Country Study

MOLDOVA'S MIDDLE-INCOME 'MISTAKEN IDENTITY':

THE SEVERE INCOME AND HUMAN DEVELOPMENT COSTS

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MOLDOVA'S MIDDLE-INCOME 'MISTAKEN IDENTITY': THE SEVERE INCOME AND HUMAN DEVELOPMENT COSTS[*]

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The newly independent Republic of Moldova joined the World Bank and the IMF in 1992. The World Bank designated it a 'middle-income' country, a status it retained for Bretton Woods lending until 1997. The middle-income designation implied that the government of Moldova was not eligible for concessionary lending from the World Bank and IMF, and would not receive concessionary finance from the major bilateral development agencies. After demonstrating that assigning middle-income status to Moldova was a mistake, which was implicitly conceded by the World Bank in 1997, this Country Study investigates the consequences. It uses a simple procedure for calculating counterfactual scenarios based on assigning Moldova low-income status in the early 1990s. The counterfactual scenarios suggest that the development and welfare costs of the mistake were extremely high: a much greater fall in income per capita than would otherwise have been the case, with an associated increase in headcount poverty and lower life expectancy. There is a cruel irony associated with this mistake. Had Moldova been designated a low-income country in the early 1990s, it would have been by the mid-2000s a middle-income country instead of remaining the poorest country in Europe. Thus, there is a strong case for multilateral compensation.

1 INTRODUCTION

In 1992, Moldova joined the World Bank and the International Monetary Fund, and was assigned to middle-income status by the World Bank.[1] For developing country governments, the distinction between low-income and middle-income status is of great practical importance. To be defined a low-income country gives a government access to concessional finance.

This means access to 1) the International Development Association (IDA), the World Bank's 'concessional window'; 2) several IMF concessional funds (for example, the Poverty Reduction and Growth Facility); 3) IDA terms for debt restructuring; and, in practice, 4) concessional lending and grants from bilateral agencies.[2] As a result of the decision by the World Bank on its income level, Moldova found it necessary to borrow on the private commercial capital market and on terms close to commercial ones from the World Bank, IMF and regional development banks.[3]

If one accepts the dichotomy between low- and middle-income as a valid basis for determining the terms for development finance, then one must accept that errors of measurement can result in inequities and inconsistencies near the borderline that divides the two groups. However, the case of Moldova was much more serious than a minor measurement error.

In Section 2 it is demonstrated beyond reasonable doubt that the World Bank made a mistake when it assigned Moldova to the middle-income category. It is also demonstrated that the European Bank for Reconstruction and Development and the IMF assigned Moldova a per capita income well below the World Bank low-income borderline as early as 1994. And it was not until 1999 that the World Bank officially shifted Moldova from the middle- to low-income category.

It is beyond dispute that low-income status brings economic benefits to a country, and equally beyond dispute that being assigned to middle-income status entails concrete economic costs. In Section 3 a simple national income accounting model is used to estimate the cost to Moldavians of the World Bank's miscalculation of its national income. In Section 4 the output costs associated with the erroneous middle-income designation are used to calculate the impact on social indicators. Section 5 considers the budgetary effects, especially those during the severe deficit reduction measures of 1997-1999. The final section re-emphasises the case for financial compensation for the costs attributable to the mistaken identity of Moldova.

2 MOLDOVA'S PER CAPITA INCOME

In the early 1990s, the Bretton Woods institutions encountered a unique challenge that would not be repeated: establishing the procedures and policies for initiating operations in countries that would transit from central planning to market regulation. The policies applied to these countries, reinforced by strict conditionalities, would prove extremely controversial and be associated with economic contraction in all transition countries and collapse in more than a few (see Weeks, et al., Chapter 2).

An apparently administrative issue, but in practice of overwhelming importance, was the valuation of the national products of these countries. This valuation would determine the terms on which governments could borrow, and would be central to the extent to which they would have access to bilateral development assistance.

A World Bank research paper in 1992 sought to create a rigorous analytical framework for establishing consistency between the administered prices of the planning system and the market evaluation of goods and services. It appears that these estimates were the basis for the first listing of the former Soviet Union countries in the *World Development Report* of 1993.[4] That research report gives the per capita income of Moldova as US$ 2,360.

Table 4 of the report compares this estimate to 10 other estimates for Moldova, all of which were lower, on average, by 19 per cent, with the lowest being 36 per cent lower (World Bank 1992, 20).[5] At the very least, the estimates of Moldova's GDP at independence were approximate and subject to re-interpretation, as they would be by the World Bank in the late 1990s.

Table 1 reports various estimates of Moldova's per capita income,[6] from the *World Development Reports*, the World Bank country reports for Moldova, the European Bank for Reconstruction and Development, the IMF, and the National Bank of Moldova. The last column gives the per capita income of the lowest middle-income country for each *World Development Report* (1993-1995) or the low-income borderline (after 1995). The second column, 'WDR 93', begins with the per capita income figure in WDR 1993 and adjusts it using annual growth rates.[7]

TABLE 1
Various Statistics on Moldova's Per Capita Income, 1991-2000 (US$ 1995)

	WDR	**WDR 93**	**WB CP**	**EBRD**	**IMF**	**NBM**	**LY WB**
1991	2170	2170					650
1992	1300	1542	1260				670
1993	1060	1524		**354**	**310**	**310**	730
1994	870	1053		482	325	377	770
1995	920	1041			392	400	790
1996	nd	983				471	785
1997	**540**	1002				528	785
1998	410	939				464	
1999	370	910	350			321	
2000	379	931				354	

Notes and sources:

<u>WDR</u>: from the annual and semi-annual *World Development Reports* (with a two-year lag in title date, so that the 1991 figure was published in 1993).

<u>WDR 93</u> is the time series implied by the 1991 figure, using accepted rates of growth for 1991-2000.

<u>WB CP</u>: the per capita income figures in the World Bank country reports for 1994 and 2004.

<u>EBRD</u>: from the European Bank for Reconstruction and Development (*Transition Report update 1995*).

<u>IMF</u>: estimate found in IMF (1996).

<u>NBM</u>: from the National Bank of Moldova website.

<u>LY WB</u>: for 1991-1995 the per capita income of the lowest middle-income country; for 1997-1998 the official dividing line between low- and middle-income countries.

Comparison of the first two columns suggests that the World Bank substantially revised Moldova's per capita income at least twice, in 1993 and 1997 (in the former year by 30 per cent compared to what the 1991 value and the growth rates implied, and in the latter year by almost half).

Since the contentious issue is when these statistics were assigned, one should note that the WDR numbers appeared with a two-year lag (e.g., 1991 appeared in the 1993 report), the values reported in the World Bank country report were contemporary, the EBRD statistics

were in mid-1995, the IMF's in 1996, and the National Bank of Moldova's 1993 number was assigned in 1995. The table demonstrates beyond challenge that by mid-1995, two international organisations, the EBRD and the IMF, accepted a per capita income of Moldova that implied it was a low-income country.

This date is important because major lending to Moldova by the IMF would begin in late 1995,[8] and the World Bank would make over half of its lending after 1995. Almost all of the loans by both multilaterals would be non-concessionary.[9] The EBRD would begin its lending, also non-concessional, in 1995.[10] Thus, the two organisations that in their official documents reported a per capita income well below the low-income country threshold would lend to Moldova on terms for a middle-income country.

In 1999, when debt service reached 15 per cent of GDP, these three organisations accounted for 62 per cent of Moldova's external debt and 70 per cent of its public sector debt. Had these loans been on IDA terms, this entire debt would have been within a grace period for repayment.[11] Therefore, a closer inspection of the World Bank's reporting on Moldova's per capita income is appropriate.

Table 2 demonstrates the degree of accuracy of the estimates of per capita income by the World Bank for 1991 in seven ex-USSR countries. The countries are Moldova and all other ex-USSR countries that were reported to have per capita income lower than Moldova's in 1991. The first column reports the statistic given in *World Development Report 1993*. Under 1997, the lower number is the per capita income assigned to the country in *World Development Report 1998/1999*.[12] The upper row for each country gives the per capita income implied by 'consensus' growth rates for each country.[13]

TABLE 2

Per Capita GDP for Eight Former Republics of the Soviet Union, from World Development Reports Based on Consensus Growth Rates, 1991-1997

	WDR	Level implied by growth rates:						WDR91*/
	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**YLY**
Moldova	2170	1542	1524	1053	1041	983	1002	1.86
							540	
Armenia	2150	1226	1104	1159	1235	1342	1382	1.90
			580					
Turkmenistan	1700	1524	1319	1050	945	860	742	1.18
							630	
Azerbaijan	1670	1630	1235	978	853	896	939	1.96
				500				
Georgia	1570	866	614	552	567	696	768	1.06
			580					
Kyrgyz Rep	1550	1320	1116	893	835	955	1035	1.42
				630				
Uzbekistan	1350	1171	1118	1040	1012	1042	1076	na
Tajikistan	1050	731	604	466	402	330	331	1.49
		492						
Lowest MY	650	670	730	770	790	785	785	

Notes: MY = middle-income. WDR91*/YLY is the ratio of the WDR 1993 per capita income for 1991, adjusted by consensus growth rates to estimate the per capita income in the year the country was declared 'low income', divided by its WDR per capita income in that year.

Sources: *World Development Reports* 1993-1997, 1998/1999, 2000/2001; and EBRD 1995-2000.

The purpose of the table is to allow us to inspect the designation of countries as 'low-income' by the World Bank. The last row of the table gives the lowest per capita income of middle-income countries or the benchmark per capita income for low-income status.[14]

The final column reports the ratio of the per capita income, implied by the WDR 1991 statistic and consensus growth rates, to the country's per capita income in the year that it was designated 'low-income'. The table demonstrates several important points. For only one country, Georgia, does the WDR 1991 statistic generate a 1997 per capita income close to that assigned to it in WDR 1998/1999, though the number for Turkmenistan might be considered within a reasonable degree of measurement error. For the other five countries that became defined as low-income, the difference varies from slightly over 40 per cent (Kyrgyz Republic) to 90 per cent (Armenia). The only reasonable conclusion to reach is that the World Bank adjusted downwards the per capita incomes of these countries on some basis for which we have no information.

This adjustment occurred at a different time for each country. For Tajikistan, the adjustment was made for 1992 (by 49 per cent, as reported in the WDR 1993); for Armenia, it was done in 1993 (by 90 per cent); for the Kyrgyz Republic and Azerbaijan in 1994 (by 42 and 96 per cent, respectively); and for Turkmenistan and Moldova in 1997 (by 18 and 86 per cent respectively).[15]

There is no obvious reason that some countries benefited from adjustment earlier than others. Thus, this suggests that the adjustments were *ad hoc*. The practical consequences of later adjustment were profound: lack of access to IDA lending and concessional funds (including grants) from bilateral lenders. In the case of Moldova, and perhaps others, this lack of access resulted in substantial borrowing at commercial rates.

In summary, it is beyond dispute that on the basis of per capita income, Moldova qualified as a low-income country in the mid-1990s. The World Bank made a mistake in its estimate of the country's per capita income for 1991, and persisted in this mistake until 1998-1999. This was recognised by the IMF and EBRD in 1995, and by implication by the World Bank in its 1998-1999 revision of the country's per capita income.

It is also beyond dispute that multilateral lending to Moldova, at least by 1995, should have been on IDA terms. Therefore, it follows that through much of the 1990s and into the 2000s, the government of Moldova paid debt service, a considerable portion of which was to the World Bank itself,[16] which was unjustified by the procedures for multilateral lending.[17] Furthermore, the high debt burden left Moldova more exposed to the Russian financial crisis of 1998 than other former Soviet countries (Loukoianova and Unigovskaya, pp. 8, 17, 20). The next section estimates the impact of the World Bank's mistake.

3 COUNTERFACTUAL PER CAPITA INCOME SCENARIOS

It should not be controversial that being assigned middle-income status rather than low-income would have an economic cost.[18] This would result from the opportunity cost of the differential in debt service and foregone concessional lending and grants. This section uses the familiar national income identity to generate counterfactual scenarios that allow the cost to be calculated based on reasonable assumptions.

National income is equal to the sum of private consumption, private investment, government expenditure, net exports and inventory change. The latter is assumed to be zero, which is justified over an extended period, though there might be minor errors in any year. Following accepted theory, private consumption is assumed to be a function of disposable

income (national income minus government revenue), and imports a function of aggregate income.

On these assumptions, the level of national income is equal to the components of autonomous expenditure (private investment, government expenditure and exports) times the multiplier, where the latter is determined by three parameters, the propensities to consume, tax and import (see the Annex for the algebra). The multiplier is the inverse of the sum of the share in national income of the three elements of autonomous expenditure.

In the calculations, private investment and exports are assumed to be the same in the counterfactuals as in the actual outcome, with public expenditure becoming the only element of autonomous demand that changes. For investment, we assume that the investment decision is made on the basis of expectations, which would be too complex to include in the scenarios.

The calculations also ignore counterfactual changes in interest rates, a major determinant of the cost of investment. For exports, the standard assumption is made that their demand is determined externally, and exchange rate effects are ignored. If, as seems reasonable, the absence of a debt burden, which is central in the scenarios, would raise expectations, the counterfactuals are conservative in their estimate of the economic cost of being assigned middle-income status.

The most difficult part of the counterfactual exercise is to determine the shares of the components of autonomous expenditure and government revenue because different sources report different statistics for some years. Because this study focuses upon the effects of a decision by the World Bank, World Bank statistics were used when sources were in disagreement, or IMF statistics if the World Bank did not report the statistic (see the Annex for a discussion of data sources, and Annex Table 2 for the basic statistics used in the counterfactuals).

Three counterfactual calculations are generated, on the assumption that Moldova was assigned low-income status in 1994, a year after it joined the World Bank and IMF.

1. Assumption of no debt service payments by Moldova:

If Moldova had been designated a low-income country in 1995, debt service in that year and subsequent years would have been close to zero. During 1990-1994, debt service was less than one per cent of GDP in every year, and had the subsequent loans been on IDA terms there would have been a near-zero interest rate and a grace period longer than the counterfactuals calculated in this study.

Since it is an unrequited transfer, debt service does not stimulate aggregate demand. Thus, demand-increasing public spending is the reported share in GDP minus the share of debt service. Thus, the multiplier is calculated using public spending minus debt service. The first counterfactual applied that multiplier to reported expenditure, which assumes that all debt service became domestic expenditure.

2. Assumption of no debt service and receipt of 'representative' concessionary grants by Moldova:

As a low-income country, Moldova would have received official development assistance in grants. While the counterfactual for debt service was simple to formulate, deciding on the

hypothetical ODA was more speculative. The assumption was made that Moldova would have received a share of ODA in GDP equal to the average for the low-income countries of the former Soviet Union (these statistics are reported in Annex Table 1).

Because Moldova had the second smallest population of the eight countries in Annex Table 1, this is a conservative assumption. The counterfactual average for Moldova is the same as the actual value for Armenia (the smallest country) and over a percentage point below that for the Kyrgyz Republic (the third smallest).

3. The previous two assumptions plus a lower import propensity (increased multiplier) by a shift to public spending:

The counterfactual assumption that government spending increased by the share of debt-service relief and additional ODA implies that there was a relative shift in the distribution of domestic expenditure from the private sector to the public sector. While the private sector had a high and increasing propensity to import during the 1990s and 2000s, the import share of public expenditure was quite low. Therefore, the expenditure-shifting from private to public would reduce the aggregate import propensity and, therefore, increase the multiplier (see the Annex for details). The third counterfactual scenario applies this 'adjusted multiplier' to the public spending share in the second counterfactual.

These three counterfactuals can be epitomised as follows:

1) <u>no debt service:</u> namely, what if Moldova had received its loans on IDA terms?

2) <u>no debt service and receipt of ODA:</u> namely, what if Moldova had received its loans on IDA terms and received representative ODA levels?

3) <u>no debt service, receipt of ODA and a public expenditure effect on lowering import propensity:</u> namely, what if Moldova had received its loans on IDA terms, had received representative ODA levels, and its import propensity fell in accordance with the implied increase in government expenditure and its multiplied therefore rose?

The counterfactuals are shown in terms of per capita income in Figure 1 (with the numbers supplied in Annex Table 2). It comes as no surprise that all of the counterfactual calculations yield a GDP and GDP per capita above the reported statistics. This follows necessarily since each counterfactual assumes a higher level of aggregate expenditure that was realised, and the economy had excess capacity.

Table 3 summarises the difference between the counterfactuals and actual per capita income. In the first half of the 1990s, the difference was relatively small, just five per cent as an annual average, with ODA the largest element of the difference and debt service being zero. For the second half of the decade, the calculated losses are dramatic, namely, over 40 per cent of GDP, with debt service alone making a difference of 17 percentage points.

Perhaps most striking is the lingering effect of the mistaken identity assigned to Moldova. During 2000-2006, well after Moldova had been declared low-income, debt service depressed per capita income by 12 per cent per year. And all three counterfactual components reduced this drop by slightly over twenty per cent.

FIGURE 1

Actual and Counterfactual GDP Per Capita, Moldova, 1990-2006
(1995 U.S. dollars, World Bank)
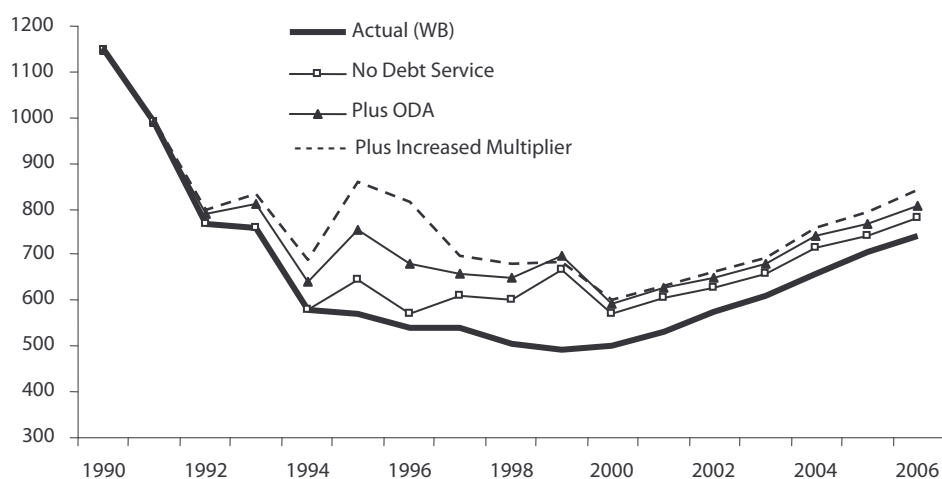
Notes:

Actual is GDP per capita calculated by using the _World Development Report 1997_ statistic for per capita income in 1995, multiplied by the World Bank population statistics.

No Debt Service is the autonomous demand multiplier times the components of exogenous expenditure, assuming that public-sector external debt service was used as domestic expenditure.

No Debt Service Plus ODA is the previous counterfactual calculation, plus an increase in government expenditure equal to the difference between the official development assistance received by low-income former USSR countries and that received by Moldova (percentage of GDP).

No Debt Service Plus ODA Plus Increased Multiplier is the two previous counterfactuals, with the additional assumption that the increase in government expenditure from debt service and ODA reduces the import propensity.

See the Annex for sources and detailed explanation of calculations.

Sources: See Annex for data and method of calculation.

TABLE 3

Summary of Losses, Per Capita, Annual Average (US$ 1995)

	1990-1994	1995-1999	2000-2006	All years
1. No Debt Service	0	89	74	57
2. Plus ODA	27	69	33	42
3. Plus Increased Multiplier	<u>16</u>	<u>61</u>	<u>23</u>	<u>32</u>
Total loss	43	218	130	131
Per capita GDP	848	529	618	660
Total Loss/Actual (%)	5.1	41.2	21.1	19.8

Notes: Each row refers to the loss calculated in the counterfactual for each item alone. ('Total loss' is the difference between actual GDP values and the third counterfactual).

The credibility of the counterfactual scenarios is reinforced when one compares Moldova to other low-income countries of the former Soviet Union. One of the principal consequences of Moldova's debt burden was to undermine the financial stability of the country. When the Russian financial crisis of 1998 swept the region, Moldova's debt made the country especially

vulnerable, as demonstrated in Figure 2. The six countries in the figure in addition to Moldova were selected because they all had low-income status by the end of the 1990s. Of the seven countries, Moldova was unique during 1997-2000 in that it had neither low-income status nor petroleum to export.[19]

FIGURE 2

Index of Constant Price GDP, former Soviet Union Low-Income Countries, 1992-2000 (1997 = 0)
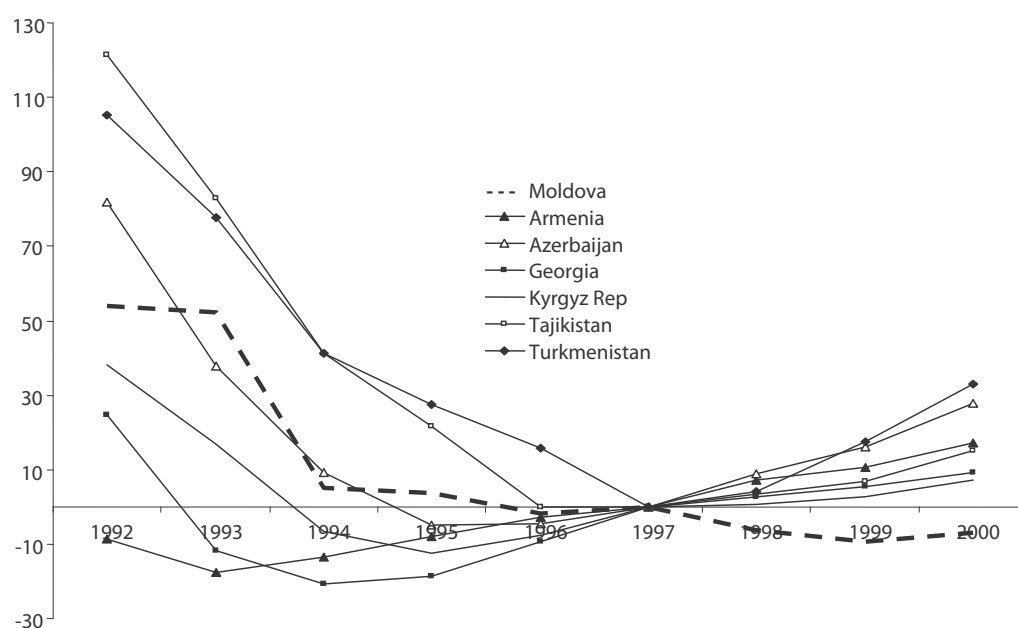
Note: See Table 2 for low-income status.
Source: EBRD (1995-2001).

During 1992-1997, all seven countries show a similar downward trend in per capita income, and Moldova's decline was *less than* the average experienced by the other countries. However, after 1997 only Moldova suffered a decline in per capita income in the wake of the Russian crisis. A simple hypothesis test indicates that if one controls for petroleum exports, being assigned low-income status was associated with a per capita income 13 per cent higher than in its absence.[20] This cross-country result is consistent with the analysis above that Moldova has borne a heavy cost for the non-concessionary borrowing and the lack of development assistance that resulted from having been assigned middle-income status.

If it is obvious that the erroneous designation of Moldova as middle-income had an economic cost, it should be equally obvious that the loss of per capita income had a negative impact on social conditions. In the next section, the counterfactual calculations of per capita income are used to generate counterfactual scenarios for key social indicators.

4 COUNTERFACTUAL SOCIAL INDICATOR SCENARIOS

Declines in per capita income, unless offset by a reduction in inequality, result in an increase in the number of people below the poverty line. In addition, falling per capita income tends to reduce government expenditure per capita. These obvious relationships can combine to

undermine the health of a large portion of the population. This section investigates these effects and links them to the counterfactual calculations of per capita income.

The relationship between the proportion of the population in poverty and per capita income is determined by the distribution of income in the vicinity of the poverty line. Therefore, the higher per capita income for Moldova in the counterfactual scenarios would reduce poverty if the income effect were not cancelled by an adverse distribution effect. As a practical matter, it is not possible to incorporate distributional effects into the hypothetical scenarios.

Headcount poverty rates for the counterfactuals are calculated on the assumption that distribution near the poverty line remained unchanged during 1990-2006. Given the large changes in income per head, this implicitly assumes a continuous and well-behaved distribution function. Specifically, it is assumed that the elasticity of the number of people below the poverty line with respect to per capita income is slightly over minus one.[21]

Calculating scenarios on the basis of these restrictive assumptions yields the conclusion that during the second half of the 1990s, poverty would have been eight percentage points lower had there been no debt service to pay (about 300,000 fewer people in poverty), 15 points lower with no debt service and with receipt of ODA (over 500,000 fewer people), and 20 points lower when the multiplier effect is also included (750,000 fewer people) (Figure 3). During 2000-2006, with the economy in the midst of its long-delayed recovery, the debt and ODA effects remained strong. The absence of debt on non-concessional terms (based on low-income status) would alone have allowed Moldova to achieve the Millennium Development Goal of halving extreme income poverty**.**

FIGURE 3

Counterfactual Headcount Poverty in Moldova, 1990-2006
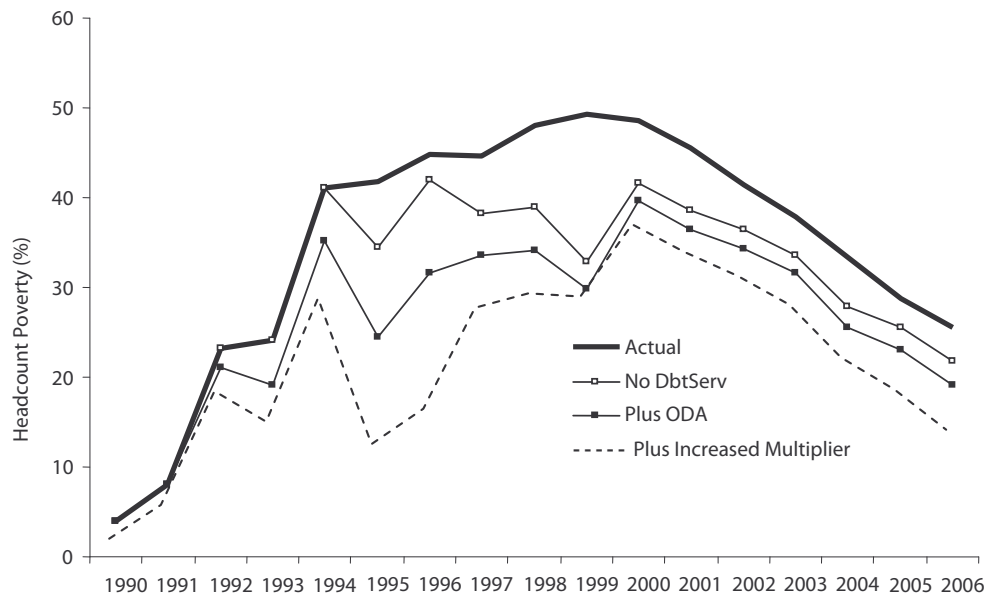
Notes: Household surveys reported national headcount poverty rates of 45 per cent in 1997 and 49 per cent in 2000. A joint IMF and World Bank publication reported higher poverty levels (IMF and World Bank 2004, p.27). Given per capita incomes of US$ 540 and US$ 500, respectively, the elasticity of poverty with respect to per capita income is -1.06. This elasticity is applied to the World Bank reported per capita income ('actual PCY') and the counterfactual values generated by the three scenarios. See annex for sources and details of calculations.

Poverty is associated with poor health and shorter life expectancy. In 1990, with a per capita income of US$ 1,148, life expectancy at birth was 68.3 years in Moldova, 71.8 years for women and 65 for men. In 1995, with per capita income of US$ 570, life expectancy fell to its lowest level, i.e., 65.7 years, with a slightly greater percentage decline for women than for men.

It is well established that life expectancy bears a close relationship to per capita income, and the relationship would be even closer if one could control for the distribution of income. Figure 4 uses the counterfactual per capita incomes to calculate counterfactual life expectancies, derived from a regression exercise using Moldovan data. The largest differences are for 1994-1996, when the counterfactuals calculate a gain in life expectancy between one and two years.

FIGURE 4

Actual and Counterfactual Life Expectancy in Moldova, 1990-2006
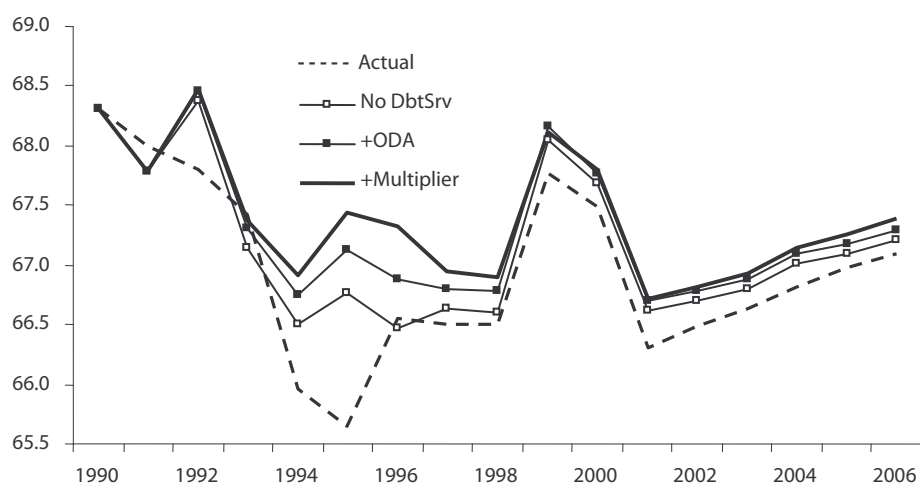
Notes:

The variable is life expectancy at birth, average for males and females.

Actual is from *World Development Indicators 2003*, and the other estimates are calculated using the counterfactual per capita incomes and life expectancy from the following regression:

Ln(LE) = 3.972 + .035(lnPCY) + .018D

       [.00]   [.00]   [.00]

Degrees of freedom = 9, Adjusted R^2 = .733, F-statistic = 12.93 [.00]

Numbers in brackets give the probability that the coefficient is zero and that the overall relationship is random.

Legend:

No DebtService is the counterfactual calculation using the regression, based on a per capita GDP assuming that all debt service was used for domestic expenditure.

Plus ODA adds the difference between ODA for Moldova and that for low-income countries of the former Soviet Union.

Plus Multiplier: is the counterfactual that adjusts the multiplier for the shift from private to public expenditure.

Sources: See annex.

Through the 1990s and 2000s, Moldova bore the heavy burden of *faux* middle-income status, which acted to lower its per capita income. As a result, more Moldovans fell into poverty than otherwise would have been the case, and on average Moldovans lived shorter lives. Unlike every other transition economy in Europe or Central Asia, the Moldovan economy did not recover in the late 1990s; indeed, *in 1999 its income per capita was the lowest for the*

entire decade. As discussed in the previous section, the failure to recover was a direct result of Moldova's indebtedness-generated financial vulnerability to the Russian crisis of 1998. Because Moldova was compelled to undergo severe fiscal adjustment, that crisis would lead to a near-collapse in social expenditures.

5 DEFICITS AND SOCIAL EXPENDITURE

The importance of the link between middle-income status and the Russian financial crisis, via the debt vulnerability of Moldova, appears clearly in an analysis of government expenditure.[22] Table 4 shows that despite a fall in per capita income of 45 per cent from 1991 to 1997, social expenditure fell by less than 20 per cent. However, the Russian crisis provoked a public expenditure catastrophe, far worse than what followed independence.

TABLE 4
Estimated Per Capita Public Expenditures in Moldova, 1991-2006 (US$ 1995)

		Public Expenditure 1995 US$			
	PCY US$	**Total**	**Social**	**Health**	**Education**
1991	990	321	109	34	46
1992	766	212	104	28	54
1993	757	180	82	24	40
1994	578	168	98	35	51
1995	570	226	93	34	50
1996	539	209	95	36	54
1997	540	233	89	33	40
1998	505	195	65	23	28
1999	492	161	48	14	19
2000	500	167	48	14	27
2001	532	154	49	16	30
2002	574	193	66	21	39
2003	612	199	71	23	40
2004	659	223	78	25	44
2005	708	256	86	28	50
2006	742	294	91	31	61

Notes: The numbers are estimated by applying reported percentages to the World Bank per capita income statistics. PCY = per capita income.

Sources: See annex.

In 1997, the year before the Russian crisis, Moldova's debt service increased sharply, from three to seven per cent of GDP, and would not fall to three per cent again until 2005. In 1998, the year of the Russian financial collapse, debt service rose to 10 per cent, then increased to 15 per cent of GDP in 1999, when it reached 80 per cent of central government revenues (IMF and World Bank 2004, p. 7).

As did other transition countries, Moldova suffered a severe revenue collapse soon after dismantling the central planning system. This collapse caused a fiscal deficit of eight per cent of GDP in 1992, but the government quickly brought this down with expenditure reduction, to one per cent in 1993, and then over-adjusted to run a surplus of five per cent of GDP in 1994.[23]

Debt service brought on a second fiscal crisis during 1995-1999, during which the fiscal deficit averaged over six per cent of GDP (Figure 5). However, net of debt service, the fiscal deficit was, on average, one per cent in surplus for these years, with a massive shift from minus three per cent in 1997 to plus 10 per cent in 1999.

FIGURE 5

Debt Service and the Fiscal Deficit as Per Cent of GDP, 1990-2006
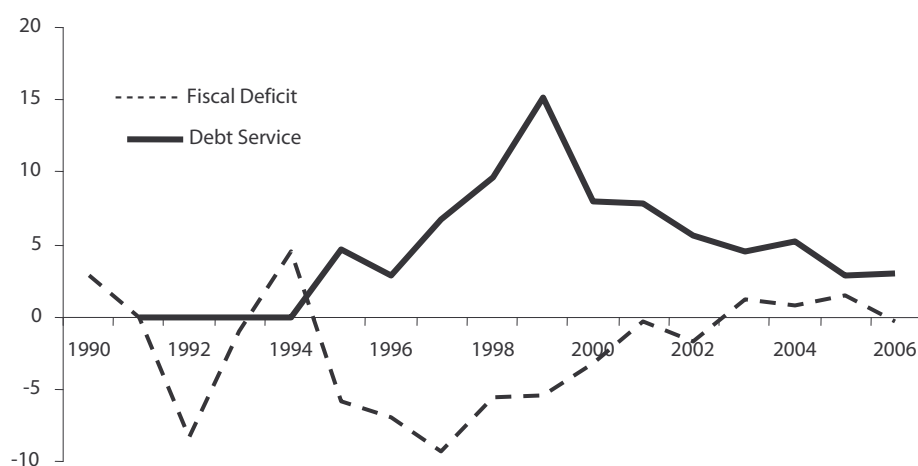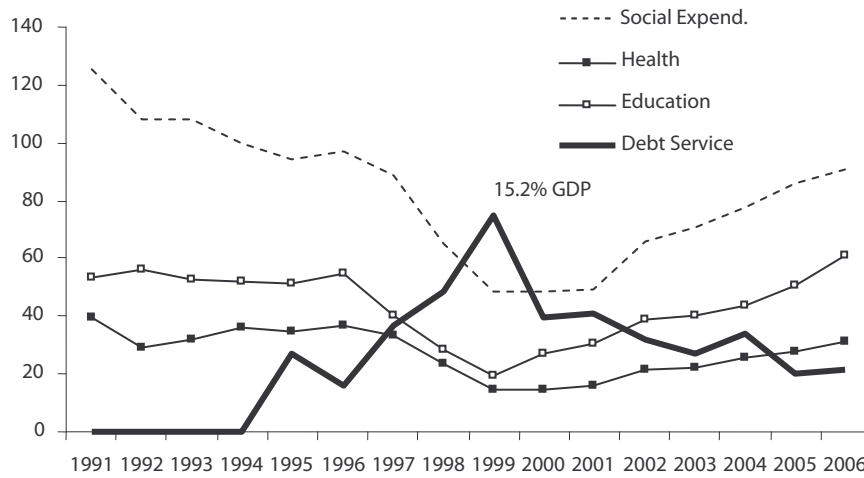

Source: IMF (see Annex).

This extraordinary fiscal adjustment, namely, 13 percentage points of GDP in two years, was largely the result of reductions in expenditure by ten percentage points, especially social expenditures.[24] It is beyond controversy that this adjustment, overseen by the IMF, resulted from the requirements of debt service—a debt service created by Moldova's designation as middle-income at the beginning of the 1990s. This deficit reduction, which the IMF lauded as 'impressive and unprecedented', had a devastating impact on social expenditures.

As Table 4 shows, health expenditure per capita, which in 1997 was still 97 per cent of its 1991 level, dropped to two-thirds of the 1991 level in 1998, and to 40 per cent in 1999.[25] The IMF seemed to view the reduction in health expenditure favourably: "the bulk of the [expenditure] reduction was concentrated in the bloated health care and education sectors" (IMF 2001, p. 15). Concrete measures included the closure of 75 per cent of hospitals (from 253 to 65), which the World Bank described as 'progress'.[26] This progress is placed in perspective by a DfID briefing paper that reported corresponding deteriorations in several health indicators from 1998 to 2000.[27]

Figures 6 and 7 show that there was a close relationship between social expenditures and debt service. While the relationship is not contested, indeed even noted by the IMF (see IMF 2001, pp. 12-15), the *de facto* trade-off is striking. In Figure 7, the correlation between the fiscal deficit and debt service is obvious, and after 1994 a one dollar increase in debt service was associated with a fall in social expenditure of 86 cents (constant 1995 U.S. dollars).

The foregoing discussion should not be interpreted as suggesting that reduction of a large fiscal deficit was unnecessary in Moldova or elsewhere. The point of the discussion is that had Moldova been designated as low-income in the early 1990s, there would have been a deficit immediately after independence, but not in the second half of the 1990s. Thus, the massive fiscal adjustment during 1998-1999 would not have been necessary.

FIGURE 6

Per Capita Public Expenditure by Type, 1991-2006 (constant 1997 US$)

Source: IMF (see Annex).

FIGURE 7

Fiscal Deficit, Debt Service and Social Expenditure Per Capita, 1991-2006
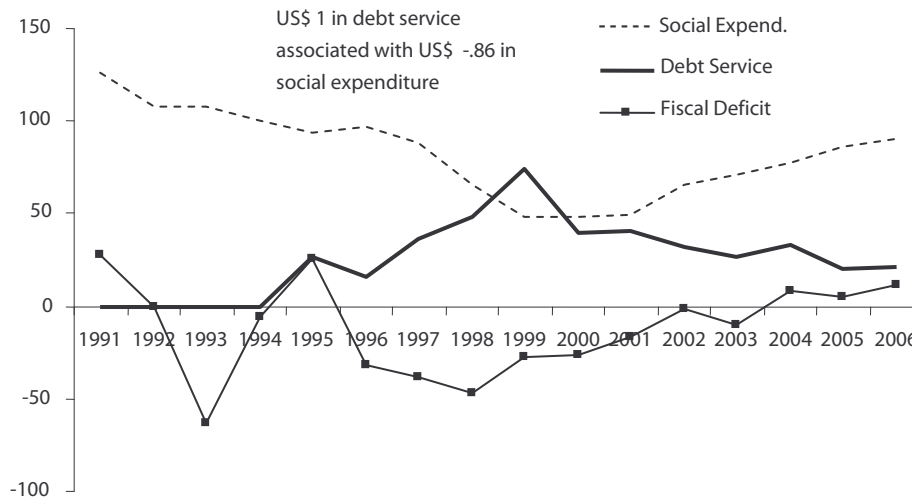
Notes:

For 1994-2006, the simple correlation between social expenditure and debt service is based on:

[social expenditure per capita] = 103.49 - .86[debt service per capita]

                                                (.00)   (.00)

Adjusted R-square = .51, F-statistic @ .00, Degrees of freedom = 10

Assigning middle-income status to Moldova and maintaining that designation through almost all of the 1990s resulted in a massive burden of debt service—a burden made worse by the output-depressing impact of the Russian financial crisis, which was also fostered by the Russian burden of a non-concessionary debt. Public expenditure that could have improved the health and education of Moldovans and supported pensions for the elderly went to service the country's non-concessionary debt.

6 SUMMARY AND CONCLUSION

For all Eastern European and Central Asian countries, the transition to a regulated market economy was costly in terms of human welfare. Life expectancies fell and incomes declined sharply. The cost of the transition was especially severe in Moldova. A substantial portion of that cost can be attributed to one administrative decision by the World Bank, which assigned Moldova middle-income status rather than low-income status. Considering the alternative scenario, namely, designation of Moldova as low-income in the mid-1990s, is not a far-fetched counterfactual; countries in comparable circumstances were so designated as early as 1994.

If the case of Moldova carries any general lessons, one surely is that the dichotomy between low- and middle-income status is not, by itself, a sound basis for determining multilateral lending or bilateral development assistance. While in practice countries with income above but close to the borderline between the two categories frequently receive a 'blend' of IDA and IBRD terms for their borrowing, this merely perpetuates the arbitrariness in a slightly diluted form.

The dichotomy suffers from several obvious defects. First, it is completely arbitrary, for there is no theoretical basis for such a distinction. Second, it is recognised that the lower the level of development of a country, the greater are the potential measurement errors in calculating its national income. One reason is that the more underdeveloped a country, the larger is its portion of non-marketed output. For a few countries even the size of the resident population is uncertain. Estimates of migration from Moldova vary greatly, for instance.

Finally, it was clear in 1990 that Moldova was one of the poorest countries in Europe, if not the poorest, despite the higher publicized measurement of its per capita income. Had the multilaterals based their lending, and bilaterals their development assistance, on this obvious observation, Moldova's transition would have had a much lower human cost, and its subsequent recovery would have begun several years earlier.

Therefore, there is a clear case for multilateral compensation to the government of Moldova. It is a failing of the international system that no formal mechanism exists through which such compensation could be adjudicated. Since the case for compensation to Moldova is so strong, ad hoc means should be found, if necessary, for such remedial action.

ANNEX: CONSTRUCTING COUNTERFACTUALS

1 STATISTICAL SOURCES

As explained in the next section of this annex, the counterfactuals in this study are based on the national income identity. Constructing a consistent national income series for Moldova is tedious, because the country did not adopt its own currency until 1993 (the *Leu*, also spelled *Lei* in some sources). The National Bank of Moldova provides a time series of GDP for 1995-2006, and other time series are found in EBRD *Transition Reports* (various issues) beginning in 1991, and IMF reports (1996, 1998, 1999, 2001, 2005 & 2006a) beginning in 1993.

Statistics for the late 1980s and early 1990s in current and constant Russian Roubles are given in World Bank 1993, 1994b, 1995a and 1996a. Statistics on the shares of the major components of GDP are in the same IMF and World Bank sources. Prior to 1995, these shares are calculated from the World Bank *Statistical Handbooks* (World Bank 1993, 1994b, 1995a and 1996a).

The GDP growth rates for per capita income are similar in all sources. These are applied to the per capita income statistic in the *World Development Report 1997*, which drastically revised Moldova's income per capita. GDP is obtained by multiplying by the population. The calculations use the population numbers implied by dividing GDP in *Leu* by GDP per capita in *Leu*, both from the National Bank of Moldova's macroeconomic statistics (NBM website). The debt service statistics are from the National Bank of Moldova, and are also reported in the various IMF country reports.

There are no statistics on the share of private investment in GDP. This ratio was calculated by assuming inventory change to be zero. Thus, this implies (all symbols being shares of GDP):

i = s - [(g – t) + (x – m)], where g, t, x and m are known.

Government expenditure is net of transfers to various special funds if the actual expenditure for the services in question is included under other budget items (such as pension payments). Government expenditure includes both current and capital outlays.

2 COUNTERFACTUALS

The counterfactual scenarios are calculated using the basic national income identity and the distinction between induced and exogenous variables.

By definition,

$Y = C + I + G + (X - M) + \Delta inv$

$Y_d = Y - T, T = tY$

$C = a(1 - t)Y$

$M = nY$

Variables (measured in constant 1995 U.S. dollars):

Y = national income

C = private consumption

I = investment

G = government expenditure

X = exports

M = imports

Δinv = inventory change

T = government revenue (taxes and fees, but not external grants)

Y_d = disposable income

Parameters:

a = marginal propensity to consume, assumed equal to the average

t = marginal propensity to tax, assumed equal to the average

n = marginal propensity to import, assumed equal to the average

If Δinv = 0, and β is the multiplier, then,

$$Y = (I + G + X)\beta$$

The calculations do not include any exchange-rate effects, so each period's export value is assumed to hold in the counterfactual. For simplicity, interest rate and other influences on investment are ignored, so that each period's actual investment applies in the counterfactual. Government expenditure is the only autonomous variable that changes, and is introduced as a share of GDP (G/Y = g). This allows for three calculations, two of which are counterfactual scenarios,

$g_1 = [G(NDS)_t]/GDP$ = government expenditure net of debt service (NDS)

$g_2 = [G(NDS)_t + DS]/GDP$ = government expenditure including debt service (DS)

$g_3 = [G(NDS)_t + DS + ODA]/GDP$ = government expenditure net of debt service and ODA

$$Y = (I + X)\beta/(1 - \beta\, g_i)$$

Where I and X are in 1995 U.S. dollars, and g_i equals g_1, g_2, or g_3.

ANNEX TABLE 1

Official Development Assistance to Countries of the Former Soviet Union, 1991-1999

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Armenia	.1	2.4	5.4	8.1	7.6	18.3	10.1	7.4	na
Azerbaijan	.0	.1	.5	4.5	3.8	3.0	4.6	2.2	4.7
Belarus	.5	.9	.7	.6	1.1	.4	.2	.1	.1
Georgia	.0	.0	.0	.0	11.5	10.5	6.6	4.7	8.4
Kazakhstan	.4	.0	.1	.2	.3	.6	.6	1.0	1.1
Kyrgyz Rep	.0	.0	2.2	5.5	8.7	12.9	13.9	13.8	22.7
Tajikistan	.0	.0	.0	.0	3.8	7.1	5.6	6.0	6.6
Turkmenistan	.0	.0	.0	.8	.6	.7	.4	.6	.7
Moldova	**.0**	**.3**	**.6**	**2.0**	**2.1**	**2.1**	**3.0**	**2.0**	**6.6**
average LYC	.1	1.2	2.7	6.0	7.1	10.4	6.9	5.8	8.6
LY - Moldova	.0	.0	2.1	4.0	4.9	8.3	3.8	3.8	2.0

Notes: The row 'average LYC' (low-income country) excludes Moldova, and in each year includes only those countries assigned to low-income status by the World Bank. The year in which each country achieved low-income status is reported in Table 2 in the text.

Source: World Bank, *World Development Indicators 2001*, CD-ROM.

ANNEX TABLE 2

Basic Statistics and Counterfactual Calculations of Moldova's GDP, 1990-2006

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PCY US$ WB																	
(constant 1995)	1148	990	766	757	578	570	539	540	505	492	500	532	574	612	659	708	742
Population mns	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.65	3.65	3.62	3.64	3.63	3.62	3.61	3.60	3.59	3.59
GDP US$																	
(constant 1995)	4134	3564	2760	2728	2084	2055	1941	1973	1844	1782	1820	1930	2081	2212	2376	2544	2661
Shares in GDP																	
Investment	.19	.17	.16	.16	.19	.16	.20	.20	.22	.18	.15	.17	.16	.17	.16	.16	.16
Exports	.20	.13	.15	.16	.23	.24	.35	.40	.38	.40	.48	.48	.50	.50	.49	.47	.44
Public exp, g1	.32	.25	.28	.24	.29	.35	.36	.36	.29	.18	.26	.21	.29	.29	.29	.34	.38
Public exp, g2	.32	.25	.28	.24	.29	.40	.39	.43	.39	.33	.34	.29	.34	.33	.35	.37	.41
Public exp, g3	.32	.25	.29	.26	.33	.45	.47	.47	.43	.35	.36	.31	.36	.35	.37	.39	.43
Debt Serv/GDP	.00	.00	.00	.00	.00	.05	.03	.07	.10	.15	.08	.08	.06	.04	.05	.03	.03
ODA/GDP*	.00	.00	.01	.02	.04	.05	.08	.04	.04	.02	.00	.00	.00	.00	.00	.00	.00
Multipliers Implicit	1.41	1.82	1.70	1.81	1.41	1.34	1.10	1.04	1.12	1.32	1.12	1.16	1.05	1.04	1.05	1.03	1.02
Adjusted Multiplier**	1.41	1.82	1.71	1.83	1.46	1.41	1.20	1.07	1.15	1.30	1.13	1.17	1.07	1.06	1.07	1.05	1.04
Counterfactual GDP																	
1. DbtSrv>GE (g2)	4134	3564	2760	2728	2084	2331	2050	2226	2196	2406	2083	2197	2274	2371	2582	2667	2797
2. + ODA (g3)	4134	3574	2842	2919	2306	2713	2441	2398	2376	2523	2161	2277	2352	2449	2671	2759	2898
3. + Multiplier	4134	3577	2869	2998	2477	3091	2936	2549	2490	2482	2186	2296	2394	2509	2727	2852	3015
CF/actual GDP per capita (actual = 100)																	
1. DbtSrv>GE (g2)	100	100	100	100	100	113	106	113	119	135	114	114	109	107	109	105	105
2. + ODA (g3)	100	100	103	107	111	132	126	122	129	142	119	118	113	111	112	108	109
3. + Multiplier	100	100	104	110	119	150	151	129	135	139	120	119	115	113	115	112	113

Notes:

g1 is government expenditure net of debt service, which is actual domestic expenditure.

g2 is government expenditure without debt service, used for the counterfactual 1.

g3 is government expenditure without debt service plus receipt of ODA/GDP (see next note).

CF = Counterfactual

*ODA/GDP is the difference between what Moldova actually received in concessional finance and the average for low-income former Soviet Republics. See Annex Table 1.

** 'Adjusted Multiplier' is the multiplier adjusted upward for the switch of expenditure from the private to the public sector. See discussion in the text and this annex.

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NOTES

1. From World Bank (1998, 251), a document to which we refer below:

   "For operational and analytical purposes, the World Bank's main criterion for classifying economies is gross national product (GNP) per capita. Every economy is classified as low-income, middle-income (subdivided into lower-middle and upper-middle), or high-income."

   In 2007 the dividing line between low- and middle-income status was US$ 1,025.
   See http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/IDA/.

2. Among the first agencies to focus their grants almost exclusively on low-income countries was the Swedish International Development Agency. By the turn of the century it became common practice.

3. IBRD terms can be found at: http://web.worldbank.org/servlets/ECR?contentMDK= 20066287&contTypePK=214251&folderPK=112519&sitePK=210385&callCR=true, and
   IDA terms at: http://siteresources.worldbank.org/IDA/Resources/IDATerms07.pdf

4. The procedure for estimation is found on page 12ff (World Bank 1992). See also the contemporary World Bank Working Paper by Ahmad (1992).

5. The lowest estimate was by Bolotin (1992). The World Bank research paper comments:

   "...[L]ittle is known about [Bolotin's] sources and methods. Bolotin describes his work as a PPP study and his FSU-US relative in GNP per capita level parallels that inferred from WDI-PP." (World Bank 1992, 22).

6. Throughout this study statistics for Moldova are exclusive of Transniestre, a small section of the country that declared autonomy in the early 1990s. It subsequently was placed outside the administrative control of the government in Chisinau. Specifically, the population statistics used in calculations exclude Transniestre.

7. By 1996 all the major international agencies reported almost the same annual growth rates, though they may have reported different per capita incomes. See EBRD's Transition Reports and IMF (1998, 1999, 2001, 2005).

8. A schedule of IMF lending to Moldova is given on the IMF website:

   http://imf.org/external/np/fin/tad/exfin2.aspx?memberKey1=672&date1key=2007-07-05.

9. The World Bank's general lending policies toward the transition countries came under criticism from the organisation's evaluations department,

   "Effectiveness was limited by an initial underestimation of the need to focus on poverty alleviation and good governance and the use of rapid privatization to promote private sector development (PSD) without a supporting legal and institutional framework. Lending was based on the expectation of a short, shallow transition recession; the prolonged recession in some CIS countries led to the accumulation of significant levels of indebtedness." (OED 2004, p. x).

   World Bank lending is reported at: http://lnweb18.worldbank.org/eca/eca.nsf/Countries/Moldova/6D77BD6402E0F21 D85256C2500626BB0?

10. I thank staff at the EBRD for providing me with a full listing of its operations with Moldova.

11. An IMF and World Bank joint report in 2004 commented on concessional lending to Moldova:

    "Concessionality for Armenia and Moldova dwindles, but for different reasons, as Armenia graduates and Moldova remains cut-off from concessional assistance. It is hoped, though, that Moldova will resume an acceptable adjustment path sufficient to attract international support and avoid the pessimistic scenario portrayed here." (IMF and World Bank 2004,18).

    Nonetheless, later the report stressed Moldova's need for concessionary finance:
    "Highly concessional stock-of-debt operations in the Kyrgyz Republic, Tajikistan, and Georgia and Moldova (once performance has been reestablished in the latter two countries) are key to attaining debt sustainability." (Ibid, 38).

12. There were three consecutive biannual WDRs: 1998/1999 (none for 1998 alone), 1999/2000 and 2000/2001.

13. See, for example, EBRD, *Transition Report* 2000.

14. For WDRs 1993-1997, countries were listed in ascending order of per capita income. For the 1998/1999 WDR, countries were listed in alphabetical order, with the benchmark reported in notes, and a table provided at the end of each report listing countries by category.

15. The dates for designation of low-income status were given in a joint IMF and World Bank report:

    "The World Bank granted IDA-only status to five highly-indebted countries of the CIS-7 group (Armenia, Georgia, Kyrgyz Republic, Moldova and Tajikistan) in 2000. Shortly thereafter, Azerbaijan and Uzbekistan also obtained access to IDA resources." (IMF and World Bank 2004, 14).

16. A World Bank web page states:

    "Since 1993, the World Bank has financed 23 operations in Moldova for a total commitment of US$592.01 million. This includes five adjustment loans (US$235 million), and 18 investment operations (US$341.5 million). Of the investment operations, 9 are IBRD loans, 13 are IDA credits, and one is an IDA grant." (http://lnweb18.worldbank.org/eca/eca.nsf/Countries/Moldova/6D77BD6402E0F21D85256C2500626BB0? OpenDocument)

    The first substantial IDA loan was made in September 1997, by which time the Moldovan government had borrowed US$ 360 million on IBRD terms (equivalent to almost US$ 100 per capita), sufficient to qualify Moldova as heavily indebted under subsequent HIPC criteria.

17. This is consistent with the conclusion reached in an IMF working paper on the lending by 'multilaterals' to the countries of the former Soviet Union:

"Third, over-optimism by multilaterals contributed to the high debt levels. If external financial assistance, which was needed because of high social costs of the transition, had come in the form of grants in the first two or three years of the transition, the debt burden would have been lower and sustainable." (Helbling, Mody & Sahay 2004, Abstract).

The study included seven countries: Armenia, Azerbaijan, Georgia, Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan. An analysis of Moldova's debt position in the early 2000s is found in IMF and World Bank (2001).

18. This was recognised explicitly for Moldova in an IMF and World Bank report:

"In 1999, the ratios of debt service due to exports remained below 25 per cent for all countries except Moldova, which has significant debt on commercial terms. Debt service due accounted for over 80 per cent of central government revenues in Moldova…" (IMF and World Bank 2004, p. 7).

19. Of the countries in the figure, only petroleum-exporting Turkmenistan did not receive low-income status before Moldova.

20. The hypothesis was tested that the percentage deviations from 1997 during 1998-2000 were associated with low-income status and petroleum-exports. For low-income status, the binary variable takes the value of one for the years in which the country was listed as low-income by the World Bank. The other hypothesis assigns the value of one to the petroleum-exporting countries Azerbaijan and Turkmenistan. The statistics are:

Dv1997 = -7.84 + 13.60[LYS] + 14.37[Petrol]

              (ns)   (.00)   (.00)

Adjusted R-square = .60, F = 15.19 (.00), DF = 18

Where Dv1997 is the deviation of per capita GDP from the 1997 value, LYS is low-income status (equal to zero or one), and Petrol is a binary variable for exporting petroleum (zero or one). The constant term is not significant at a five per cent probability, and the binary variables are both significant at less than one per cent probability—as is the F-statistic.

21. The elasticity is $[(\bullet H/\bullet Y)(Y/H)]$, where H is the number of people below the poverty line and Y is per capita income. This is not the same as the elasticity of the poverty share with respect to per capita income. The elasticity of -1.06 is the value obtained by comparing the household surveys of 1997 and 2000 (for details see Weeks, et. al. 2005, Chapter 4, and especially the annex to that chapter).

22. An IMF report stressed the damaging effect of the Russian crisis:

"When the Russian crisis hit in August 1998, output declined [in Moldova], macroeconomic imbalances surged and the financial situation became fragile". (IMF 2001, p. 6).

23. The IMF commented:

"Following the collapse of the Soviet Union and Moldova's independence in 1991, output dropped sharply and inflation soared, but through mid-1998, substantial progress was made in financial and macroeconomic stabilization…" (IMF 2001, p. 6).

24. The IMF described the process as follows: "The 1999 fiscal adjustment was approximately 6 per cent of GDP; it came largely through rationalization of public expenditures, notably reducing inefficiency in the social sectors" (IMF 2001, p. 6). The six per cent statistic that is quoted refers to the budget inclusive of external debt service.

25. A World Bank report in 2003 referred to "dramatic reductions…brought on by the 1998 fiscal crisis" (World Bank 2003a, p. v). According to Table 5 in the report, health expenditure fell in real terms by 32 per cent in 1998 and by 35 per cent in 1999 (World Bank, 2003a, p. 16). A diagram on the same page of this report indicates per capita expenditures lower than those reported in Table 4 of this study.

26. The exact quotation is, "Despite this progress, there is a significant unfinished agenda" (World Bank 2003a, p. 1).

27. Of ten indicators, four improved, namely, maternal deaths, malignant neoplasms, 'external causes of death' and reported HIV cases. Those that worsened were: life expectancy, the perinatal mortality rate, the infant mortality rate, diseases of the circulatory system, and new TB cases (DfID UK 2004, p. 2).