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Alternative Social Security Systems in CIS Countries

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Abstract

In the USSR in 1990, social security reforms led to the imposition of a uniform system of benefits in a large and demographically diverse country. This required inter-regional transfers, which are now no longer feasible with the demise of the USSR. Relatively high contribution rates also pose a problem for a nascent commercialized sector. The paper argues that benefit levels in some former Soviet Union countries are now unsustainable. The price shock associated with the "transition" to a market economy should lead to a consideration of a "mix" of policies, including a basic benefit in kind. While funded systems may eventually reduce contribution rates, there are implementation difficulties in the medium term.

JEL Classification Number:
H5, I3, P2

Summary

In the USSR in 1990, social security reforms led to the imposition of a uniform system of benefits in a large and demographically diverse country. This required inter-regional transfers, which are now no longer feasible with the demise of the USSR. Relatively high contribution rates also pose a problem for a nascent commercialized sector.

The paper presents a simple demographic model to compare pay-as-you-go (PAYG) and funded options for providing benefits. An alternative, which could also help in reducing expenditures, is a basic benefit in kind, in Beveridge terms, which would reduce the need for indexation and corresponding increases in contribution rates during the transition period. The paper concentrates on pensions and standardized family allowances, although the argument could be extended to provisions for the unemployed in an analogous fashion.

The empirical investigations, for Russia, Ukraine, Belarus, Uzbekistan, and Turkmenistan, are designed to show the effects of different demographic characteristics in the European and Central Asian Republics in 1991.

It is seen that if interest are negative in the medium term, a move to a funded system would greatly increase contribution rates and a move away from a PAYG system would be undesirable. Even with positive rates of return, these would need to exceed population growth rates for funded systems to be attractive. Thus a funded option would be less attractive in the Central Asian countries, than say in Ukraine or Belarus. Alternative methods of reducing net-overall outlays are discussed, including the basic benefit-in-kind-- through a system of quantity food stamps, and the cash equivalent. It is argued that a combination of PAYG benefits and the basic benefit are desirable for the transition to minimize overall costs while providing adequate benefits.

I. Introduction

The adoption of an integrated system of benefits and contributions in a large country with sharply varying demographic characteristics and income levels depends on "equalizing" transfers across regions, such as was the case in the former Soviet Union (FSU). The dissolution of these transfers, and the major price shocks that are faced in individual successor countries, lead to a need for an evaluation of the appropriate social security system for the period of transition to a market economy and in the longer term. The discussion of reform options, however, has to be related to the existing system of social protection, and in particular the reforms that had been introduced in recent years.

Most FSU countries face increasing pressures on expenditures at a time when resources are stagnating or falling in real terms (Tanzi, 1991). Increasing payroll contributions much beyond currently high levels prevailing in FSU countries may not be desirable, given the disincentives that might be generated for a nascent private sector and increased non-compliance. While much can be done to reduce costs for certain types of instruments--such as increasing the retirement age and tightening eligibility criteria for pensions--in this paper we concentrate on broader systemic choices. The first is an examination of a shift to a funded system from current pay-as-you-go (PAYG) arrangements. The second is to assess the scope for an additional system for the transition period, which may be compared with a "basic benefit" in kind in "Beveridge" terms. This could reduce the need for indexation of benefits, hence preserve the viability of a PAYG system without recourse to major rate increases during the transition. We concentrate on pensions and standardized family allowances in this paper, although the argument could be extended to provisions for the unemployed in an analogous fashion.

Section II provides some of the background to the current situation in FSU countries. In Section III we present a demographic model used to compare the PAYG and capitalized options. Simulations for the year preceding the disolution of the FSU for selected republics are presented in Section IV. We discuss an alternative system of a basic benefit in kind--or the cash equivalent--that could be provided in parallel with the PAYG system without formal indexation. Concluding remarks are presented in Section V.

II. Background

The basic social security system in the former USSR was predicated on a guarantee of employment together with a range of allowances and benefits targeted to particular needs. The levels of cash-based transfers and incomes were determined in relation to extensive in-kind provision and administered prices. A major reform of the formal social security system in the USSR was undertaken during 1989/90. One of the major objectives was to introduce social insurance principles for the financing of pension expenditures, and for this purpose an independent Pension Fund was created.

There was also a reform of a range of family allowances together with the establishment of a Social Insurance Fund. The abandonment of lifetime guarantees of employment was a another major ingredient of the reforms, and this required the creation of an unemployment insurance mechanism. Together these measures were designed to protect against income loss for contingencies that are likely to occur in any modern market-based economy.

The economic reforms in most countries of the new Commonwealth of Independent States (CIS) ensure that the social security system will have to adapt to reflect changing circumstances, in particular to the adjustments in prices and the removal of subsidies and in-kind transfers. Moreover the inter-republican transfers, which had sustained the previous social security system, are no longer feasible. This will necessitate a major overhaul of the social security system in many of the individual successor countries as the levels of benefit for some of the major contingencies are no longer compatible with available resources. The special demographic characteristics in particular regions created some possibilities of the pooling of risks and resources on an all USSR basis, with higher levels of benefit in some republics than would have been otherwise possible. In addition the high levels of payroll contribution, which were set to exceed 40 percent of the wage bill in some countries such as Belarus and Ukraine (when taken together with payroll taxes for Chernobyl and unemployment insurance), pose considerable difficulties to the development of a private sector.

In the USSR at the end of the 1980s, there were political constraints on explicit transfers from poorer to richer republics, even if this was justifiable by pooling of risks for pensions. Such transfers would have been involved on the basis of standardized contributions and benefits, given the demographic characteristics of the poorer Central Asian republics, with relatively young populations, to pay for example for retirees in the richer states, such as the Baltics, which have a relatively high proportion of elderly persons. To ensure that the net transfers were in the "right direction", that is from richer to poorer republics, the designers of the USSR social security reform decided to include universal family allowances for very young children as part of the expenditures to be covered by the resources of the pension fund. While this ingenious device solved the immediate problem of "undesirable" inter-republican transfers, it was no longer possible to design the pension fund on social insurance principles. The restructuring of the pension system that is now necessary, because of the demise of the USSR, reintroduces the possibility of a social insurance base for the pension fund of individual republics.

In some of the CIS countries, such as Ukraine and Belarus, the "retired" elderly comprise a very large proportion of the population. According to the 1989 population census, the ratio of the group of "retirees," defined as those above retirement age: 55 for women and 60 for men, to the population of legal working age was 0.38 in Ukraine and 0.35 in Belarus. It is evident that the old age dependency ratio is increasing in some of the CIS countries, and for Belarus Goskomstat estimates put it at

0.357 for 1991, having risen from 0.289 in 1979. Of course, not all persons of working age are in the workforce, and the effective old age dependency ratio for 1991 would be in excess of 0.4. This implies that not only has there been an increase in the number of retirees, but that over time the number of workers supporting each retiree has fallen from 3.5 in 1979 to 2.8 in 1991. The old age dependency ratio in the Central Asian CIS countries is relatively low by comparison, that for Uzbekistan being 0.16 in 1989. On the other hand, the ratio of persons below working age relative to the working age population in Uzbekistan was 0.88 as against 0.41 in Ukraine.

To finance the increased level of benefits on a pay-as-you-go basis (PAYG) a standardized payroll contribution was imposed throughout the USSR, to pay for pensions as well as a range of allowances, at 26 percent of the wage bill for 1991 (plus a 1 percent contribution by individuals). The contribution rate was set to rise to 37 percent from 1992 on to cater for an aging of the population in certain parts of the USSR. In a PAYG system, the effective old age dependency ratio is one element in the determination of the financing burden of pension expenditures. Another major factor is the level of the average wage (influencing the contribution base) relative to the average pension, or the average replacement rate. Given that nominal pensions remained unchanged between 1956 and 1990, the average replacement rate fell from 60 percent in 1956 to under 33 percent in 1990. The reforms of 1990 were designed in part to rectify the relative fall in the living standards of pensioners.

On the basis of the realized average pension replacement rate of 39 percent of average wages for the USSR in 1991, Ahmad (1992) estimates the PAYG contribution needed on an all-USSR basis for pensions should have been 16 percent of the wage bill. About 12 percent of the wage bill would have been needed for all other allowances expressed in standardized fashion as a benefit per child under 16. Had the average replacement rate for pensions been 50 percent, a 30 percent contribution would have been needed for pensions alone---suggesting that the stipulated average USSR contribution rate may be inadequate for a substantial improvement in benefit levels. Without pooling across republics, the higher replacement rate would have led to a PAYG contribution rate for Ukraine in relation to pensions in 1991 of around 34 percent. And the aging of the population in particular republics, such as Belarus and Ukraine, would undoubtedly lead to an increase in the PAYG contribution rate in the future.

There appears to be little justification for using the surpluses generated on account of pension contributions to cross-subsidize family allowances. Pension contributions represent a long-term commitment to covered workers, and as these may be expected to increase over time with the ageing of the population, a degree of "partial funding" may be desirable to ensure that the contributions do not fluctuate sharply.

III. A Demographic Model

To facilitate the comparison between PAYG and funded options, we model the demographic characteristics of CIS countries with the help of simplifying assumptions. Each country is assumed to have a fixed population growth rate, n, and life expectancy L. All individuals live to age L, begin to work at age T_y, spend T_w years in the workforce and T_p in retirement. Thus,

$$L = T_y + T_w + T_p. \tag{1}$$

All adults marry, and women bear children between the age T_y and $T_y + T_f$. Childbirth is uniformly and continuously distributed over the period of fecundity, T_f and all households have the same number of children. It is assumed that households are nuclear, and that in each country there are exactly n_w workers per household ($n_w \leq 2$). The initial age structure of the population in the republic at time t is represented by the continuous line between 0 and L in Figure 1. This represents a cross-sectional snapshot of the population. 1/

Between time t and t + δt, the age distribution moves from the continuous to the dotted line between 0 and L. Area A represents the children born during the period, and D the number of deaths. And C is the number of people at an age when they have children. Normalizing by 1 at the age when people begin to work, T_y, where a represents age,

$$A = e^{nT_y} \int_0^{\delta t} e^{n\delta t} \cdot e^{-na} \, da = \frac{1}{n} e^{nT_y} (e^{n\delta t} - 1) \tag{2}$$

$$D = e^{nT_y} \int_L^{L+\delta t} e^{n\delta t} \cdot e^{-na} \, da = \frac{1}{n} e^{n(T_y-L)} (e^{n\delta t} - 1) \tag{3}$$

$$C = e^{nT_y} \int_{T_f}^{T_y+T_f} e^{-na} \, da = \frac{1}{n} (1 - e^{-nT_f}) \tag{4}$$

1/ Uppercase T is used to represent phases of life, in the cross-section, and lowercase t relates to points in time affecting the whole distribution.

Figure 1.   Demographic Profiles

Number of
People

$e_{n\delta T}$

1

A

C

D

0   δT T_y $T_y + T_f$ L $L + \delta T$

Age
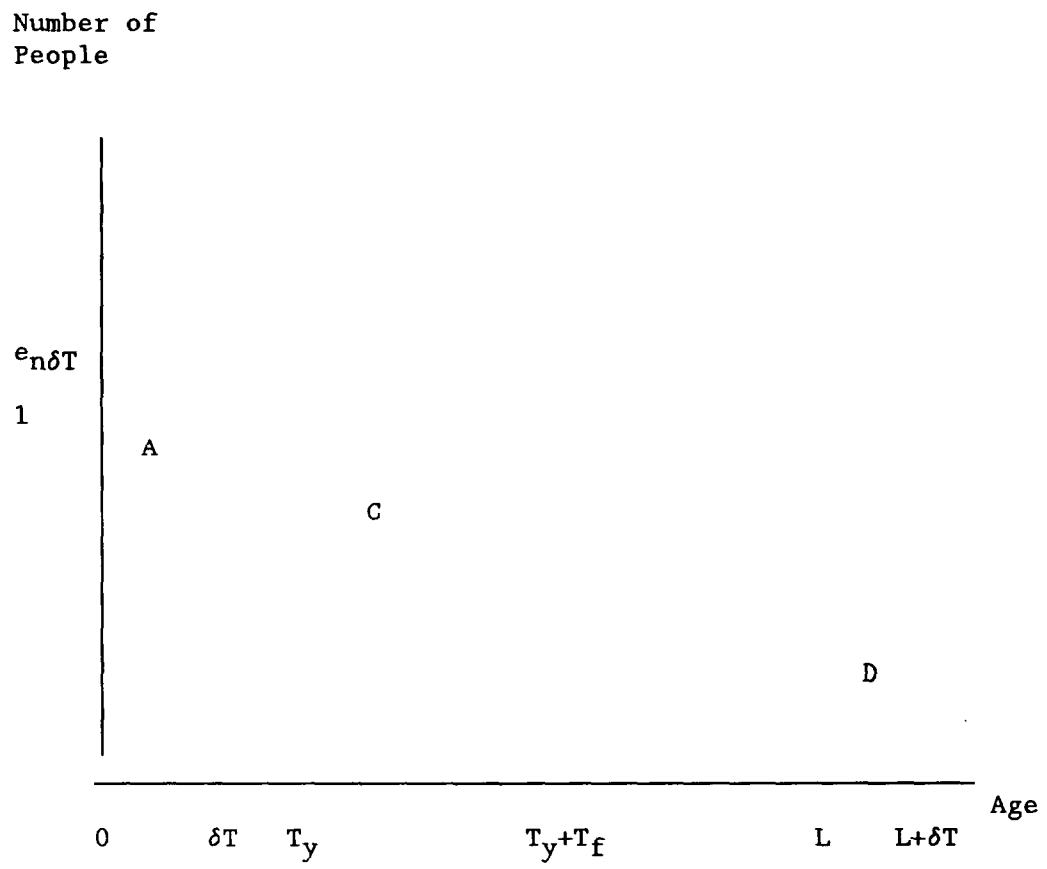
The number of children born to each household between time t and t + δt is given by $\mu_{\delta t}$:

$$\mu_{\delta t} = \frac{2A}{C} = \frac{2ne^{nT_y}(e^{n\delta t} - 1)}{1 - e^{-nT_f}} \tag{5}$$

The total number of children born to a household, n_c, is obtained by the limit μ of $\mu_{\delta t}$, as δt tends to zero, taken over the period T_f:

$$n_c = \frac{2n\, e^{nT_y}}{1 - e^{-nT_f}} \cdot T_f \tag{6}$$

where $\mu = n_c/T_f$ represents the constant instantaneous birth rate in a given household during the fecundity period.

Similarly, one could obtain the normalized population of working age, W, and the number of retirees, R,

$$W = e^{nT_y} \int_{T_y}^{T_y + T_w} e^{-na}\, da = \frac{1}{n}(1 - e^{-nT_w}) \tag{7}$$

$$R = e^{nT_y} \int_{T_y + T_w}^{L} e^{-na}\, da = \frac{1}{n} e^{-nT_w}(1 - e^{-nT_w}) \tag{8}$$

Assuming that the number of workers per household is known, one could derive the number of workers P_w and number of pensioners P_p, as well as P_p as a function of P_w:

$$P_p = \frac{2R}{n_w W} \cdot P_w = \frac{2(1 - e^{-nT_p})}{n_w(e^{nT_w} - 1)} \cdot P_w \tag{9}$$

By the same method, the number of children younger than a given age, T_b, is given by:

$$P_b = \frac{2 \, e^{nT_y}(1 - e^{-nT_b})}{n_w \, (1 - e^{-nT_w})} \tag{10}$$

The capitalized system considered here equates the actual values of contributions and benefits for a given cohort (e.g. the set of people born in a given year) for the given system of benefits. All variables are expressed in present value terms at the beginning of a person's working life, and are given in real terms.

The total wage, Ω, that is earned by a worker during his working age may be expressed as:

$$\Omega \quad 1 = \int_0^{T_w} w_0 \, e^{ka} \, e^{-ja} \, da = w_0 \, \frac{(1 - e^{(k-j)T_w})}{j - k} \tag{11}$$

where j is the real interest rate, w_0 the initial wage, and k the increase in the real wage during the working life of the individual.

1. Pensions

The total value of all pensions an individual is likely to receive during his retirement may be expressed as π:

$$\pi = \int_{T_w}^{T_w + T_p} p \cdot e^{-ja} \, da = p \, e^{-jT_w} \, \frac{(1 - e^{-jT_p})}{j} \tag{12}$$

It is assumed that all persons will receive a pension. The contribution rate necessary to sustain the pension system on a capitalized basis is thus

$$t_p = 2\pi/n_w \, \Omega \tag{13}$$

2. Allowances

On the assumption that the main family allowance is a child benefit payable to all children below a particular age, T_b, it is possible to calculate the profile of allowances payable to each family. As shown in Figure 2, the benefit for a household at a point in time, $b(a)$, is

Figure 2.   Benefit Structure

Benefits

B_1 B_2 B_3

Age

T_y $\text{Min}(T_f, T_b)$ $\text{Max}(T_f, T_b)$ $T_y + T_f + T_b$
$+T_y$ $+T_y$
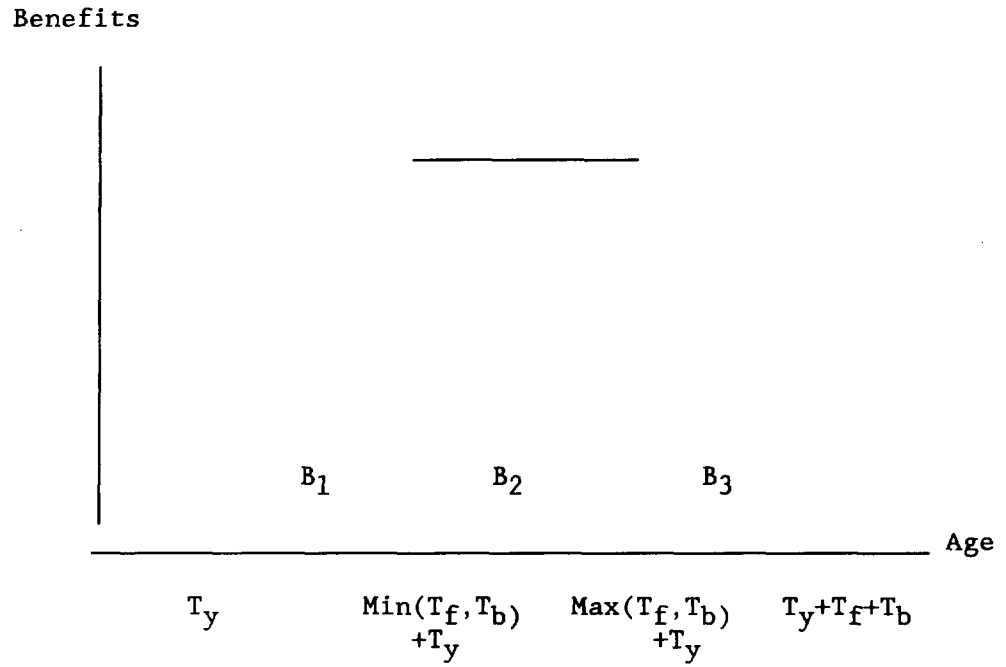
$$b(a) = \mu ab \qquad \text{if } T_y < a < T_y + \min(T_b, T_f),$$

$$= \mu b \min(T_b, T_f) \qquad \text{if } T_y + \min(T_b, T_f) < a < \max(T_b, T_f),$$

$$= \mu b [T_b + T_f - a] \qquad \text{if } T_y + \max(T_b, T_f) < a < T_y + T_b + T_f$$

$$= 0 \qquad \text{if } a > T_y + T_b + T_f \tag{14}$$

Then over a lifetime, the value of all benefits received is then:

$$B = \int_0^{T_y + T_f + T_b} b(a) e^{-ja} \, da = B_1 + B_2 + B_3 \tag{15}$$

Then, if $T_b < T_f$,

$$B_1 = \int_0^{T_b} \mu b(a) e^{-ja} \, da = \frac{\mu b}{j^2} [1 - e^{-jT_b}(1 + jT_b)] \tag{16}$$

$$B_2 = \int_{T_b}^{T_f} \mu b T_b e^{-ja} \, da = \frac{\mu b \, T_b}{j} [e^{-jT_b} - e^{-jT_f}] \tag{17}$$

$$B_3 = \int_{T_f}^{T_b + T_f} \mu b(T_f + T_b - a) e^{-ja} \, da = \frac{\mu b}{j^2} e^{-jT_f}[e^{-jT_b} + jT_b - 1] \tag{18}$$

Hence,

$$B = \frac{\mu b}{j^2} (1 - e^{-jT_b})(1 - e^{-jT_f}) \tag{19}$$

In a capitalized arrangement, the contribution rate necessary to sustain the allowances is given by:

$$t_b = B / n_w \Omega \qquad (20)$$

All the above variables in this section are expressed in real terms.

3. PAYG and capitalization

In a PAYG system, total present expenditures are met out of total present contributions. The required PAYG contribution rate is a function of the aggregate pension bill (defined as $p_a \cdot P_p$, or the average pension times the number of pensioners at a point in time) expressed as a percent of the aggregate wage bill, where the latter is given by Ω':

$$\Omega' = P_w w_a \qquad (21)$$

and the average wage w_a is:

$$w_a = \int_0^{T_w} w_0 e^{ka} e^{-na} \, da \Big/ \int_0^{T_w} e^{-na} \, da$$

$$= w_0 \frac{n}{n-k} \cdot \frac{1 - e^{(k-n)T_w}}{1 - e^{-nT_w}} \qquad (22)$$

Notice that neither the numerator, $p_a \cdot P_p$, nor denominator (equation 21) of the expression for the PAYG contribution rate involves the rate of interest, but depends on the population growth rate n. By contrast, the contribution rate for capitalized pensions is independent of n, but is a function of the rate of interest j (see equations (12) and (13)). When n = j, it may be verified that the two systems would yield equivalent contribution rates. With a stable demographic structure, PAYG systems would be preferred if and only if n > j, a situation that is likely to be satisfied in many of the CIS countries.

If population growth varies over time, a degree of inter-generational redistribution will result with a PAYG system, but not with a capitalized system. This is the standard justification for preferring a capitalized system in many cases, and is taken as the crucial distinction between the two systems in this paper. It is possible to consider a "hybrid" PAYG or partially funded system, with the possibility of a build-up of reserves, or of borrowing at market interest rates, to cater for demographic bulges. Such a hybrid system would be capitalized in the sense described above-- even though full capitalization of contributions may be difficult to implement in many circumstances.

IV. Simulations for Selected Republics

        In this section we juxtapose the PAYG and capitalized outcomes for
selected CIS republics for 1991, including Russia, Belarus, Ukraine,
Uzbekistan and Turkmenistan. This choice reflects the diversity of
demographic patterns to be found in the former USSR. The demographic data
are based on the 1989 USSR Census. The average wage data for each republic
are based on differentials as reported in IMF et al, (1991) using Russian
1991 outcomes as the base. The basic data are reported in Table 1.

1.   PAYG and capitalized options

        The basic results are presented in Table 1, with PAYG contribution
rates taken from Ahmad (1992) for the selected republics. The capitalized
contribution rates are presented for various real interest rates. At a real
interest rate of 0.8, which would be equal to the growth rate of the USSR
population, the PAYG and capitalized pension contribution rates would be
equalized on an all USSR basis. The 0.8 percent real interest rate exceeds
the growth rate of the Russian, Ukrainian and Belarus populations, and if
this rate of return could be achieved, these republics would be able to
reduce their pension contribution rates from the PAYG levels. The
0.8 percent real interest rate, however, is lower than the population growth
rate in Turkmenistan or Uzbekistan, and with a capitalized system with this
rate of growth, contribution rates are likely to be higher for these
republics. If a 3 percent real rate of return could be assured, then
contribution rates in all republics could be reduced.

        The comparisons between the PAYG and capitalized options are based on
steady state assumptions, and do not include the substantial transitional
costs that would be involved over a prolonged period of time in the shift
from the former to the latter. This is because current beneficiaries and
those who are to retire in the next 10 years or so would not be able to
benefit from the capitalized system, and would need to be provided for by
the budget. Thus any benefits from a reduced contribution for a capitalized
system would accrue well into the future.

        If real interest rates remain negative in the medium term, the move to
a capitalized system would greatly increase the contribution rates and a
shift away from a PAYG system would not be attractive. It is only when
proper capital markets are established in the CIS republics, with positive
real rates of return, that the possibility of fully funded pensions should
be considered. Even then, for republics with relatively high population
growth rates the benefits are likely to be lower than for those with lower
population growth rates.

Table 1. PAYG and Capitalized Contributions in
Selected CIS Countries, 1991

Contribution Rates	Russia	Ukraine	Belarus	Turkmenistan	Uzbekistan
PAYG 1/					
Pensions	16.0	18.4	18.1	8.4	9.4
Family Benefits	11.0	11.9	12.1	21.0	24.5
CAPITALIZED					
Pensions					
j= 0.8 2/	15.6	16.4	17.0	13.9	16.2
j=-3.0	43.7	46.9	49.5	37.4	46.5
j= 3.0	8.0	8.3	8.6	7.3	8.2
Benefits (j=0.8)	8.4	9.2	9.3	16.0	18.7

Source: Calculations based on Appendix Table 2 and Ahmad (1992).   See
text for formulations.

1/ The PAYG contribution rate represents the payroll tax which would have
been needed to cover 1991 levels of expenditures on pensions and family
benefits, in the absence of transfers from the budget or other republics.
The overall statutory PAYG rate for 1991 was 28 percent, established on an
all-USSR basis.   To the extent that the sum of PAYG pension and family
benefit contribution rates falls short of 28 percent, a republic should have
generated a surplus, but would have been in deficit if the sum exceeded the
statutory rate.

2/ j represents the real interest rate used to calculate contributions
for capitalized pensions.

2. Alternatives for the transition

It is likely that in the transition period, most of the CIS republics will continue to operate PAYG systems for pensions. However, even PAYG systems, to avoid sharp fluctuations in the contribution rate, require the buildup of partial reserves. This would move the system towards the hybrid system described above, with reduced inter-generational redistribution.

In keeping with the Beveridge tradition, we would see a continued role for family allowances, perhaps amalgamated as a single child benefit as illustrated in the calculations above. We do not see the justification for capitalized contributions for allowances, which would remain one of the main instruments to assist families with children at a crucial stage in the life cycle. However, earmarked payroll contributions are likely to continue to be needed during the transition to protect the family allowances, and also to determine the level at which the benefits might be set. In the longer term, the family allowances might be paid out of general revenues.

As described in Ahmad (1992), to keep the overall contribution rate from rising to unsustainable levels, it is important to keep the average replacement rate (which is determined ex-post as a result of adjustments in the minimum pension, or in combination with revaluations of existing benefits) from rising sharply. However, in a transition period when average wages are falling in real terms, and when most pensions are concentrated in a narrow band around the minimum wage, reliance solely on cash pensions per se would lead to a substantial deterioration in the living standards of one of the most vulnerable groups of the population. A similar argument applies with respect to family allowances which are constrained in like fashion.

A method of providing a level of basic protection during the transition is through what might be termed, by a latter day Beveridge, as a basic benefit in kind. This might be provided in terms of limited quantities of basic food-items, or in terms of the cash equivalent of the quantities stipulated. This basic protection could be viewed as an insurance service provided by the state to citizens without reference to current income levels. Thus financing should be outside payroll contributions. In other words, this basic insurance should be met out of general revenues. A consequence of such a provision would be to lower the cost of labor to enterprises, a measure that should reduce the extent of unemployment that may result because of the transition, and also encourage labor absorption in newly commercialized sectors.

a. Quantity based food-stamps

A system of provision of limited quantities of the basic food items, could be implemented through food stamps denominated in quantity terms. A number of administrative arrangements are possible. One possibility is for individuals to purchase the stamps (e.g., from banks or post offices), and to obtain the stipulated quantity from retailers without further payment.

Of course, additional quantities would have to be paid for at the market price. The retailers would redeem the stamps, for an equivalent quantity of goods, plus a merchandising fee. Alternatively, a system of cash-redemption may be considered. The basic idea is for there to be a single market price as far as the retailer is concerned, and that this price should be freely determined (see Ahmad 1991 for a further discussion).

The quantities set for the food stamps should be determined by the consumption levels of the poorest strata of society. This would provide the highest degree of protection to the poorest members of society, and richer individuals purchasing larger quantities at higher freely determined prices would be protected to a lower extent. The system of quantity food stamps could permit a substantial reduction in the subsidy cost in relation to a system of generalized subsidies (see IMF et al., 1991). The mechanism for the withdrawal of the quantity food stamps would involve an adjustment of the prices at which these are provided, with a narrowing of differentials with market prices within a two or three-year period.

b. Cash compensation

An alternative to the system of quantity food-stamps would be a cash equivalent transfer to individuals. If resale of the quantity food-stamps were permitted, and without transactions costs, then in a stable pricing regime, the two methods of protection would be identical. The difficulty is that the quantity food-stamps do require an administrative network, and that transactions are not costless, which may lead to a preference for cash transfers in principle. On the other hand, a cash transfer also involves a degree of administrative complexity---arrangements have to be made to reach those who are affected in time---and this process may not be immune from corrupt practices. And in the uncertainty associated with a period of rapid price change, the quantity food-stamp would provide a poor individual much better protection than the cash transfer. These factors would have to be considered by the authorities in coming to a judgement between one or the other system.

V. Concluding Remarks

It is apparent that a PAYG system for pensions will continue to operate in most CIS republics in the transition period. Family allowances will have to be tailored to available resources in individual republics, as the prospects for inter-republican transfers are not bright, and it is unrealistic to expect that surpluses on account of pensions should continue to be used for family allowances in certain republics. Maintenance of basic living standards could involve a combination of formal social security instruments, as well as a basic benefit in kind-- or its cash equivalent-- to protect the vulnerable against sharp relative price changes, while keeping wage-based contributions at a reasonable level.

Table 2.   Basic Data for Calculations

	Turkmenistan	Russia	Ukraine	Belarus	Uzbekistan
Initial data 1/					
Wage index 2/	0.92	1.08	0.91	0.95	0.81
(rub/month)					
Average net wage	451.3	529.8	446.4	466.0	397.3
* Average gross wage at t	618.2	725.8	611.5	638.4	544.3
* Initial gross wage	567.7	658.7	553.9	579.0	500.2
Pension	177.2	208.0	175.3	183.0	156.0
Benefit per child	94.0	94.0	94.0	94.0	94.0
(years)					
youth period	18.0	18.0	18.0	18.0	18.0
working period	40.0	40.0	40.0	40.0	40.0
* pension period	16.0	17.9	18.8	19.7	18.9
fecundity period	20.0	20.0	20.0	20.0	20.0
allowance period	18.0	18.0	18.0	18.0	18.0
life expectancy at birth	65.2	69.6	70.9	71.8	69.2
(numbers)					
workers per household	1.3	1.3	1.3	1.3	1.3
* children per household	4.0	2.4	2.2	2.4	4.1
(per 1000 live births)					
infant mortality	54.7	17.8	13.0	11.8	37.7
('000)					
workers	1,492	75,168	25,420	5,198	9,797
pensioners	440	42,062	16,356	3,280	3,200
children	2,064	63,586	19,746	4,274	13,913
rates					
interest rate	0.8	0.8	0.8	0.8	0.8
population growth rate	2.5	0.7	0.4	0.6	2.6
wage growth rate	0.5	0.5	0.5	0.5	0.5

1/ An asterisk (*) represents a calculated variable (see text for formulations).
2/ From IMF et al (1991).

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