels for adjustment of  $p$  to reflect excess demands for goods in period one. The first is through an increase in  $P^1$ , causing a rise in  $p$  and a shifting of expenditures to  $c^2$ . The second is through an increase in the nominal interest rate (for given  $P^1$ ), and will have the same effect. Interest rate controls alone do not avert this adjustment; such efforts will simply occasion a price increase in  $P^1$ , as the commodity price in period one rises in response to excess demand.

#### Modelling saving in the dynamic transition.

Life-cycle models of consumption, investment and saving over an infinite horizon provide a convenient starting point for the theoretical model. The optimal behavior in Campbell (1987) or Blanchard and Fischer (1989) can be summarized in the notation of the previous section, with conditions introduced to govern the adjustment of nominal price ( $P^t$ ) and the stock of financial assets ( $D^t$ ) over time:

$$D^t = (1+r) D^{t-1} + P^t s^t \quad (3)$$

$$s^t = y^t - c^t - t^t \quad (4)$$

$$P^t = P^{t-1} + \phi [(g^t - t^t) - s^t - \beta(p^t)] \quad (5)$$

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reversed for extremely high valuations of period-one relative price  $p$ .

The stock of financial assets rises with interest paid to holders and with the value of private saving in the period. The net material balance condition (1) may not hold in flow equilibrium, allowing for the possibility of rationing in periods of excess demand. This excess demand is a function the government deficit and the volume of foreign borrowing  $\beta(p)$ .<sup>10</sup> As equation (5) indicates, such excess demand will cause price inflation; the limiting case, as  $\phi$  approaches infinity, is that of net material balance.

The stock equilibrium for this dynamic economy has a saddlepoint nature. It is illustrated in Figure 2. AA represents the combinations of D and P that assure asset market stock equilibrium (i.e.,  $D^t = D^{t-1}$ ) and GG the combinations that ensure zero excess demand in the goods market. The AA curve as drawn is steeper than the GG curve; this is a property of the parameters of the system.<sup>11</sup> The system has a convergent dynamic only along the saddlepath SS.

Consider the adjustment along the saddlepath from point A in Figure 2. Excess demand is positive (and thus private saving negative) throughout the adjustment, as is indicated by the gradual liquidation of the stock  $D^t$ .<sup>12</sup> In the absence of real shocks to output, the government budget or foreign borrowing, real consumption (and real saving) will be constant through time but the nominal excess demand in each period is lessened and the rate of price inflation slowed. Nominal goods market equilibrium and asset market stock equilibrium are only achieved concurrently, however, at the equilibrium Q.

The analysis of point A does not fully capture the transition for the Soviet system because the households at independence were not on their preferred trajectory. The constraints on both price levels and supply of goods led to rationing and forced saving off the SS curve. This forced saving resulted in the "ruble overhang" that could more properly in this context be characterized as a "deposit overhang" and illustrated at point B.

The dynamic followed from B with price decontrol replicates a number of features of private adjustment in the former Soviet republics. First, the quantity of deposits was certainly more than necessary to generate demand for the quantity of goods available: this is evident in B's distance above GG. Second, households nevertheless held these deposits (rather than cash, for example) because of their claims on future consumption: this is evident in the distance by which B is below SS. When prices were liberalized there was an immediate jump (to point C), followed by ongoing inflation as households tempered the upward pressure placed on demand for goods because of the effect of the ensuing price increases on purchasing power in the future. The price jump is represented by the movement from B to C on the saddlepath; the ongoing inflation by the movement along SS from C toward Q.

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<sup>10</sup> The equation of motion for foreign debt is subsumed in the asset accumulation equation, and the nominal interest rate is the same on foreign and domestic borrowing. These assumptions could be relaxed, but at the cost of modeling the evolution of international debt separately.

<sup>11</sup> The condition for this to hold [  $(\partial c^t / \partial D^{t-1})(g^t - t^t - \beta^t) > r (\partial c^t / \partial P^{t-1})$  ] is always true for  $D^t > 0$ .

<sup>12</sup> This is not a requirement of the model; the saddlepath could be upward-sloping and still satisfy the saddlepath properties.

Real private saving in this adjustment need not take a constant value if there is access to international lending. In that case the intertemporal adjustment in  $p^t$  can induce foreign financial flows that compensate for variations in private saving. The relative price  $p^t$  must be interpreted here as the vector of relative prices of goods between time  $t$  and all future time periods.

The predicted path of saving is made more complex by collapse of commodity production, as for example was observed in the former Soviet Union with independence. This here enters exogenously as an increase in the public-sector deficit to be financed through the inflation tax.<sup>13</sup> An increase in the steady-state real fiscal deficit will have the effect of shifting down the asset-market curve to  $AA'$  and shifting in the goods-market equilibrium curve to  $GG'$  as in Figure 3. Beginning from equilibrium  $Q$ , prices jump immediately to  $C'$  along the new saddlepath  $SS'$ , and then decline somewhat as households accumulate deposits. The new steady state at  $E'$  has a larger nominal stock of deposits but a reduced real value. This period would be characterized by excess supply of goods, as prices have overshoot the long-run value. Alternatively, the increased fiscal deficit could be recognized while still on the original saddlepath around  $C$  -- if so, there would be an additional jump in  $P$  followed by still further inflation while moving down the other arm of  $SS'$  to  $Q'$ . Similar comparative dynamics demonstrate the real saving- and deposit-increasing effects of exogenous increases in nominal interest rates.

#### **Channels for retention of saving**

This analysis presumed that the financial instruments in which saving is placed can be represented by the homogeneous asset  $D^t$  with given rate of return. In fact, there is great variation in the characteristics of assets serving as stores of saving. The traditional instrument was the home-currency deposit in the formal financial sector -- during the Soviet period, in the Saving Bank. Since independence, however, the potential saving instruments have proliferated to include deposits denominated in foreign currencies, holdings of foreign currencies, deposits with informal financial institutions and trust companies, and stocks of commodities.

The former Soviet republics have inherited the Soviet financial system. The formal financial sector in each republic includes institutions licensed by the state and is dominated by a few large organizations continuing to reprise their roles in the Soviet system. The inherited Soviet structure has been explained in detail elsewhere -- see, for example, the text by Gregory and Stuart (1990), Hardy and Lahiri (1992), Ickes and Ryterman (1992) or Conway (1994a). Three features are of importance to the present study: monopoly, specialization, and the dichotomy between cash and non-cash transactions. The informal sector includes a collection of unlicensed intermediaries whose activities

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<sup>13</sup> Explanation of the collapse of production in the former Soviet republics will be a fascinating task, but one largely outside the scope of the present study. I will examine the incentives to enterprise saving, because it is anomalous to observe increased real time deposits during a period of free-fall in enterprise production. One possible explanation is the growth of an informal productive sector unmeasured in official statistics; this will reinforce the conclusions on informal activity discussed below.

The fall in production leads directly into large public-sector deficits. State enterprises have reacted slowly to the downturn, and have consequently maintained personnel costs in excess of revenues. These must be paid from the state budget. Further, the downturn in economic activity leads to a downturn in taxation revenue for the government and to an upturn in demand for pension and unemployment benefits.

are poorly monitored or understood.

The monopolistic and specialized features of formal financial intermediaries have been carried forward into the financial sectors of the former Soviet republics. They have two implications of importance to savers: low (often negative) real interest rates in formal-sector financial institutions, and an explosion in activity by informal intermediaries. Formal-sector financial institutions have in practice been quite sluggish in raising interest rates on household deposits to rates in excess of inflation. The following table, for example, indicates the nominal rates on deposits in domestic currencies at the Saving Banks of various former Soviet economies in mid-1993.

**Saving Banks: Nominal Interest Rates on Deposits, mid-1993**

	Sight deposit	1-3 year deposit	Inflation (2/92 to 2/93)
Kazakhstan	15	30	800
Ukraine	120	--	1400
Georgia	5	10	800
Belarus	20	40	800

Source: data collection network.

Conway (1994a) identifies three possible reasons for these strongly negative real interest rates. First, it may be simple inertia in responding to market forces: these were the rates used under the Soviet system, and these are the rates to use today. Second, the Saving Bank may be responding to government initiatives to hold deposit rates down so that lending rates can also be depressed -- a clear example of the financial repression phenomenon McKinnon (1973) discussed in developing countries. Third, the Saving Bank may have little incentive to attract more deposits. As Conway (1993) illustrates, the monopoly position of the bank vis-a-vis borrowers and the problems of imperfect information and enforcement all work to reduce the desired level of lending of the Saving Bank at any real interest rate. It will then set a deposit real interest rate at the lowest level consistent with attracting funds to finance the profit-maximizing level of lending. This level drops even lower since its deposits are presently guaranteed (in nominal terms) by the government in all these economies.

The financial position of the republics of the former Soviet Union has become much "shallower" in the period since independence. After a controlled rise in prices in mid-1991, a substantial liberalization of prices in former members of the Soviet Union occurred in January 1992. With price increases that reached 1000 percent in the first three months of 1992, the "ruble overhang" was eliminated. Since that time, price inflation has remained substantial.

#### **Private saving and fiscal deficits: intermediating between the two.**

The previous theoretical examples do not model the process of intermediation between private savers and the fiscal deficit. In the Soviet Union this process was nearly automatic: private saving was deposited with the public uni-bank known as Gosbank, and Gosbank then extended credit to public investment and consumption activities. The interest rate was positive in real terms, but did not fluctuate to clear the credit market. Rather, the public sector by plan had first claim on goods, and the private sector was able to consume only what remained. In a market economy this would have led to increased commodity prices (and a fall in  $p$ ), but in the command economy the result was rationing of consumption and consequent "forced saving". Saving in Gosbank was in excess of that desired by the households, but in the absence of goods to purchase the deposits accumulated into the

"ruble overhang". Since households in the Soviet Union were not integrated into international capital markets, imports did not serve as an alternative for the scarce domestic product.

With independence, fiscal deficits rose and private income fell. Together, these led to an imbalance in the capital market. There was further a loosening of restrictions on commodity markets; the result was an initial burst of inflation. The capital-market imbalance was worsened by the maintenance of artificially low nominal interest rates by the state banks. This combined with the inflationary burst to turn sharply negative the real interest rate on deposits and discourage private saving in the banking system.

There was thus an *ex ante* shortage of saving. The short-term solution to this shortage relied upon a variant of the "inflation tax". The private sector received income in nominal assets (cash or bank deposits). The fiscal deficit was financed through the banking system extension of directed credits refinanced by the central bank. The fiscal purchases were made with these credits; when the private sector spent its income it found the supply of goods limited. Excess demand then bid up the price of goods. In the notation of the previous section this registers as saving, since the real value of income exceeds the real value of consumption. From the household perspective, however, it is a tax because the real value of purchasing power in the present has been decreased by the inflation.

The key to the effectiveness of the tax was the private sector's continued holding of nominal assets denominated in the home currency. The private sector quickly recognized this and switched its holdings into assets denominated in other currencies. I denote these other assets as foreign-exchange holdings, either of cash or of deposits in the banking system. The tax became less and less effective as the tax base became less and less, and in the spirit of Cagan (1956) inflation entered an upward spiral.

#### **Implications of the theory for observed saving.**

Private saving is the deferral of consumption from the present to future periods. As noted above, it responds to price incentives. However, it is also subject in aggregate to the fundamental material balance constraints, especially when foreign lending is inelastically supplied. Saving reductions will be triggered by negative temporary output shocks and increases in government expenditure and taxation; it will also fall through increases in the value of the stock of inherited wealth. All of these scenarios will be accompanied by an increase in the relative price of goods at present, either by rising nominal interest rate or by increase in period-one price level.

The dynamics of adjustment to these shocks can be complex, as noted in the transition analysis above. The economies of the former Soviet Union faced two adjustments simultaneously. Negative output shocks reduced the volume of saving, *ceteris paribus*, while the deposit overhang led to a concurrent "shock" after price liberalization through appropriate adjustment of the current price for given interest rate to attain the equilibrium real interest rate consistent with the availability of consumption goods. This latter "shock" is analyzed in detail above, and indicates the evolution of nominal price through time to ensure material balance. The stock of nominal assets is declining over time, and the flow of real saving is kept constant through the adjustment in real wealth.

Government expenditure as considered in this section includes both current expenditure and investment. Reduction in government expenditure causes lower real interest rates and increased private consumption, other things equal. This expenditure reduction could follow from separate constraints through the government budget and financing. If the government is unable to obtain



resources from the private sector through taxation or saving mobilization, then private desired consumption will rise.

A reduction in formal-sector saving deposits need not be a reliable indicator of the flow of real saving in the economy. These deposits will fall into disfavor with savers if financial authorities impose artificially low real interest rates through nominal interest rate controls and persistent inflation due to government budget deficits. Other saving instruments will then provide a more effective hedge against interest-rate risk, and will absorb an increasing share of observed saving activity. These saving instruments will not at present provide resources for government investment or consumption, but will be tapped by others in the private sector to finance their own consumption or investment.

## **II. Does private saving still occur?**

The theoretical model presented earlier indicates that private saving will decline with worsening of the income of the private sector, and that this decline will be coincident with either high nominal interest rates or inflation as methods of achieving the equilibrium quantity of consumption. In practice, the adjustment mechanism has worked through inflation, since the economies have controlled nominal interest rates. The income shocks in the former Soviet economies have further been continuous and negative. Government expenditure programs have been reduced only little in the period of independence. Therefore it is a real possibility that private saving has disappeared, or dwindled to very little, during the post-independence period.

Despite the importance of informal sources and uses of household income, statistical information is unavailable. The governmental statistical agencies in a number of these countries continue to administer surveys that ask only about the formal sources of income; as a result, much economic activity goes unmeasured.<sup>14</sup> The mismeasurement of sources and uses of income has profound effects for policy discussions. In the absence of a complete cataloguing of resource flows, the analysis of consumer demand and saving will be skewed: there may be an underestimation of the volume of household saving that could be attracted to formal financial intermediation through appropriate use of incentives (e.g., positive real interest rates).

In collaboration with statisticians in Georgia and Kazakhstan, I have written and implemented a survey instrument that examines the importance of non-formal income and expenditures in the household budget. It is based upon the household flow of funds, and is designed to elicit information about the inflow of resources from all sources and the usage of this total inflow. The survey instruments as prepared for Georgia and Kazakhstan are provided in Annex B in English and Russian.

The flow of funds is illustrated in Figure 4. The sources of funds will equal the uses of funds. Formal-sector income will be only one of many sources of funds, while deposits in the formal banking system will be only one of many non-consumption uses of funds. Truthful responses to the

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<sup>14</sup> This lacuna in the reach of the statistical instruments was recently remarked in a Wall Street Journal article on Russian statistics. For example, Mr. Yuri Yurkov of Goskomstat-Russia is quoted as saying that a reported 29 percent drop in industrial output is "just a sign of a more market-oriented economy". Misha Belkindas of the World Bank states that "the old statistical system is breaking down, and the new one has yet to be built". See Claudia Rosett, "Figures Never Lie, but They Seldom Tell the Truth about the Russian Economy", Wall Street Journal, 1 July 1994.

series of questions of the survey provide a more detailed examination of household economic activity and saving than has heretofore been available.

The Flow of Funds survey was administered in August and November 1994 to 500 households in Georgia and in Kazakhstan. Its scope is quite limited in depth of questionnaire and in geographical reach of the survey. It does, however, provide a first look at the private-sector activity of households in these transition economies. In the following sections I report results from the first round of each of these surveys. The results reported here are not exhaustive, but are focused upon the saving behavior and foreign exchange use of the households. Conway (1994b) provides further detail on the income and expenditure characteristics of the sample.

#### **Results of the Georgia survey.**

The Tbilisi economy in each sampling period was one in which most expenditure is undertaken for subsistence. Of the aggregate sample, 81 percent of respondents indicated that more than half of available income in July was spent upon food alone; 33 percent indicated that over 80 percent of income goes for this use. In October, 92 percent of those sampled indicated that more than half of available income was spent upon food, and 64 percent indicated that over 80 percent of available income went to food purchase. Durable purchases were only reported in 7 instances in July and 10 instances in October. Roughly one-third of households reported clothing purchases in July, and only 22 percent did so in October.

The heads of households were asked whether their households had deposited funds in the last month in two types of accounts. The first was a commercial bank deposit in coupons (the national currency), while the second was a deposit in foreign exchange (typically US dollar) holdings. In July, only 19 households indicated making commercial-bank deposits in coupon; these were on average for 30 percent of total monthly income. 22 households indicated some deposit into hard-currency holdings during the previous month, with an average value of nearly 40 percent of total monthly income among those depositing. These activities were primarily undertaken by those with income primarily from the private sector: only 10 percent of public-sector households indicated use of hard-currency deposits, while the corresponding rate for private-sector households was 32 percent.<sup>15</sup> By October, 7 households indicated making coupon deposits, for an average of around 10 percent of total monthly income.

The heads of households were asked to indicate whether anyone in their household had received funds (through income, borrowing or exchange) in foreign currencies. These currencies include Russian rubles and US dollars. Of the total, 63 percent indicated yes and 37 percent indicated no in each sample. Those with substantial foreign-currency income were predominantly from the private sectors. Of those indicating in that a majority of household income in October came from the government sector, 92 percent indicated receiving less than half of total income in foreign currency. The corresponding percentages for "private sector" and "other", respectively, were 22 percent and 29

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<sup>15</sup> Those utilizing the coupon deposits were predominantly from the "other-income" sector, perhaps because their rental activity was conducted primarily in coupons.

percent.<sup>16</sup> Of total households, over 49 percent (for July) and 56 percent (in October) indicated that they relied upon these foreign currency receipts for more than half of total income to the household.

The uses of foreign currency ran the gamut of possible activities. Over 60 percent of those receiving foreign currency in July and over 80 percent in October indicated that they used it for purchase of goods and services.<sup>17</sup> Another 14 percent (in July) and 10 percent (in October) indicated holding it at home as saving, while 5 percent (in July, but zero in October) placed some in bank deposits. One respondent in August and 2 in November indicated that a portion of foreign currency had been placed with a trust company -- despite the wholesale failure of those institutions during the preceding months. Other uses included the payment of debts, lending to individuals and gifts to friends and family.

#### **Results of the Kazakhstan survey.**

The dominant source of income in the samples was the formal-sector salary, with 48 percent of the July households and 50 percent of the October households indicating it as the sole source. Another one-third in each sample indicated that more than half of total income came from that source. Only 11 percent of households in July and 6 percent in October indicated that no income came from formal salaries. Other sources of income were important to much smaller groups of respondents. In July, only 8 percent indicated that all or more than half of income came from government support (pensions, stipends), and 5 percent indicated sale of agricultural products as a source of more than half of income. Private business was responsible for a majority of income in 13 percent of the households, and interest from deposits or rentals was the majority source of income in only one household. In October, the percentages for non-formal income sources were the same, except that no one indicated sale of agricultural produce as a source of a majority of income and 2 households indicated interest or rental income as responsible for more than half of total income.

Households also obtained funds by selling possessions. Nearly 20 percent of the households surveyed in each sample indicated selling possessions. Of those, 42 percent sold possessions worth less than \$22 in July, while another 21 percent sold items valued between \$22 and \$44. In October, 26 percent of those selling possessions sold goods valued at \$20 or less, while an additional 22 percent sold items valued at \$20-40. In each sample, the remainder sold possessions of even higher value. In each sample these sales were disproportionately done by those in the non-formal sector, with 28 or 29 percent of those in the non-formal sector doing so and 16 percent from the formal sector.

Borrowing and dissaving by households was a common method for obtaining funds. Over 50 percent of the sample indicated that they had borrowed or dissaved during July, with the value of this dissaving exceeding \$40 during the month for one-third of these individuals. Others responding for July reported receiving back loans previously made to others; 22 percent of the sampled households indicated receiving such repayment of principal. In the November sample, 39 percent of those

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<sup>16</sup> Even this low percentage may be too high. It is illegal, though rarely enforced, to accept payment in foreign currencies without a license to do so. Those indicating no may be misrepresenting their position for fear of legal reprisal.

<sup>17</sup> The percentages quoted in this section will not sum to 100 percent, for some respondents indicated two or more uses for foreign currency.

surveyed indicated borrowing or dissaving in October, with 29 percent of these households indicating dissaving exceeding \$40 during that month. In October, 14 percent of the population received principal back from prior loans.

The responses on expenditure questions in Kazakhstan indicated less stringency of the budgetary situation when compared with Georgia. The households' share of funds devoted to food purchases, for example, were high but not extreme: only 7 percent of the population in both July and October indicated spending more than 80 percent of funds on food, with 50 percent (in July) and 33 percent (in October) reporting expenditure on food of 40-80 percent of income. Clothing and communal services (utilities) were significant expenditures for the majority of households; in July and October, for example, 32 and 26 percent, respectively, indicated expenditures of more than 20 percent of resources on clothing. Deposits in tenge accounts at commercial banks were reported by only 10 households in July, and for relatively small sums. In October there were no reported deposits among the 500 respondents. Holdings of foreign currency were indicated by 22 households in July and 31 households in October. Durable goods purchases were reported by 22 and 35 households in the two samples.

The responses on uses of funds were for the most part statistically indistinguishable by source of majority of income. Those categorized above as "formal sector" income earned spent a significantly larger (at the 95 percent level of confidence) share of resources on food, and a significantly small share on private business and trading activity.

Of the respondents for July, 18 percent (89 households) indicated receiving income or transfers denominated in foreign currency. This number was drawn disproportionately from those households in the non-formal sector: 38 percent of non-formal households reported foreign-currency income, while only 12 percent of formal-sector households did so. The majority of those receiving income reported receiving less than half their funds in foreign currency, while only 4 households indicated that all funds received were denominated in foreign currency. Five percent of households reported using foreign currency frequently or exclusively for food purchases, while 5 percent also indicated use of foreign currency frequently or exclusively for saving. Only 2 households reported using foreign currency frequently or exclusively in bank deposits. Three households reported using foreign currency in trust company deposits.

In October, 15 percent of households indicated receiving income or transfers denominated in foreign currency. Thirty-three percent of non-formal households reported foreign-currency income, while only 9 percent of formal-sector households did so. The majority of those receiving income once again reported receiving less than half their funds in foreign currency, while only 4 households indicated that all funds received were denominated in foreign currency. Four percent of households reported using foreign currency frequently or exclusively for food purchases, while 5 percent also indicated use of foreign currency frequently or exclusively for saving. Only 3 households reported using foreign currency frequently or exclusively in bank deposits, while there were no reported dealings with trust companies.

The use of foreign currency is centered in Almaty. The percentage of respondents in each city indicating a use of foreign currency and a reliance on foreign currency for denominating income is:

	July		October	
	Use	Receipt of over half of income	Use	Receipt of over half of income
Almaty	37	10	28	11
Aktyubinsk	13	4	10	3
Chimkent	23	5	27	7
Ust Kamenogorsk	9	4	5	0
Kokshetau/Kustanai	24	9	14	4
Zhezkazgan	11	0	18	3

The dependence upon foreign currency as a store of value also differs greatly across regions. In Chimkent and Kustanai over 20 percent of respondents in October indicated holdings of foreign currency as saving instruments, while in the other cities the comparable percentages were below 5 percent.

#### Conclusions on household saving in Georgia and Kazakhstan.

The survey results confirm certain characteristics of transactions in these countries that are evident to all observers. First, currency substitution is advanced in both economies (and throughout the former Soviet Union), with US dollars the currency of choice for saving and durable purchases and Russian rubles popular in Georgia for non-durable purchases. Second, expenditures are concentrated on necessities, especially food, in both countries. In Georgia this has reached an extreme concentration. Third, the income distribution in both countries is unequal, with evidence both of greater inequality and greater absolute poverty in Georgia.

There are other features of the two economies that observers have suspected but have been unable to affirm. The true usefulness of this survey has been in the quantification of these.

- The sources of income for households in the two economies have diverged sharply since independence. At that time, nearly all households received a majority of income from formal-sector (mostly government) sources. In Kazakhstan this share of households remains high at 80 percent, while in Georgia the transition has led to a minority of households (29 percent in October 1994) with predominantly government incomes. Private business activities were predominant in 39 percent of Georgian households but only 12 percent of Kazakhstan households in October.

- The sale of possessions has become a significant source of income for households in both countries. In July, 25 percent of Georgian households and 20 percent of Kazakhstan households indicated such sales. In both countries, the percentage of households involved in such activities fell from July to October, although more strikingly in Georgia. There is an interesting divergence in these activities as well -- in Georgia such sales were more common among those dependent upon government salaries, while in Kazakhstan they were more common among the families dependent upon non-formal income.

- Borrowing and dissaving are also endemic among the households in both countries. Of

Georgian respondents 34 percent indicated that they had undertaken these activities in July, while in Kazakhstan over 50 percent of respondents had done so. The amounts borrowed or dissaved were also larger in Kazakhstan. Once again, there was a decline in this percentage from July to October in both countries, although in Kazakhstan the percentage remained relatively high at 39 percent of households.

- Expenditures on food take up a large share of household purchasing power, but the Georgian case is quite extreme. In Georgia and Kazakhstan 33 and 3 percent of households, respectively, reported spending over 80 percent of income on food in July. Those households reporting expenditures of over 60 percent of income on food were 63 percent of the Georgian sample and 17 percent of the Kazakhstan sample. In October the Georgian situation had worsened: 44 percent reported expenditures in excess of 80 percent of income on food, and 74 percent expenditures in excess of 60 percent. In Kazakhstan, by contrast, the percentage of households with dominant food expenditures shrank: 3 percent in the over-80 percent category and 11 percent in the over-60 percent category.

- Saving activities still continue in both countries, but they rarely take advantage of the formal banking system. National-currency accounts were reported by a handful of households in each country. Foreign-currency deposits were equally likely in the two countries in July with 4 percent of households in Kazakhstan. By October such deposits were more likely in Kazakhstan (6 percent of households) but not observed in the Georgian sample. Holding of foreign currency at home was reported by 10 percent of both Georgian and Kazakhstan households in July; by October the percentage in Kazakhstan remained constant while that in Georgia fell to 7 percent of households. Despite the prominence of "trust companies" in recent news in both countries, only a handful of respondents in each country indicated participation in these financial intermediaries.

These results contrast with the evidence from Family Budget Surveys in Belarus: Conway (1995). These surveys indicate that 30 percent of the population continued in July 1994 to rely upon the formal-sector financial institutions (primarily the Saving Bank) for intermediation and deposit services.

#### **Saving and the distribution of income in Ukraine.**

I was unable to organize a survey of household activity for Ukraine, and thus have not comparable survey results on saving or the use of saving instruments. I do have some evidence on saving activity from the household budget survey conducted in Ukraine for the fourth quarter of 1993; these results are reported in Table 1.

Saving as a percentage of income was apparently well below its performance before independence. For the period 1985-1990, national saving in the Soviet Union averaged 25 percent of national income, while in the last quarter of 1993 the Ukrainian household saving rate was only 5 percent of household income. As Table 1 makes clear, this small positive rate masks a wide dispersion in the degree of saving or dissaving among households. Those at the low end of the income distribution were dissaving substantially, either through liquidation of bank balances (although these had depreciated greatly by this time) or through sale of possessions. Those at the upper end were saving on average about 15 percent of household income -- a substantial amount, but below the average for the entire economy of 5 years before.

### III. The collapse of formal-sector deposit of saving: evidence from four countries.

In the last years of the Soviet Union, the share of national product represented by saving deposits was steadily rising. This phenomenon became known as the ruble overhang, and represented the forced saving of individuals unable to find goods to purchase at the controlled prices of the economy at that time. As Figure 5 indicates, the share of currency in circulation to GNP rose from under 10 percent in 1985 to nearly 15 percent in 1990, while the share of household deposits in the banking system rose from 28 percent in 1985 to nearly 40 percent in 1990. This suppressed purchasing power would fuel the burst of inflation observed with independence in the newly independent states. Available indicators suggest that Belarus and Ukraine reacted similarly to the Soviet Union as a whole during this period of overhang.

Despite the suppression of purchasing power, there was no apparent bias away from deposits with the formal banking system. The relative returns on cash and deposits remained nearly constant in the period through 1990, and this was reflected in the proportional allocation of the ruble overhang. During the build-up from 1985 to 1990, the ratio of household deposits to cash in circulation in the Soviet Union remained nearly constant at 3.2 to unity.

#### The deposit-inflation nexus.

With the onset of inflation in 1991, the relative attractiveness of banking deposits denominated in domestic currency declined sharply. Those holding wealth in nominal domestic assets (including government entitlement programs) were made poorer by inflation relative to those with the ability to diversify assets into real property and hard-currency instruments. This was evident in the evolution of real currency and deposit holdings for the period 1989 - 1993 in Belarus illustrated in Figure 6. The data points represent the currency and deposits as of the end of the stated year defined in terms of 1989 rubles.<sup>18</sup> Inflation eroded the real value of nominal assets, as indicated by the downward sloping lines. In the year 1992, for example, the real value of the stock of deposits of the population fell from 13.3 billion to 2.2 billion rubles. In each period there was an addition to the real value of the stock of deposits through the inflow of saving resources to those instruments: this is indicated in the figure by the vertical arrows. Although the magnitudes for 1993 appear small in 1989 rubles, the combined real increase in holdings of these two instruments represented saving of over 5 percent of GDP in Belarus.

Only in 1990 did the increase in holdings compensate for the loss in value due to inflation; the real stocks of these instruments were falling thereafter. The lesson to private savers of 1992 and 1993 in Figure 6 must be not to do it in domestic currency-denominated assets: the value of holdings at the beginning of each year dwindled to almost zero by the end of the year. There was also a shift in the nominal instruments held by the private sector. The share of currency emission in the inducement of private saving had been growing over the years -- nearly zero in 1990, but playing the dominant role in 1993. As noted above, this indicated the growing reliance of the government upon the "inflation tax" to effect the internal transfer.

The loss in private purchasing power is striking. Conversion of the loss in real purchasing power implied by the inflation-induced devaluation of currency and deposit holdings of the population

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<sup>18</sup> The GDP deflator is used to calculate these: inflation rates for the years 1990 through 1993 were 5, 102, 1099 and 1425 percent per annum, respectively.

into 1993 rubles yields a total devaluation of the stock of nominal wealth equal to 53 percent of GDP in 1993.

Inflation was also a problem in Ukraine, as was the flight from the karbovanets-denominated instruments of the financial sector. This is illustrated in Figure 7. Banking deposits are separated into four components in the two panels; the first panel indicates the ratio of sight deposits (both by enterprises and by households) to cash in circulation, while the second panel reports the ratios of time deposits to cash in circulation. These include only deposits in karbovanets (or, before that, in rubles), and does not include the use of foreign exchange deposits.

A similar pattern is evident in each panel. Household deposit holdings in karbovanets began at large multiples of the quantity of cash in circulation but rapidly dwindled to nearly zero. From the beginning of 1993 it is clear that households have ceased to rely upon the banking sector as a store of wealth. Enterprise deposit holdings have followed an inverted-U pattern in both cases. Sight deposits and cash are the traditional method for enterprises to hold balances for day-to-day expenditures, and reliance on sight deposits grew with the government use of directed credits through the banking system to finance enterprise operations. Time deposits also became relatively attractive during the early months of 1993; given the low interest rates on directed credits, maintenance of time deposits may well have been more attractive than production.

Negative real interest rates on deposits were one cause of the households' flight from karbovanets banking deposits. As Table 2 indicates, ex post monthly real interest rates were negative throughout 1993. Not surprisingly, households sought to reallocate saving away from the banking sector. However, no matter how negative the deposit rate, the refinance credits were usually more negative -- enterprises were thus shielded from these losses as they held borrowed funds on account.

There was a movement to positive real interest rates on deposits in early 1994. This should have caused an uptick in the use of deposits by households. Such an uptick is there, though small, in the holdings of time deposits relative to cash in the first four months of 1994; see Figure 7.

#### **The attraction of foreign exchange in an inflationary environment.**

The holding of foreign exchange provides a hedge against the inflation tax on accumulated wealth. This alternative has become quite prevalent in the former Soviet economies, as is evident in the very liquid informal markets in foreign currencies. One hedge is of course to hold the banknotes of the foreign currency, while another is to make foreign-exchange denominated deposits with a financial intermediary. This latter strategy has proved quite lucrative for private savers. Commercial banks have been quite active in offering these deposits, as noted in the following section of this report, as have "trust companies". The surveys reported above provide the only available consistent evidence on holdings of foreign banknotes or use of non-bank financial intermediaries, but commercial-bank deposits in foreign exchange provide a lower bound on the importance of these deposits in attracting wealth.

In the Ukraine, foreign currency deposits grew rapidly relative to cash in circulation. These deposits were not offered in Ukraine prior to independence, but they became attractive in the environment of extreme inflation in 1992 and 1993. The value of these peaked in July 1993 and was



declining thereafter.<sup>19</sup> There was notably a decline in foreign-exchange deposits in early 1994 that was a mirror image of the upturn in household holdings of karbovantsy time deposits.

Foreign-exchange deposits also became more popular in Georgia. The monetary survey for Georgia is presented in Tables 3a and 3b for the period since December 1991. As the memorandum item indicates, domestic credit has grown strongly during this period, with average monthly growth rate of 38.9 percent over the period January 1993 - August 1994. This has not been uniform growth; domestic credit creation has peaked in the spring and the fall as planting- and harvest-related activities have been financed.<sup>20</sup> A relatively small fraction of the domestic credit creation was allocated to financing of general government (i.e., the government budget); the overwhelming majority was provided to state enterprises to finance their activities. However, the nominal interest rate on these credits was in general so low relative to inflation that repayment did not replenish the credit fund; the cost was borne through extreme inflation.

Broad money represents the liabilities of the financial sector. These liabilities have evolved over time to include an increasing share of foreign-currency deposits. Banking deposits denominated in coupons have declined as a share of domestic credit over this period, while currency outside banks has followed a cycle from rather low percentages of domestic credit in early 1993 (the period of currency shortages) through elevated percentages in late 1993, to declining shares in 1994 concluding at a quite low percentage that reflects the little real use for the coupon in the current economy. Banking deposits in foreign currency, by contrast, rose from zero at independence to a peak of 51 percent of domestic credit in January 1994. From that time until August 1994 the share of foreign-exchange deposits in domestic credit declined, reflecting in part the movement of such funds to the trust companies.

Foreign exchange here refers to non-menati currencies, although Russian rubles and US dollars were used for the majority of transactions in Georgia. There were liquid markets for foreign exchange in rubles or dollars -- the bazaar and exchange shops provide exchange for individual transactions, while the Tbilisi Interbank Exchange provided auctions for the larger transactions of commercial banks for their clients (and on their own account).

#### **Financial-sector response.**

The banking system in these countries was slow to adjust to the inflationary environment, but private banks led the way in introducing innovations to attract deposits. One such innovation was the foreign-exchange deposit. Another was the adjustment of nominal interest rates and maturities on domestic currency-denominated instruments to reflect the more inflationary and uncertain environment. The state commercial banks, and in particular the successors to the Soviet Saving

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<sup>19</sup> This decline after July 1993 may be due to the exchange rate used to convert the foreign-currency values into karbovantsy. There was a substantial overvaluation of the official exchange rate during the last half of 1993 and early 1994, and this overvaluation may have placed a downward bias on the share of foreign-currency deposits in the monetary survey.

<sup>20</sup> The indication of 88 percent growth in domestic credit in August 1994 is misleading, as this reflects the creation of temporary credit facilities to clear arrears from state enterprises to state commercial banks. This operation allowed the state commercial banks to retire overdrafts with the NBS, and left little net effect in credit creation.

Bank, were much slower in adjusting to these new financial conditions; as a result, the share of saving deposited in those traditional repositories fell sharply during this period.

The situation in Ukraine reflects this evolution. By May 1994 the banking system in Ukraine had adjusted to the preferences of its depositors and was offering a menu of deposits variegated by maturity and return. As Figure 8 indicates, the depositors (and the banks) in Ukraine favored shorter maturities for deposits as a means for hedging risks.<sup>21</sup> The annualized interest rates on household deposits exhibited a positively sloped yield curve, with interest rates well in excess of the annualized monthly inflation rate observed at that time. The enterprise yield curve turned down in the maturities past 6 months, indicating that those deposits may not be as responsive to real interest rates as they are to other factors (e.g., the contingency of future lending on present deposits).

This evolution has important consequences for government deficits and inflation. The holdings of foreign exchange or foreign exchange-denominated instruments represents an ever-increasing share of private saving that the government cannot at present tap. Commercial banks with foreign-exchange deposits will not willingly intermediate for the government's borrowing needs in domestic currency at present low nominal interest rates -- this represents a subsidy to the government that the commercial banks cannot afford. The government is forced in this instance either to issue its own foreign exchange-denominated debt at positive real interest rates or to raise its return on domestic currency-denominated debt to positive real levels. In either case, the real cost of the borrowing rises sharply.

Kazakhstan is a good example of this process. It was characterized in 1994 by a small volume of private saving. Private investors and commercial banks attract the funds of those who did save, and this saving was made available to private investors and traders. The government budget was not competitive in its efforts to attract saving, and relied upon currency emission for financing. The government is able to "attract" saving in this case only through exploitation of the private sector's need for currency; it has as cost the reduction in the real value of original nominal financial assets known as the inflation tax. The banking system was slow to attract saving from the population or enterprises in domestic currency, as it was able to rely upon National Bank of Kazakhstan (NBK) refinancing credits. In the end, this circuit of financing only enriched the bankers without attracting any real resources -- the NBK was in the end been dependent upon inflation to achieve its financial goals.

The change in the pattern of saving also has implications for resource allocation. Saving in foreign exchange would be beneficial if intermediaries existed to ensure that the funds were allocated to high-return investment activities. In fact, however, the intermediaries in foreign exchange focus upon the financing of trade expeditions to bring back consumer goods to the countries. These goods are imperfect substitutes for those available for domestic currency. Consumption thus rises, inflation hits the domestic economy and the domestic currency depreciates against foreign exchange. The population also made "deposits" with non-banking intermediaries such as Smagulov and Company; these investments were denominated in tenge for one-month maturity and were yielding 600 percent annual interest (50 percent per month). This saving was however financing the purchases of the

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<sup>21</sup> The bars in this figure indicate the shares of total deposits (household plus enterprise) that fall into each category. The total shares sum to 500 so that the scales of the two sets of information can be placed in the figure.

company.

This financial-market experience in Kazakhstan provides two lessons to the government's economic strategists. First, the real cost of financing the ongoing budget deficit was quite high. The credit auctions coordinated by the NBK and the interest rates offered on dollar deposits at the commercial banks indicated that saving was quite scarce. This scarce saving was being attracted by private actors -- commercial banks and "trust companies" like Smagulov and Company -- through offering higher real interest rates than were available in the Narodnyi Bank or other state commercial banks. Second, there is an opportunity for the government to attract this saving if it is willing to raise the interest rate that it pays on borrowed funds to compete with these private actors.

#### **IV. Other financial depositories for private saving.**

As noted above, saving in the Soviet Union has historically taken place through deposit in long-term financial instruments in the formal banking sector, primarily in the Saving Bank (or Sberbank). These deposits became unattractive as stores of wealth during the extreme inflation after independence, and savers were attracted to alternative instruments. Some of these alternative instruments were provided by private commercial banks, while others were made available by non-bank financial institutions.

Although there has been a general tendency within the former Soviet economies toward disintermediation, certain individual banks have been quite successful at operating and attracting deposits in this environment. I have surveyed commercial banks in Belarus, Georgia, Kazakhstan and Ukraine. The successful banks have offered high nominal interest rates, often on hard-currency deposits, and have introduced other innovations designed to entice depositors and establish their confidence. Their major competition has come from non-bank financial institutions also promising high returns on deposits or from individual hoarding of foreign exchange banknotes. The successor banks to the Soviet Saving Bank have as a rule been quite slow to innovate in the post-independence inflationary environment; as a result, their historical monopoly in the provision of deposits has been diminished in many of these countries.

In this section of the report I summarize conclusions on other depositories for private saving. Greater detail on individual intermediaries and the financial systems of individual countries is provided in Annex C.

Although there has been substantial variation in the development of financial sectors in transition economies, there are two stylized facts that characterize this evolution. First, the financial sector has split into two markets with one denominated in the domestic currency and the other denominated in foreign exchange. Second, there has been a profusion of commercial banks chartered in the transition economies, but very few of these offer opportunities for saving. Third, these banks have chosen one or the other market to work in -- most specialize in either domestic-currency or foreign-exchange financial instruments. Fourth, the legal framework has been conducive as well to the growth of non-bank financial intermediaries offering financial transactions, often promising higher returns than the chartered institutions.

#### **Financial market bifurcation.**

A bifurcation of financial markets emerged in these countries soon after independence. The traditional financial market used the ruble, or the successor currency of the state. The dominant

financial intermediaries were the successors to the state banks -- Promstroibank, Agroprombank, Kredsotsbank, Vnesheconombank and Sberbank. The government or state enterprises were net users of funds in this market, while the households were on net the source of funds. An alternative financial market grew up in hard currency. The private commercial banks and trust companies were the intermediaries in this market, and the sources and uses of funds were largely households and private enterprises. The real interest rate on deposits diverged sharply in the two markets; in the traditional market the real interest rate was strongly negative, while in the alternative market the real interest rate was strongly positive.

The credits in local currency were not allocated by an economic competition, but were directed by the government to enterprises, collectives or individuals as it suited the advancement of government policy. These credits were in the pre-independence days offered at positive real interest rate, but since independence and the onset of inflation the nominal interest rate on these loans has lagged significantly behind the inflation rate. The government's credit policy has thus had a substantial subsidy component, favoring those able to receive these credits. The maturity on these loans has varied, but in many cases (e.g., the loans of Agriprombank for the planting season) these are for 6 months to one year.

These directed credits were not offered by the central bank, but by the state commercial banks with whom the targeted enterprises had accounts. These state-owned banks were then provided refinance credit by the central bank at a slightly lower nominal interest rate. Although the central bank in principle offset these credits with a claim against the resources of the Ministry of Finance, in practice the government resources were insufficient to cover the volume of refinance credit issued. There were similarly only small amounts of private saving deposited with the state commercial banks (e.g., Sberbank). The public-sector borrowing requirement was thus financed on the whole through the "inflation tax" described earlier. Competition did not drive up the real interest rate and thus encourage greater voluntary saving because those enterprises receiving credits were not profitable on the whole -- the government supported them at least in part through the credit subsidy inherent in the low nominal interest rate. These enterprises had no incentive to bid up the cost of funds.

Most credits extended without central-bank refinancing are now denominated in foreign currencies, mainly US dollars or Russian rubles. These loans are extended almost always as working capital for trade transactions.<sup>22</sup> These are short-term loans with maturities usually in the 1- to 3-month range. The interest rates charged on these loans are quite high by international standards, with the most conservative banks charging 15-25 percent annual rate of interest in US dollars, and with more aggressive banks charging that amount of interest per month. There is in addition a requirement of collateral in precious metals or real estate on these loans, with the value of the collateral between

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<sup>22</sup> There is a paradox involved in the rapid growth of these foreign-exchange financial markets. They rely upon the existence within the economy of a stock of foreign currency that can be borrowed and lent, but this stock of foreign currency can only be accumulated through a succession of current account surpluses or capital outflows. The official statistics for these countries since independence indicate a series of current account deficits and capital inflows greater than outflows; if true, the stock of foreign currency in circulation should be reduced over time rather than increased. Transactions not captured in official statistics are seemingly characterized by large trade surpluses (as for example in international sales of resource stocks) -- or the countries are home to an ability to counterfeit the foreign currencies.

150-300 percent of the loan. Not surprisingly, given the high monthly interest rate, the more aggressive banks report a large share of loans delinquent at maturity.<sup>23</sup>

These foreign-currency credits are offered to both enterprises and individuals. The prototypical credit will finance an international trading transaction. Goods from abroad are purchased in foreign markets -- Turkey, India, Germany -- and are imported into Georgia. They are then sold in the bazaar at a substantial mark-up, with the proceeds being used to retire the loan. There is clearly substantial risk involved in these transactions, given the fickle taste and small effective demand of the consumers, but enough success stories have surfaced to encourage a population desperate to retain past living standards to pledge jewelry and apartments against such a loan. The result of this intermediation is the use of saving for the financing of consumption (usually, luxury consumption) expenditures. The high cost of financing working capital for a productive transaction is evident, and leaders of the banking sector indicate that very few loans are provided for productive or investment purposes.

The high positive real interest rate on US dollar credits appears to be the product of a number of factors. First is the probability of non-repayment (as noted above). Second, the variable costs of banking activity are quite high. Third, as theory demonstrates, an economy with excess demand for present consumption (as above) without access to international credits will drive up the real interest rate to induce those with loanable funds to part with them. Fourth, and most fundamentally, there is little saving at present. Although such saving is held predominantly in foreign exchange or in real assets, this flow of saving is small relative to the demand by traders. This excess demand for loanable funds causes the high real interest rates in the hard-currency financial market; these more accurately reflect the premium put upon consumption today by the residents of these countries.

The bifurcation in credit markets extends to the variety of deposits observed in the banking system. There is little deposit activity in domestic currency by individuals; what deposit activity there is represents enterprises holding the balance of directed credits until its disbursement. Evidence from Georgia's monetary survey indicates that banking deposits in coupons were roughly stable at 20 percent of domestic credit in the months January-August 1994, while banking deposits in foreign currencies averaged in excess of 40 percent of domestic credit. This ascendancy of foreign-exchange deposits will be accentuated in later periods, as noted below.

The large differential in interest rates between the domestic-currency and foreign-exchange financial markets provides a lucrative speculative opportunity. Those actors with an ability to borrow in domestic currency and to lend in foreign currency have gained large windfall profits. The interest rates are not bid together by speculation because the supply of domestic-currency credits at low interest rate is limited to the directed credits of the government.<sup>24</sup> However, the continuing supply of

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<sup>23</sup> For example, Iberiabank reported 30 percent delinquency at maturity -- although they were rolling over the loans and anticipated being paid in full (with interest) eventually.

<sup>24</sup> Although there are no systematic data, there were numerous reports that recipients of directed credits found it profitable simply to convert the principal to foreign exchange and to hold that currency to the term of the loan. Then a small fraction of the principal was re-converted to domestic currency to provide both principal repayment and interest. In this case, the directed credit clearly did not go as directed. This use of directed credits, however, provided a persistent demand for foreign

these credits provided constant depreciating pressure on the country's exchange rate.

**The proliferation of commercial banks and trust companies.**

There has been tremendous growth in the number of commercial banks in operation in the former Soviet economies since independence. The growth began in 1987 with the restructuring of the operations of Gosbank and the chartering of non-governmental cooperative banks. However, the number has increased exponentially since independence in these countries. From less than 10 banks in each country at independence the number rose by mid-1994 to over 200 in Kazakhstan, 230 in Georgia, and similar explosions in Belarus and Ukraine.

This growth did not in general indicate increased opportunity for or competition to attract depositors. Commercial banks found "origination" of directed credits refinanced by the national bank to be quite profitable. Attraction of deposits was more expensive, given the high costs of establishing branch offices, and required more detailed record-keeping. Finally, that activity involved some risk to the bank if assets and liabilities were not matched as to maturity and interest rate. This risk did not occur in the origination market. Finally, the deposits denominated in the national currency were an inherently poor saving instrument during a period of extreme inflation, but the banks were not in a strong enough financial position to offer inflation-hedging improvements to these instruments (e.g., indexed interest rates).

Commercial banks were chartered in great number. A large subset of these also qualified for "general licenses" that permitted the bank to denominate its deposit and lending activity either in national currency or foreign exchange. The competition for depositors in fact surfaced in the foreign-exchange transactions, since the banks had an excess demand for foreign-exchange credits. Interest rates in these markets were bid up to extremely high levels. This reflected in part the profitability of international trading transactions, but also in part the emergence of Ponzi schemes and ill-advised financial transactions in the underregulated markets of these economies.

**The "trust company" phenomenon.**

Commercial banks were not the only financial institutions to thrive in the volatile financial environment after independence; non-bank financial institutions also proliferated. These took a number of forms, from foreign exchange bureaus to Lombard companies (or pawnshops), but the most famous (or infamous) were the "trust companies". These were non-bank institutions that offered deposits or shares with interest rates or capital gains promised to exceed returns available in the banking system. The MMM corporation of Moscow was the best-known of these, but similar institutions grew up in all the countries observed.

These trust companies operated in a standard manner. Each sold monthly certificates. The firm set a buying and selling price each month, and these prices rose from month to month to guarantee a positive return to investors. For example, certificates in the Golden Bowl Corporation of Georgia had risen in value from \$.98-\$1 in June 1994 to \$2.30-\$2.50 in October 1994 for a compounded monthly return of about 25 percent. These trust companies were not chartered by the government and were not typically regulated by the national bank or any other government organization.

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exchange that caused the nominal exchange rates at the bazaar in these countries to depreciate more rapidly than the inflation differential, thus causing substantial undervaluation of the currency.

The first wave of trust companies attracted clients with the promise of -- and initial success in returning -- 20 percent return per month on deposits. Some of these may have been pure "Ponzi" schemes, but others were financial intermediaries with ties to corporations able to turn high short-term profits through trading operations. These organizations were able to offer such high returns because of the profits from trading activities and because deposits were loaned out completely -- negligible reserves were held for repurchase of deposit certificates. The success of these corporations attracted competitors, both from newly created trust companies and from more aggressive commercial banks. The cash flow from deposit receipts and repayments of lending was sufficient to cover withdrawals until the failure of the Russian firm MMM. During the time of the MMM crisis in Moscow, depositors in other countries approached their trust companies to redeem their certificates. The trust company was typically unable to meet these demands, and was forced to close. In Georgia there were 15 to 20 such companies during their heyday in the first half of 1994, but few remained after the MMM crisis.

These failures were liquidity-driven. Subsequent failures were related to insolvency, and occurred in one of two ways. The first was through theft: for example, the Golden Bowl Corporation failed when the chairman fled the country (reportedly with \$60 million). Smagulov and Company in Kazakhstan similarly closed in late 1994 after a year of operation as a "trust company"; Mr. Smagulov was reported to be in Australia. The second was through ineptitude. Here, the case of Innovation Bank in Georgia is instructive. This bank was backed by the Ministry of Internal Affairs and offered high interest rates on deposits. The leaders of the bank made a number of improper loans, including a 400,000 USD loan to a woman friend, while paid-in capital was valued at less than a tenth of that. Most loans were made to the founders of the Bank. Each borrower proposed a productive use for the loan, but these were not well thought out and not well screened by the bank. The bank was warned about its behavior a number of times by the National Bank of Georgia before it finally failed.

Much "trust company" activity was fraudulent. There were also reports, however, of companies resorting to formation of trust companies because of the shortage of available credit in the banking system. This is comparable to, though less dramatic than, the formation of a commercial bank by a trading company. In each case the shortage of credit from the banking system encouraged the formation of a "captive" financial intermediary.

#### **Dynamic growth of foreign-exchange deposits with private commercial banks.**

The market for foreign-exchange deposits and credits was a much freer and more dynamic environment for financial activity. The fastest-growing banks were private commercial banks that specialized in this market. Although these private banks had international correspondents, these relationships did not extend to credit lines; as a result, the banks were constrained in their ability to offer credits by the volume of deposits they could attract. The interest rates offered on these deposits were thus well in excess of the international rate. Foreign-exchange licenses were necessary in each country before banks could participate in these transactions, and the qualifications for obtaining these licenses were fairly strict. As a result, private commercial banks were separated into two groups. Those that had obtained the proper licenses were able to grow quickly, while those without such licenses stagnated.

Banks that made the strategic decision to specialize in domestic-currency transactions were typically hamstrung by the unattractiveness of nominal domestic-currency instruments in a period of extreme inflation. In Kazakhstan and Georgia, respectively, Alatabank and Kerdsobank were two

examples: private banks, but without the dynamism of those specializing in foreign-exchange transactions. This tendency existed, but was less pronounced, in Ukraine; there, Inkobank became the largest private bank through a concentration on foreign-exchange instruments while Agiobank was able to expand its operations through reliance upon innovative and high-yield instruments denominated in karbovanets for attracting private depositors.

### **Specialization and sluggish adjustment of state commercial banks.**

With the bifurcation of the financial markets, the former state commercial banks (other than the Saving Bank) found it profitable to act as the originator of directed credits in domestic currency that the national banks refinanced. The return to the bank was in effect indexed to inflation, since the "fee" received was a fixed percent of the value of the directed credit. Given this secure and relatively stable source of funds, these banks did not find it profitable to attract deposits in domestic currency. This proved to be true across countries for the successor banks to Agroprombank (Agro-Industry Bank) and Promstroibank (Industry Bank). The sole exception proved to be during periods of cash shortage; in those circumstances these banks (for example, Promstroibank of Belarus) solicited deposits from households because the deposits would be made in domestic banknotes that could be redistributed to other clients.

The successors to the Saving Bank in each country were rather slow to adjust to the new economic environment. The banks remained state banks for some time in all countries, and their management thus remained under the direction of the state bureaucracy. As a result, the Saving Bank was not allowed in most instances to capitalize upon its existing monopoly in the collection of domestic-currency deposits. Interest rates paid on deposits were adjusted infrequently, and by too little to be attractive to depositors; the maturity and other characteristics of deposits were not adjusted to the inflationary post-independence economic climate. As a result, the Saving Bank became progressively less dominant as an intermediary for private saving, although its extensive network of branches made it the sole provider of financial services for much of the population.

### **V. Conclusions and suggested extensions.**

The major conclusions of this research project can be summarized as follows.

- Private saving has assuredly declined in the period since independence for the four countries considered here. It is necessary to correct for the "forced saving" of the last years of the Soviet regime and to recognize that there has been substantial saving outside the formal financial system since independence. However, after those corrections the evidence of the surveys and official statistics suggests that private saving is down.
- Private saving is greater than that observed as deposits in the banking system. With independence and the sluggishness of the state commercial banks in adjusting interest rates to respond to the inflationary episodes, alternative financial instruments became more attractive than formal deposits. These included holding of foreign exchange, self-finance and shares in "trust companies". Private commercial banks eventually offered foreign exchange-denominated deposits to attract some of these funds, but other forms of saving still abound. I am unable to provide a specific estimate of that alternative saving, but I do provide evidence of its existence in survey results and reports from the countries examined.
- Private saving does respond to the incentives of positive real interest rates. Here it is



impossible to disaggregate two effects: the pure saving effect and that of portfolio allocation of that saving. The evidence provided here suggests that portfolios have been skewed strikingly toward those instruments with positive real interest rates. It is impossible with present data to separate convincingly the real interest rate effect from the "income effect" that has led to lower saving overall, so that I have not yet identified the contribution of real interest rates to the saving process. This is an interesting direction for future research.

• The governments of these economies have not yet tapped effectively the continuing saving. Rather, they have relied upon the use of credit creation to finance expenditures; this is effective only through stimulating extreme inflation. Proper use of existing private saving will require a reconsideration of government policies to recognize the true opportunity cost of borrowed funds, and the offering of either (a) debt instruments indexed to the exchange rate or (b) debt instruments with interest rates as high as those on deposits at reputable commercial banks. This step will no doubt be coincident with a decision to cut government expenditures, since use of these debt instruments implies a positive real cost to borrowing. It promises, however, a non-inflationary source of deficit finance.

This research report represents the beginning of study of an important question. As noted above, there are issues not resolved in this report; these can only be addressed with confidence by the amassing and consolidating of additional data. The surveys of private saving behavior reported here are an important first step, and I hope that such information will be collected in future survey efforts. In addition, more work on the transition in the financial sector will be fruitful. There is a thin line between the dynamic banks and the "Ponzi" banks, and regulation must be sophisticated to cull the latter while allowing the former to thrive. The information of this report represents a first step in examining that question.

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Table 1

	Distribution of Income and Expenditure in Ukraine for the fourth quarter of 1993, taken from household budgets								
	Monthly Household Income (in thousands of karbovanets)								
	All	Less than 120	From 120 to 160	From 160 to 200	From 200 to 240	From 240 to 300	From 300 to 400	From 400 to 600	More than 600
<b>Total Income</b>	100	100	100	100	100	100	100	100	100
Wages (of public and private sectors)	58.5	60.3	60.3	60.1	62.0	59.9	59.5	57.9	55.8
Pensions, stipends and gifts	16.9	23.8	21.5	20.0	18.4	18.3	17.1	16.1	11.5
Sale of products	19.7	15.6	18.0	18.4	18.4	19.0	19.1	20.5	22.6
Income from other sources	4.9	0.3	0.2	1.5	1.2	2.8	4.3	5.5	10.1
<b>Expenditures (as a share of income)</b>									
Foodstuffs	57.4	87.9	75.4	71.0	66.5	62.2	57.4	51.2	38.0
Other goods	20.1	11.9	13.1	16.8	16.1	17.6	19.8	21.6	29.3
Alcoholic beverages	2.5	1.2	1.9	2.1	2.6	2.5	2.5	2.7	2.6
Communal services	2.1	2.2	2.3	2.0	2.0	2.0	1.8	1.7	1.5
Other services	3.9	4.0	4.6	4.2	4.5	4.4	4.1	4.3	3.4
Taxes	5.5	4.0	4.6	4.9	4.7	5.3	5.6	6.1	5.9
Other expenses	3.5	3.3	1.9	2.5	2.6	3.1	3.8	4.4	4.1
<b>Saving (as residual)</b>	5.0	-14.5	-3.8	-3.5	1.0	2.9	5.0	8.0	15.2
<b>Memorandum:</b>		Less than	\$4.70 -	\$6.27 -	\$7.84 -	\$9.40 -	\$11.76 -	\$15.68 -	More than
US dollar equivalent on 15 November in informal market		\$4.70	6.27	\$7.84	\$9.40	\$11.76	\$15.68	\$23.52	\$23.52

Source: Ministry of Statistics; data collection network.

**Table 2**  
**Real Interest Rates in Ukraine**  
 Average interest rate minus observed inflation rate

			Refinance Credits	Commercial Credits	Deposits
1993	January		-41.1	-40.8	-41.5
	February		-22.4	-18.8	-19.1
	March		-13.8	-10	-11.2
	April		-10.8	-8.2	-10.1
	May		-1.2	-7.7	-1.9
	June		-26.0	-20.4	-24.2
	July		-19.1	-8.1	-8.0
	August		-19.0	-9.4	-11.5
	September		-36.8	-28.5	-30.4
	October		-37.1	-29.7	-32.7
	November		-26.7	-11.6	-14.5
	December		-32.9	-24.7	-28.7
1994	January		-7.3	5.6	-0.4
	February		6.6	17.3	9.9
	March		13.3	25.4	20.5
	April		9.9	20.1	20.2
	May		10.6	19.1	16.9

Source: National Bank of Ukraine

Table 3a

**Monetary Survey for Georgia**  
(As percent of Domestic Credit)

	DEC 1991	DEC 1992	JAN 1993	FEB 1993	MAR 1993	APR 1993	MAY 1993	JUN 1993	JUL 1993	AUG 1993	SEP 1993	OCT 1993	NOV 1993	DEC 1993
<b>Net Foreign Assets</b>	0.0	-94.4	-66.0	-67.6	-62.7	-44.9	-51.6	-36.2	-29.4	-21.7	1.3	-11.9	2.5	13.5
Convertible assets	0.0	1.9	2.2	2.5	2.3	1.9	5.5	6.3	6.1	5.9	25.9	16.8	19.5	23.6
Russian ruble assets	0.0	-96.3	-68.2	-70.1	-65.0	-46.8	-57.1	-42.5	-35.6	-27.6	-24.6	-28.7	-17.0	-10.0
<b>Net Domestic Assets</b>	73.1	140.4	105.3	112.8	92.7	75.7	96.5	94.1	96.6	91.5	87.7	94.5	84.5	71.9
Domestic Credit	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Claims on General government	7.6	14.9	22.5	9.3	6.2	4.2	6.7	7.0	2.4	5.9	8.2	10.0	12.5	23.3
Claims on rest of the economy o/w claims on enterprises	92.4	85.1	77.5	90.7	93.8	95.8	93.3	93.0	97.6	94.1	91.8	90.0	87.5	76.7
o/w claims on enterprises	77.3	64.5	56.8	58.4	69.2	70.5	58.7	57.0	59.5	56.4	61.7	60.8	65.7	61.7
Other Assets (net)	-26.9	40.4	5.3	12.8	-7.2	-24.3	-3.5	-5.9	-3.4	-8.5	-12.3	-5.5	-15.5	-28.1
<b>Broad Money</b>	73.1	46.1	39.3	45.2	30.1	32.1	44.9	57.9	67.2	69.8	89.0	82.6	87.1	85.4
Broad money (coupon-denominated)	73.1	45.2	38.8	44.5	28.9	31.4	41.7	53.9	64.0	65.8	64.7	66.6	58.3	48.7
o/w Currency outside banks	34.9	16.8	13.4	13.0	7.7	10.9	11.3	23.8	31.6	31.5	33.4	37.3	33.2	22.0
o/w Banking deposits	38.2	28.5	25.4	31.5	21.1	20.5	30.5	30.1	32.4	34.3	31.3	29.3	25.1	26.7
Banking deposits in foreign currency	0.0	0.8	0.5	0.8	1.2	0.7	3.2	4.0	3.3	4.0	24.3	16.0	28.8	36.8
<b>Memorandum items:</b>														
Domestic credit (billions of coupons)	17.7	158	211	234	402	478	444	515	543	648	858	1305	1934	3769
Domestic credit (monthly growth rate)		795.5	33.1	11.0	71.9	18.9	-7.0	15.9	5.4	19.4	32.4	52.0	48.3	94.9

Source: National Bank of Georgia

\* - Annual growth rate

Table 3b

**Monetary Survey for Georgia**  
(As Percent of Domestic Credit)

	JAN 1994	FEB 1994	MAR 1994	APR 1994	MAY 1994	JUN 1994	JUL 1994	AUG 1994
<b>Net Foreign Assets</b>	26.5	17.9	11.2	-16.7	-18.7	-26.2	-24.3	-25.1
Convertible assets	29.1	20.0	12.0	-16.6	-18.6	-26.0	-24.2	-25.1
Russian ruble assets	-2.7	-2.1	-0.8	-0.1	-0.1	-0.2	-0.1	-0.0
<b>Net Domestic Assets</b>	78.1	90.9	79.5	82.2	91.3	92.4	96.4	89.7
Domestic Credit	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Claims on General government	14.0	15.7	13.5	6.2	8.6	6.0	9.0	6.4
Claims on rest of the economy	86.0	84.3	86.5	93.8	91.4	94.0	91.0	93.6
o/w claims on enterprises	71.8	68.4	72.5	82.1	76.9	81.8	79.0	85.9
Other Assets (net)	-21.9	-9.1	-20.5	-17.8	-8.7	-7.6	-3.6	-10.3
<b>Broad Money</b>	104.5	108.8	90.7	65.6	72.7	66.2	72.1	64.5
Broad money (coupon-denominated)	41.7	39.6	30.2	17.1	27.4	23.3	26.3	18.3
o/w Currency in circulation	17.5	15.5	8.9	3.3	4.3	3.7	3.6	3.6
o/w Banking deposits	24.2	24.1	21.3	13.7	23.0	19.6	22.7	14.7
Banking deposits in foreign currency	51.3	47.8	49.6	42.9	36.6	34.2	30.7	38.8
Balances on banks' correspondent accounts	11.6	21.4	10.9	5.6	8.7	8.7	15.1	7.4
<b>Memorandum items:</b>								
Domestic credit (billions of coupons)	4708	5870	11438	38573	39701	50138	60209	113172
Domestic credit (monthly growth rate)	24.9	24.7	94.9	237.2	2.9	26.3	20.1	88.0

Source: National Bank of Georgia

Figure 1  
Endogenous Determination of Saving and the Real Interest Rate

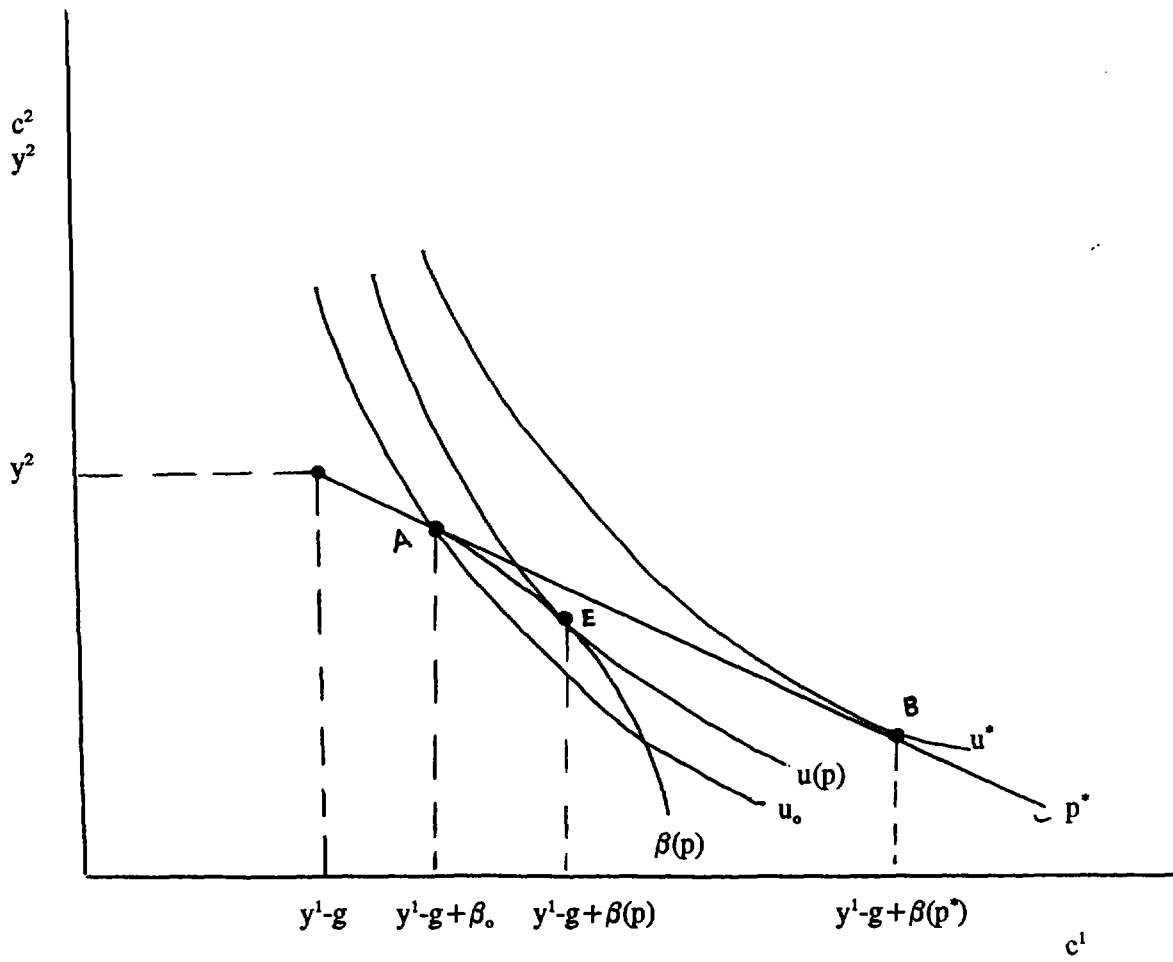




Figure 2  
Steady State Equilibrium in Price and Wealth Accumulation

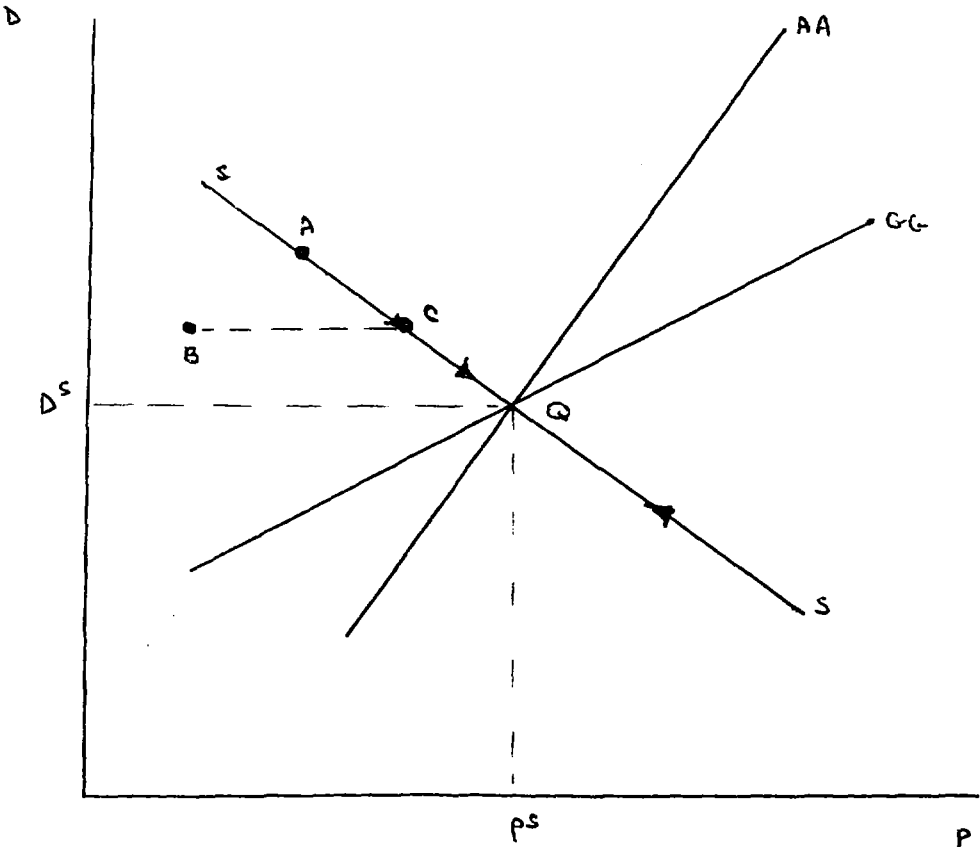
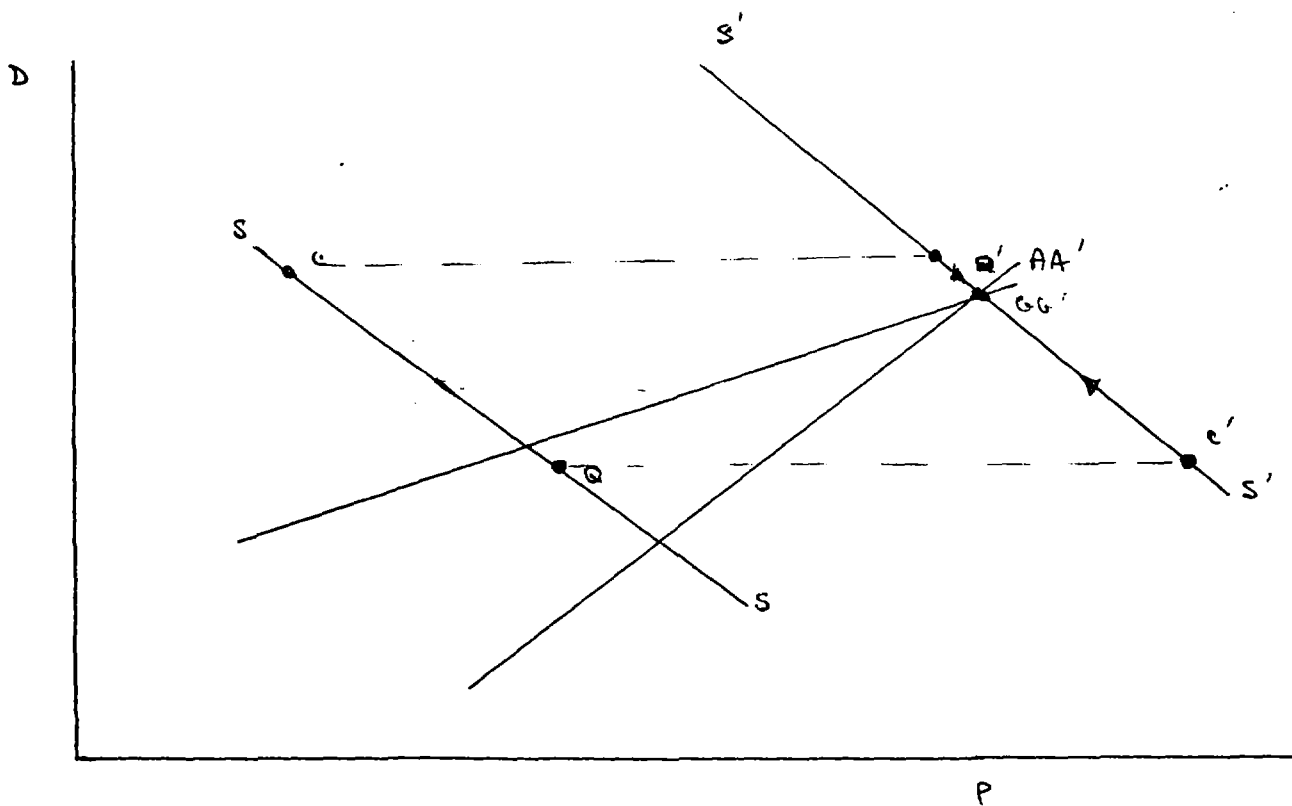


Figure 3  
Comparative Dynamics of a Negative Production Shock

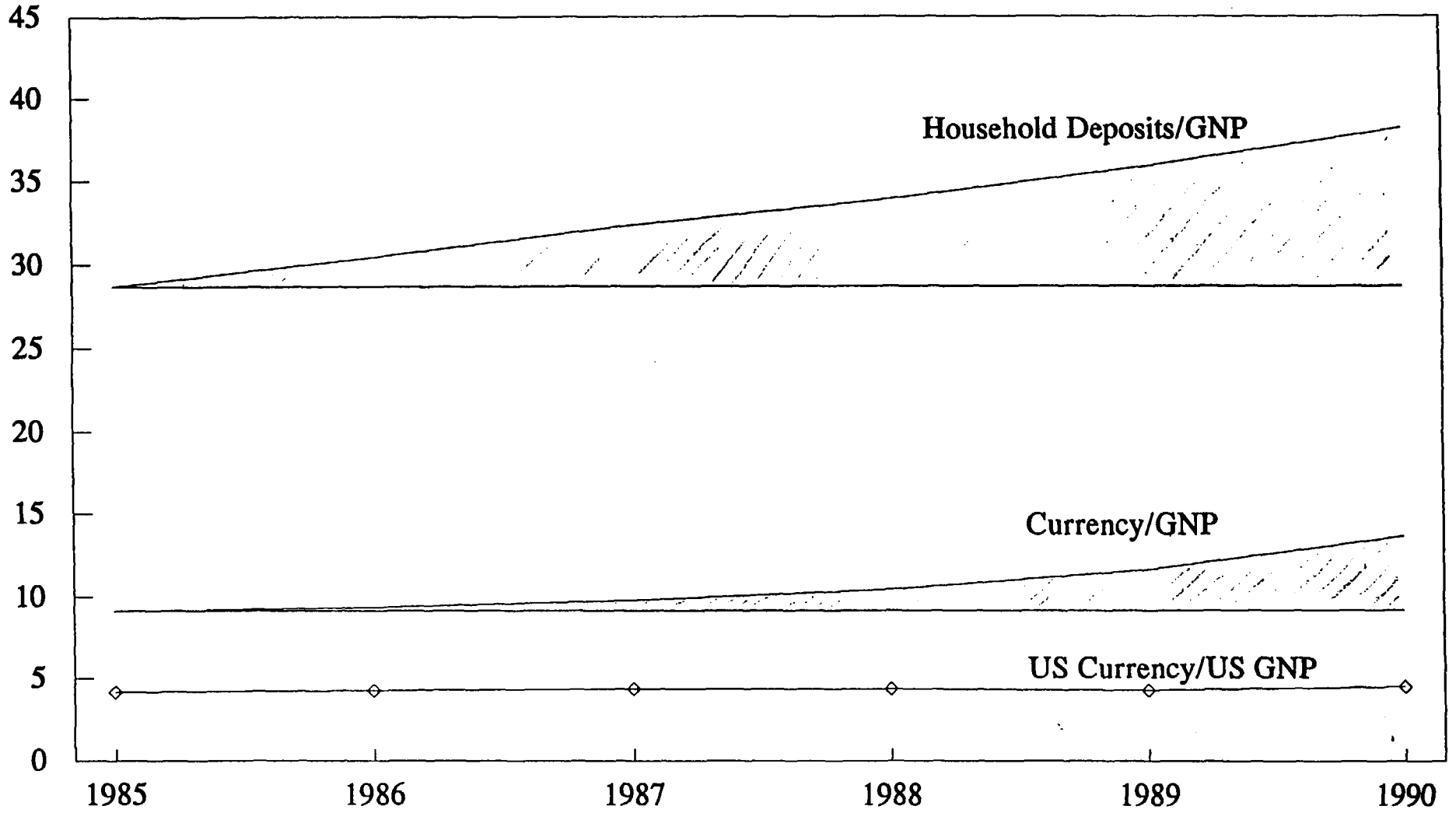


**Figure 4**  
**Household Sources and Uses of Purchasing Power**  
**(on a monthly basis)**

<b>Sources</b>	<b>Uses</b>
Total income	Expenditures on consumer goods
Formal wage and/or salary	Expenditures on communal services
Sale of produce or livestock	Business expenditures
Private trading or business activity	Deposits in banks or other financial institutions
Rental of land or property	Holdings of currency (domestic or foreign)
Interest from loans given	Capital purchases
Pensions or other government payments	
Gifts from family and/or friends	
Sale of possessions	
Borrowing, withdrawal from bank accounts or use of hoarded currency	
Receipt of previously loaned funds	

Figure 5  
Asset-holding and the "Ruble Overhang" in the Soviet Union

### Currency and Household Deposits as shares of GNP



Shaded areas in diagram represent estimate of overhang.

**Figure 6**  
**Currency Holdings and Deposits of the Population in Belarus**  
**in 1989 rubles**

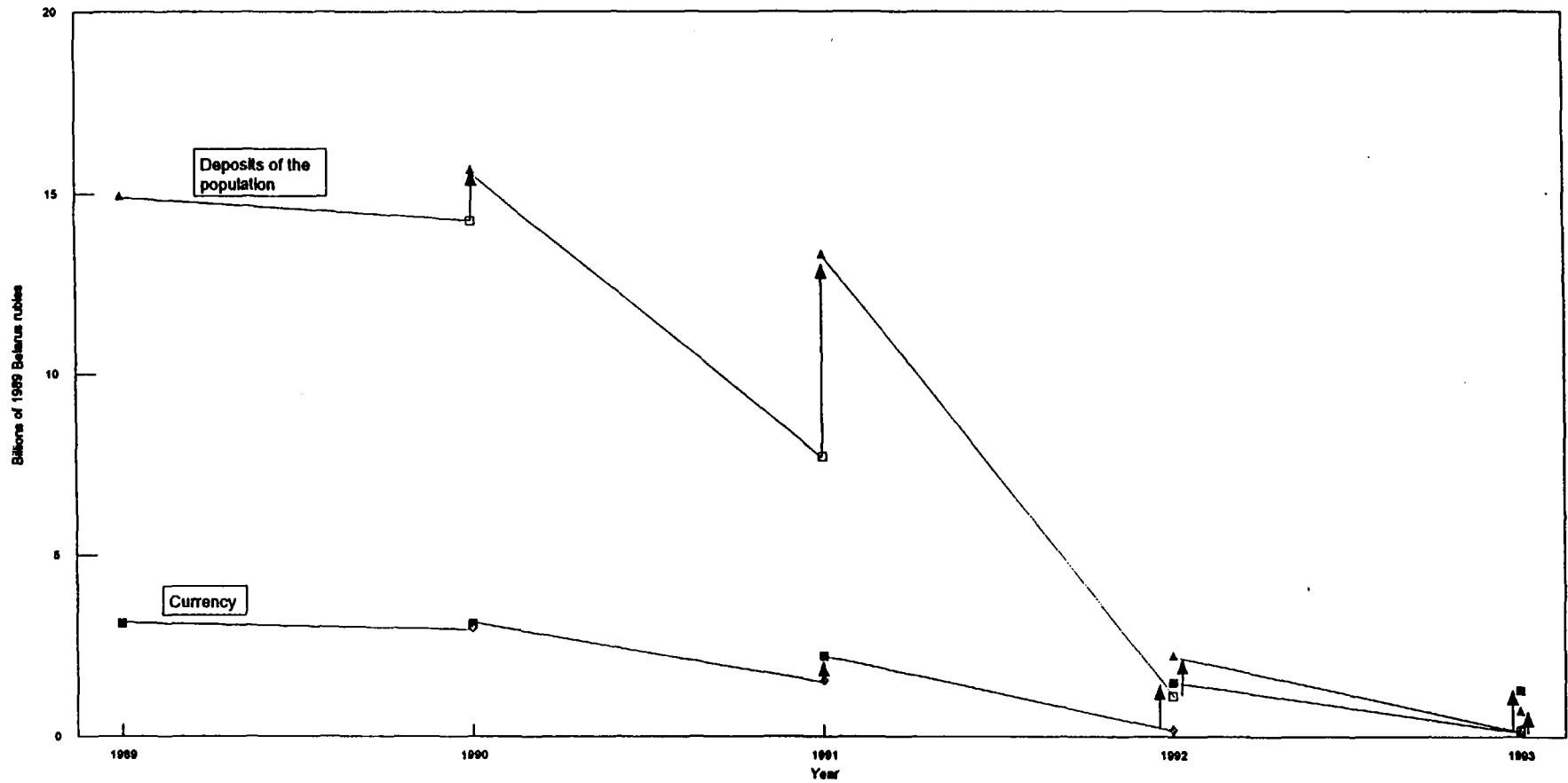
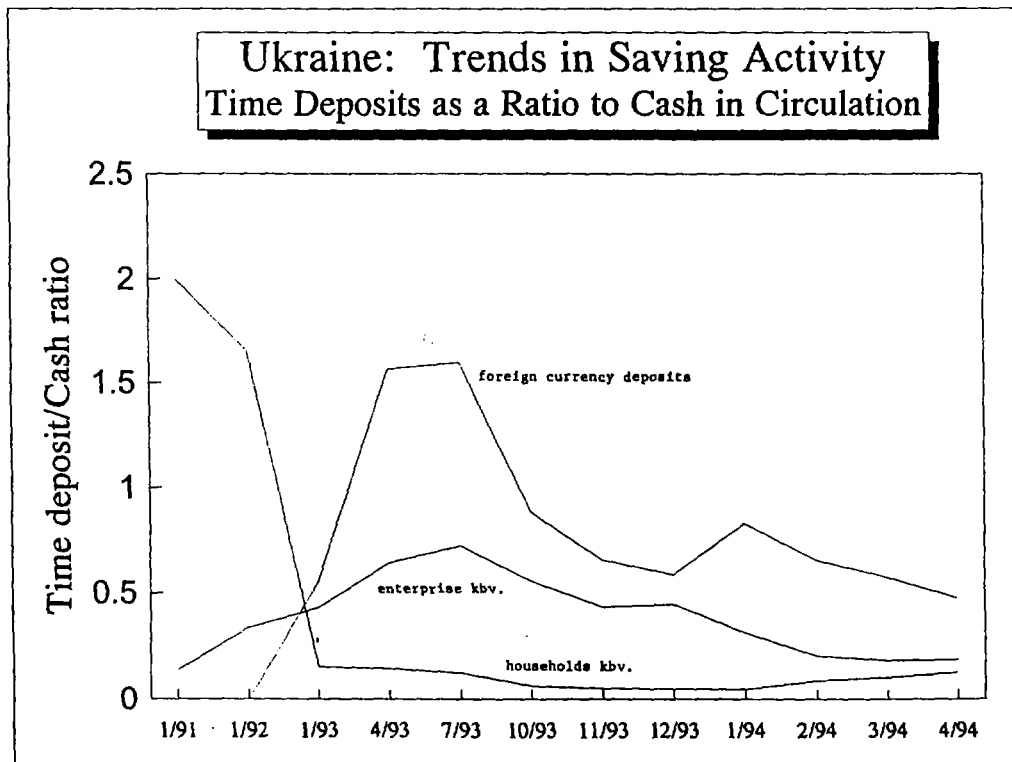
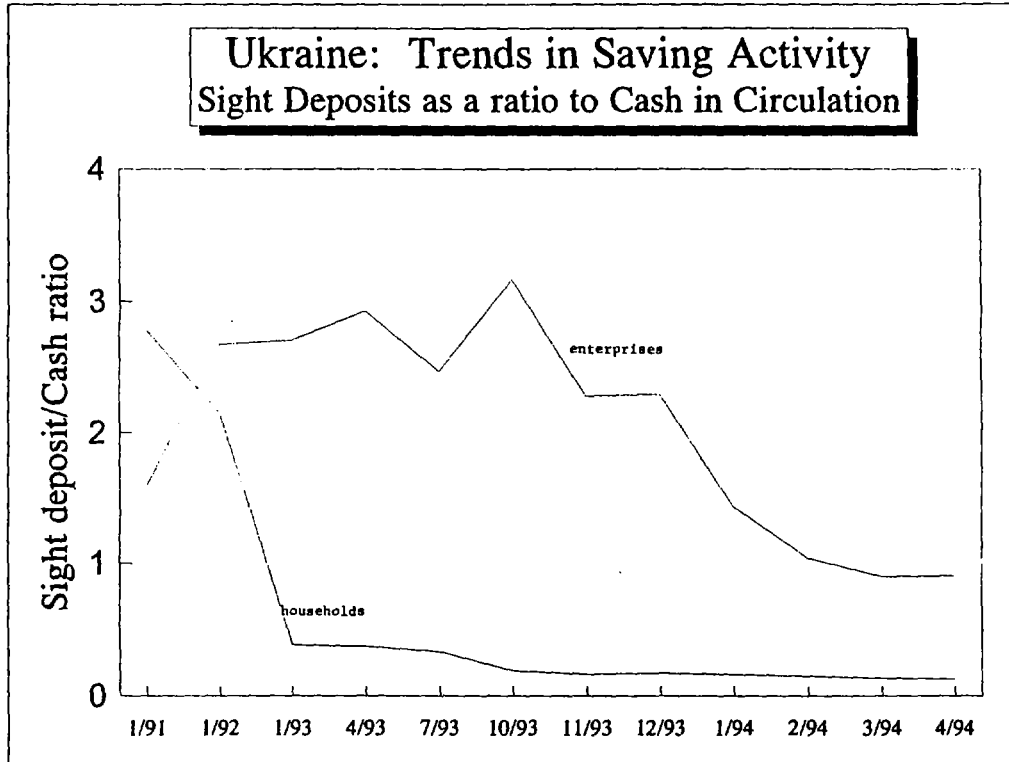
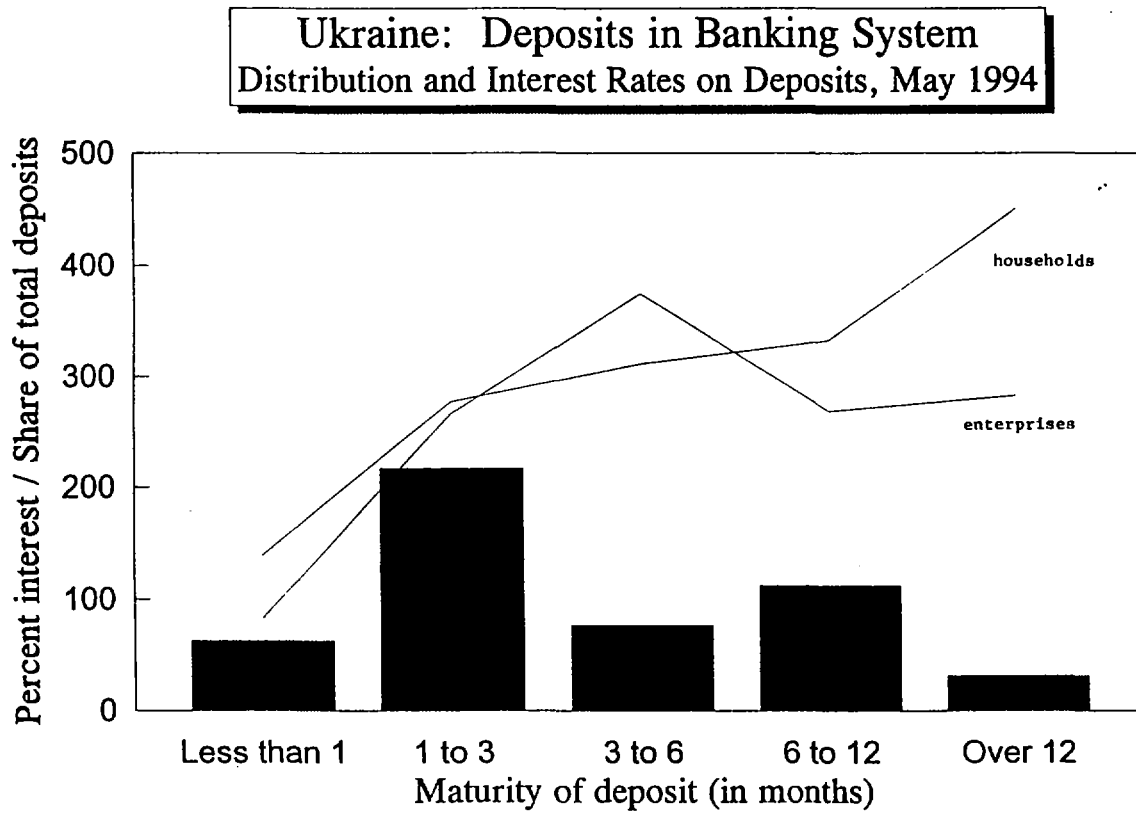


Figure 7  
 Ratio of Banking System Financial Instruments to Cash in Ukraine



**Figure 8**  
**Yield Curve and Concentration of Deposits in Banking System in Ukraine**



**Source: National Bank of Ukraine**





**Annex A**  
**Theoretical specification of saving in the transition.**

The theory of private saving is best viewed as an intertemporal choice for the allocation of real resources. In this section I begin with a two-period model to illuminate the basic economic forces determining private saving. I then turn to an extension of the framework in which the dynamic of transition is explicitly derived.

**The two-period model.**

The private sector will be modeled as equating the present value of expenditure over the two periods to the present value of after-tax income and the wealth carried forward from the past. This budget constraint can be written as

$$\begin{aligned} E(p,1,u) &= \Omega \\ \Omega &= p(D - t) + Y \\ E &= pc^1 + c^2 \\ Y &= py^1(\alpha) + y^2 \end{aligned} \tag{1}$$

$E$  is the present value of expenditure (here, simply consumption) in the two periods, and has the usual properties of expenditure functions.<sup>25</sup> Consumption in period two ( $c^2$ ) is taken as the numeraire, while consumption in period one ( $c^1$ ) has a relative price  $p$ .<sup>26</sup> The level of utility achieved through this pattern of expenditure is denoted  $u$ .  $D$  is the inherited wealth, while  $Y$  is the present value of income in both periods and  $t$  is a lump-sum tax paid in period one.<sup>27</sup>  $\alpha$  represents the possibility of an income shock in period one.

The material balance in the period-one consumption good is then

$$c^1 + g - y^1 = \beta \tag{2}$$

The government has its own expenditures ( $g$ ) in period one that are not necessarily financed completely out of taxation receipts and contribute nothing to utility.  $\beta$  is the volume of international borrowing (i.e., the negative of the current account surplus) undertaken by the households. International lenders are assumed to have a positive  $p$ -elasticity of international borrowing, with the volume of available financing rising with  $p$ .<sup>28</sup>

<sup>25</sup> The convention in the following will be that derivatives are indicated by subscript while time periods are indicated by superscript.

<sup>26</sup> This relative price is the amalgam of the ratio of price levels in the two periods and the nominal discount factor  $R = (1+r)$ ; i.e.,  $p = P^1R/P^2$  where superscripts indicate periods.

<sup>27</sup> I assume for simplicity that no taxes are levied (and no government expenditures made) in period two.

<sup>28</sup> Rising  $p$  indicates that the real interest rate that the home country pays on international debt is rising. This specification was chosen to provide a parameterization of two extreme cases: an economy with unlimited access to world capital markets at given price  $p^*$  (infinite  $p$ -elasticity) and an economy with no access to world capital markets (zero  $p$ -elasticity). Those special cases are derived directly in Annex C.

Saving of the households in period one is defined as

$$s = y^1 - c^1 - \tau \tag{3}$$

and as combination of (2) and (3) indicates is identical in equilibrium to the difference of the government budget deficit ( $g-\tau$ ) and foreign borrowing  $\beta$ . There are thus three sets of determinants to real saving. The first is the government fiscal policy, as summarized by the fiscal deficit. The second comprises shocks to earnings capacity, as indicated by the shock  $\alpha$  to period-one product. The third is the relative price (or real interest rate)  $p$ . While the first two are exogenous, the third is jointly determined with real saving; I examine this joint determination in the following sections.

**Equilibrium in the two-period model.**

The determinants of real saving and the real interest rate  $p$  can be derived from total differentiations of the equation system (1) through (3). Through appropriate substitution, this derivation yields the following solution in terms of endogenous variables  $p$  and  $u$ .

Define  $\gamma = (c^1 - y^1 - \beta - D + \tau)$ , and assume that it is positive in equilibrium (i.e., that the economy will have excess demand for goods in period one). Define as well  $\delta = (E_{pu}/E_u)$  as the marginal propensity to consume in period one from discounted wealth  $\Omega$  and  $\eta = (\beta_p - E_{pp}) > 0$  the increase in availability of period-one resources to the government budget through real interest rate increase.<sup>29</sup> Then

$$\begin{bmatrix} dp \\ E_u du \end{bmatrix} = (1/\Delta) \begin{bmatrix} 1 & \delta p & -(1-\delta p) & -\delta p \\ -\gamma & p\eta & \gamma + p\eta & -p\eta \end{bmatrix} \begin{bmatrix} dg \\ dD \\ y^1_\alpha d\alpha \\ d\tau \end{bmatrix} \tag{4}$$

$$\Delta = \delta\gamma + \eta > 0$$

The relative price of period-one goods is rising (either through an increase in  $P^1$  or an increase in  $R$ ) with an increase in  $g$  or  $D$  and a decrease in  $\tau$ . A shock  $\alpha$  that tends to reduce period-one income also has this effect for non-extreme values of  $p$ . The shifts in  $g$ ,  $\tau$  and  $\alpha$  all limit the quantity of goods available for consumption in period one, and thus raise the relative price of those goods. The stock  $D$  represents a claim by consumers on the existing stock of goods based on previous saving, and an increase in that stock will increase demand and thus the relative price of period-one goods. The multiplier term  $\Delta$  is positive by the assumption of excess demand for period-one consumption ( $\gamma\delta$ ) and due to the positive effects of real interest rate rises in causing domestic saving (the Slutsky substitution effect  $-E_{pp}$ ) and increased foreign borrowing ( $\beta_p$ ).

Utility is falling with an increase in  $g$  or  $\tau$ ; government expenditure is not valued in the utility function but crowds out private consumption, while taxes subtract directly from disposable income.

---

<sup>29</sup> By definition  $E(1,p,u) = \Omega$ . It is also the case that in equilibrium the Slutsky and Marshallian demand curves coincide. For period-one consumption, that implies  $E_p(p,1,u) = c^1(p,\Omega)$ . Differentiation of these two equalities for constant  $p$  yields  $E_u = \Omega_u$  and  $E_{pu} = c^1_p \Omega_u$ . Substitution and rearrangement yields  $E_{pu}/E_u = c^1_p$ , as was to be shown.

A negative shock to period-one output causes a fall in utility as well. Utility is increasing in wealth carried forward.

Real saving behavior as defined in this macroeconomic context can be derived from equations (3) and (4).

$$\begin{aligned} ds &= y_{\alpha}^1 d\alpha - E_{pp} dp - \delta E_u du - d\tau \\ &= (1 - (\beta_p/\Delta)) dg - (1/\Delta)p\delta\beta_p dD - (1 - (p\delta\beta_p/\Delta)) d\tau - (1 - (1-p\delta)\beta_p/\Delta) y_{\alpha}^1 d\alpha \end{aligned} \quad (5)$$

Real saving is rising with an increase in  $g$ , although not in a one-for-one manner if foreign borrowing is possible. It is falling with an increase in the accumulated stock of wealth and rising with an increase in real taxation. It is falling with negative output shocks in period one.<sup>30</sup>

#### Modelling saving in the dynamic transition.

Life-cycle models of consumption, investment and saving over an infinite horizon provide a convenient starting point for the theoretical model. The optimal behavior in Campbell (1987) or Blanchard and Fischer (1989) can be summarized in the notation of the previous section, with conditions introduced to govern the adjustment of nominal price and the stock of financial assets over time:

$$D^t = (1+r) D^{t-1} + P^t s^t \quad (6)$$

$$s^t = y^t - c^t - t^t \quad (7)$$

$$P^t = P^{t-1} + \phi [(g^t - t^t) - s^t - \beta(p^t)] \quad (8)$$

The stock of financial assets rises with interest paid to holders and with the value of private saving in the period. The net material balance condition (2) may not hold in flow equilibrium, allowing for the possibility of rationing in periods of excess demand. This excess demand is a function the government deficit and the volume of foreign borrowing  $\beta(p^t)$ .<sup>31</sup> As equation (8) indicates, such excess demand will cause price inflation; the limiting case, as  $\phi$  approaches infinity, is that of net material balance.

---

<sup>30</sup> This last effects are not ambiguous, and provide an interesting contrast with the impact of increased government expenditure. All increase the excess demand in the goods market in period one, but the government's marginal propensity to consume in period one is unity. Given the private marginal propensity of  $\delta$ , the impact of the output shock or taxation effect is reduced and can be reversed for extremely high valuations of period-one relative price  $p$ .

<sup>31</sup> The equation of motion for foreign debt is subsumed in the asset accumulation equation, and the nominal interest rate is the same on foreign and domestic borrowing. These assumptions could be relaxed, but at the cost of modeling the evolution of international debt separately.

Expansion of this equation system and evaluation at net material balance (with stable price  $P^*$ ) yields the following matrix equation system:

$$\begin{bmatrix} D^t - D^{t+1} \\ P^t - P^{t+1} \end{bmatrix} = \begin{bmatrix} r - P^* (\partial c^t / \partial D^{t+1}) & (g^t - t^t - \beta^t) - P^* (\partial c^t / \partial P^{t+1}) \\ \phi (\partial c^t / \partial D^{t+1}) & \phi (\partial c^t / \partial P^{t+1} - \beta_p(p^t)) \end{bmatrix} \begin{bmatrix} D^{t+1} \\ P^{t+1} \end{bmatrix} \quad (9)$$

Consumption is assumed to respond to price and financial-asset stocks as in the two-period case, with  $(\partial c^t / \partial D^{t+1}) > 0$  and  $(\partial c^t / \partial P^{t+1}) < 0$ . The former condition is derived from the marginal propensity to consume from an increase in purchasing power  $\Omega$ , ceteris paribus, while the second stems from the impact of nominal price increases on the purchasing power of nominal financial assets. The effect of  $D$  includes both its direct impact and its indirect impact through the change in the relative intertemporal price of goods  $p^t$ .

The trace and determinant of the matrix indicate the saddlepoint nature of the equilibrium to this dynamic system.<sup>32</sup> It is illustrated in Figure 2 of the text.

---

<sup>32</sup> The trace of this dynamic system is  $r - P^* (\partial c^t / \partial D^{t+1}) + (\partial c^t / \partial P^{t+1} - \beta_p)$ , and this will be negative for lower values of  $r$ . The determinant of the system is  $\phi[r (\partial c^t / \partial P^{t+1} - \beta_p) - (g^t - t^t - \beta^t)(\partial c^t / \partial D^{t+1})] < 0$  always. These signs will assure a saddlepoint-stable equilibrium.

## Annex B: Survey instrument

### Saving Survey - Georgia

The following survey was prepared by Patrick Conway and the Georgian Center for Transition Economic Systems and Sustainable Development. It was administered twice in the city of Tbilisi, in August and in November 1994, to 500 heads of household. The results will be used in a comparative study of saving behavior in transition economies under preparation by Patrick Conway, and by the Georgian Center and the Caucasian Institute for Peace, Democracy and Development in their periodic reports.

The heads of households interviewed were selected according to the following criteria.

- 1.) The proportion of households in the sample from each administrative district (raion) of Tbilisi was set equal to the existing population distribution.
- 2.) The proportion of households of certain size (e.g., 4 members) in the sample was set equal to the existing population distribution.

Given these selection criteria, households were selected by random from the population. 20 individuals trained by the CSEI conducted the first survey during the period 15 - 22 August 1994.

#### Demographic questions:

1. How many individuals reside in your household?

1      2      3      4      5      6      7      8      9      10 or more.

2. How many individuals residing in your household have monetary income?

1      2      3      4      5      6      7      8      9      10 or more

3. In which region of Tbilisi (raion) do you live?

1      2      3      4      5      6      7      8      9      10

4. Do you (or any members of your household) own your home?

Yes                      No

5. What is your gender?

Male                      Female

6. What is your age?

18-24                      25-34                      35-49                      50-60                      61 or older

7. What is the highest level of education you have received?

Compulsory                      Technical Training                      Higher education

**Economic questions:**

8. Within the past month, consider the total income of your household. From what sources did the income come?

	None	Less than half	More than half	All
Formal salary				
Sale of agricultural produce or livestock				
Private trading or business activity				
Rental of land or property				
Interest from lending funds				
Pensions or other government payments				
Gifts from family or friends				

9. In which of the following ranges does the total monthly income of your household lie?

Check one

- Less than 1 million coupons
- Between 1 million and 10 million coupons
- Between 10 million and 20 million coupons
- Between 20 million and 30 million coupons
- Between 30 million and 50 million coupons
- Between 50 million and 80 million coupons
- More than 80 million coupons

10. In the last month, did you sell any possessions to obtain money?

Yes                      No

11. If yes, was the value of those possessions

Check one

- Less than 1 million coupons
- Between 1 million and 10 million coupons
- Between 10 million and 20 million coupons
- Between 20 million and 30 million coupons
- Between 30 million and 50 million coupons
- Between 50 million and 80 million coupons
- More than 80 million coupons

12. In the last month, did you borrow any money, withdraw money from bank deposits or use currency saved at home?

Yes                      No

13. If yes, was the combined value of these activities

Check one

- Less than 1 million coupons
- Between 1 million and 10 million coupons
- Between 10 million and 20 million coupons

- Between 20 million and 30 million coupons
- Between 30 million and 50 million coupons
- Between 50 million and 80 million coupons
- More than 80 million coupons

14. In the last month, did you receive back any money previously lent to others?

Yes No

15. If yes, was the value of the returned money

Check one

- Less than 1 million coupons
- Between 1 million and 10 million coupons
- Between 10 million and 20 million coupons
- Between 20 million and 30 million coupons
- Between 30 million and 50 million coupons
- Between 50 million and 80 million coupons
- More than 80 million coupons

16. For the last month, add together the total of those sources of funds described above -- income, sale of possessions, borrowing, reduction of bank deposits, use of accumulated currency, and return of previously lent money. Of this total, how much was used on each of the following?

Food expenditures	None	Less than half	More than half	All
Housing rental	None	Less than half	More than half	All
Clothing expenditures	None	Less than half	More than half	All
Communal services	None	Less than half	More than half	All
Entertainment expenses	None	Less than half	More than half	All
Business expenses	None	Less than half	More than half	All
Deposits in banks and trust companies	None	Less than half	More than half	All
Holdings in currency (coupons or other)	None	Less than half	More than half	All
Large purchases (autos, houses, refrigerators, and others)	None	Less than half	More than half	All

17. For the last month, add together the total of those sources of funds described above -- income, sale of possessions, borrowing, reduction of bank deposits, use of accumulated currency, and return of previously lent money. Of this total, what percentage was used on each of the following:

Food expenditures	None	0-20	20-40	40-60	60-80	80-100	All
Housing rental	None	0-20	20-40	40-60	60-80	80-100	All
Clothing expenditures	None	0-20	20-40	40-60	60-80	80-100	All
Communal services	None	0-20	20-40	40-60	60-80	80-100	All
Entertainment expenses	None	0-20	20-40	40-60	60-80	80-100	All
Business expenses	None	0-20	20-40	40-60	60-80	80-100	All
Deposits in banks and trust companies	None	0-20	20-40	40-60	60-80	80-100	All
Holdings in currency							

(coupons or other)	None	0-20	20-40	40-60	60-80	80-100	All
Large purchases (autos, houses, refrigerators and others)	None	0-20	20-40	40-60	60-80	80-100	All

18. Do you expect the past month to be similar to this month economically?

Yes No

19. During the past month, did anyone in your household receive funds (income, borrowing, exchange) in foreign currency (rubles, dollars or other)?

Yes No

20. How much of your household funds came in the form of foreign currency?

None Less than half More than half All

21. Your household used this foreign currency in what way?

	No	Partial Use	Primary Use	All
Spent on goods and services				
Held at home as saving				
Placed in bank deposit				
Placed with trust company				
Given to friends				
Lent to individuals				
Paid debts				



## Annex C

### Profiles of Formal Financial Institutions in Belarus, Georgia, Kazakhstan and Ukraine

In the course of this research project I interviewed a number of officials with commercial banks in Belarus, Georgia, Kazakhstan and Ukraine. The text of the report summarizes the conclusions I reached based upon these interviews, but the details of the financial sectors and banking operation in these countries may be of independent interest. For this purpose I include below short summaries of the financial sectors of the various countries and the operations of specific commercial banks. For each country the section on banking operations begins with a description of the successor bank to the Soviet Saving Bank, given the historical monosony of this institution in attracting saving.

#### **Belarus.**

In Belarus the bifurcation in financial markets was strongly in evidence. The markets in zaichik (the national currency, de facto) in mid-1994 were a channel for distributing directed credits to favored industrial and agricultural borrowers.<sup>33</sup> These credits did not represent intermediation of private saving, but rather a claim on the National Bank of Belarus (NBB). Markets in foreign exchange also appeared, with the private commercial banks taking the lead in these activities. Lending volumes depended upon the prior attraction of foreign-exchange deposits, and banks were thus more competitive in seeking those depositors.

The state commercial banks, especially Agroprombank and Promstroibank, were the prime channels for distribution of these directed credits. Agroprombank in mid-1994 relied upon NBB or budgetary refinancing for over 75 percent of its resources, while time deposits (including foreign exchange deposits) represented only about 10 percent of resources. Promstroibank was less reliant on these government refinancings, but very dependent upon the correspondent balances of industrial enterprises held at miniscule nominal interest rates. Promstroibank did offer some foreign-exchange credits, but these were typically refinanced through foreign lines of credit arranged by foreign exporters or joint-venture partners.

Private commercial banks were also able to refinance credits with the NBB in mid-1994. Thus, the most successful banks were not necessarily specialized in foreign-exchange transactions. For example, Priorbank was roughly equally split in value between zaichik and foreign-exchange transactions at the beginning of 1994. It obtained a significant share of zaichik funds through NBB refinancing but sought the rest through interbank borrowing and enterprise deposits deposits of zaichik or foreign currency. Belarus Bank, by contrast, specialized almost completely in foreign-exchange credits and deposits.

The Saving Bank of Belarus was rather slow to respond to the changing economic climate, in part because it remained a state-controlled institution. In mid-1994 it continued to offer only zaichik-denominated deposits, with interest rates much below the inflation rate. Deposits did increase five times in nominal terms over 1993, but the consumer price index had increased 20 times in the same period. Foreign-exchange deposits were under preparation at that time, nearly a year after competing

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<sup>33</sup> The local currency at that time was de jure a ruble supplement, exchangeable at par for Russian rubles. There was de facto a large premium on Russian rubles in this exchange, especially in non-cash transactions. The ruble supplement was known in Belarus as the "zaichik", or rabbit, because that animal is pictured on the 1-ruble supplement.

banks had begun these operations. The Saving Bank activities remained constrained by governmental regulation. For example, 40 percent of Saving Bank deposits by law were to be relent for housing construction at an annual interest rate of 140 percent. The borrower paid 10 percentage points of this, while the government was to reimburse the Saving Bank for the balance. Not only was this lending rate well below inflation, but the government was typically not prompt in its reimbursements. This greatly constrained the interest rate the Saving Bank could offer on deposits.

The structure of interest rates on deposits in Belarus underwent some adjustment in 1993.

Table C1  
Interest Rates on Deposits at the Saving Bank in Belarus  
(in percent)

Maturity of deposit	July 1993	January 1994
Sight deposit	20	60
One month time deposit	40	160
Three month time deposit	40	190
Six month time deposit	40	240
One year time deposit	40	250
Three-five year time deposits	50	
More than five year deposits	60	

Source: Saving Bank

Historically, the Saving Bank lent large volumes of its funds to the National Bank of Belarus (NBB) and the Ministry of Finance. By mid-1994 this had almost disappeared, with no borrowing by the Ministry of Finance, and only small amounts by the NBB. An April 1994 decree of the presidium of Supreme Soviet governed this. There were no other government-directed loans, but the NBB did require reserve holdings of between 10 and 12 percent of deposit volume to be held at the NBB.

In mid-1994 the Saving Bank was just preparing to introduce foreign exchange deposits. It expected to fill a niche in the market, for commercial banks required a minimum balance of \$300 for such deposits; the Saving Bank had no such minimum balance. The interest rate was projected to be 6 percent annually. The details remaining included the receipt of a license to trade foreign exchange from Belvnesheconombank and the building up of foreign exchange reserves.

### Georgia.

In Georgia the bifurcation of financial markets was quite far advanced, and the financial intermediaries had for the most part chosen to specialize in one or the other currency. The market for deposits and credits in the domestic currency, or menati, was stagnant in mid-1994 except for the credits refinanced by the National Bank of Georgia (NBG). The Agroprombank and the Promstroibank (here known as the Industriabank) were channels for distribution of these credits;

Industriabank had branched as well into foreign-exchange transactions.

In October 1994 there were 250 commercial banks licensed by the NBG for operation in Georgia. Most of these were in operation on only a limited scale, and may have been the "in-house" bank for a firm or group of firms. Of the total, only the five state commercial banks and perhaps 10 others were considered active in soliciting banking deposits and clients for lending. The NBG was at that time involved in an effort to tighten restrictions upon these intermediaries.

The New Georgian Bank (the Georgian name for the Saving Bank) remained a state bank until mid-1994. Its deposits less than doubled in nominal terms during the first half of 1994 despite a ten-fold increase in consumer prices, due in part to a nominal interest rate of 150 percent per annum on those deposits. With privatization in July 1994 it began its transformation into a full-service banking system. 50 enterprises per day become depositors. It has correspondent banks throughout Europe, and is presently searching for a European partner in a joint venture in international banking. Foreign exchange departments were put in place in all affiliates and the bank accepted foreign-exchange (US dollar, not Russian ruble) deposits. The rate on these deposits was seemingly not very competitive, however, since the bank experienced a drop in deposits in mid-1994 as it lowered its return to 3 percent per month.

Private commercial banks have left the menati financial markets nearly entirely. For example, Ivertbank in mid-1994 had accepted deposits from individuals split among Russian rubles and dollars in a 9:1 ratio. Ruble deposits received a 5 percent/month interest rate. US dollar 3-month time deposits earned 3 percent per month. There was solid growth (roughly 20 percent) in dollar deposits during the first half of 1994. These funds were loaned out at interest rates of roughly 10 percent per month for trading transactions. The TBC Bank, a member of the TBC Group, operated in a similar manner. Of deposits, only 20 percent of the total is found in coupons, with 60 percent in US dollars and 20 percent in Russian rubles and German marks. The bank's lending occurs almost exclusively in US dollars. The imbalance between coupon (or ruble) deposits and lending is rectified by immediate conversion of coupon (or ruble) to US dollars on the auction or bazaar markets. Both banks have limited resources, as deposit volume is not large, but were demonstrating positive growth at a time of depression elsewhere in the economy. Other banks, such as Kerdsobank, have chosen a strategy of specialization in menati transactions, but these are not exhibiting rapid growth.

Trust companies were very visible alternatives to depositors in Georgia. A large number of these companies were in evidence at the end of 1993, but most failed in mid-1994 with the failure of the MMM corporation in Moscow.<sup>34</sup> Others continued through to the end of 1994, but these failed in turn. Depositors and shareholders placed great pressure on the government to provide ex post guarantees for their funds, pointing to involvement by government agencies and officials in the organization and management of some of these. These companies solicited US dollar deposits offering 24 percent interest per month. They apparently had lined up loans backing trade that could offer 100 percent per month. Unfortunately, these loans often failed, and so also did the trust companies..

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<sup>34</sup> These were not linked financially. However, Georgian depositors in such companies lost faith after observing the MMM difficulties and demanded their deposits returned. This "run on the trust company" led to closures in Georgia as well.

The first wave of trust companies (including Achi, Golden Fish, Geico and others) attracted clients with the promise of -- and initial success in returning -- 20 percent return per month on deposits. Some of these may have been pure "Ponzi" schemes, but others were financial intermediaries with ties to corporations able to turn high short-term profits through trading operations. These organizations were able to offer such high returns because of the profits from trading activities and because the deposits were loaned out completely -- negligible reserves were held for repurchase of deposit certificates. The success of these corporations attracted competitors, both from newly created trust companies and from more aggressive commercial banks. The cash flow from receipts and repayments of lending was sufficient to cover withdrawals until the failure of the Russian firm MMM. During the time of the MMM crisis in Moscow, depositors in Tbilisi approached these trust companies to redeem their certificates. The trust company was typically unable to meet these demands, and was forced to close.

These failures were liquidity-driven. Subsequent failures were related to insolvency, and occurred in one of two ways. The first was through theft: for example, the Golden Bowl Corporation failed in October 1994 when the chairman fled the country (reportedly with \$60 million). The second was through ineptitude. Here, the case of Innovation Bank is instructive. This bank was backed by the Ministry of Internal Affairs and offered high interest rates on deposits. The leaders of the bank made a number of improper loans, including a US \$400,000 loan to a woman friend, while paid-in capital was valued at less than a tenth of that. Most loans were made to the founders of the Bank. Each borrower proposed a productive use for the loan, but these were not well thought out and not well screened by the bank. The bank was warned about its behavior a number of times by NBS before it finally failed.

Depositors have been quite vocal in demanding that the government make restitution for the losses in these trust companies. In part, this demand is due to the understandable desire of investors to recoup an investment gone sour. It is also the case, however, that many of these failed companies had close ties with government agencies; in some cases (like Innovation Bank) the government agency was a part owner.

### **Kazakhstan.**

The banking system of Kazakhstan had its beginnings in 1987 with the "break-up" of the Gosbank and the passage of a new law on corporations. The Almaty Cooperative Bank in 1988 received the fourth banking license issued in the Soviet Union. By mid-1994 there were over 200 banks in Kazakhstan. 35 of these were private, while the remainder were joint-stock corporations.<sup>35</sup> Four that had begun as specialized state banks -- Turanbank (previously Promstroibank), Agroprombank, Narodnyibank (previously Saving Bank) and Credsotsbank -- were joint stock companies with the government retaining part of the stock. There were also 9 banks with partial foreign ownership.

The bifurcation of financial markets has occurred in Kazakhstan as well. However, as in Belarus, the most successful banks are participating in both markets. In the tenge market (the national currency), funds were obtained predominantly through sale of capital, founders' deposits and either credit auctions or the refinancing of directed credits with the National Bank of Kazakhstan

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<sup>35</sup> Cooperatives have fallen from favor, so the cooperatives have been converted to joint-stock corporations.

(NBK). Tenge deposits were in general an unprofitable way to obtain funds. For small banks (mainly those created since independence) there was an insufficient network of offices to attract deposits. For most there was only one office -- in Almaty -- and for some there were no offices at all. In that situation attraction of deposits from the population became almost impossible. For large banks (mainly the specialized state banks Agroprom, Turan and Kredsots) the deposits of the population were unprofitable and undesirable. Despite their network of offices, the cost of funding through NBK refinancing fell below that of attracting many small depositors. Further, these banks were also aware that the directed credits were extended to many essentially bankrupt producers. If the banks attracted their own deposits, they would be pressed to lend those as well to these corporations, and thus could not protect the funds of the depositors. The NBK was not unhappy with this outcome. Keeping all banks dependent upon them for funds allowed them to supervise and organize the banking system. Only at Narodnybank were deposits a primary source of tenge funds.

Non-bank financial institutions stepped into the breach and solicited deposits from the population for trading activities. They promised a large return on investment. These activities were popular with investors but poorly monitored. These included trust companies, Lombard companies, pension funds and investment funds.<sup>36</sup> The government was unsure how to handle these new businesses, since legislation did not at that time provide the government with the ability either to regulate the new businesses or to obtain data from those businesses. For example, Smagulov and Company was a private firm offering 600 percent annual interest on tenge "deposits" throughout 1994. The firm delivered as promised in the earlier months, and by August 1994 a "large share of the population" wishes to place money with it. In one case, people waited in line 3 days to make their deposits. The people liked the return, and also liked the fact that the agreements were in effect 1-month deposits. Unfortunately, Smagulov and Company closed its doors in late 1994, without repaying principal or interest on current balances. Smagulov was reportedly in Australia at the end of 1994.

Narodnyi Bank became a joint-stock company in May 1994 after a history as a state-run bank. Changes in banking policy were not evident in August 1994, however. Interest rates had not been adjusted since January 1994 (see Table C2). The minimum-maturity time deposit was one year. The bank did not have a license to trade foreign exchange. There were many plans for improvements -- short-term deposits, foreign-currency deposits, and higher interest rates on deposits to name a few -- but none was in place.

Deposits of individuals with Narodnyi Bank and the commercial banks rose 58 percent in nominal terms from the beginning of 1994 until 1 June 1994, from 202.5 million tenge to 320.8 million tenge. However, the inflation rate during that same period was 266 percent, indicating a large fall in the real value of accumulated tenge deposits. As of 1 July 1994, the volume of tenge deposits at Narodnyi Bank was 1.15 billion tenge, while there were only .3 billion tenge at all other commercial banks combined. However, from the beginning of the year the commercial banks have been more successful at attracting new deposits: there was a 58 percent increase in all deposits and a 19 percent increase in deposits at Narodnyi Bank.

In early 1994 the NBK introduced a less expansionary credit policy. Less credit was directed to state enterprises and refinanced by the NBK. A greater share of credit was distributed through

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<sup>36</sup> A Lombard company runs on pawnshop principles.

NBK auction, often with consequently higher interest rate. This made reliance upon NBK funds less attractive to commercial banks, and they began to solicit household and enterprise deposits. In mid-1994, commercial banks accepted deposits in both tenge and foreign exchange. The latter were more popular with commercial banks.

The dynamic banks in Kazakhstan could be characterized in mid-1994 in two ways. First, they transacted not only in tenge but in foreign exchange. The latter attracted depositors wishing to minimize the risk from unanticipated inflation. The second major difference was the interest rate on deposits. On 1 January 1994, Narodnyi Bank offered deposit rates of 60 percent (for sight deposit) to 250 percent (for children's deposits, maturity 10 years) per annum. Kazkommertsbank offered rates of 230 - 550 percent per annum on deposits. Alatabank offered 188 percent per annum. Only Kazkommertsbank of the three offered foreign-exchange deposits in July 1994, and the 35 percent per annum return on those deposits represented an extremely positive real interest rate.

### **Ukraine.**

The financial system in mid-1994 in Ukraine illustrated the strains of transition from extreme inflation to a more moderate price environment. There were two markets in existence. The majority of transactions remained denominated in karbovanets (national currency), although foreign-exchange transactions were ubiquitous. In the market for karbovanets instruments the interest rates on deposits and credits reflected the more-inflationary environment of 1993; in real terms these interest rates were extremely high, given the rapid decline in inflation from hyperinflationary rates.

The successful commercial banks were transacting in both currencies. Inko Bank, for example, was the largest private commercial bank in Ukraine when measured by number of branches, assets, liabilities or profits. It accepted deposits in both karbovanets and US dollars. On its karbovanets deposits, it offered in mid-1994 very short maturities (as little as 2 weeks) with annualized interest rates of 150 - 200 percent. With US dollar deposits, the interest rates were 6 percent per annum for small amounts up to 24 percent per annum for amounts greater than \$10 million. In mid-1994 enterprises made 78 percent of deposits in the bank, with private persons making the other 22 percent. The share of enterprise deposits in karbovanets is greater than the share in US dollars, with private deposits just the reverse.

Agiobank, a medium-sized bank, thrived by specializing in the offering of karbovanets deposits to individuals. It was ranked second in deposits to Otshadbank (Saving Bank) in mid-1994, with its success attributable to the variety of deposit instruments it created. For example, it was the first bank to introduce high-yield certificates of deposits in the form of bearer bonds (in April 1993). It also introduced door-to-door salespeople to sell Agiobank instruments to enterprises. Finally, it began paying crediting interest monthly to accounts while Otshadbank was only doing this once per year. The karbovanets deposits of the bank remained 70 percent from the population while 30 percent are from enterprises. Lending in karbovanets was 90 percent to enterprises.

Agiobank's annual interest rates on hard currency deposits ranged from 18 percent to 25 percent. Roughly 80 percent of total deposits are made by private individuals. The lending is about 50 percent to enterprises, 50 percent to individuals. Of total deposits, roughly 90 percent were in karbovanets with the remaining 10 percent in hard currency.

**Table C2**  
**Narodnyi Bank**  
**Annual Interest Rates on Deposits**

Type of Deposit	Soviet Era	1 March 1992	1 August 1992	1 March 1993	1 July 1993	1 January 1994
Demand deposits	2	3	6	15	20	60
Deposit of uncertain maturity	3	7	14	30	40	100
Time deposit: one to three year	5	7	14	30	40	100
Time deposit: three to five year	7	10	20	40	50	120
Time deposit: greater than five year	9	15	30	60	80	180
"Children deposit" -- ten year	9	15	30	70	100	250
Annuity for auto or housing purchase	2	5	14	30	40	100
Special accounts	7	7	7	20	20	60

Source: Narodnyi Bank, 19 July 1994

Deposit interest rates have changed only on these days. The types of instruments available had not changed since the Soviet period.

The Otshadbank in Ukraine was the most innovative successor to the Saving Bank of those in the countries studied in adapting to the post-independence economic climate. It modernized its operations, and could guarantee next-day payment to any location in Ukraine. Its technical facilities were the most advanced of all the banks. For example, all lending and depositing operations in the capital could be governed by magnetic card access. However, its deposit-taking abilities were limited by the interest rates enforced by the National Bank of Ukraine (NBU). On 1 July 1994 the Otshadbank could offer only 30 percent per annum on time deposits of less than 6 month maturity. Its traditional business had been cut way back since independence. In 1988 through 1992, there were roughly 250 customers per day at each affiliate. In 1994, that average had fallen to 5-7. Large deposits were no longer the rule. In the Soviet days, 8 percent of the customers held 72 percent of the value of Saving Bank deposits. Most accounts in mid-1994 were very small in value. Its strategic plan for 1995 was to focus upon providing an effective medium of payments, while leaving deposit and lending operations to others. The Otshadbank accepted deposits in foreign exchange at a 3 percent annual interest rate. It lent these funds carefully, and insisted upon land collateral. These deposits (at the market exchange rate) represented roughly 50 percent of deposits in mid-1994.<sup>37</sup>

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<sup>37</sup> The chief of the Kiev operations of Saving Bank insisted that the foreign-exchange deposits were "mainly held for foreign students in Kiev".







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