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Serbia: Doing More with Less

Addressing the Fiscal Crisis by Increasing Public Sector Productivity

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Poverty Reduction and Economic Management Unit
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CURRENCY EQUIVALENTS (R$/US$)

Currency Unit – 71.8 RSD= 1 US$

WEIGHTS AND MEASURES

The Metric System is used throughout the report.

FISCAL YEAR

January 1 to December 31

ABBREVIATIONS AND ACRONYMS

ALOS	Average length of stay (hospital patients)
CAP	Common Agricultural Policy
DRG	Diagnostic-related group
DZ	Community Health Center (domovi zdravlja)
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIB	European Investment Bank
EIS	Education Information System
ETC	Electronic Toll Collection
EU	European Union
GDP	Gross Domestic Product
HBS	Household Budget Survey
HDM	Highway Design and Management Model
HIF	Health Insurance Fund
ICTY	International Criminal Tribunal for the Former Yogoslavia
IFI	International Financial Institution
IRI	International Roughness Index
LSGs	Local Self-Governments
LSMS	Living Standards Measurement Study
IMF	International Monetary Fund
MEFP	Memorandum of Economic and Financial Policies
MLSP	Ministry of Labor and Social Policy
MoH	Ministry of Health
MTDP	Medium-Term Development Plan
NIP	National Investment Plan
OECD	Organization for Economic Cooperation and Development
PEPS	Public Enterprise Roads of Serbia (Public Enterprise Putevi Srbije)
PER	Public Expenditure Review
PISA	Programme for International Student Assessment
PPIAF	Public-Private Infrastructure Advisory Facility
RSL	Road Safety Law
RSMCR	Road Safety Management Capacity and Proposals for Investment Strategies
SAA	Stability and Association Agreement
SBA	IMF standby arrangement
SMEs	Small and Medium Enterprise
SOEs	Socially-Owned Enterprises
VAT	Value Added Tax
WHO	World Health Organization
ZS	Serbian Railways (Zeleznice Srbije)

Vice President:	Shigeo Katsu
Country Director:	Jane Armitage
Sector Director:	Luca Barbone
Sector Leader:	Bernard Funck/Ronald Myers
Task Team Leader:	William Dillinger

FOREWORD

This report is based on the findings of a series of missions to Serbia between December 2008 and May 2009. The report was prepared by William Dillinger (Task Manager) with the assistance of Lazar Sestovic, Marina Wes and Ron Hood. Sectoral chapters were contributed by Anita Schwarz, Daniel Dulitzky, Ana Djordjevic, Juan Diego Alonso, Ivana Aleksic, Boryana Gotcheva, Sanja Madzarevic-Sujster, Carolina Monsalve and Martin Humphreys. The peer reviewers were Debbie Wetzel and Ardo Hansson.

The report was produced with the participation of a wide range of Serbian counterparts. These included officials and staff of the Ministries of Finance, Health, Education, Labor, Economy, and Infrastructure, and the Health Insurance Fund, Public Enterprise Roads of Serbia and the Pension Fund. Comments from the International Monetary Fund (IMF) are also gratefully acknowledged.

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EXECUTIVE SUMMARY

With its economy disrupted by the global economic crisis, the Serbian government faces tight budget constraints for several years to come. The Government has already responded by freezing wages and pension benefits and making cuts in capital works and other discretionary spending. These measures, while effective in the short term, are not necessarily sustainable over time. This report looks at more fundamental reforms in key public services, in order to identify opportunities for constraining expenditures through improvements in productivity.

Pensions. Pensions are the largest single program of government expenditure. Costs are high, due in part to generous benefits. The pension due to a new retiree in Serbia is equal to nearly 60 percent of the net average wage. Due to a variety of mechanisms that encourage early retirement, average retirement ages are lower than in most Organization for Economic Cooperation and Development (OECD) countries, and years of contribution, shorter. Pension costs are also driven up by demographics. Due to its low birth rate, Serbia has a large number of beneficiaries relative to the number of contributing workers.

As a short term response to the fiscal crisis, the Government has decided to freeze pension levels in nominal terms in 2009 and 2010. This is a highly desirable measure from a pension policy standpoint, as it will reduce the replacement level of pension benefits over the next two years. The Government should resist pressures to compensate for this reduction once the fiscal crisis ends. The Government should also consider other methods of reducing benefits on a permanent basis: limiting the number of years a worker can retire early, reducing pensions for early retirees (regardless of their years of contribution) and raising the retirement age for women. Savings can also be achieved by improving the administration of contributions and benefits.

In the longer term, the existing system of pension indexation will substantially reduce the financial burden of the pension system. Under current legislation, which will go back into effect once the fiscal emergency passes, pensions are to be indexed solely to inflation. Once growth resumes and wages rise in real terms, pension receipts will outstrip pension payments, resulting in a surplus-generating system, although one that pays very low benefits relative to average wages. Nevertheless, the Government would be wise to continue to index pensions solely to inflation until the replacement level falls to more affordable levels.

Health. Despite an array of management improvements to date, the Serbian health care system still suffers from a wide range of inefficiencies. The hospital bed occupancy rate is below the level of new European Union (EU) members and considerably below the level of older EU member states. While marginal efficiency gains can be achieved by administrative fiat, the key to fundamental improvements in health care productivity is a

change in the way it is financed. The present input-based system of financing encourages inefficiency in the use of resources and provides no incentive for improved service volumes or quality.

The Government is now in the process of reforming the health financing system. For primary care, it will adopt a capitation based payment system, in which primary physicians are paid according to the number of patients on their rosters. For higher level (hospital) care, the Ministry of Health and the Health Insurance Fund (HIF) intend to move to an output-based (Diagnostic-related Group (DRG) or prospective hospital payment) system. International experience shows that such reforms can generate substantial savings but need to be carefully designed to prevent fraud. The Government should continue the pilot testing of these reforms and move to full implementation as quickly as possible.

Education. The level of government spending on education in Serbia is comparable to other European countries (as a percent of GDP) but its outcomes are considerably poorer. There is evidence that significant savings could be achieved through the rationalization of the school network, particularly at the primary level, without reducing education quality. Serbia has too many teachers, given its present student population. As a result, many classes are inefficiently small.

Consolidating under-enrolled classes by shifting students to other classes in the same school (and grade) could reduce costs by ten percent. Consolidating under-enrolled classes by shifting students to other schools within the same municipality could reduce cost another 25 percent. The latter, however, would require some schools to be closed. This is a politically difficult step. Other countries in the region have found it useful to enlist local governments in this effort. The Bulgarian government, for example, allocates funding for education to each local government on the basis of enrollment, and allows each local government to recommend which schools and classes to close. Serbia should consider doing the same.

Social assistance. Serbia spends relatively little on social assistance. Of the little that is spent, less than one quarter is specifically targeted to poor households. The two poverty targeted programs—the MOP and the child allowance—are nevertheless well designed although under-funded. As the recession is likely to increase the number of needy households, the Government should consider increasing funding for these two programs.

Agricultural and enterprise subsidies. The Government spends a significant amount on agricultural subsidies, largely in the form of a fixed payment per hectare. While this is less distortionary than the input- and price subsidies it replaced, it is not particularly effective either in promoting agriculture or in reducing rural poverty. The area-based payment should be scaled back and means tested.

The system of subsidies to manufacturing and mining enterprises is in transition. In the past, subsidies have been used to facilitate privatization, financing severance

payments for workers in state- and socially-owned enterprises. As privatization has proceeded, the cost of these subsidies has declined and will continue to do so. (The Government's proposed equity investment in Zastava/FIAT remains an exception.) In the future, the Government will have to guard against a resumption of enterprise subsidies in the form of tax breaks and subsidized or unrecovered loans to private investors.

Roads. Serbia has a history of under-funding maintenance, which has led to the deterioration of much of the regional road network. The Government's current priority, nevertheless, is to upgrade segments of Corridor X (which, despite its foreign financing, still implies a considerable Government counterpart contribution). In the short term, spending on Corridor X is likely to be somewhat lower than originally planned, due to the time required to complete land acquisition and other preconstruction activities. The prospects for financing additional maintenance expenditures by increasing fuel taxes or tolls are limited, although better toll administration could have some impact. Resources for maintenance will instead have to come from efficiency gains, including improvements in the prioritization of maintenance projects and wider use of performance contracts.

Railroads. While freight traffic on the state railroad Zeleznice Srbije (ZS) has been growing, passenger traffic has been declining, and the financial performance of the company has continued to deteriorate. Current subsidies to the state railway company are insufficient to cover its operating losses. The Government nevertheless intends to invest over RSD144 billion in upgrading rail service in Corridor X. Immediate savings could be achieved by postponing the start of works in Corridor X and by reducing the design speed of the proposed works from 160 km/hr to 120 km/hr. The latter step would reduce the overall cost of the project by 60 percent. The company's recurrent operating losses could be reduced by abandoning under-used track, terminating underused passenger services, reducing staff, and raising passenger tariffs.

Summing up. Overall, the immediate annual savings yielded by these proposals could be equivalent to about eight percent of consolidated central government expenditures (in 2008). The proposed increase in the MOP and child benefits, along the with start of debt service on the road company's arrears, would reduce that figure to 6.7 percent. But this package assumes a fairly radical pace of reforms, including the immediate consolidation of under-enrolled classrooms within schools and among schools and an immediate 50 percent cut in area-based payments to farmers. Social pressures and administrative constraints may slow the pace of reform.

In 2010, the principal expenditure savings will instead continue to come from short term controls over expenditure aggregates: the freeze on pensions and wages and cuts in discretionary spending and capital works. The impact of the efficiency measures proposed in this report will take more time to materialize. The Government should, nevertheless, make an immediate start. While the fiscal impact of these reforms will be evident over the medium term, their most important impact will be on the quality of public services. The reforms will stand Serbia in good stead even after economic growth resumes.

INTRODUCTION

1. This report responds to a specific request from the Serbian Minister of Finance. In the face of slowing economic growth, the Government faces the prospect of increasing deficits in the short and medium term, due largely to growing pension obligations. The problem cannot be addressed by increasing revenues: the public sector is already oversized. The Ministry of Finance has therefore asked the Bank to identify opportunities for constraining growth in expenditures, without sacrificing the quality of public services. This report is therefore focused on identifying opportunities for efficiency gains in the major categories of Government expenditure.

RECENT ECONOMIC TRENDS

2. Until very recently, Serbia's economy had been grown strongly, following significant economic reforms begun in 2000. As shown in Table 1, real GDP growth in 2007 reached 7.5 percent, the second highest since the start of the transition. Non-agricultural growth averaged 7.6 percent over the 2005-2007 period, driven by the services sector which had been growing at double digit rates (in particular trade, financial services and transport and telecommunication). Output rose by nearly 50 percent between 2000 and 2007, as the corporate sector started to post profits and the banking sector was restructured. The positive supply response also appears to reflect increases in productivity and output of recently privatized and *de novo* firms, as evidenced by the particularly rapid rates of output growth in precisely those sectors which have recently undergone extensive privatization (e.g., steel, cement, rubber, tobacco, dairy, sugar, and banking) or attracted foreign investors.

Table 1: Key Economic Indicators

	2005	2006	2007	2008	2009	2010	2011	2012	2013
National Accounts									
Real GDP growth (%)	6.0	5.6	7.5	5.6	-2.0	0.0	3.0	5.0	5.5
Revenue (% GDP)	42.8	43.6	43.0	40.9	39.5	38.3	37.9	37.6	37.5
Expenditure (% GDP)	42.0	45.2	44.9	43.4	42.5	40.9	39.6	38.8	38.8
Balance (% GDP)	0.8	-1.6	-1.9	-2.5	-3.0	-2.5	-1.7	-1.2	-1.2

Source: IMF. Data for 2008 are preliminary.
Data for 2009 and later are projections

3. Rapid growth during 2005-07 was led by domestic aggregate demand. Overall investment levels had remained roughly constant in recent years, and slightly increased to 24.4 percent of GDP in 2007, although public investment levels had been

rising from 2.7 percent of GDP in 2005 to 4.7 percent in 2007. Real private sector consumption had been growing rapidly and increased by nearly 10 percent in 2007 alone. It took place on the back of:

- ***a credit boom***: Serbia continued to experience rapid credit growth which for 2007 is estimated to be 16.1 percent (average for the year); driven by credit to households which grew by more than 51 percent in 2007 (average for the year);

- ***expansionary fiscal policies and significant increases in public spending***: Consolidated general government spending reached 44.9 percent of GDP in 2007, up from 42 percent in 2005, driven by increases in both capital and current spending;

- ***increases in real wage levels***: Total year-on-year real gross wages increased 17.9 percent in 2007, on top of a 12.1 percent increase in 2006;

- ***rapid increases in exports***: Exports increased on average 29.6 percent annually (in dollar terms) over the 2005-07 period, albeit from a low base.

4. The global economic crisis has hit Serbia hard. Growth in 2008 as a whole is estimated to have declined to 5.4 percent, with growth in the earlier part of the year driven by continued strong goods services sector performance, a much better agriculture season and growth in manufacturing and exports offset by declines later in the year. In the near term, the Serbian economy will continue to be affected by the international economic crisis, like other countries in the region. The Serbian economy to large extent depends on the availability of credit and investment from abroad, and receives annually about 9 percent of GDP in the form of remittances. As of May, 2009, the IMF estimated that in 2009 Serbia will see a two percent drop in GDP. Projections for the subsequent years (2010-2013) show a slow recovery, with no growth in 2010 and only three percent growth in 2011, based on ongoing developments in the global economy as well as new fiscal policies adopted in line with the Fund program. (See below.)

THE IMF STANDBY ARRANGEMENTS

5. Recognizing the risks inherent in the current international financial situation Serbia requested a precautionary stand-by arrangement (SBA) with the IMF in late 2008. In January, 2009, the Fund mission and the Serbian government reached agreement on a fifteen month economic program supported by a €402.5 million precautionary stand-by arrangement (SBA). This is now expected to be replaced by a new, 27-month, SBA, whose terms were broadly agreed upon in March, 2009.

6. The original 15 month SBA called for an overall fiscal deficit of 1.75 percent of GDP in 2009 and one percent of GDP in 2010. This was to be achieved largely through limitations on expenditures. (On the revenue side, the January SBA called only

for small increases in excise taxes to offset decreases in customs revenue resulting from the recently signed SAA pact with the EU.) In aggregate, Government revenue would decline slightly as a percent of GDP. Apart from these measures, all adjustments would take place on the expenditure side.

7. By far the most important adjustment was to be a temporary suspension of pension indexation. Pension levels would reflect the two large increases granted in 2008, but would not be increased during 2009. In addition, increases in public sector wages would be limited to the projected rate of inflation (7.9 percent). Non-essential hiring was to be suspended. Taken together, these measures were expected to confine growth in the wage bill to six percent. Public enterprises and local governments were expected to follow similar wage policies. The Government also committed itself to a freeze in most spending on other goods and services (in nominal terms) and reductions in agricultural subsidies, including the abolition of the per-hectare land payment to legal entities. Existing commitments to a joint venture project with Fiat and Zastava car company would be honored, however—an expenditure which the Government's accompanying Memorandum of Economic and Financial Policies (MEFP) estimated would cost .5 percent of GDP.

8. The new draft SBA calls for additional, more severe, measures. As specified in the Government's Memorandum of Economic and Financial Policies, these would include a freeze on the nominal wages of government employees (including employees of public enterprises) through 2010, an extension of the nominal freeze on pensions through 2010, a freeze on hiring (with very limited exceptions), a reduction in transfers to local governments, and sharp reductions in the discretionary budgets of all budget users.

9. These measures, while severe, are short term palliatives. The Government will not be able to freeze pensions in nominal terms indefinitely, as inflation will rapidly diminish their purchasing power. A long term freeze on salaries will make it difficult to attract and retain competent staff. Hiring freezes, by the same token, run the risk of generating arbitrary gaps in public employment, as staff who retire are not replaced. Cuts in discretionary spending--particularly for road maintenance—would result in further deterioration of the network.

10. While the eventual resumption of economic growth will generate some increase in revenues, the fiscal envelope over the medium term is expected to be tight. According to the Fund's projections, Government revenues are projected to decline by five percent in 2009, and a further four percent in 2010. Revenues would only begin to recover, in real RSD terms in 2011.

11. In any event, increases in government revenues are not sustainable in macroeconomic terms. The Serbian public sector is already oversized. Under these circumstances, the Government will therefore have to focus on continued restraint in expenditure. The aim of this Public Expenditure Review (PER) is to advise the Government—and more specifically the Minister of Finance—on opportunities for

constraining growth in expenditures, without sacrificing the quality of services it provides.

THE EXISTING DISTRIBUTION OF PUBLIC EXPENDITURE

12. The Serbian public sector consists of several distinct entities: (1) budgetary central government, which accounts for the majority of spending, including defense and public security, social assistance, and most of the costs of education; (2) the pension and health insurance funds and the road company, each of which has an independent source of revenue but also receives varying levels of transfers from the central budget; (3) local governments, which have limited taxing powers (as well as the authority to impose tariffs to support their public utilities) but receive substantial transfers from the central budget; and (4) centrally owned public utilities, state-owned, and socially-owned enterprises. This report focuses on a subset of these, namely entities: (1) over which the central government exercises direct fiscal control, and (2) that compete for central government tax revenues or their equivalent (e.g., payroll taxes). Thus it will focus on the budgetary central government, the pension and health insurance funds and the road company.[1] Local governments will be considered only to the extent they represent a claim on the central government budget—i.e., as recipients of intergovernmental transfers. State owned enterprises will be considered in the same way.

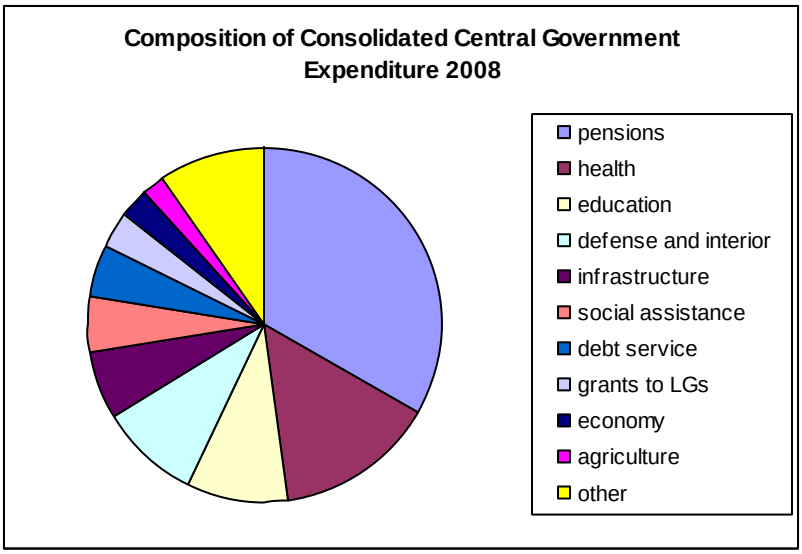

Figure 1

13. Figure 1 demonstrates the sectoral distribution of consolidated central government expenditures.[2] As shown, the largest single item of consolidated central government expenditure consists of pensions. Spending on pensions consumed one third of public expenditures in 2008 Spending on health (largely financed from social contributions to the HIF) is

[1] Although the pension funds and the health fund derive the majority of their revenues from payroll contributions, these function, in effect as taxes. Any increase in contributions paid to these funds reduces the amount of fiscal space available to the central government.

[2] Consolidated, as defined here, includes the expenditures of the pension and health funds and the road agency that are financed from their respective own-source revenues. Data is from budget execution reports of central government, HIF, pension funds and PEPS.

the second largest item of consolidated central government expenditure, accounting for 15 percent of the total in 2008. Spending on education consumed another ten percent. Spending on security--defense and police--also consumed about ten percent. Spending on transport infrastructure (including foreign financed-spending) and social assistance each consumed about five percent of the total. Taken together, these six major items of expenditure accounted for 78 percent of total consolidated expenditure in 2008. With the exception of security—where the World Bank claims no expertise—these sectors are the focus of this report. This report also examines spending on enterprise subsidies. Although these do not constitute a major proportion of government spending, they represent particularly attractive targets for expenditure cuts.

14. As shown in Figure 2, the 2009 budget (as revised effective May 2009) implies sharp changes in the sectoral composition of central government expenditure. (In the absence of budgets for the pension funds, the health fund, and the road agency, this analysis is based on budgetary central government only.) In absolute terms, expenditures on pensions—i.e., transfers to the pension fund—would soar. Expenditures on debt service, principally under the rubric 'repayment of principal on domestic debt', would increase by a nearly equal amount. Expenditures on defense and police would increase, as would expenditure on social assistance and programs administered by the Ministry of Economy. All other categories of expenditures would see either little growth or sharp decline.

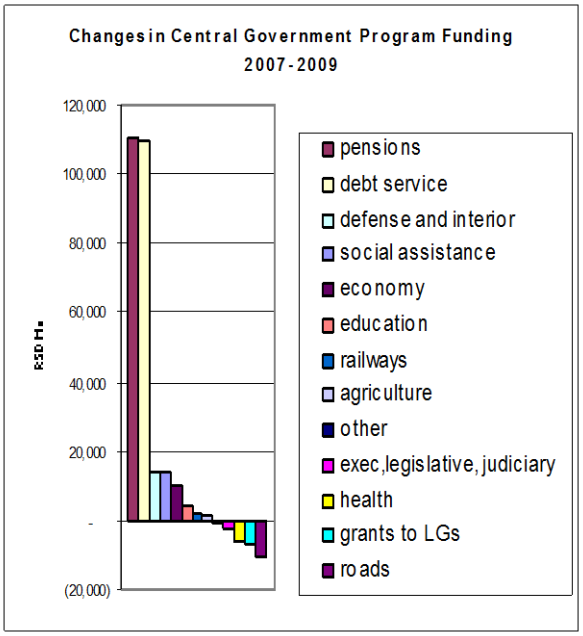

Figure 2

PENSIONS

15. The Government's pension commitments are the primary threat to its fiscal equilibrium. Although pension reform laws in 2001, 2003, and 2005 have substantially restricted pension benefits (raising the normal age of retirement, imposing stronger eligibility criteria for access to disability pensions, instituting a point system linking contributions to benefits, and changing the basis of post-retirement indexation) pension benefits are still high by EU standards. In 2008, the government conceded two extraordinary pension increases, one in January 2008 and the other in October 2008. The fiscal consequences of these increases will be fully felt (i.e., over the entire 12 months) in 2009. Under the terms of the January and March SBAs with the IMF, indexation is to be suspended through 2009 and 2010. Under the current legislative framework, however, indexation will recommence once the freeze expires and other costly elements of the pension system will remain in place.

THE SERBIAN PENSION SYSTEM

The Serbian pension system consists of a single pension fund, comprised of three formerly separate funds, one for employees, one for the self-employed, and a third for farmers. These three funds were administratively unified as of January 2008, but will not be financially merged until 2011. The Employees' Fund is by far the largest, with 2.0 million contributors and 1.2 million beneficiaries. The Self-Employed Fund is significantly smaller with only 0.25 million contributors and 0.04 million beneficiaries. The Farmers' Fund has 0.22 million beneficiaries, but few contributors, drawing only 13 percent of expenditures from contribution revenue. A fourth fund exists for the military, but has yet to be merged with the other three.

Contribution rates are set at 22 percent for old age, disability, and survivors' insurance, with an additional 12.3 percent for health insurance and 1.5 percent for unemployment insurance, making the total payroll tax 35.8 percent, well above western European and OECD levels, but average among central European countries. These rates represent a slight increase from the previous reform which had reduced contribution rates on pensions from 32 percent to 19.6 percent. In addition, many occupations permit workers to receive extra credit per year of contributions. These additional credits now require additional contributions from employers proportional to the additional privileges their workers receive. Previously these additional credits were covered by the State.[3] Contributions are collected by the tax authorities and then distributed to the pension funds and other social insurance funds as designated. Since the contributions are paid by employers, attributing the contributions to specific individuals is not straightforward and requires employers to submit an additional form which allows the individualization of contributions. This process will be facilitated by the development of a Central Registry which is on the Government agenda to create.

Eligibility for pensions is based on age and years of service (contributions). An amendment to the pension law in 2001 established a retirement age of 63 for men and 58 for

[3] The extra credit that workers receive for particular occupations also allows them to retire early. While the increased benefit from the extra credit is paid for by employers, the additional cost from the longer retirement period is not charged to employers.

women with 20 years of service and 65 and 60 with 15 years of service for men and women respectively, and a minimum age of 53 with 40 years of service for men and 35 years of service for women. These thresholds were in effect from January 2002, although those who retired earlier at younger ages continue to receive their pensions. The 2005 amendments to the pension law eliminated the option of retiring at age 63/58 with 20 years of service, but provided for it to be phased out gradually over the period between 2008 and 2011. As of 2009 men may retire at age 64 with 18 years of service while women may retire at age 59 with 18 years of service. The 2005 law also reduced the minimum pensionable age to 50 for some occupations and introduced the option of retiring at any age with 45 years of service credit. Eligibility for disability arising from a work-related injury is immediate regardless of past contribution history. If the disability is not work related, the individual must have completed 5 years of contributions, with lower eligibility requirements for those younger than age 30 at the time of disability. Disability pensions are only awarded to those incapable of performing any type of work, in line with international best practice. Similarly, a minimum of 5 years of contribution is required before an individual who dies can leave a pension to survivors.

Benefits are based on a point system as defined in the April 2003 law. In this law, individuals accumulate personal points based on their contribution history and their contribution wage relative to average wage, with one point being awarded per year of service for those who earn average wage and multiple points being awarded to those whose earnings are a corresponding multiple of the average wage. In addition to the extra service awarded to particular occupational groups, all women are given an additional 15 percent service credit. The personal points are then monetized by multiplying by the general point whose value was initially set at around 1.8 percent of average wage in 2004. Thus, a person who retired after 30 years of contributions and who had paid contributions on the basis of average wage for each of those 30 years would retire with a pension equal to 54 percent of 2004's average wage. But while individuals earn a single point for contributions at average wage level per year for the first 40 years, between 40 and 45 years, the individuals earn only half a point and beyond 45 years of contributions, they earn no points.

The value of the general point was initially indexed to 50 percent of inflation and 50 percent of nominal wage growth, allowing its value to erode, over time, relative to the average wage. However, in 2005, the law was amended, shifting the basis for indexation entirely to inflation, with the change to be phased in over a 4 year period. The first year of pure inflation indexation was to occur in 2009, but (as noted above) this has been held in temporary abeyance.

Pensions following retirement were also initially indexed by the same combination of 50 percent inflation and 50 percent nominal wage growth, with the basis for indexation subsequently shifted entirely to inflation, to be phased in over a 4 year period. But the 2005 also mandated that the average pension should fall to no less than 60 percent of average wage in the first 3 years of the law's enactment. With normal wage growth, this provision would not be binding, but the extraordinary wage growth which occurred in 2007 and 2008 resulted in an extraordinary increase in pensions in January 2008.

Disability pensions are determined exactly as old age pensions, but length of service is increased by 2/3 of the difference between the person's age and 53 and 1/3 the difference between 53 and the relevant retirement age, implicitly making the assumption that had the individual been healthy, he would have worked 2/3 of the time until age 53, the earliest age of retirement and only 1/3 would have worked until the normal retirement age.

Survivors are given 70 percent of the pension if there is only one survivor, 80 percent to be divided between them if there are two survivors, 90 percent if there are three survivors and 100 percent for 4 or more survivors. Survivor pensions are calculated on the basis of at least 20 years of contributions, regardless of the actual years of contribution. Widows receive the right to collect a benefit at age 48 unless caring for children. Widowers can collect the survivor pension at age 53, unless caring for children. These ages are being raised to 50 for widows and 55 for widowers under the 2005 legislation. The relevant age for widows in 2009 is 49 and for widowers 54. Orphans collect pensions until the age of 15 unless they are studying in which case the age limit can be as high as 26. Disabled orphans receive the pension for life. Other family members who were dependent on the worker, such as parents and siblings may be eligible for benefits in the absence of a spouse and children. If a spouse and children exist, these other family members can claim the difference between 100 percent and the benefit awarded to the immediate family. The main characteristics of the system are summarized in the table below.

Serbian Pension System Parameters in 2009

Contribution Rate	22%, 11% from employers and employees each, with higher employer contributions for those with extra credited service
Retirement Age	64 for men with 18 years of service; 59 for women with 18 years of service; 53 for those with 40 years of service for men and 35 years of service for women; at any age with 45 years of service
Benefit Rate	Benefits determined by the point system with 1 point awarded for each day the contribution is made on the basis of average wage;
Value of General Point	1% of average wage; women get an additional 15%
Indexation of General Point	Indexed to inflation
Indexation of Pensions Post-retirement	By law, to be indexed to inflation, but suspended in 2009 and 2010
Disability pensions	Calculated as old age pensions with credit given for 2/3 the difference between age of disability and 53 and 1/3 the difference between 53 and normal retirement age
Survivor pensions	Normally 70% of pension if only one survivor; given to women at 49 and men at 54 unless caring for a child; in order to receive the right, the woman must have reached age 44 and the man 49 at the time of the spouse's death

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16. The current pension system—even after the 2001 and 2005 reforms are fully in effect—is, and will remain, unaffordable. This is, in part, because pension benefits are too high. Figure 3 compares the level of pension benefits in Serbia with those of high income OECD countries. As shown, the pension due to a new retiree in Serbia is equal to nearly 60 percent of the net average wage. This is equivalent to the norm for high income OECD countries and is higher than the rate paid in more than one-third of them. This comparison, in fact, understates the generosity of the Serbian pension system. New old age benefits in high income OECD countries are calculated for individuals who begin work and contribution at age 20, work and contribute continuously until reaching the retirement age which is typically age 65

for both males and females. In the case of Serbia, the pension level applies to men retiring on average at age 60 and women retiring on average at age 57. Individuals are retiring with far fewer contribution years than the 45 years typical in OECD countries. Serbian pensioners are thus receiving similar pensions for fewer years of work and contribution and receiving them for a longer duration because of the earlier retirement age than their counterparts in the OECD.[4]

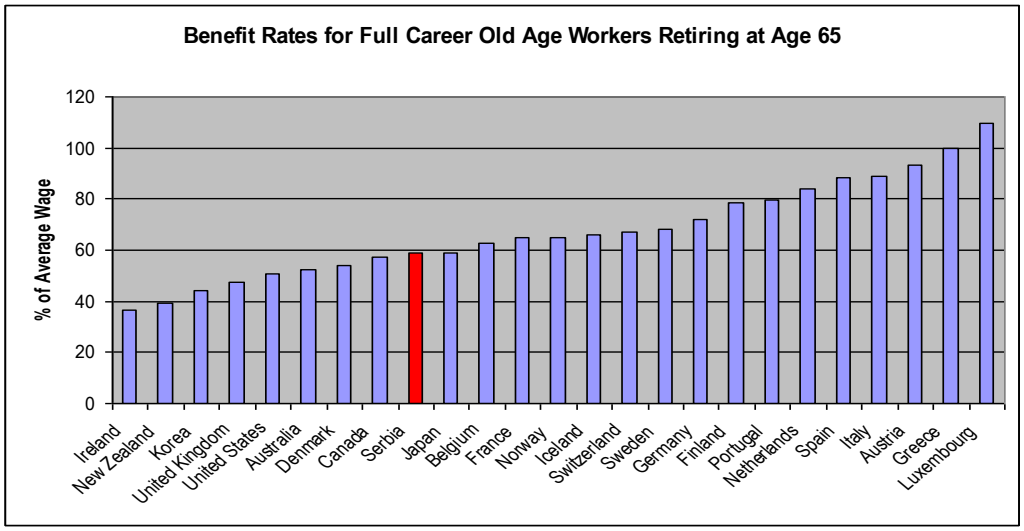

Figure 3

17. The high cost of the current level of Serbian pensions is exacerbated by two characteristics that distinguish Serbia, to varying degrees, from the high income OECD countries. First, it is an older country. As shown in Figure 4, of the ECA region countries --which are already among the 'oldest' in the world--Serbia is among the older 40 percent, with 14.4 percent of the population aged 65 or above. Serbia also has a lower percentage of population in working age, typically defined as people between the ages of 15 and 64: 67 percent. As a result, there are fewer workers to support larger numbers of retirees than in many countries.

18. Second, the process of economic transition has left Serbia with a relatively high proportion of the older population receiving benefits from the pension system and a relatively low proportion of the working age population contributing to it. Typically,

[4] Furthermore, Serbia also typically calculates average pension to wage ratios using all types of pensioners, old age, disability, and survivors. The benefit levels shown above only apply to full career old age pensioners. If all type of pensions were included in the OECD numbers, together with pensions for early retirees and for those with incomplete careers, far fewer countries would be able to reach this 70 percent level. In Serbia, only about 50 percent of pensioners are old age pensioners, with 26 percent receiving disability pensions and 24 percent receiving survivor pensions. Since survivors receive pensions which are typically 30 percent lower than the old age pension and the disability pensions are also typically 15 percent lower than the old age pensions, the large numbers of these types of beneficiaries also drives down the average pension to wage ratios.

socialist countries had relatively high formal labor force participation rates. These high formal labor force participation rates of the past translate into high coverage rates among the current elderly, which translate into relatively higher pension expenditures regardless of the particular demographics of the country. At the same time, the transition process itself dramatically changed the formal labor markets as large state-owned enterprises which offered lifetime employment were privatized, downsized, and split into smaller enterprises, which needed to respond flexibly to an evolving economic environment. This led to rising unemployment and the growth of an informal labor market. While new privately owned enterprises have sprung up, enforcing pension contributions legislation against them has been difficult. The fall in the number of formal sector workers has led to low coverage among the working age population which translates into low revenue collection.

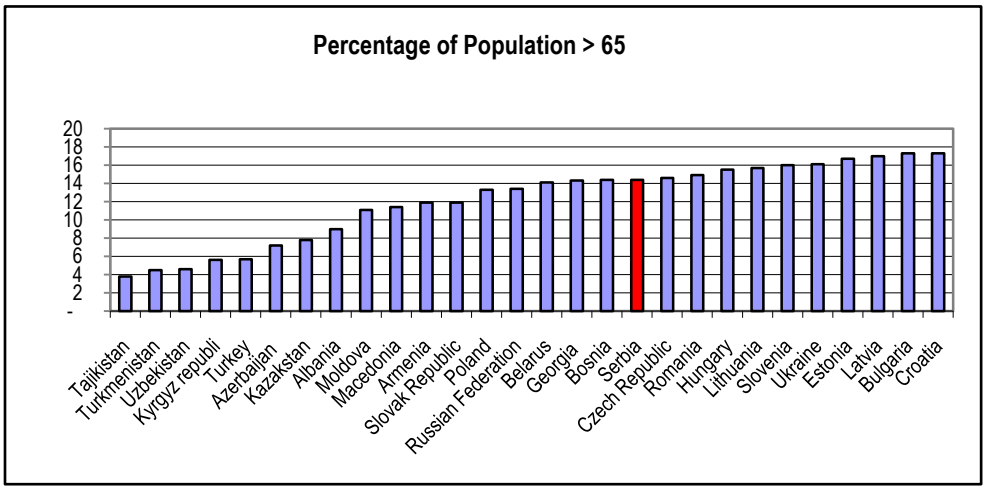

Figure 4

19. Pension eligibility criteria are also too generous. This is largely due to a variety of arrangements that allow a person to receive benefits before reaching the age of 65. Figure 5 shows the distribution of the beneficiaries of the Employee Pension Fund. As shown, only 60 percent of the beneficiaries are aged 65 or older. Of the remaining 40 percent, 45 percent are receiving old age pensions, 32 percent disability pensions, and 23 percent survivor pensions.

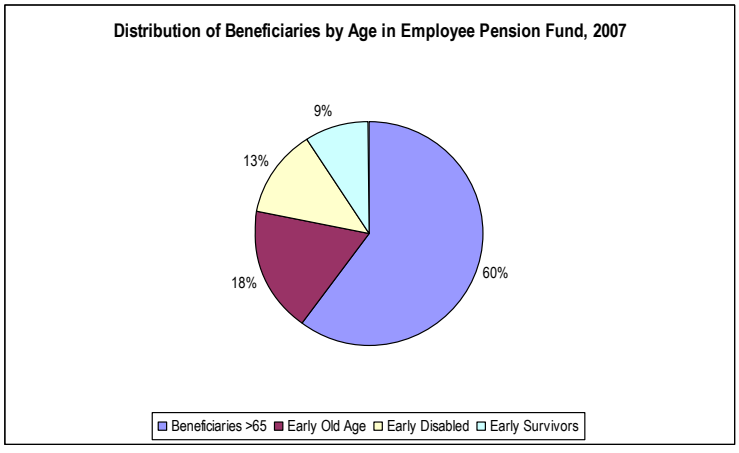

Figure 5

20. The large number of underage pensioners arises, first, from the low retirement age that prevailed in the past. As noted above, the retirement age is gradually being increased and will top out at 65 (for men) and 60 (for women) for persons with at least 15 years of service.

But it also reflects the prevalence of provisions that allow those with 45 years of contributions to the pension system to retire at any age and to credit granted to persons working in particular occupations.

21. The large number of under-65 disability pensioners is largely attributable to the previously liberal disability laws which defined disability as inability to perform the work previously performed by the individual. As noted above, the law has been strengthened to apply only to those who are unable to perform any type of work, but those previously granted disability under laws existing in previous years cannot be constitutionally reviewed. The large number of survivor pensioners is largely due to provisions allowing widows and widowers to receive survivor pensions as young as 54 for men and 49 for women, rather than requiring them to wait until the legal retirement age.

DIRECTIONS FOR REFORM

22. **Freeze pensions, then index to inflation** To address these problems, the Serbian government has a variety of options. First, in order to lower the average pension level to a level more in keeping with Serbia's resources, the Government is well advised to maintain the agreed freeze on pension levels in 2009 and 2010 and thereafter revert to the indexation method specified in the 2005 pension law. The 2009 and 2010 freeze will have a dramatic impact on pension expenditures. Thereafter, imposing an inflation-only index on both the general point (which determines the level of pension benefits at the time of retirement) and subsequent pension payments will slow the rate of growth in the average pension level in nominal terms and reduce the aggregate level of pension spending as a percentage of GDP. As shown in Figure 6, the 2009 freeze combined with a reversion to inflation-only indexation thereafter would reduce aggregate pension expenditures from 14 percent of GDP in 2010 to 12.6 percent of GDP by 2015 and 11.3 percent of GDP in 2020.[5] Extending the freeze through 2010 would further reduce pension costs to 12.7 percent of GDP in 2010, 11.8 percent in 2015 and 10.7 percent in 2020.

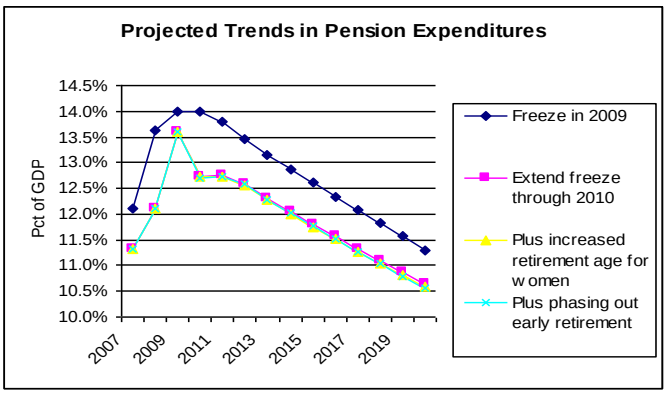

Figure 6

23. Over the longer term, however, indexation based solely on inflation will reduce pension levels to socially unacceptable levels. Employees and employers would be asked to contribute 22 percent of wage over a lifetime of employment to support a pension equal to only 9 percent of the average wage. The system would

[5] In a point system, there are two parameters which require indexation, the value of the general point which affects the value of the pension at the time of retirement and the value of each subsequent pension payment. Current law would index both parameters to inflation. Source: PROST projection May 2009.

not be providing value added for the worker and would be insufficient to prevent poverty in old age. Over the longer term, Serbia should therefore consider moving to a mixed inflation and wage based system, in which the value of the general point would be indexed to wages (permitting new retirees to retire with a pension that reflects prevailing wages at the time they retire) while subsequent pension payouts would be indexed to inflation.

24. **Reduce pensions for early retirees** Second, the Government could change the parameters of pension benefits. It could, for example, reduce the level of pension benefits for those taking early retirement, *even if they meet the years of contribution criteria*. Most countries reduce the pension for early retirees, imposing an actuarial reduction on the pension related to the number of years that a person retires early. The concept underlying the actuarial reduction relates to maintaining the total value of the pension package regardless of the age of retirement. If the normal retirement age is 65 and individuals at age 65 are expected to live 15 years, an individual retiring at age 62 will be receiving the pension for at least 3 additional years and will be receiving 20 percent more in pension benefits than the person who retires at age 65 if the benefit levels are the same. Most countries would then reduce the pension level for the 62-year old by 20 percent to make the value of the retirement benefits equal to what the individual would have received at age 65.

25. **Limit the number of years a worker can retire early.** Most countries also limit the number of years that a worker can retire early. Figure 7 shows the number of years of early retirement allowed for men in selected middle and high income countries. As can be seen from the figure, most countries others limit it to 5 years or less and many do not permit any early retirement at all. Hungary and the Czech Republic, for example, limit early retirement to three years. Poland does not allow it. As noted earlier, Serbia allows early retirement as young as age 53 for men with 40 years of contributions, and, in effect allows retirement at any age for persons of either sex with 45 years of contributions. Limits on the number of years of early retirement are a necessary complement to reductions in the pension benefits of early retirees. Pensions are intended to prevent poverty in old age. Allowing people to retire too early (with corresponding actuarial reductions in their pensions) would result in pension levels too low to achieve that purpose. Figure 8 shows the degree of reduction per year of early retirement in selected middle and high income countries. The average reduction is about 4.5 percent per year although this still provides an incentive for early retirement, since between 6 and 7 percent is the actuarially fair reduction. In Hungary, the reduction is 2.5 percent; in the Czech Republic 3.5 percent. Serbia does not reduce the pension at all. Figure 6, above, illustrates the impact of eliminating early retirement at the rate of six months per year between 2011 and 2040 (in addition to freezing pensions in 2009 and 1010.) As shown, the impact would be relatively small in the short term. Pension costs would fall by about 0.1 percent of GDP. Delaying retirement would result in individuals accumulating more years of service and thus becoming eligible for higher benefits when they do retire, partially offsetting the expenditure reduction impact of a higher retirement age. On the other hand, those postponing retirement also make contributions in the additional years

that they work, reducing the amount of support the pension system requires from the budget. The difference can be quite significant over the longer term. The savings are nevertheless not insignificant.

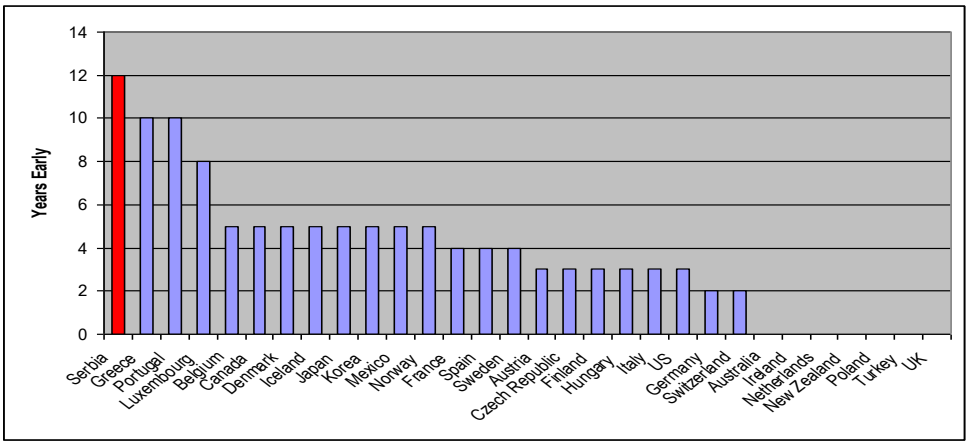

Figure 7: Ceilings on Early Retirement in High Income Countries

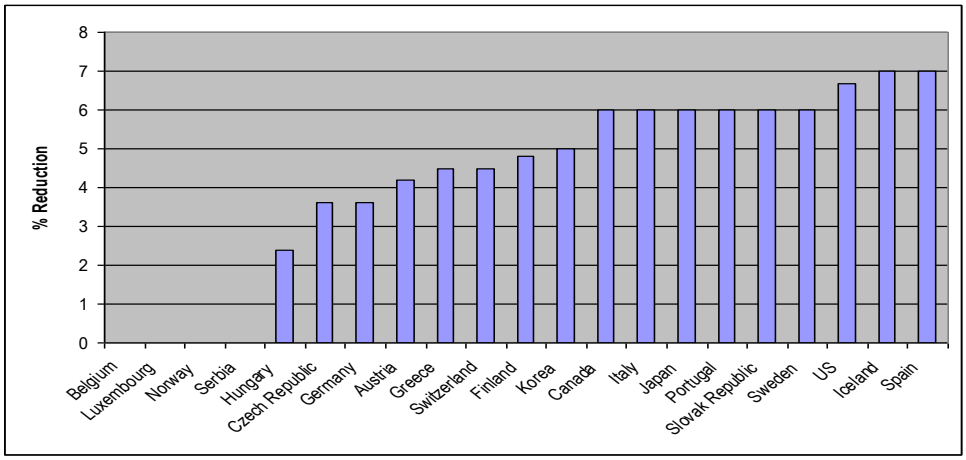

Figure 8: Reduction in Benefit per Year of Early Retirement in High Income Countries

26. **Raise the retirement age for women**. Even when fully phased in, the 2005 law maintains a 5 year difference in retirement ages between men and women, allowing women to retire at age 60 with 15 years of service credit. Since women live longer than men, the differential provides a large subsidy to women retirees, and given the longer life expectancy of women, there is no economic reason to permit the early retirement. Most high income countries have moved to equalize retirement ages between men and women. Figure 9 shows the retirement ages in high income countries. Only in Austria, Greece, Italy, and Switzerland is there a differential between retirement ages for men and women, and the differential is only one year in the case of Switzerland. Figure 6 shows the impact of raising retirement ages for women gradually from 60 to 65 over a 10 year period from 2011-20. Again, the impact is relatively small. The reform would not discernibly affect

pension costs until it is fully phased even, and even then would only reduce these costs by 0.1 percent of GDP. Accelerating the pace of reform, would of course, hasten its impact.

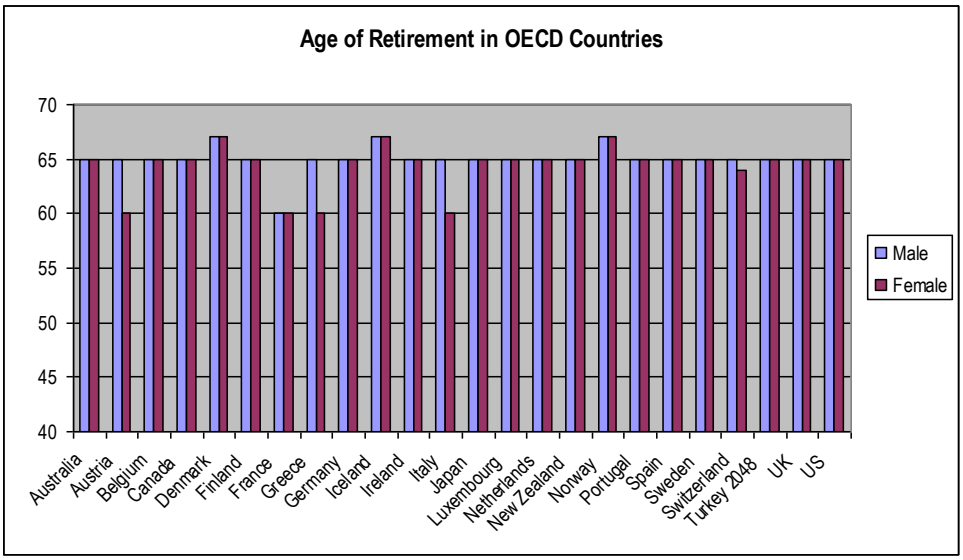

Figure 9

27. **Improve compliance and administration.** Pension administration in Serbia has been complicated by the merger of three pension funds into one. While the funds have been consolidated, all of the information is still kept in three separate sub-accounts which requires duplicative systems and records. Furthermore, the Tax Authority collects the pension contributions together with income taxes and other social insurance contributions and remits the money to the pension fund. Employers are obliged to submit an M-4 form to the pension fund each year which lists the individual workers on whose behalf the money was paid.

28. The Government has taken the decision to create a Central Registry as a separate entity which would keep individualized records on pension contributions as well as health and unemployment contributions in addition to personal income taxes. It has only recently appointed the head of the entity. Once fully operational, the entity should lower compliance costs for employers since a new worker would be registered with the entity and not separately with the pension fund, health insurance, unemployment insurance fund, and the tax authority. Employers are also expected to report employee data on an individual basis monthly instead of the annual data that the social insurance funds now receive, making it easier to match contributions with the persons for whom they are intended. All of these measures will improve the efficiency and contribution enforcement capacity of the pension fund.

29. Nevertheless, there will be data issues which remain which involve the breakup of the former Yugoslavia where workers have contribution histories in what are now other countries. During the various conflicts, enterprises often did not remit contributions or employment was interrupted or records lost. Enterprises undergoing

privatization were not always obligated by law to make contributions. All of these factors suggest that past contribution histories will remain problematic for some time. Furthermore, the business processes of the pension fund need to be seriously reviewed and streamlined to improve efficiency and effectiveness in administering pensions.

30. But as noted earlier, without a change in pension policy, the current system is not attractive for new workers. Forcing workers and employers to comply with policies which are disadvantageous to them will be increasingly difficult even with the best administration, but nearly impossible without major improvements.

31. **Longer Term Reforms.** In the longer term, the Serbian pension system is projected to turn around completely. From a deficit-generating moderately generous system, it turns into a surplus-generating system which pays very low benefits. As noted earlier, the long run shows a clearly unsustainable system from the social point of view with employees and employers being asked to contribute 22 percent of wage over a lifetime of employment to support a pension equal to only 9 percent of wage for a limited retirement period. The system would not be providing value added for the worker and would be insufficient to prevent poverty in old age.

32. Moving to a mixed inflation/wage-based indexation system for both the general point and the pensions after retirement will improve the long run benefits somewhat, but not sufficiently to make them worthwhile. A more comprehensive reform will be required. A number of approaches could be taken. The simplest would be to de-link the indexation of the general point from the pensions after retirement and allow the general point to be linked to average wage growth while the pensions after retirement are linked to inflation. The starting value of the general point would need to be determined such that pensions would be adequate while being fiscally sustainable and affordable.

33. Alternatively, a different pension framework could be adopted. Options include a return to a defined benefit pension system similar to the type that existed in the former Yugoslavia or a notional account system similar to the one adopted in Sweden, Poland, and other countries. Each of these options would need to be costed and evaluated within the Serbian context and parameters chosen which would provide value to workers and pensioners while being affordable. A downside of adopting a new pension framework is that Serbia adopted a new framework in 2002 and changing frameworks frequently might give workers the impression that the pension system instead of providing long term security, is itself a source of instability.

34. Serbia has considered adopting a second pillar, a defined-contribution fully funded pension system alongside its existing publicly provided pension system in the past. However, adopting such a system means that some of the contributions from current workers will be diverted from the current government-run system into workers' individual savings accounts. This diversion would result in less revenue going to the public system. Given the sizable deficit already in the public pension system, the Government cannot afford to adopt policies which will increase the level of the deficit

further. If some of the medium term measures are adopted and create sufficient fiscal space, introducing a second pillar in the future might become an option for the Government to consider. But the fiscal space currently is not there for this even to be an option.

35. Irrespective of the nature of the long run system, there will be more elderly in the future without pension rights. While the pension system currently provides benefits to 53 percent of those aged 65 and above, currently only 34 percent of the working age population is contributing, suggesting that in the future only a little more than a third of the old age population will be eligible for pension benefits. The Government may need to consider whether the current social assistance system is adequate for providing benefits to what will now be the majority of the elderly who are retiring without access to any other form of public benefits. One option would be complement the contributory pension system with either a means-tested benefit exclusively for the elderly poor or by better integrating the elderly poor into the MOP.

36. The Government will also need to further develop the private pension sector. As the population ages, the public system will be unable to provide generous benefits to retirees. People who want more in old age than what the public system will be able to provide will have to undertake additional savings. The Government can assist by providing vehicles for that saving, as they have with the private pension system, and with regulating and supervising those savings to enhance their security.

HEALTH

37. The Serbian health system has made significant progress over the last 15 years. Outcomes have improved and more services are delivered at a level of spending comparable to other countries in the region. Some measures to regulate medical practices and improve quality of care have also been implemented. At the same time the system faces major challenges. As in many health systems in Europe, Serbia confronts pressures for increased health spending, due to the aging of the population, the introduction of new (and expensive) pharmaceuticals, and the development of new technologies. These exacerbate the fiscal pressures already confronting the system as a consequence of the global economic crisis. Lower growth will most likely be accompanied by an increase in unemployment and poverty, potentially reducing the Health Insurance Fund's (HIF) revenue base and increasing the pool of vulnerable groups who must be subsidized from the general budget. Under this scenario the Government will need to find ways to use resources more efficiently, by improving management and furthering the reforms that will create incentives to use resources more productively. These are explored in the following section.

THE SERBIAN HEALTH CARE SYSTEM

The health care system in Serbia is organized on the basis of social health insurance principles, with stewardship by the Ministry of Health. The Republic Health Insurance Fund (HIF) is in charge of collecting contributions, pooling resources, and purchasing services from health care providers, which are in turn majority-owned by the Ministry of Health or municipal governments. Both employers and employees are required to contribute 6.15 percent of their payroll/wages, with a minimum and maximum threshold. The self-employed contribute 12.3 percent of declared income. Farmers contribute four percent of their property tax assessment. The Pension Fund makes a contribution on behalf of retirees equal to 12.3 percent of their respective pensions.[6] The Ministry of Health makes a contribution on behalf of the unemployed (for a period not to exceed six months) and a wide range of other vulnerable groups who are exempted from paying into the system.[7] As the HIF has run a cash surplus in recent years, there has been no need for additional subsidies from the Government budget to the Fund.

In terms of health service delivery, Serbia has not followed the path of other countries in the region that adopted family medicine models. Instead primary care is provided at Community Health Centers—*domovi zdravlja* (DZs). Some DZs also provide specialist outpatient services, and about twenty DZs (out of 159) operate low level inpatient facilities. Most DZs are now owned by municipalities or are in the process

[6] There is some evidence suggesting that evasion is pervasive among certain groups; self-employed and farmers contributed 5 percent and 0.78 percent of HIF revenues in 2004 respectively, while workers contributed 68 percent of revenues from contributions and the pension fund 24 percent (Bredenkamp and Gragnolati).

[7] The current estimated number of individuals exempted from contributions is 710,000 and includes the following categories: (i). children aged 15 years or younger; (ii) schoolchildren and students until the end of their education or 26 years of age; (iii) pregnant women up to 12 months after birth; (iv) Disabled and mentally challenged people; (v) People under treatment for HIV infection or other infectious diseases (as described by the law), malignant diseases, haemophyllia, diabetes, psychosis, epilepsy, sclerosis multiplex, terminal renal failure, cystic fibrosis, systematic autoimmune disease, rheumatic fever, drug abuse, people that got i injured or sick related to providing emergency medical care, and people related to the organ or tissue donation or acceptance; (vi) Monks; (vii) People on social welfare according to regulations regarding social protection, military veterans, military disabled and civil disabled in war; (viii) Users of permanent monetary assistance, placed in the social institutions or other families, according to social protection regulations; (ix) Unemployed, or other people whose monthly income is below minimal income (lath; (x) members of the family whose main sustainer is serving military service; (xi) Roma people who, due to traditional way of life, do not have permanent address; and (xii) People registered as refugees or internally displaced, and if their monthly income is below minimal income prescribed. According to the law, the transfer per capita to the HIF from central Budget on behalf of these groups is 12.3 percent of the minimal monthly income. In the last few years the transfers have been lower than the statutory levels. The resources transferred to HIF on behalf of vulnerable groups have represented between 1.88 (plan for 2009) and 3.14 (2004) percent of HIF revenues.

of being transferred to them from the MoH. Hospitals and clinical hospitals are owned by the MoH and provide services at the secondary and tertiary care levels.

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38. The last 15 years have seen significant improvements in the management of the system. The MoH has spearheaded reforms to improve quality of care, including: (i) the reconstruction of several DZs and some hospitals and clinical centers; (ii) the upgrading of medical equipment; (iii) the development of capacity to produce vaccines locally in a cost-effective manner; (iv) the creation of professional chambers (doctors, nurses, dentists, pharmacists) in charge of licensing health professionals; and (v) the creation of a National Agency for Quality and Accreditation. In terms of data management, the HIF: (i) introduced a fully functioning IT system; (ii) developed a database of insurees; and (iii) introduced e-invoicing to health service providers resulting in more precise and timely monitoring of expenditure. The sector also resolved a large stock of debts and arrears that burdened the system and took steps to partially rationalize the system, reducing the number of beds and staffing, increasing co-payments, and reducing the generosity of the benefit package (e.g., by eliminating most dental services for adults from the package). The HIF also embarked upon a substantial change in the mechanism used to pay health care providers, although this has yet to be fully employed.

39. Partly as a consequence, health outcomes have improved significantly over the last decade. Serbia now has an epidemiological pattern not unlike most countries in Eastern Europe. In fact many indicators are equal or better than those in the most recent EU member states. As shown in Figure 10, average life expectancy, at 73.7 years, is almost equal to the EU8+2 average. It is higher than in the Baltic countries and roughly equivalent to that of Hungary (73 years) and Slovakia (74 years). Progress in improving the health status of the population accelerated particularly after the 1990s. For example neonatal deaths sharply decreased in the period from 1999 to 2006 and its rate is now at a level comparable to the average of EU member states that joined after 2004. Standardized death rates, however, remain above the averages of both recent EU countries and older members. EU averages. (Figure 11.) They are roughly equal to the rates in the Baltic countries and Hungary and considerably above the rates in Slovakia.

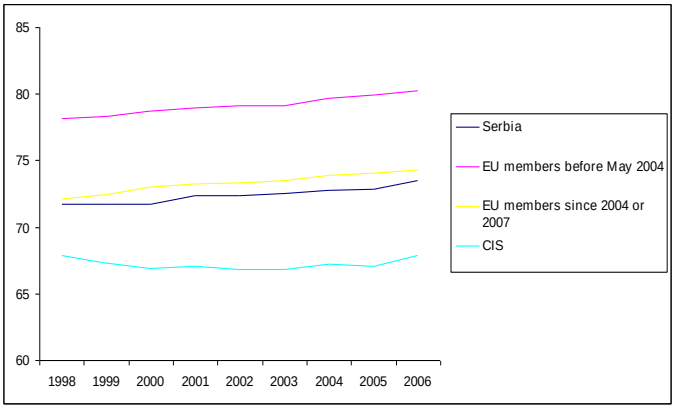

Figure 10: Life Expectancy at Birth in EU and Serbia

40. Historically, the countries of the former Yugoslavia have spent a relatively large percentage of their resources on health, when compared to other countries at similar levels of development. As a percent of GDP, Serbia's current aggregate level of health care spending (including both private and public spending) is somewhat higher than that of the recent EU member states but

below that of the older members. The aggregate level of spending has remained more or less constant, as a percent of GDP, over the last few years.

41. As in the rest of Europe, most health spending is undertaken by the public sector. Private spending on health in Serbia represents about a third of the total, and has decreased from a high of 34 percent of total spending on health in 2001 to the current level of 30 percent. These ratios are similar to those prevailing in the EU.

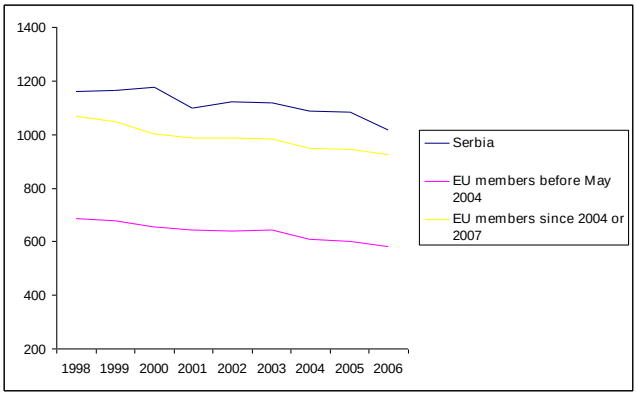

Figure 11: Death Rates in EU and Serbia
(per 100,000 population)

42. Government spending on health in Serbia has remained roughly constant as a percent of GDP in recent years, rising from six percent in 2002 to 6.3 percent in 2008.[8] As this was a period of rapid growth in the economy, the budgets of both HIF and MoH have been increasing over time. From 2003 to 2008 HIF spending increased 23 percent in real terms, while the budget for the Ministry of Health (devoted mostly to prevention, purchase of equipment and infrastructure, and pay for health care for vulnerable groups) almost doubled. [9] (Figure 12.)

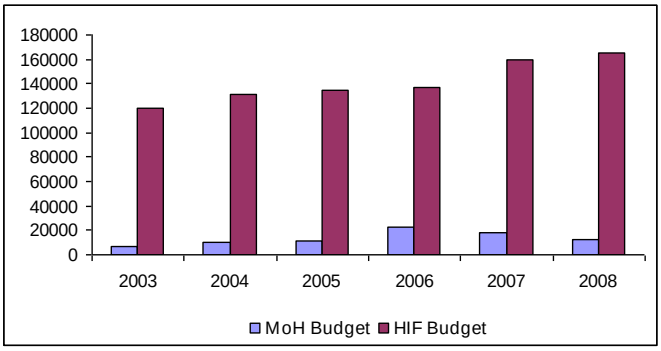

Figure 12: Trends in Spending of MoH and HIF
(constant RSD mn of 2008)

43. Hospital care consumes a disproportionate share of total health spending in Serbia. Between 2005 and 2008 real spending on hospitals grew about 40 percent, almost twice the rate of growth of overall spending, and now consumes half of the HIF budget. (Figure 13.) This is considerably higher than the average proportion of health care spending devoted to hospitals in the OECD countries: 38 percent. (Schneider, 2007). Spending on outpatient care accounts for 24 percent of HIF spending, while OECD countries spend about 31 percent. There are many possible explanations for this, e.g., that the system is relying excessively on inpatient care, admitting patients to hospitals for procedures that could be

[8] Figures for 2008 are based on preliminary budget figures for the MoH and HIF.

[9] The significant fluctuations in spending by the MoH over this period reflect an increase in capital spending, financed from the National Investment Plan, during the middle of the period.

handled at lower levels of care.[10] It is also possible that hospitals are not using the most cost-effective combination of factors in providing care.

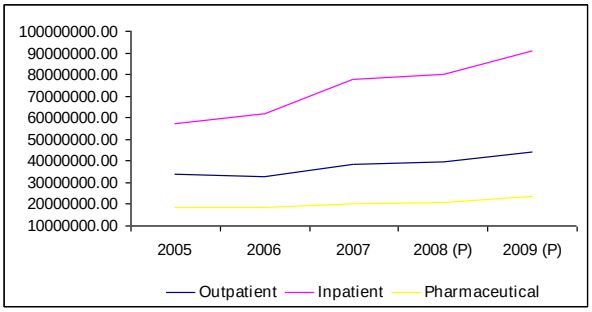

Figure 13: Trends in HIF Spending by Function
(constant RSD ths of 2008)

44. Pharmaceuticals are an important driver of spending throughout the world. A rule of thumb dictates that pharmaceutical spending has been increasing at twice the rate of growth of GDP in most OECD countries. The main reasons for this trend are the aging of populations and the introduction of new, expensive medicines that become essential for certain patients.[11] However Serbia has managed to keep the growth of pharmaceutical spending at bay. This has been accomplished through the use of reference pricing, active management of the positive drug list, and the use of co-payments to limit demand.[12] As a result, spending on drugs represents less than 15 percent of HIF spending.

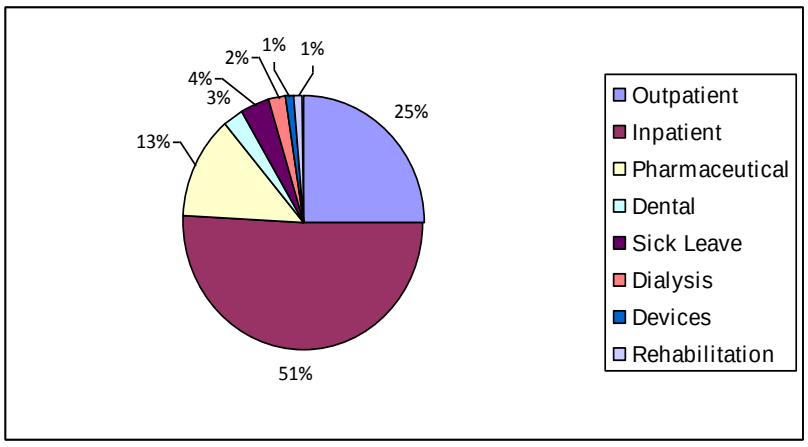

Figure 14: HIF Spending by Category
(planned 2009)

45. Spending on sick leave accounts for about four percent of the HIF budget. (The HIF is required to provide this benefit to all its beneficiaries.) A significant effort was made to reduce these costs from a high of 7 percent in 2005 and HIF spending on sick leave has decreased about 30 percent in real terms over the last four years. However, anecdotal evidence suggests that the system is still overly generous and abused. Many countries in Europe have removed non-medical benefits from the health insurance package.

[10] The problem may be at the primary care level; if primary care providers do not have an incentive to provide care, they may refer patients easily to hospitals, becoming "gate-openers" rather than " gate-keepers".

[11] Imasheva and Seiter, 2007.

[12] Dukic, 2007, unpublished.

46. As shown in Figure 14, other, smaller categories of expenditure, including dental care and dialysis account for the remainder of HIF spending. Spending on dental care more than doubled in the same period, in spite of a reduction in coverage, but still represents only 3 percent of HIF spending.

47. Despite the array of management improvements to date, the Serbian health care system still suffers from a wide range of inefficiencies. In terms of facilities (beds per capita) and staffing (physicians per capita) Serbia is not out of line. As opposed to many countries in Eastern Europe or the former Soviet Union, Serbia did not build a large hospital infrastructure and concomitantly bed levels are in line with the average of those prevailing in the EU. Between 2005 and 2008 the number of beds was reduced by 7 percent, and the number of beds per 100,000 is now almost at the level of EU15 countries. As shown in Table 2, it is well below the level in most of the Baltic and Visograd countries (with the exception of Poland). The ratio of beds to population prevailing in the EU may not be the appropriate standard, however. Countries where an explicit effort has been taken to develop day surgery systems and optimal use of the primary care network—which is in general more cost-effective than hospital care—have achieved significantly lower ratios—for example the UK (360), Sweden (220), Australia (260), and Ireland (290).

Table 2: Beds per 100,000 Population

	2002	2003	2004	2005	2006	2007
Poland	557	547	534	523	516	..
Serbia	**606**	**593**	**592**	**577**	**562**	**540**
Estonia	607	592	581	547	564	557
Slovakia	769	735	701	689	681	679
Latvia	775	781	773	768	760	757
Hungary	785	783	783	785	791	712
Lithuania	894	868	843	812	799	814
New EU members	688	681	654	644	640	..
Old EU members	602	590	579	568	561	..

Source: HFADB (WHO).

48. In principle, staffing levels —at least the number of physicians— do not appear out of line with EU countries. As shown in Table 3, the number of physicians per 100,000 population is slightly higher in Serbia than in the newer EU member states and considerably below that of the older ones. Again, levels in Serbia are below those of neighboring countries, except Poland. There is evidence, however, of an excessive number of physicians at the primary (DZ) level. In Europe as a whole (as defined by the World Health Organization (WHO)), there is an average of one primary physician per 3,500 inhabitants. In Serbia, the ratio is 1: 782. The level of non-medical staffing--26 percent of the total in 2007--may also be too high. In the case of DZs, on average more than 20 percent of staff is non-medical, with 6.4 percent administrative and 16.5 percent technical.

49. A major effort to rationalize facilities and staffing levels was begun in 2005, with the publication of the health sector strategy 2005-2010. The strategy provided target

for reductions in facilities (i.e., beds) and staff. It did not, however, designate specific facilities or positions to be closed. It was followed by a major voluntary dismissal program, in which staff were offered enhanced severance packages in return for their resignations. During 2005 and 2006, 14,400 staff took advantage of the program. While the program was originally intended to target non-medical staff, the HIF was ultimately compelled to offer it to all its employees. As a result, staff in key specializations were lost, along with staff who were, in fact, redundant.

50. The staffing trend has since reversed. While the health strategy envisioned further reductions of staff through 2010, total staffing levels grew from 108,975 in 2005 to 111,068 in 2008. While some new hiring represents a replacement of staff lost during the voluntary dismissal program, some does not. Hospital directors are said to be under pressure to create jobs regardless of need, particularly since the start of the economic downturn.

Table 3: Physicians per 100,000 Population

	2002	2003	2004	2005	2006	2007
Slovakia	322	319	313	..	..	..
Poland	230	229	224	199	203	..
Serbia	259	265	265	262	264	**271**
Hungary	319	324	334	278	304	278
Latvia	299	298	311	315	315	305
Estonia	315	317	321	320	328	..
Lithuania	399	396	390	400	398	407
New EU members	260	265	267	265	253	..
Old EU members	327	329	331	336	338	..

Source: *HFADB (WHO).*

51. Other productivity measures indicate a clear gap between Serbia and the EU countries. Significant progress has been made over time in improving productivity of health services, but there is still a gap when compared to EU countries. For example inpatient care admissions increased from 11 per 100 to almost 15 per 100 in the period 1999-2006, but it still fell below the 17 per 100 value in EU members before 2004 and almost 21 per 100 in EU members joining after 2004.[13] As shown in Figure 15, the hospital bed occupancy rate (69 percent) is below the level of the new EU members and considerably below

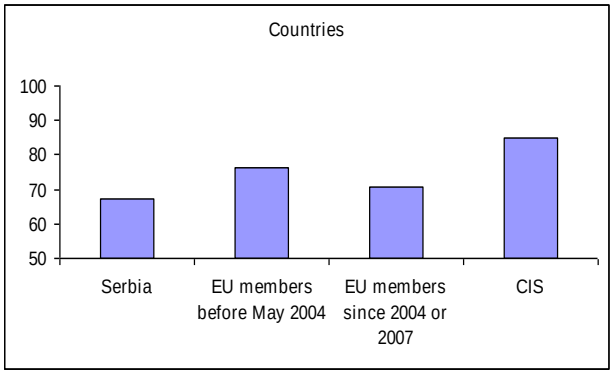

Figure 15: Bed Occupancy Rates (2007)

[13] A lower admission rate may also be associated with access problems. According to the latest LSMS , six percent of the population was not insured under the compulsory health insurance, including 14 percent of those living below the poverty line and 17 percent of Roma.

the level the older EU member states. (It is, however, roughly equal to the levels in levels in Hungary (69 percent); Estonia (71 percent) and Slovakia (68 percent). By the same token, average lengths of stay (ALOS) are longer in Serbia that in either group of comparator countries. If occupancy rates were to increase to levels observed in Europe, the same level of discharges could be achieved with significantly lower bed numbers.

52. Variations among hospitals in the average length of stay for comparable treatments suggest the extent of inefficiency in some facilities, and by the same token, the potential for increased productivity in the system as a whole. A recent study of six hospitals in Serbia showed that the length stay for fractures of the femur, for example, varied from a 35 day average to a 6 day average. Somewhat smaller variations were shown for other procedures. (Figure 16.)

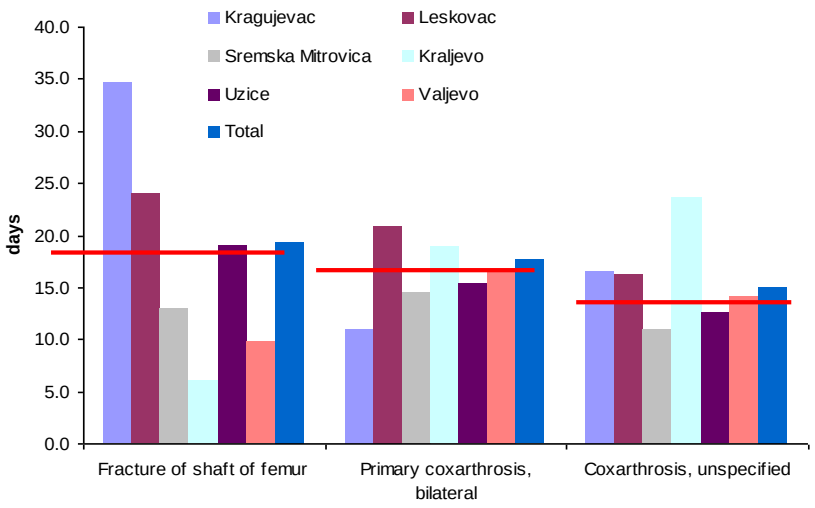

Figure 16: Avg. Length of Stay for Selected Treatments in Different Locations

53. Product ivity variations are also common in primary care centers. A recent study surveying 147 out of 159 DZs concluded that the average per capita spending in the highest-spending quartile of DZs is four times that of the lowest-spending quartile. Only nine percent of visits, moreover, are preventive. In addition many facilities are widely underused.[14] The same study estimated the production efficiency of each DZ, defined as the ratio of the total number of consultations to the maximum possible number based on the inputs currently available. Figure 17 shows this ratio for each DZ, ranking them from the one with lowest to highest production efficiency ratio. Efficiency ratios for DZs vary from 0.13 to 0.86, with an average of 0.64, More than 50 percent of DZs produce at two thirds or less than their maximum capacity.

[14] World Bank (2008a): Serbia, Baseline Survey on Cost and Efficiency in Primary Health Care Centers before Provider Payment Reform.

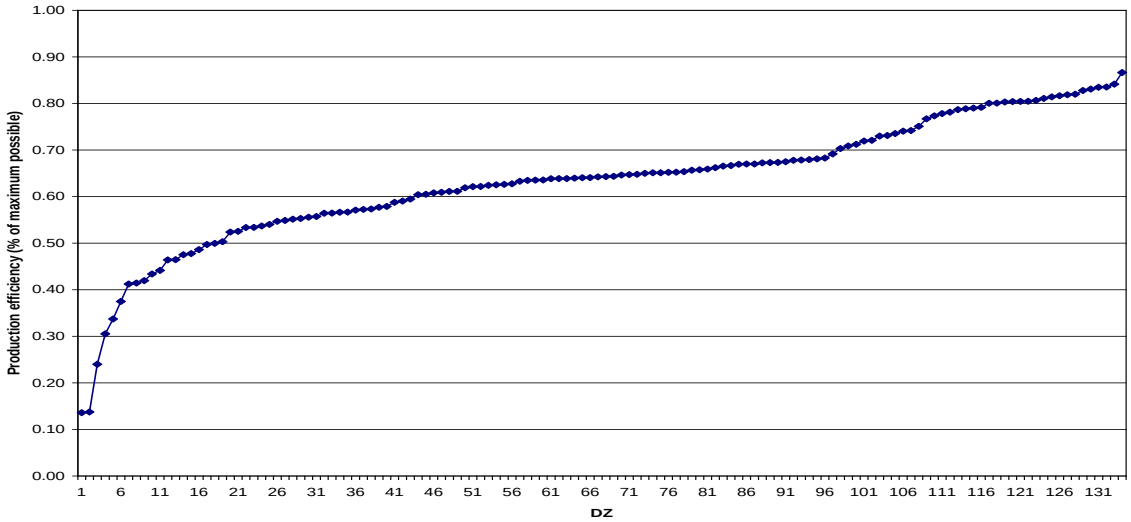

Figure 17: Capacity Utilization in Primary Health Care Facilities

DIRECTIONS FOR REFORM

54. The significant progress in managing the health system and improving quality and outcomes during the last 15 years should continue, in spite of the Government's fiscal constraints. To accomplish this, the Government has to improve productivity. The analysis in hospital and primary care sectors has shown that it would be possible to maintain current levels of service provision with a smaller endowment of inputs, continuing the trend in beds and staff reductions that was initiated a few years ago based on the recommendations of the human resources strategy. It has also been shown that, following the examples of other countries in Europe, productivity in the health sector is dependent on the incentives embedded in the payment mechanisms, and currently the system does not create the space to reward those providers with higher productivity of better quality of service. There are a number of actions that can be taken to remedy these problems.

55. In the short run, there are several immediate targets for efficiency improvements. **Efforts to right-size facilities and staffing in hospitals and DZs should continue**. The MoH currently plans to reduce the number of beds by 3,000. As the level of funding for health care facilities is based on the number of authorized beds, this could imply a significant reduction in costs. The HIF could also consider targeted staff reductions. This will require careful preparation, however. The HIF's previous experience with downsizing suggests that relying on voluntary buy-outs alone can result in adverse selection (only the most qualified staff leave) or inadvertent shortages in certain types of staff (anesthesiologists leave but non-medical staff stay on). Right sizing staff will therefore require a careful review of staffing needs in different types of facilities. One immediate target nevertheless presents itself. The HIF now has a

considerable number of occupational therapists on its payroll. As the Fund has no obligation to provide this service beyond a statutory minimum, responsibility for this should be assumed by the private sector. There is also evidence (cited earlier) that DZs could reduce staffing levels (as well as space) without reducing the number of consultations they provide.[15]

56. Several additional measures could be employed to reduced costs or generate marginal increases in revenues. Some savings could be achieved by **reducing the salaries of HIF physicians who (legally) operate private practices**. In December of 2008 the MoH legally authorized the HIF to employ medical doctors who also engage in private practice. According to the new regulations doctors who want to work in private facilities have an obligation report to employers and to reduce the percentage of time they charge accordingly. In the two months since the policy went into effect approximately 150 doctors have chosen this option and started to work part time in the private sector. It remains to be seen what financial impact this will have and if additional incentives will be needed to motivate doctors to take advantage of it. Small but not insignificant revenue increases could be achieved by **renting out (or closing down) unused space in municipal clinics**. As shown in Table 4, nearly half of the space of DZs is devoted to non-clinical purposes. The HIF could also consider **raising the level of copayments**, although copayments were already doubled (from RSD 20 to RSD 40) effective January 2009.

Table 4: Utilization of DZ Space, in percent of total square meters

Space	Mean % N=146				
	All DZs	Rural	Urban	Stand-alone	In Health Center
Consultation Rooms	43.1	42.8	43.3	41.9	45.8
Laboratory	3.8	3.4	4.1	3.3	4.8
Pharmacy	3.5	4.2	2.9	4.3	1.7
Other (non-clinical)	46.8	49.2	44.5	47.9	44.2

Source: World Bank (2008): Serbia, Baseline Survey on Cost and Efficiency in Primary Health Care Centers before Provider Payment Reform.

57. There may also be potential savings in **evaluating the cost effectiveness of the benefits package.** The package of benefits offered by the HIF is not excessively generous. Nevertheless, to economize on the use of expensive technology, Serbia might consider the example of many EU countries and use a formal medical technology assessment and pharma-economics methods to evaluate the cost-effectiveness of new technologies before including them in the basic benefits package. This could occur in conjunction with rules that reserve the most sophisticated medical technology for tertiary and specialized hospitals, with appropriate referral systems to ensure that patients, who need it, receive it. Also some effort (by MOF) to improve contribution administration.

[15] World Bank (2008).

MoH argues that MoF is less vigilant in enforcing collection of HIF contributions than it is, for example, in enforcing VAT payments.

58. **Reforming the health financing system.** The key to fundamental improvements in health care productivity, however, is a change in the way it is financed. The present system of financing encourages inefficiency in the use of resources and provides no incentive for improved service volumes or quality. At present, the budgets of health care providers, at both the primary and secondary level, are based on the costs of inputs. The health insurance fund pays providers on the basis of annual contracts, which specify the amounts to be spent on wages and salaries, utilities, medicines and other supplies. Allocations for staff are based on the number of authorized staff and salary coefficients. Payments for other recurrent costs are largely based on number of beds. As a result, health care providers have a strong incentive to maximize the number of staff and the number of beds in their facilities. While the contracts may require reports on performance, there are typically no penalties associated with poor performance. Nor are the overall contract amounts related to the number and the severity of the cases treated. Consequently, providers have no incentive to economize on the use of inputs or to increase the quantity of services they provide.

59. To create incentives for more efficient provision at both the primary and secondary level, the Government of Serbia has initiated a reform in payment mechanisms. For primary care, the Government proposes to adopt a capitation based payment system. Under this approach, patients typically register with an individual doctor of their choice who becomes the primary point of contact in the healthcare system. These doctors receive training in a broad range of primary healthcare fields, limiting the need for referrals. To encourage physicians to register patients, the paying agent—in this case the HIF--would pay providers a standard rate for each patient on their roster. To encourage physicians to actually serve these clients, they often provide additional funding on a fee-for-service basis.

60. Design of this reform is well underway. At present, the MoH and HIF are devising the specific formula, with assistance from the European Commission. The formula is expected to include adjustments for age, gender, and additional incentives to provide preventive services. To prepare for the introduction of the formula, the MoH and HIF are also providing support to DZ managers to respond to the change in incentives associated with the new payment mechanism and improve data systems and reporting in the DZs and the HIF.

61. For higher level (hospitals) care, the Ministry of Health and the HIF intend to move to an output-based (DRG or prospective hospital payment) system care. Under this approach, hospitals are paid on a per-case basis, i.e. the average cost of treating a patient during an entire episode. The payment can be adjusted to reflect variations across regions, hospital characteristics, and levels of complexity. (By paying the *average* cost, the DRG system creates an incentive to minimize cost of treating a certain case.) In preparation for this move, the MoH is planning to invest in hospital management

software in at least nine hospitals; and provide capacity building for health sector managers to adapt to the new payment mechanism. A pilot for DRG costing has already started and full implementation of the pilot is expected to take one or two years.

62. International experience shows that implementing such reforms can generate substantial savings. (See Box 1.) But it can also be a very difficult and lengthy process, however. Output-based systems can encourage providers to fraudulently inflate the quantity of services they provide and may lead to declines in service quality.[16]

Box 1: Successful Introduction of DRGs: The Case of Hungary

The case of Hungary is illustrative of the potential gains associated with the introduction of DRGs. Hungary began full implementation of DRGs in 1993 after a five year pilot. In its pure form, a case base payment system like DRGs would pay all hospitals the same amount for the same case; therefore less productive hospitals would have to adjust their behavior in order to catch up with the more productive ones or else face losses (as their cost of producing a certain case is higher than the amount they are paid for it).

This adjustment process takes time, however In Hungary the payment system allowed for different levels of DRGs for equivalent treatments until 1997, at which time payments for a given DRGs were equalized across all hospitals. As a result of the introduction of DRGs productivity of hospitals increased significantly. The average length of stay decreased from 12.6 to 9.5 days between 1994 and 1998, and overall spending on acute hospital care decreased 14 percent in real terms in the same period. At the same time the productivity increased sharply, as the number of cases per 100 increased from 22 to 25.

This is a common pattern observed in countries following the introduction of DRGs and requires careful monitoring. In the case of Hungary several measures had to be taken to prevent abuses by providers: (i) there is a cap on overall hospital expenditure at the national level, and as resources are exhausted the fees are recalculated (downwards); (ii) careful control on re-admissions is implemented in order to avoid charging twice for the same case; (iii) inefficiency such as provider-induced hospitalization was reduced by charging co-payments to patients, and by monitoring and controlling provider reporting of cases; (iv) Hungary also applied volume control in hospitals. In general the number of discharges has to be monitored carefully in order to identify abuses in the system. In addition the introduction of DRGs will require substantial changes in hospital management, as they have to be able to change the mix of inputs in order to produce more efficiently.

EDUCATION

63. The level of government spending on education in Serbia is comparable to other European countries, but its outcomes are considerably poorer. There is evidence

[16] The World Bank financed Serbia Health Care Project is supporting the development of institutional capacity in the HIF and MOH to review and improve the basic benefit package and the provider payment and contracting systems.

that significant savings could be achieved through the rationalization of the school network, particularly at the primary level, without sacrificing the quality of and access to education.

THE SERBIAN EDUCATION SYSTEM

The network of basic education schools in the Republic of Serbia is composed of two types of schools: regular schools and special education schools. The first type of schools includes the traditional two levels of education: primary education, within an 8-year cycle and secondary education, which usually lasts 4 years. The second type of schools provides education for students with special needs or special types of disabilities. Regular schools frequently take the form of a single central school and several associated satellites, which are usually smaller in size and were originally created to satisfy the needs of villages or settlements located more than 2 kilometers away from the central schools. The bulk of satellite schools (around 75 percent of them) provide only the first four grades of primary school although some provide all eight grades of primary education, and some secondary schools have satellites as well[17]. Satellite schools comprise roughly 15 percent of total enrollment and 22 percent of total classes at the primary education level. Table 5 summarizes the main indicators for regular education schools and their distribution across the three geographic areas usually used in education statistical reports of the country.

The Government recently took on an additional responsibility in the education sector. Starting in school year 2006/07, it introduced a mandatory 6-month preparatory pre-school program. This is to be funded from the central government budget and is to reach all children of pre-primary-school age.[18] (Prior to that time, preschool was offered on a voluntary basis by local governments and covered only 35 percent to 45 percent of children between 3 and 7 years of age.) Although mandatory, the new pre-school program is currently (2007/08) covering only 89 percent of children, with significant regional differences.

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[17] The creation of satellite schools is authorized in the art. 15 (school size) of the "Manual on the Criteria for Determining the Price of Services in Primary Education".

[18] The mandatory pre-school program is primarily conducted in existing kindergartens for 4 hours a day over a minimum of 6 months prior to a child's entry into primary education.

Table 5

Serbia's Basic Education System: Main indicators

Type of school	Main Indicators	City of Belgrade	Autonomous Province of Vojvodina	Central Serbia	Total Republic of Serbia
Primary	Total Number of Schools	396	1,009	3,283	4,688
	Number of Satellite Schools	216	661	2,666	3,543
	% Satellites	54.5	65.5	81.2	75.6
	Total Students	114,808	156,586	307,539	578,933
	Total Classes	5,181	8,203	17,166	30,550
	Average Class Size	22.2	19.1	17.9	19.0
	Average School Size	289.9	155.2	93.7	123.5
	Total Educational Staff	13,469	20,405	39,045	72,919
	Total Number of Teachers	9,933	15,409	29,045	54,387
	% Teachers	73.7	75.5	74.4	74.6
	Student/Teacher Ratio	11.6	10.2	10.6	10.6
	Teacher/School Ratio	25.1	15.3	8.8	11.6
	Student/Educational Staff Ratio	8.5	7.7	7.9	7.9
Secondary	Total Number of Schools	103	151	367	621
	Number of Satellite Schools	27	40	135	202
	% Satellites	26.2	26.5	36.8	32.5
	Total Students	55,137	64,330	135,562	255,029
	Total Classes	2,096	2,588	5,167	9,851
	Average Class Size	26.3	24.9	26.2	25.9
	Average School Size	535.3	426.0	369.4	410.7
	Total Educational Staff	8,238	9,293	17,981	35,512
	Total Number of Teachers	6,313	7,420	14,693	28,426
	% Teachers	76.6	79.8	81.7	80.0
	Student/Teacher Ratio	8.7	8.7	9.2	9.0
	Teacher/School Ratio	61.3	49.1	40.0	45.8
	Student/Educational Staff Ratio	6.7	6.9	7.5	7.2

Note: Schools for students with special needs are not included.

Source: Own estimates on the basis of school-level database constructed for this chapter.

64. Serbia spends about five percent of GDP on public education. As shown in Figure 18 this is similar to the average level in the Baltic countries and somewhat more than the level in Bulgaria and Romania. The level of education expenditure in Serbia has varied only marginally in recent years, both in absolute and in relative terms, although the trend is complicated by the history of changes in the mandate of the ministry responsible for education, the introduction of the mandatory preparatory pre-school program, and an unusual increase in capital spending financed through the National Investment Plan (NIP).[19] As shown in Table 6, the current (2008) level of spending—4.8 percent of GDP—represents a slight decline over the levels prevailing in 2005 and 2006.

[19] The Ministry of Education's budget is slightly overestimated for 2005 and 2006 when that ministry was also covering the area of sports. For these years, budget allocations for specific sports-related government agencies are excluded from the tables but some shared functions (management of the system, for instance) between education and sports was not possible to separate.

65. Despite this adequate level of spending, the performance of Serbia's education system has been disappointing. After a decade of profound crises during the 1990s, Serbia started this decade with a fairly low education base. According to Census data, in 2002, only 41 percent of Serbia's population of 15 years of age and older had completed a secondary school without any further education. Also, only 4.5 percent and 6.5 percent of Serbia's population had completed post-secondary and university education, respectively[20]. Key indicators suggest that the education system continues to lag OECD comparators in several key respects. Although the net enrollment ratio[21] for primary education in Serbia is close to the OECD average, it is falling. The net enrollment ratio for secondary education, while rising slightly, is still much lower than the OECD average.[22] Completion rates for primary education have ranged from 91 percent-93 percent since 1995, with an average of 1-2 percentage-point improvements per year. This is not the case with secondary education, where some significant deterioration has occurred since 1990, with fairly dramatic regional differences. In Serbia as a whole, completion rates for secondary schools have stagnated at 78 percent. By contrast, completion rates in the city of Belgrade rose from 89 percent to 98 percent between 1990 and 2000.

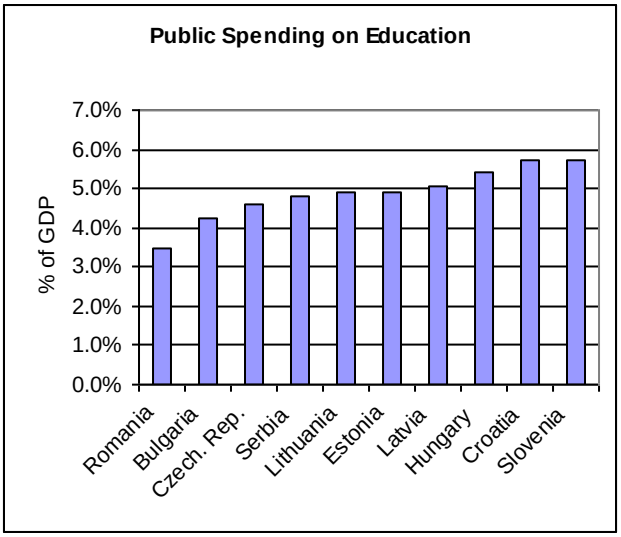

Figure 18: Public Expenditure as Percent of GDP: Serbia and European Countries

Source: Data for Serbia is from WB calculation based on the 2005 Government Budget. Data for other countries is from Eurostat Education Statistics. (Data is for 2005/2006.)

Table 6: Trends in Education Expenditure 2005-2008

	2005	2006	2007	2008[23]
% GDP	5.2%	5.6%	4.8%	4.8%

Sources: Author's own calculations from Executed Budgets of RS for 2005-2007 and Supplemental Budget for 2008, Ministry of Finance.

66. The picture is murkier at the tertiary level due to poorer data. Net enrollment rates--the ideal indicator of enrollment--are not available and the Republic Statistical Office does not keep track of gross enrollment rates, either. However, the latest estimates

[20] New round of census data collection will take place in 2011, and some preliminary testing is already being carried out by the Republic Statistical Office.
[21] The net enrollment ratio is the percent of a given age cohort enrolled in the appropriate grade.
[22] OECD and ECA data from World Bank's EdStats website (http://www.worldbank.org/education/stats).
[23] Underestimated, as data on LSGs' contributions are not yet available.

of gross enrolment rates range from 37.8 to 43 percent[24] Public higher institutions constitute half of all higher institutions in Serbia in 2005, with close to 240,000 students. Of those, 93 percent study at public higher education institutions[25] and a quarter of all students are attending ISCED 5B programs, which are shorter programs with a special focus on practical, technical or occupational skills. Only a quarter of all students graduate on time, according to the criteria set by their respective programs.

67. In terms of learning outcomes, Serbia's education system is performing below international averages when compared both to the OECD and neighboring countries[26]. Serbia took part in the Programme for International Student Assessment (PISA) in 2003 and 2006. On both occasions, Serbia's 15-year-olds failed to demonstrate an adequate level of achievement in reading, mathematical and scientific literacy. PISA results are widely used as a proxy for students' future prospects in the labor market.[27] (Table 7.)

Table 7: PISA Results for Serbia and a Selection of Countries, 2003 and 2006[28]

	2003	2006	2003	2006	2003	2006
Country	**Math**		**Reading**		**Science**	
Bulgaria	.	413	.	402	.	434
Romania	.	415	.	396	.	418
Serbia	**437**	**435**	**412**	**401**	**436**	**436**
Croatia	.	467	.	477	.	493
Norway	495	490	500	484	484	487
Slovakia	498	492	469	466	495	488
Poland	490	495	497	508	498	498
Slovenia	.	504	.	494	.	519
Finland	544	548	543	547	548	563

Source: Baucal and Pavlović-Babić (2009), p.28. Authors' selection and presentation of PISA data.

68. Not only is Serbia faring below the OECD average of 500 points in each of the assessed areas but the results of student achievements between the two assessments did not improve. In fact, in reading, Serbia results dropped an additional 10 points. Although Bulgaria and Romania fare worse than Serbia, it is worth noting that two countries of the former Yugoslavia, Slovenia and Croatia, whose educational systems

[24] UNESCO Institute of Statistics gives 43 percent of GER in higher education for Serbia in 2002, while M.Vukasovic calculated 37.8 percent. Source: Vukasovic, M. (2007), *Higher Education and Social Stratification in Serbia 1990-2005*. Aveiro: Universidade de Aveiro. Master thesis.

[25] Vukasovic, M. (2009), *Financing Higher Education in South-Eastern Europe: Albania, Croatia, Montenegro, Serbia, Slovenia*, COP, Belgrade.

[26] This part of analysis relies heavily on *"Quality and Equity of Education in Serbia: Educational Opportunities of the Vulnerable – PISA Assessment of 2003 and 2006 data"*, Aleksandar Baucal and Dragica Pavlović-Babić, Ministry of Education of the Republic of Serbia, 2009.

[27] As OECD, the administrator of PISA, explains, PISA focuses on young people's ability to use their knowledge and skills to meet real-life challenges, rather than merely on the extent to which they have mastered a specific school curriculum.

[28] In each test subject, the score for each participating country is the average of all student scores in that country. The average score among OECD countries is 500 points and the standard deviation is 100 points, which means that two-thirds of students across OECD countries score between 400 and 600 points.

share a same origin with Serbia's, have significantly higher results than Serbia in any of the three domains tested in PISA. According to OECD methodology, 38 PISA points are worth approximately one year of schooling. Using this measure, Serbia is behind the OECD average for about 60-70 points and 30-90 points behind student scores in Slovenia and Croatia, or at least a couple of years of schooling.

69. In addition to average student achievements, data from PISA 2006 allow comparisons between the countries in terms of the level of student achievement. Achieving level 2 (out of 6 or 5, depending on the tested area) is deemed sufficient to classify a student as 'functionally literate'. Using this measure as a standard for comparison, about 43 percent of students in Serbia are functionally illiterate in mathematics, 38 percent are functionally illiterate in science, and half of all 15-year olds are functionally illiterate when it comes to reading[29]. This score is much worse for the poorest students in Serbia, as the poorest 20 percent have 65.2 percent in math illiteracy, 73.9 percent in reading and 59 percent in scientific literacy[30]. Overall, the results per dinar invested in the system are far lower than what the country should achieve, judging from the performance of comparable countries.[31]

70. As in most other countries, the lion's share of public education expenditure in Serbia is consumed by the salaries of the education staff. It ran at the level of close to 4 percent of GDP from 2005 to 2008. Such high levels of education spending on compensation to education employees reflects the number of education staff rather than the level of their salaries in this sector. Average salaries of primary school teachers in 2008 were about seven percent below the average for all wage earners in Serbia, and were considerably lower than the salaries of those working in other government sectors (public administration and social insurance). Average salaries for secondary school teachers were roughly equal to the average for all wage earners and salaries for university professors (RSD56,900) considerably above that average.) While salaries in the teaching profession have increased considerably during this decade, the increase has been consistent with growth in formal sector wages throughout the economy. As shown in Figure 19, salaries in the education sector have closely paralleled the level of average wages in Serbia as a whole since 2002.

[29] Baucal and Pavlović-Babić (2009), p.20.
[30] Baucal and Pavlović-Babić (2009), pp.22-3.
[31] Baucal and Pavlović-Babić (2009), pp.2-3 and 45-46 show that although Serbia and Croatia invest a similar proportion of the GDP in Education, Croatia's results in PISA are higher, on average, by the equivalent of 1 year of basic education. In other words, a 15-year-old Serbian boy would need an extra year of education to attain the level of skills that a Croatian counterpart has at his same age, despite the fact that both countries' investments are identical in relative terms.

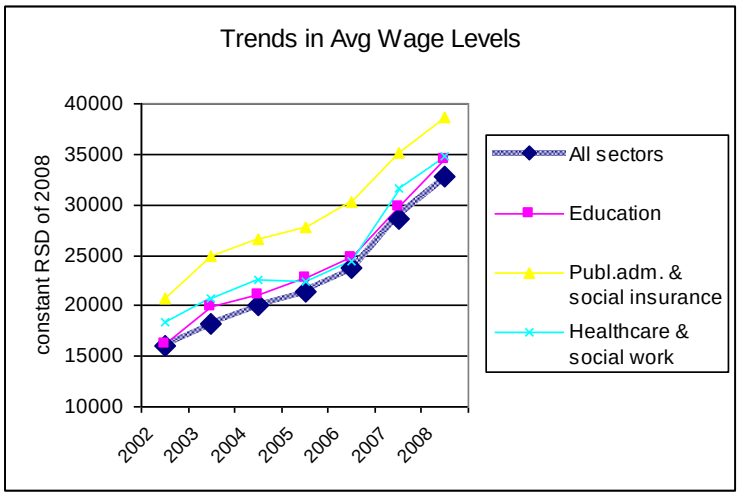

Figure 19: Trends in Monthly Education Salaries
(RSD)

DIRECTIONS FOR REFORM

71. **Rationalizing the school network.** There appear to be opportunities for significant cost savings by reducing the number of education staff, particularly at the primary level. Serbia has too many teachers, given its present student population. As a result, many classes are inefficiently small. Education of equivalent quality could be provided with a smaller number of teachers. The cost savings would be substantial.

72. As shown in Figure 20, primary school enrollment levels have declined dramatically over the last fifteen years, largely due to falling birth rates. The decline in the school age population is expected to continue. The number of primary-school-age students is expected to decline by another 4 percent over the next 15 years A. 13 percent reduction in the number of secondary school age children is projected. But Serbia has been unable to reduce the number of classes proportionately, resulting in very high teacher/pupil ratios in some areas. Similarly, while the number of secondary school students has fallen sharply, with the number of secondary school classes has actually increased. (Figure 21.)

73. The result has been a steady fall in the size of the average class, at both the primary and secondary level. Figures 20 and 21 provide a first glance at the evolution of the number of classes at the primary and secondary levels. Figure 20 shows the situation for primary education, where while the number of students (grades 1 through 8) has been steadily decreasing across time (23.4 percent between 1990/91 and 2006/07), the number of classes did not fall in similar proportions (only 6.1 percent in the same time period). In the case of secondary education, Figure 21, the trend in enrollment has been more

complicated, with a sharp increase after the end of hostilities in the late 1990's, followed by a steep decline. The number of classes has, nevertheless, continued to increase.

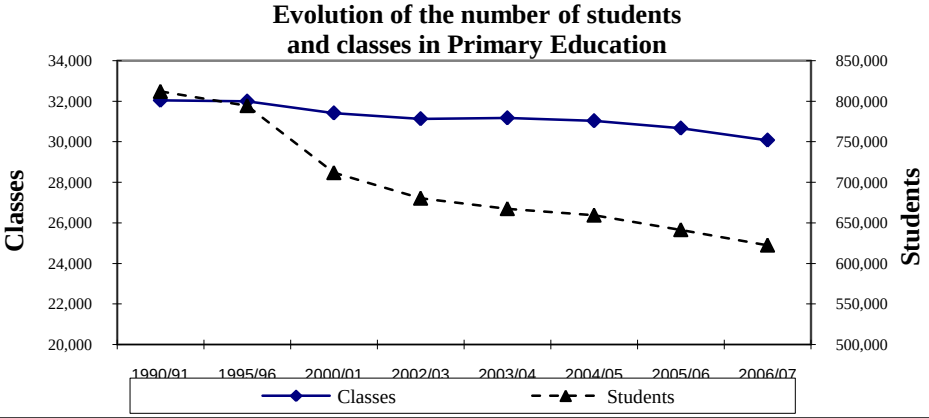

Figure 20

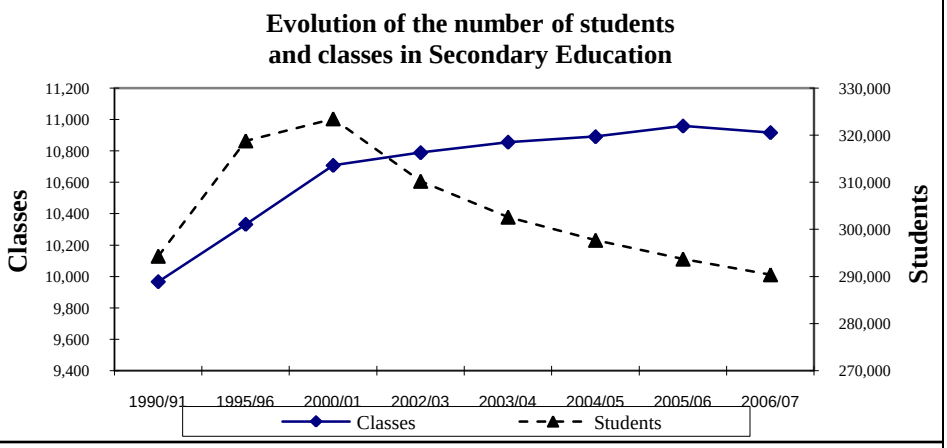

Figure 21

74. In both cases, the average number of students per class has steadily declined. As shown in Figure 22, the reduction amounted to 18.4 percent for primary and to 10 percent for secondary education, comparing the year 1990/91 to the year 2006/07. If this decrease in the average size

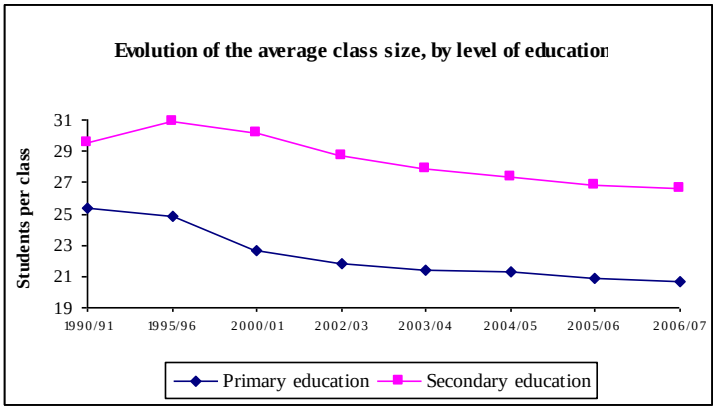

Figure 22

of classes had led to a concomitant improvement in quality, this might have been a desirable outcome. Unfortunately, data on the trends in the performance of Serbian students suggests otherwise.

75. The failure of the system to adjust is in part a result of its own regulations. The configuration of the system of primary and secondary schools in Serbia is based on an extensive system of by-laws and ministerial decrees[32]. The current set of rules fixes the key parameters that determine, inter alia: a) the type of institutions allowed; b) the number of positions authorized per institution; and c) the teaching norms or maximum number of hours expected for full-time equivalent positions. With respect to the key factor in determining class size, however, it is ambiguous. Current regulations fix a *maximum* class size of 30 students for both primary and secondary schools[33]. There are also somewhat lower maximum classes for multi-grade classrooms in small satellite schools. In classes combining two grades, the maximum class size is 20. In classes combining three or four grades, the maximum is 15 (see Table 8). The regulations do not, however, fix a *minimum* class size for classes of any kind. Thus 30 sixth-graders could be taught in a single class of 30 students or divided into three classes of ten students, without violating the regulations. By the same token, small satellite schools *are not required* to combine grades, no matter how few pupils each grade may have. Multi-grade classrooms—a highly efficient way of organizing education in sparsely populated areas—are permitted but not required.[34]

76. The absence of minimum class size regulations is not the whole explanation for the persistence of undersized classes, however. School administrators are free to consolidate classrooms up to the maximum size. Their failure to do so is explained by the perverse financial incentives under which they work. Serbian schools are financed on the basis of inputs. Funding for salaries—the largest single item of educational expenditure--is provided on the basis of authorized teaching hours. Although the current allocation of teaching hours may have reflected enrollment at some time in the past, school administrators have no incentive to reduce teaching hours when enrollment declines. In

[32] The Law on the Foundations of the Education System, enacted in May 2004, establishes the basis under which the system works and sets up the key norms that regulate the types of institution, the language of instruction, the rights of minorities, the duration of education, the curriculum implementation and the distribution of the financing of the system. The Laws on Primary Education and Secondary Education add some more detail in terms of the organization around each of these levels and a set of four extra Ministerial Decrees provide the specifics in terms of the determination of the price of services and the teaching norms.

[33] An exceptional class size of 34 students is allowed for schools that offer education in a certain ethnic minority's mother tongue.

[34] Unfortunately, none of the school databases this study had access to presents the detail of students by grade per satellite school. However, two sources of information do present some clues as to the proportion of multi-grade classrooms in satellite schools, unfortunately with widely different numbers. Whereas the UNICEF's database (see "Optimization of the Network of Schools in Serbia", UNICEF, 2003) shows that approximately 80 percent of the total classes in satellite schools are combined classes of 2 or more grades, the Levitas & Herczynski's database (see "The Finance & Management of Primary Education in Serbia - Findings and Recommendations", Levitas, T. and Herczynski, J., 2006) puts the number at roughly 45 percent. In any case, the proportion of multi-grade classrooms in satellite schools seems to be fairly high.

fact, they have good reason not to do so. Fewer teaching hours mean smaller budgets and the unpleasant task of dismissing staff.

Table 8: Current Regulations on Class Size, by Level of Education

Level of education	Grades	Maximum number of students allowed per class*			
		Multi-grade teaching		Standard configuration	Exceptional configuration**
		3 or 4 grades combined	2 grades combined		
Primary	1-4	15	20	30	34
	5-8	Not mentioned in the Law		30	34
Secondary	9-12	Not mentioned in the Law		30	Not mentioned in the Law

* Note that these values are maximum bounds for class sizes. Minimum values are not set in the law, because there might be schools in rural areas where this minimum may not be reached. In practice, though, these maximum values should be interpreted as minimum values, and seem to be enforced as such, especially, in the case of multi-grade teaching in small satellite schools in rural areas.

** Refers to the case of schools that receive minority students from other neighborhoods, towns or cities.

Source: Law on Primary School, article 27, and Law on Secondary School, article 31.

77. The savings that could result from closing under-enrolled classes can be estimated by calculating the number of classes Serbia would require if all classes were optimally sized. This can be determined by dividing the number of students in a given grade in a given municipality by a proposed minimum class size (say, 30); adding one,[35] and summing the result for all municipalities in Serbia. If a minimum class size of 30 is chosen, for example, the calculation would show that Serbia has 11,000 more classes than it needs at the primary level; or roughly 37 percent of the total actual number.[36] This oversupply appears at all grade levels (1-8) and in all parts of Serbia, although it is more concentrated at the earlier grades (particularly grades 1-4) where the average proportion of excess classes hovers around 44 percent and in Central Serbia, where there are, on average, there are 50 percent more classrooms than required. A similar calculation for secondary education yields a significantly smaller oversupply, with about 1,300 excess classes, or about 13 percent of the total.

[35] As an additional class would be required for those children left over after optimum-sized classes are filled.

[36] This is the assessment that stems from the school-level database prepared for the purposes of this study. This database came as a result of an extensive compilation and consolidation of three different databases built in the last five years by different researchers: a) the database built by UNICEF for the study on the Optimization of the School Network (UNICEF, 2003); b) the database built only for primary education schools in Levitas and Herczynski (2006); and c) the data from the Education Information System for the school year 2006/07, which is a still incomplete database of the basic education system, but that essentially captures roughly 90 percent of the current system.

78. An immediate, nationwide, implementation of a minimum class size rule is not feasible. The calculation above assumes that all students can be reallocated among schools anywhere within a given municipality in order to achieve optimum-sized classes. This is clearly unrealistic in the short run. It could imply that schools in remote and sparsely populated parts of a municipality would be closed and their students transported to other, perhaps distant, parts of the jurisdiction. It would also imply large scale reductions in staff. These are reforms that could be implemented over the course of a few years but not over a few months.

79. More immediate efficiency gains could be achieved by rationalizing class sizes *within individual schools;* i.e., leaving the total number of students in a given grade and school unchanged, but consolidating classes within the school where the opportunity exists. It is estimated that this measure could reduce the number of classrooms by about 2,900 or ten percent, based on a minimum class size of 30.

80. These estimates are based on actual central government spending on primary education, by grade, in each of the 25 administrative districts into which Serbia is divided for statistical purposes. They assume that costs would decline in direct proportion to declines in the number of classrooms but that differences in per-student spending among administrative districts (and among grades within administrative districts would remain.[37]. Overall, this calculation suggests that full imposition of a 30-student minimum class size within each of the 169 municipalities of Serbia would achieve savings of about RSD14.7 billion, or about 37 percent of the total current budget allocated by the national government to primary education. Yet, implementing only intra-school optimization, a much more doable plan for the short term, would still achieve a significant savings of RSD3.5 million a year, or roughly ten percent of the Government's current spending on primary education.

[37] This is why, for example, although both Braničevo and Pcinja have an almost identical number of total classes for grades 1-8 (988 and 983, respectively), the fact that the budget for the latter is 25 percent as big as the former makes that every excess class in Pcinja be roughly 25 percent costlier than in Braničevo.

Box 2: Previous Efforts to Estimate Savings from Optimization

The optimization of the primary school network is not a new topic in Serbia. In fact, probably the most significant contribution along these lines comes from a publication from UNICEF (2003). This report was based on a comprehensive database covering every school in the country. It identified ten strategies for optimizing the school network, including closing down satellite schools (or in some cases, expanding the range of classes they offer), increasing the transportation of students to nearby schools, and using mobile teachers. It did not work out their cost implications, however. A subsequent study by the firm Development Alternatives, Inc. (Levitas & Herczynski, 2006), focused exclusively on the primary education level and did provide some costing for a subset of proposed strategies. These included: (i) applying a minimum class rule only to schools with more than 400 students or (ii) either closing small satellite schools or closing classes in satellite schools that did not reach a certain number of students. The first strategy was found to have more impact, although savings were estimated to equal only 1.2 percent-2.5 percent of total spending on primary education. The present study finds considerably larger savings, largely because: (i) it applies the optimal class size rules to all 4,688 primary schools, rather than the 518 schools with more than 400 students; and (ii) it assumes that students can be shifted among schools within a municipality (The previous study focused only on class size optimization within individual schools.) The present study also uses somewhat better data.*

* Serbia still lacks an updated census of primary education. This study uses a custom data base, derived from the latest but still incomplete Education Information System (EIS), complemented by the databases prepared for the UNICEF (2003) and Levitas & Herczynski (2006) studies.

81. Some of the savings from optimizing class sizes among schools would be lost to increased transportation costs. The imposition of a minimum class size rule could imply a significant increase in the number of students traveling to school by bus. Transport costs are shared by both the National Government and by the Local Self-Governments (LSGs), with the latter covering only the transportation of students living four or more kilometers from the school they attend. Due to data constraints, the precise amount of this increase in costs cannot be determined. A theoretical calculation, based on the geographic characteristics of each administrative district and municipality, nevertheless, suggests that transportation costs would increase by about 50 percent.

82. Regulations governing the education of ethnic minorities will also reduce the savings from classroom rationalization. Ethnic minorities in Serbia have the right to an education in their mother tongue, provided at least 15 students of a given ethnic group are enrolled for grade 1 (primary education) or for grade 9 (secondary education).[38] Given the existence of more than 21 ethnic minorities in Serbia, jointly comprising 18 percent of the total population, this provision is likely to prevent the formulation of 30-student classes in some areas.

[38] Right established in article 5 of both the Law on Primary Education and the Law on Secondary Education.

83. **Devising a strategy for network optimization** School rationalization implies a considerable rearrangement of facilities and students along with a considerable reduction in staff. Staffing reductions would fall more heavily on some schools than others, due to different rates of demographic decline in different jurisdictions and current variations in class/pupil ratios. The Ministry of Education has devised a proposal for rationalizing the school network, which may involve, in addition to staff reductions, the closing of schools (particularly satellite schools), the consolidation of classes, and reductions in non-teaching staff. In principle, the Ministry's rationalization plan is to be implemented over three years, starting in the school year 2009/10. Implementation is to begin in Belgrade and the other largest cities of Serbia and gradually move towards the periphery. This focus on Belgrade and other large cities is likely to be most cost effective, according to the analysis prepared for this report.

84. The Ministry also has to resolve a somewhat thornier implementation issue: who will do the rationalizing? One approach would be to proceed on a top-down basis, with the Ministry deciding which facilities to close and which classes to consolidate, and reassigning or dismissing teaching staff accordingly. An alternative, recently used in Lithuania and Bulgaria, is to decentralize such decisions to local governments. Under the approaches adopted in those countries, funding for most of the recurrent costs of education (including salaries) is provided to each municipality as a lump sum on the basis of enrollment.[39] As a result, municipalities with sparsely enrolled classes experience a drop in funding and are forced to undertake the difficult downsizing decisions the Ministry might prefer to avoid.

85. Changes in financial arrangements, however, would not be sufficient. Local governments must also have the authority to respond to declining levels of funding, by consolidating classrooms, closing schools, and dismissing teachers. In some Eastern European countries, this has been a sticking point. Local governments are not permitted to close schools or reduce teaching positions without the permission of the Ministry of Education. This can paralyze reform. While the Ministry of Finance is trying to reduce funding, the Ministry of Education refuses to allow cuts in expenditures.

86. Some Eastern European countries, including Bulgaria and Lithuania, have resolved this problem by conceding considerable autonomy over the determinants of education costs to their local governments. While salary scales are set nationally, local governments have the authority to consolidate classrooms, dismiss teachers and--subject to certain limitations--close schools. Some central governments also provide funding for severance payments and assistance in transportation. (See Box 3) . Serbia would be well advised to learn from these examples.

[39] Adjustments in the formula are normally made for jurisdictions facing inherently higher unit costs, such as those in sparsely populated or mountainous areas.

Box 3: Minister or Mayor: Who Should Close Schools?

Closing a school is the most difficult decision anyone involved in education policy-making has to make. It strips a community of an important gathering point. It may imply the dismissal of teachers who live in the community and the bussing of students—including very young students—to places that parents regard as distant. Dropout rates also tend to rise in conjunction with school closings. As a result, school closures are hugely unpopular and highly costly in political terms.

Under these circumstances, central Governments are well advised to share part of the burden of school closings with local governments. Engaging local governments has an addition benefit: it draws on their local knowledge to assist in identifying the right schools to be closed and workable solutions for addressing the needs of affected students.

This is Bulgaria's experience. Starting in January 1, 2007, the Bulgarian government shifted the system for financing primary education from one based on inputs (i.e., teachers) to one based on enrollment. The bulk of financing for education to municipalities now comes in the form of a large ear-marked grant based on the number of students in the municipality. Municipalities can decide for themselves how many schools they want to maintain. Not surprisingly, many municipalities quickly decided they could do with one, two or three fewer schools and started approaching the ministry of education with requests for school closures.

The ministry of education in Bulgaria still plays an important role in the school closing process. It has the final say in school closings and monitors compliance with the fairly elaborate procedures municipalities must undertake before doing so For instance, a school closure proposal has to include a discussion of how the transportation needs of affected students will be addressed and demonstrate that nearby schools have sufficient capacity to accommodate the additional students. The Government has also introduced a program to monitor dropout rates[40] and established a number of additional national programs to support municipalities in the process. For instance, municipalities with school closures can apply for school buses, for additional payments to laid-off teachers, and for resources to refurbish "central" (or new "merged") schools. Finally, the ministry has put together a list of "protected schools: schools that cannot be closed down because no nearby schools exist to ensure access to education for all. Additional resources to finance such small (and usually located in mountainous areas) are provided.

The results have been impressive. After many years of unsuccessful attempts to close schools (interrupted by brief spike in 1997 and 2000) In each of the 2006/07 and 2007/08 school years, roughly 100 schools were closed. In the 2008/2009 school year, another 300 schools are expected to close.

87. To facilitate the rationalization process, the Ministry should also complete the development of the Education Information System so as to supply the Ministry of Education and Ministry of Finance with timely and accurate information on the number and size of classes, the number and characteristics of education staff, the number and characteristics of students, the number and characteristics of the school network.

[40] World Bank (forthcoming): "Program Document for a Proposed Loan to Republic of Bulgaria for a Third Social Sector Institutional Reform Development Policy Loan".

The Government will also need to alter the regulations governing the hiring of education staff and reform the bylaws regulating class sizes and teaching norms.

88. In principle, wage restraint could be a source of future savings in the education sector. Firm conclusions cannot be reached without better data, however. At this time, there is no evidence that wages are any higher than necessary to attract and retain qualified staff. Nor is there any evidence to the contrary—i.e., that wages could be lowered without generating recruitment and retention problems.

89. In any case, significant restraints in wage levels, even if warranted, may be difficult to achieve. Education staff belongs to unions that have been very successful in achieving real wage increases in the past. The Government negotiates wage agreements with the three education unions on an annual basis. The December 2007 protocol, covering wage increases for 2008, called for five percent increases in March, September and October, respectively. The figure applied to all educational staff, both teaching and non-teaching. An additional increase was granted to non-teaching staff in order to narrow the gap between teaching and non-teaching staff. Based on expected rates of inflation for 2008, this represents a real increase of nearly seven percent.[41] There is some risk, in fact, that any savings derived from network rationalization will be exhausted on wage increases. Recent salary-setting negotiations between education trade unions and the government explicitly link the two: the unions were willing to accept downsizing only if it is tied to wage increases. While the economic crisis has temporarily changed the content for wage negotiations, the Government may find it difficult to restrain future wage increases once the economy recovers.

SOCIAL ASSISTANCE

90. Serbia spends relatively little on social assistance. Of the little that is spent, less than one quarter is specifically targeted to poor households. The two poverty targeted programs—the MOP and the child allowance—are nevertheless well designed although under-funded. As the recession is likely to increase the number of need.

SERBIA'S SYSTEM OF SOCIAL ASSISTANCE

Serbia operates over 20 social assistance programs, with multiple social objectives. Broadly, the objectives of the programs can be divided into three groups: (1) poverty reduction; (2) population growth, and (3) assistance to vulnerable groups such as veterans and the disabled. Different programs pursue these objectives to various degrees. Serbia has only one explicit anti-poverty program—the means-tested Material Support for Low Income Households (MOP) program. But it also means-tests other programs

[41] In any event, the final increase, stipulated in the December 2007 protocol and set for October 2008, was conditioned upon network rationalization. As this did not occur, the final increase was suspended until further negotiations between the Ministry of Education and the three teacher unions were completed.

such as the pro-natalist child allowance. Other programs—such as aid to veterans and people with disabilities--are categorical and not explicitly means tested, but may have positive distributional impacts due to the characteristics of their recipients. Pensions, discussed earlier in this report, have a particularly significant positive impact on poverty.

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91. Overall, Serbia spends relatively little on social assistance. (Table 9.) Spending as a whole averaged less than two percent of GDP in the 2005-2009 period. As a share of GDP, this is lower than the average spending in the OECD (2.5 percent, 2006) and in the EU countries (2.5 percent, 2006), and comparable with the spending of ECA countries with similar level of economic development. Compared to the countries of former Yugoslavia, where the non-contributory benefits have similar structure and objectives, Serbia spends slightly more than Macedonia and Croatia, and less than Bosnia and Herzegovina. Spending on programs targeted to the poor is particularly low. As of 2008, only 7 percent of social spending was allocated to the MOP, with another close to 16 percent allocated to the child allowance program. Together, spending on the two programs equaled only 0.44 percent of GDP, a figure far below the level of the majority of ECA countries. Although public outlays on social assistance programs as a whole have increased as share of GDP, from 1.3 percent of GDP in 2006 to 1.8 percent in 2008, allocations for the MOP and child allowances have declined. Spending on child allowances was cut down from 0.42 percent of GDP (2005) to 0.3 percent of GDP (2008) and the spending on MOP, from 0.16 percent of GDP to 0.14 percent of GDP, over the same period.

Table 9: Spending on Non-Contributory Social Assistance and Child Benefits and Services in Serbia, 2005-2009 (RSD mn)

Programs	2005	2006	2007	2008	Budget for 2009
Major Means Tested Programs					
• MOP	2216	2660	3005	3675	4034
• Child allowance	7132	8512	7689	8127	8243
Non-Means tested programs					
• Veterans benefits	9919	11500	12658	15106	16200
• Wage compensations for mothers on maternity leave	6885	8895	11062	13560	14945
• Caregivers allowance	1393	1867	3967	5106	5640
• Parental allowance/birth grant	3199	2222	3069	4118	4397
• Foster care	374	476	648	937	1100
• Social work	995	1238	1384	1485	1686
Total	32113	37370	43482	52114	56245

Source: Ministry of Finance of Serbia and Ministry of Labor and Social Policy of Serbia.

92. There are two reasons for this trend. First, Serbia's rapid economic growth over the last decade has reduced poverty levels significantly--from 13.4 percent in 2002 to 6.6 percent in 2007[42]--thereby reducing the number of potential beneficiaries. Second,

[42] Living Standards Measurement Study. Serbia 2002-2007.

legislative changes restrained the scope of social assistance benefits and the number of eligible beneficiaries. This was accomplished through two major items of legislation: the Law on Financial Support for Families with Children, enacted in mid-2002 and amended in 2005, and the Law on Social Protection and Provision of Social Safety to Citizens, amended in September 2004.[43]

93. As described in Box 4, the laws consolidated and rationalized the existing range of social programs, abolishing regional differences in benefit levels and strengthening means testing. Several provisions, nevertheless, tended to reduce benefit levels. The threshold for MOP eligibility tended to exclude large households.[44] The shift from wages to cost-of-living as the basis for indexing eligibility thresholds also tended to reduce the number of beneficiaries—at least at a time when wages were rising faster than inflation. And in 2005, the access for working age able-bodied persons to the MOP was restricted to 9 months in one calendar year. The introduction of changes in the child allowance brought an immediate reduction of the number of eligible beneficiaries by 200,000 or 30 percent - from 682,000 monthly average for January-May 2002 (before the introduction of the law) to 482,000 average for July-December 2002, and to a steady though more modest reduction thereafter to 405,000 beneficiaries in 2008.[45]

94. As a whole, Serbia's non-contributory social programs nevertheless appear to be fairly well targeted, in the sense that the majority of benefits go to the poor. Over 54 percent of all benefits go to those in the poorest quintile of Serbia's population (Serbia HBS 2006). By the same token, 46 percent of the beneficiaries of these programs belong to the poorest 20 percent of the population, and close to 70 percent of them, to the bottom 40 percent of the population. The targeting of the MOP program is particularly good, with over 60 percent of benefits going to families in the poorest quintile and to the extreme poor[46]. This compares favorably with child allowances, for which the poorest quintile receives 48 percent of total benefits and the poor receive 50 percent. Coverage is an issue, however: only 7.5 percent of the poorest quintile and 27 percent of the extreme poor receive benefits from the MOP program. Coverage of the child allowance is slightly better: 22 percent of the poorest quintile and 36 percent of the extreme poor receive it.

[43] According to an impact analysis of the Center for Liberal-Democratic Studies in Serbia, two thirds of the reduction of child allowance recipients should be attributed to the increase in family incomes and assets, and one third to the program design changes. Source: Matkovic, Gordana and Bosko Mijatovic. Impact Analysis of Government Financial Assistance for the Poor, CLDC, 2008 (mimeo).

[44] The minimum income required for eligibility declines substantially with increases in the number of family / household members. For a one-person household it is 16 percent of the average wage, for two-member household - 22 percent, for three-member household - 28 percent, for four-member household – 30 percent, and a maximum of 32 percent when the household consists of five or more members.

[45] Matkovic, Gordana and Bosko Mijatovic. Impact Analysis of Government Financial Assistance for the Poor, CLDC, 2008 (mimeo).

[46] The 2006 HBS does not single out household/family income from MOP. For that reason, a proxy (broader) social benefit income category has been used to assess the coverage and targeting of the MOP, and the data should be treated with some caution.

95. The level of benefits is relatively generous for those who manage to receive them. Social assistance benefits constitute 23 percent of the consumption of the poorest

Box 4: Amendments to the Social Assistance Legislation in Serbia in 2002 – 2005

The *Law on Financial Support for Families with Children* was enacted in mid-2002 and amended in 2005. The law:

- introduced differentiation between the social policy / poverty alleviation objectives of certain child benefits on one hand and the demographic / population policy objectives of other part of the benefits for children;
- consolidated the numerous previously existing child benefits into three main programs: (a) a means-tested monthly child allowance with a social assistance objective; (b) a birth grant for the first four children; and (c) a wage compensation program for new mothers who have worked for at least 3 months before taking maternity leave;
- abolished the regional and municipal differences in the criteria for access to child protection and the regional / municipal differences of the paid benefits and introduced 'centralized' / national criteria and nation-wide benefit levels thus improving the targeting to the poor in the municipalities with relatively higher poverty rates;
- strengthened the means test by adding a test for assets to the existing income test;
- changed the base for indexing the eligibility thresholds and benefit levels from average wage growth to the more slowly increasing cost of living index, and replaced the monthly indexations with by-yearly adjustments (as of April 1 and October 1);
- abolished the categorical entitlement to child allowance for the third and each subsequent child (before the means test was applied only for the first two children);
- introduced a means test for the allowance for the first four children and limited the allowance entitlement to the first four children in the family only; and
- linked the provision of the child allowance to school attendance for the children of school.

The *Law on Social Protection and Provision of Social Safety to Citizens* was amended in September 2004. The amendments resulted in design changes to the program for material support (MOP) with cost containment impact. Under the law,

- the regional and municipal differences in the criteria for access to MOP were abolished and substituted with a uniform national poverty line (access threshold);
- similar to the child allowances, the indexation of the eligibility thresholds for the MOP shifted from the differentiated regional or municipal average wage growth rate to a national cost-of-living index. The MOP benefit levels, as well as the levels of all other social assistance transfers started to be indexed with the cost of living;
- the access to MOP for families where the majority of the members are able-bodied and of working-age, was reduced to 9 months in one calendar year to encourage resuming employment and prevent providing the benefit during the months of increased seasonal demand for informal employment when formal incomes become more feasible but hard to estimate and verify.

20 percent of the population. Generosity varies significantly across programs. Child allowances represent close to 12 percent of the consumption of the poorest 20 percent of households while MOP and caregivers allowances are much more generous, representing 47 percent and 65 percent of the incomes of those eligible for the benefit. . Social benefits are also generous for the extreme poor accounting for over 60 percent for their consumption.

DIRECTIONS FOR REFORM

96. **Prioritizing Spending:** With the projected slowdown in Serbia's economy, levels of poverty are likely to increase, adding to the number of beneficiaries eligible for the MOP increasing demands for wider coverage. In responding to these demands, the Government would be well advised to **focus any increases in spending on programs that are most effective in targeting the poor, and freezing or limiting spending on other programs.** Two programs, in particular, are candidates for expansion.

97. **The first is the MOP**. The MOP is a last resort poverty gap program activated only when all other social protection mechanisms are 'exhausted' but the individual or household remains poor. Eligibility for MOP is determined by a means test taking into consideration all earnings of the household except those from other social benefit programs. The MOP eligibility threshold is determined as a percentage of the average wage and adjusted for household size with a steeply declining and same for children and adults equivalence scale.

98. As an anti-poverty program, the MOP is well targeted, in the sense that most benefits go to poor households. There is a strong case for scaling up the MOP and expanding the number of households eligible to receive it. In relative terms the spending on MOP is lower than similar spending in benchmark countries as the new EU member states. Even the 'low spenders' on targeted social assistance Poland, Latvia and Estonia spend more than Serbia (Table 10).

Table 10: Spending on Social Protection in Serbia and EU New Member States
(% of GDP)

Country	Total social protection	Pensions	Family and child benefits	Targeted social assistance	Disability benefits
Latvia	12.6	6.1	1.3	0.2	1.2
Lithuania	13.3	6.1	1.1	0.3	1.3
Serbia (2008)	13.4	11.4	1.0	0.14	0.8*
Estonia	13.4	5.8	1.7	0.2	1.2
Romania	14.9	5.6	1.6	0.6	1.0
Slovakia	17.2	6.6	1.8	0.5	1.6
Czech Republic	19.6	7.8	1.6	0.6	1.5
Poland	20.0	11.6	0.9	0.2	2.3
Hungary	20.7	8.6	2.5	0.5	2.1
Slovenia	24.3	10.6	2.0	0.7	1.9

*War veteran benefits and caregivers benefits.
Source: MISSOC.

99. Expanding the number of beneficiaries could be accomplished in part by raising the income threshold for eligibility and/or relaxing the asset test. It can also be accomplished by simplifying application procedures and through more aggressive outreach. There is anecdotal evidence that the poorest of the poor (mostly Roma and

IDPs) make limited use of the MOP and instead rely on one-time grants from their respective municipalities. This is in part because eligibility documents are often issued for a fee set at the local level which is not affordable for the poorest;[47] people who migrate have no permanent address or cannot provide certain documents and cannot meet the eligibility criteria; or the approach to identifying beneficiaries is passive: social workers rely mostly on demand from applicants rather than undertaking active outreach with information dissemination and/or identification of potential beneficiaries. At present, the Centers for Social Work, which implement the MOP, are making efforts to reach potential beneficiaries and make sure that they understand how to apply for and receive assistance. These efforts should be supported. Finally, the MOP equivalence scale can be aligned with the good OECD practices to eliminate the bias towards single-member and small families and households.[48]

100. **The second is the child allowance program**. The child allowance program is the social protection program for children from low- and low middle income families. It is means-tested and limited to the first four children in the family, aged 0-19. It is also conditional to school enrollment for those after age 7.[49] As is the case with the MOP, the level of benefits is low. Eligibility is limited to families in which the income per family member is less than 20 percent of the average monthly wage, i.e. only marginally higher than the access threshold for the MOP. The average amount of the child allowances is quite low: around 5 percent of the average wage.

101. As in the case of the MOP, there is a strong case for maintaining the child allowance at least its existing level of funding and for addressing administrative barriers that prevent eligible households from accessing it. According to MLSP administrative data, around 20 percent of the children of MOP beneficiaries (i.e., the poorest households) do not receive the child allowance, partly due to a lack of evidence of enrollment in school. Verifying regularly school attendance might help identify the barriers which poor children face and thus increase the number of eligible beneficiaries.

102. Several other social programs are less effective in addressing poverty. While the government's pro-natalist policies and the special status of certain constituents (such as veterans) may justify the continuation of these programs, the case for an expansion in funding is less compelling. In some cases, improvements in targeting may be justified.

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[47] The central government itself does not charge poor households for documentation fees.

[48] The MOP equivalence scale is implicit (the MOP due amount is determined in nominal terms per family/household depending on the number of its members) and varies across years. For example, in 2009, a two-member household/family is receiving 1.37 of the MOP amount for one member family/household; three-member – 1.75; four-member – 1.87 and five-member – 2 times the MOP for a single-member family or household. Moreover, in the case of families with more than five members, the MOP amount is 'capped' at 2 times the MOP for a single member household/family.

[49] In parallel, the law provides for enhanced access to child allowances for certain categories of vulnerable children - children of single parents, children in need of special care, children in foster care and guardianship, by increasing the eligibility threshold for them by 20 percent of the standards one and by increasing of the extended benefit by 30 percent. As a result their share increased from 8 percent of all beneficiaries in 2001, to 14 percent in 2008 (administrative data).

103. **Wage compensation during maternity.** The program for wage compensation (paid leave) during maternity accounts for a large share (26 percent) of overall spending on social programs in 2008, although it accounts for only 0.5 percent of GDP. The wage compensation is paid by the employer, who is compensated for this purpose (reimbursed) by the MLSP. Eligibility extends to working mothers in both the public and private sectors, including the self-employed. The benefits last for one year in the case of the first and second child, and two years for the third and fourth child. The size of the compensation is based on the salary received by the individual in the month prior to maternity and upon length of service: mothers with up to 3 months of work qualify for 30 percent of their gross wage; those with record of 3 to 6 months – for 60 percent of their gross wage and those with more than 6 months of work record – for 100 percent of their gross wage. The maximum benefit is capped at five average monthly salaries.

104. This benefit is generous relative to similar types of compensation in the countries of the European Union, including the new member states from Central and Eastern Europe, where most such benefits are financed from insurance contributions, as indicated in Table 11, implying a close link between wage and benefit funding source. Maternity benefits (paid leave) in these countries are generally shorter (with a maximum of one year) and the rate of compensation is generally lower, starting at less than 100 percent of the wage and in some countries declining over time to encourage mothers to return to work.

Table 11: Sources of Financing of Cash Maternity Benefits in the EU Member States

From global insurance contribution	From a separate maternity and sickness fund	From earmarked maternity fund	From public health insurance tax	Other models
Belgium Spain Cyprus Malta Portugal United Kingdom **Estonia**	**Slovenia** Germany France Italy Austria **Romania** **Bulgaria**	**Czech Republic** **Latvia** **Lithuania** **Poland** **Slovakia** Luxemburg Greece	Denmark **Hungary**	The Netherlands – unemployment fund (earning security insurance) Finland – fund for sick leave Sweden – fund for sick leave

Source: MISSOC, 2008.

105. In terms of its distributional implications, the wage compensation during maternity is regressive: higher share of the transfer reaches the non-poor than the poor. As the benefit is based on the employee's exit salary, higher benefits accrue to women with higher salaries. As a result, in 2007, benefits received in non-poor households were

by 43 percent higher than those received in poor households.[50] The rules of the program also potentially allow abuse of the system because the benefit is: (i) paid by the Government rather than the employer; and (ii) based on the employee's salary in her last month of employment, which could be inflated.

106. These flaws could be addressed without radically altering the program. Its perverse distributional implications could be addressed by lowering the cap on the benefit from five average salaries to, for example, three average salaries. The incentive to fraud could be addressed by lengthening the period by which compensation is based from one month to, for example, three months. There is also a case for reducing the overall cost of the program by approximating the duration and level of benefits to those more typical of other EU and Eastern European countries: i.e., three months to a maximum of one year, with a declining level of compensation over time.

107. Expenditures on military veteran benefits' also consume a relatively large share (29 percent) of social spending (2008). As shown in Table 12, veterans benefits include a wide range of individual components, and include payments to military personnel disabled during war or during peace, civilians who became disabled due to military conflicts and families of deceased soldiers. Currently, the state budget in Serbia provides such benefits for approximately 45,000 veterans, 27,000 of them military disabled during war or peace time, 3,000 civilian victims and 15,000 family members.

Table 12: Spending by Types of Veteran Benefits in 2009

Type of veteran benefit	Budget for 2009 (million RSD)
Total	16,200
Benefits for military veterans, o/w	13,988
Cash compensations for military disabled	230
Personal compensation for disability acquired at war paid by post offices	11,018
Personal compensation for disability acquired at war paid through the municipalities	2,390
Wage subsidies for working veterans	177
Cash payments to military veterans living abroad	98
Yearly compensations	52
Other compensations for military veterans	23
Benefits for civilians who have acquired disability at war	948

Source: Ministry of Finance, 2009 budget.

108. MLSP is considering a reform in the system of veterans benefits. A new law is under preparation. It will be critical to calculate the cost of any reforms before the law is enacted, in order to ensure that they are affordable under the current economic circumstances. Some savings could be achieved by establishing an electronic registry and data management system to verify eligibility under each program. In principle, benefits paid to dependent family members could be means-tested. Any savings arising from

[50] Living Standards Measurement Study. Serbia 2002-2007.

reducing such benefits would presumably not be worth the political expense of doing so. No changes in veterans benefits are therefore recommended.

109. The same is true of the birth grant which has a strictly pro-natalist objective. It provides a grant for each child, with the amount increasing steeply with each additional offspring. The grant for a second child is four times higher than that for the first; the grant for the third, 1.75 times that for the second; the fourth 1.35 times that for the third. Although the objective of this grant could be questioned, it is relatively cheap. Overall, birth grants account for eight percent of social spending and only 0.15 percent of GDP (2008). It is therefore recommended that the birth grant be maintained at its current level.

110. The caregivers allowance targets people with disabilities. It was received by 3.1 percent of households in 2007 and by 7.2 percent of the poor households.[51] The program could benefit from some redesign: consolidating some of the small and narrowly targeted elements (e.g., allowances for specialized equipment, transportation, rehabilitation, communications, etc.) into one benefit which reflects the individual medical and social inclusion needs of the recipient, and linking benefits with social care and employment services. This should be on the agenda for medium-term reform. But in fiscal terms, reform is not urgent. The caregivers' allowance accounts for only about 10 percent of spending on social programs and 0.19 percent of GDP.

ENTERPRISE SUBSIDIES

111. Subsidies to enterprises (including farms) constitute a significant proportion of government expenditure in the current period. The five largest central government programs consumed about four percent the 2008 central government consolidated spending in 2008, based on 2008 budget execution data.[52] But the subsidy regime is in transition. A large proportion of subsidies have been used to facilitate the process of privatization, financing severance payments for workers in state owned enterprises. With some exceptions, the privatization process has been largely completed, and the level of these subsidies can be expected to decline. Under the revised 2009 budget, a considerable volume of resources are committed to new equity investments. These represent part of the Government's economic stimulus efforts, and might be expected to decline. What will remain are of subsidies to SOEs that have been slow to privatize--particularly in the mining sector—subsidies to the railroad and to agriculture, and subsidies to certain classes of private firms---such as SMEs. In the current economic climate, there is also pressure to make soft loans to private firms in order to stimulate the economy.

[51] Living Standards Measurement Study. Serbia 2002-2007.

[52] These figures exclude a variety of smaller subsidy programs and implicit subsidies in the form of write-offs of uncollected taxes and social contributions from state owned enterprises. They also exclude subsidies from local governments to their respective enterprises, which are financed from local government's general budgets.

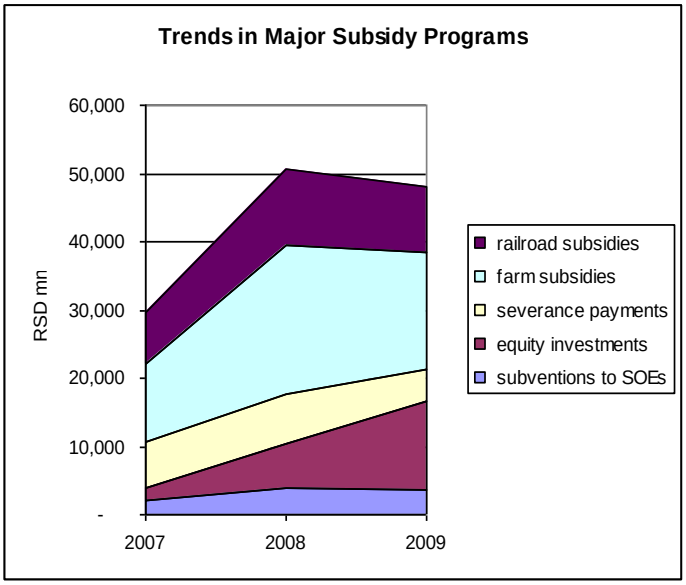

Figure 23

AGRICULTURAL SUBSIDIES

112. In sectoral terms, the largest program of subsidies consists of subsidies to agriculture. As shown in Figure 23, in 2008, these accounted for about 40 percent of total central government subsidies. Since 2004, Serbia has been phasing out price supports for specific crops. Sugar and tobacco subsidies have been eliminated, although support to the dairying industry remains. But the largest form of agricultural subsidies consists of the so-called 'de-coupled area payment'. This was introduced in 2007 to replace former input subsidies and reflects the structure of subsidies under the EU's Common Agricultural Policy (CAP). It consists of a standard payment (equal to € 120 per hectare) to every registered farmer, up to a maximum of 100 hectares. As of 2008, only full time farmers who contribute to the pension system are eligible to receive the subsidy.

113. As an alternative to input subsidies or price supports, the decoupled area payment is relatively efficient. It does not distort prices. But it is also expensive and –in the current Serbian context—difficult to justify. In effect, it functions as a poorly targeted form of social assistance for the rural population. Because payments are not means tested, there is presumably a high level of leakage to higher income groups. At the same time, the de-coupled area payment may be inhibiting agricultural productivity. The 100-hectare cap on benefits discourages land consolidation. Already, the average farm size in Serbia is less than one-quarter that in the EU.[53] Consolidation will be necessary to permit Serbian farmers to compete with those in the EU. International experience, moreover, suggests that investment in rural infrastructure (primarily irrigation and roads) and the dissemination of new existing technologies are much more effective in promoting agricultural growth than subsidies.

114. In principle, there is therefore a strong case for eliminating the decoupled area payment--at least until Serbia joins the EU. At that time, the costs of the program will be paid by Brussels. (Eliminating the program would not jeopardize Serbia's

[53] The average farm size in the EU, including leased land, is 27 ha. According to the Serbian agricultural census, the average farm size in Serbia is 3.5 ha. This figure excludes leased land, however. Data from the farm registry suggests that the EU-comparable figure is closer to 6 ha.

accession prospects, as the EU requires only that the *system* for distributing the subsidy be accredited prior to the distribution of EU agricultural subsidies.) The program's role in supporting the incomes of poor farm families could be replaced by a scaled-up MOP, as noted earlier. Alternatively, **the program could be transformed into an income-support program for small farms**, with the area payment subject to means testing. The political obstacles to doing so should not be underestimated. According to the 2008 LFS, roughly one-quarter of the Serbian labor force is engaged in agriculture—an important constituency that would be expect to resist such reform. Nevertheless, the Government has managed to impose an across-the-board reduction in the area based payment in 2009 and may be able to further reduce it on a targeted basis in future years.

SUBSIDIES TO STATE ENTERPRISES

115. Support to state- and socially-owned enterprises (SOEs) that are due to be privatized constituted about 22 percent of central government subsidies in 2008. These include severance payments financed from the Development Fund, the Transition Fund and the Solidarity Fund, and credit lines to socially owned enterprises for restructuring. A large proportion consists of soft loans provided by the Development Fund and payments by the Transition and Solidarity Funds, which finance severance in connection with the pre-privatization staff restructuring.

116. Overall, the level of enterprise subsidies (excluding subsidies to railroads) has increased in nominal terms over the last four years, due to increased funding for severance. Costs are expected to decline however, as privatization proceeds. In 2008, 18 of the 20 largest SOEs were offered for sale. Nine were sold and one liquidated through bankruptcy. Altogether around 240 companies were sold through different privatization models. Indirect subsidies, in the form of tax and contribution arrears, have also been a problem, although the level of such subsidies is expected to decline as privatization proceeds. According to data from the Tax Administration, at the end of 2008 the overall stock of tax and contribution arrears of 987 public enterprises was RSD13.37 billion, of which twenty percent was owed by inactive companies.

117. The Government nevertheless confronts the costs of subsidizing or privatizing the more intractable state enterprises. In the mining industry, Resavica and Bor are the two largest remaining companies that are slated for privatization or closure. Resavica is the largest single recipient of central government budget subsidies in Serbia (other than Serbian railways). It is a complex of nine mines employing 4,195 people across 8 municipalities. Of the nine mines, a maximum of one-third are viable. (One mine has been out of operation since the late-80s.) Direct subsidies for Resavica in 2008 amounted to €22 million or 0.06 percent of GDP. The level of subsidies per employee is equal to average wage in the country as a whole. In addition to direct subsidies, Resavica receives implicit subsidies in the form uncollected taxes and social contributions. Rough estimates suggest that these indirect subsidies are almost equivalent to the direct ones.

118. Boor receives far less in terms of direct subsidies (a soft loan of RSD39 million) but still benefits from significant implicit subsidies. Bor's existing stock of debt to state and private institutions (the latter constitute a contingent liability for the state) amounted to a record €670 million in 2008. Out of this, arrears on taxes, social contributions, and loan repayments due to the Development Fund amounted to €180 million. The Government embarked upon the privatization of the mines in 2006. Privatization advisers were hired and the company was prepared for privatization. However, the process has been stalled since then, particularly at Resavica. **The Government should restart the process, restructuring the company, closing the least viable mines, and launching a staff downsizing program.**

Box 5: The Development Fund

In principle, the Development Fund exists to provide subsidized financing for the programs related to economic and regional development, development of SMEs, increasing competitiveness, and so forth. The average subsidized interest rate at around 6-7 percent compares favorably with the market average of some 15-17 percent in 2008. During 2007, the Development Fund approved 1,221 loans in the total amount of approximately €208 million or 0.89 percent of GDP.

In practice, a large part of Development Fund financing goes to socially-owned companies, where less than ten percent of loans are being repaid; the rest being written-off in the process of pre-privatization restructuring. These loans are used to cover operating costs–wages, electricity, gas, etc.—rather than a new investment—and reflect the unprofitability of the borrowers. In 2008, some €33 million was spent on 114 loss-making companies distributed across transport, metal, metallurgy, textile, chemical, electrical machinery, non-metal, construction, wood, tourism and other industries.

Source: Ministry of Economy, Development Fund.

119. By far the largest privatization expenditure proposed in the initial 2009 budget was the Government's proposed equity investment in Zastava, a key component in the proposed sale of a majority stake in the company to FIAT. Although this was expected to reduce subsidies to firm in the long run, in the short run, it represented an extremely heavy cost. (The Government's proposed equity investment and loans to =Zastava were budgeted at RSD14 billion in 2009. This was equivalent to about RSD 230,000 per employee.) Due to changing economic conditions, the agreement with FIAT has not yet been signed, although FIAT has made some initial investments in the Zastava plant. Under the revised 2009 budget, the allocation for the Zastava project has been reduced to RSD4 billion, with the remainder of the funds allocated to several subsidized loan programs, including liquidity loans to export-oriented firms (RSD4.0 billion); start-up loans to small enterprises (RSD3.2 billion); and subsidized loans to consumers for purchases of domestically produced consumer durables (RSD2 million).

120. Looking forward, Serbia's enterprise subsidies have been justly criticized for distorting markets, undermining the country's long term competitiveness, and wasting money on non-economic enterprises. Serbia's EU ambitions, if not the force of these arguments, will eventually force it to scale back its remaining sector specific subsidies. The European Commission (EC) has adopted a "State Aid Action Plan for 2005-2009" which seeks a relative reduction of the overall state aid in GDP and reorientation of aid to address market failures, rather than supporting specific industries. In the new EU member states, subsidy reform has been a key component of the pre-accession and post-accession reform agenda. If Serbia is to follow this example, enterprise subsidies would have to be limited to development aid, R&D, closures, and staff reductions.

121. To this end, the Ministry of Finance is in the process of drafting a Law on State Aid. This is intended to be consistent with the EU state aid rules and the institutional arrangements and system of ex-ante control of state aid specified in Serbia's Stabilization and Association Agreement with the EU[54]. The draft law, however, has scope for improvement. Under the current draft, the proposed Serbian Commission for State Aid Control would lie within the Government, being presided over by the Minister of Finance. All Commission members would be Government appointees, while administrative, technical and other support would be provided by the Ministry of Finance. The draft law envisages annual reporting to the Government only, thus limiting access by the public or the legislature.

122. As a whole, this approach fails to provide the commission with sufficient autonomy and protection from political influence. The Government should consider establishing the Commission for State Aid Control as an independent body reporting the Parliament, with professionals recruited through open, public competition. The role of the Commission could be strengthened by expanding the present definition of its responsibilities[55] and authorizing it to provide preliminary opinions on any legislative proposal or strategy concerning state aid, which would be binding prior to their adoption by the government.

ROADS

123. Spending on roads--including spending financed from tolls and earmarked tax revenues--accounted for about five percent of consolidated central government expenditure in 2008. In the immediate future, the Government confronts the need to

[54] EC Progress Report, 2008.

[55] These could include responsibility for: (i) the assessment of state aid proposals and aid schemes within annual and multi-annual state aid approval plans; (ii) monitoring the implementation and effects of state aid granted and order the recovery of unlawfully granted state aid; (iii) collection the data on the use and effects of state aid granted; (iv) cooperation with the authority responsible for state aid to agriculture and fisheries in the preparation of annual reports on state aid; (v) cooperation in the budget preparation process with the authorities responsible for the preparation of the state budget and the budgets of regional and local self-government units, in compliance with the separate law; and (vi) participation in the preparation of draft proposals for laws and other regulations concerning state aid, as well as promotion and encouragement of improvements in the state aid system.

increase maintenance spending (particularly on regional roads), restructuring the debt of the state road agency, and providing counterpart funding to a major program of highway investments in Corridor X. The prospects for financing these expenditures from increased tolls and fuel taxes are limited. Instead, the Government's most promising option would be to extend the construction schedule for the Corridor X works and seek immediate efficiency improvements in the planning and execution of works by the state roads authority.

THE SERBIAN ROADS SECTOR

The density of the road network in Serbia is similar to that of neighboring countries. Serbia has a road network totaling approximately 40,845 kilometers—with 5,525 kilometers of main and primary roads, 11,540 kilometers of regional and secondary roads, and around 23,780 kilometers of local roads.[56] Road density in Serbia is 462 km per thousand square km, in line with most regional neighbors, but lagging behind Albania (657), Croatia (506), and Montenegro (500) and substantially behind the levels found in new EU member states and in OECD countries. On a second measure, road density per one thousand inhabitants, Serbia, with 5.4 km per 1,000 inhabitants, has a higher road density than Albania, but below that all other countries in the Western Balkans.

Although there has been an improvement in the condition of the main and regional road network in the last three years, about 40 percent of the network remains in poor or very poor condition Figure 24 illustrates the results of a survey of the main and regional road network conducted in 2008.[57] This shows that while the majority of the motorways and main roads are now in good condition, slightly over half the regional road network ranks as poor or very poor. In addition, the design characteristics of much of the existing network in terms of speed and axle loads is below European standards, increasing vehicle operating costs, and reducing safety and competitiveness.

[56] This corresponds to what the national road agency calls roads of Class I, II and III respectively.

[57] These results are from a survey conducted in 2008 as part of the road and inventory database study under the World Bank funded Transport Rehabilitation Project and became available in March 2009. The survey defined road condition using the International Roughness Index (IRI), but with different boundary values for different road classes.

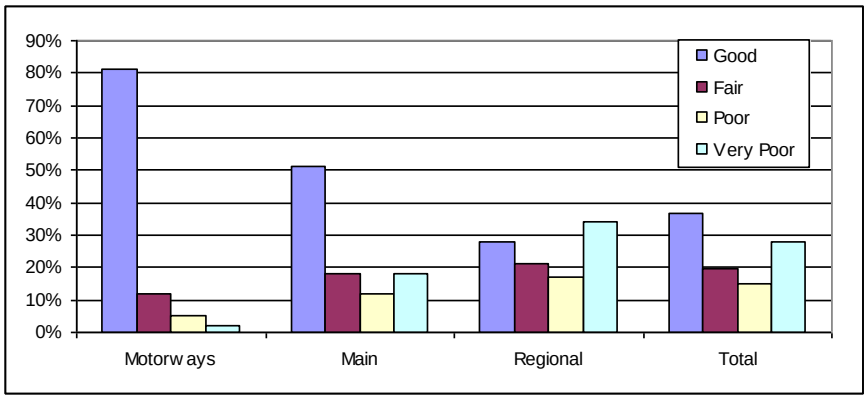

Figure 24: Condition of the Main and Regional Road Network, 2008
Source: PEPS.

Road safety is also a major concern in Serbia. As shown in Figure 25, the number of fatalities and injuries from traffic accidents has been increasing fairly steadily over this decade (although peaking in 2007). The fatality rate, at 4.8 casualties per 10,000 vehicles in 2008 remains about five times higher than that of the best performing European Union countries, and compares unfavorably to several countries in the region, as shown in Figure 26.

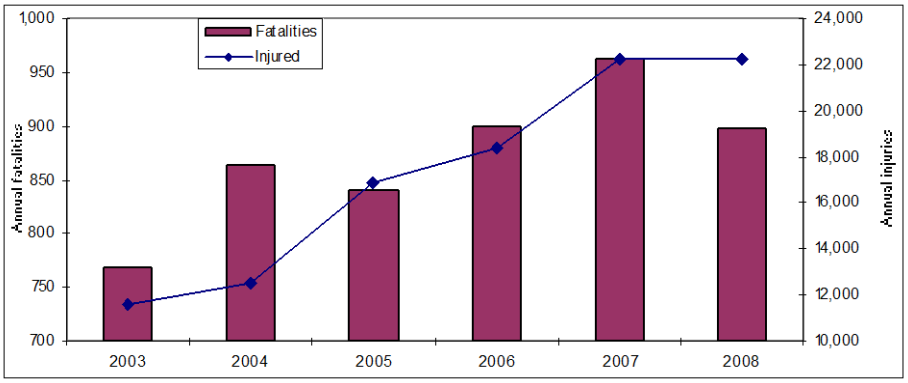

Figure 25: Trends in Injuries and Fatalities
Sources: PEPS, Bank estimates

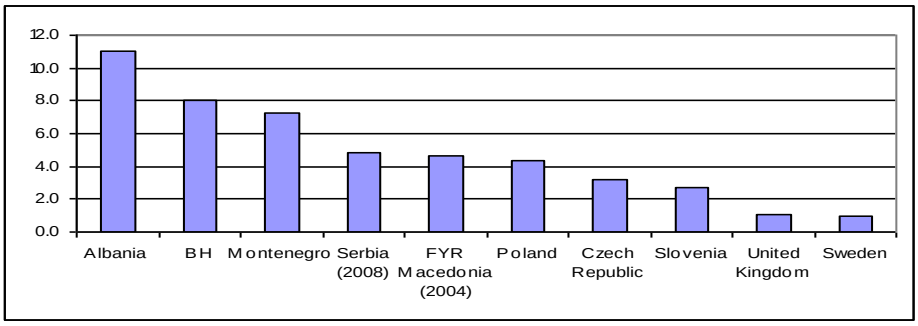

Figure 26 International Comparisons of Traffic Deaths (deaths per 10,000 vehicles)
Sources: PEPS, Bank estimates.

Box 6: Road Safety Initiatives

The road safety situation in Serbia is serious and, against the background of rapidly increasing motorization, will deteriorate further unless urgent, well-orchestrated and appropriately funded evidence-based action is taken. Currently, the main institutions with governmental responsibilities for road safety are the ministries of infrastructure, interior, justice, education, and health, as well as PEPS and the Public Health Institute. Currently, there are a number of gaps, including: (i) limited analysis of risk factors in transport, police and health sectors; (ii) little multi-sectoral understanding as to priority areas for action; (iii) poor collection and handling of road safety data; (iv) lack of road safety management capacity; and (v) limited coordination between the various agencies. The seriousness of the problem is fully acknowledged by all key stakeholders, as is the need for further reforms in public policy, road safety strategy, legal and compliance frameworks, and road safety management capacity. The Global Road Safety Facility financed the "Review of Road Safety Management Capacity and Proposals for Investment Strategies" (RSMCR) in August 2007.

The draft Road Safety Law (RSL), expected to be adopted in 2009, is the first major update in legislation since the 1980s and addresses many aspects of the EU Transport *Acquis* and recommendations given in the RSMCR. However, road safety funding arrangements are inadequate and lack transparency. The public sector as a whole needs to devote appropriate levels of resources if Serbia is to improve its safety performance to match current European practice. In this regard, at present it is difficult to estimate the amount of public funds allocated to road safety and there is a need to change this, especially if there is to be a rise in the allocation of funds allocated on improving road safety.

The Serbian roads agency Public Enterprise Putevi Srbije (PEPS) is responsible for managing the primary and secondary (regional) roadwork (Its mandate does not extend to tertiary roads or urban streets.) PEPS was established by the passage of the Road Law in November 2005, with effect from January 1, 2006. As shown in Table 13, it is largely financed from transport-related taxes and fees. Proceeds from the national investment plan (i.e., Government privatization receipts) and foreign borrowing provide much of the remainder. Transfers from the central government's ordinary budget constituted only five percent of PEPS' receipts.

124. The overall level of PEPS' reported expenditure has increased only modestly in real terms in recent years. Total expenditures increased only fourteen percent between 2005 and 2008. Expenditures on new construction have remained constant, despite additional financing from the National Investment Plan (NIP). Spending on maintenance appears to have fallen, although the figures are distorted by payments on arrears to contractors for work carried out in 2006 and 2007. and by the conflation of maintenance, rehabilitation and upgrading expenditures. (Total spending on maintenance, rehabilitation and upgrading, in fact increased sharply in 2006 and 2007, but was not paid for until 2007 and 2008.) For 2009, PEPS' proposed business plan assumes a substantial increase in maintenance, rehabilitation, upgrading, and construction expenditures. This would be accompanied by increased spending on Corridor X, which will be carried out by the road agency's daughter company, Koridor 10 D.O.O.

Table 13: PEPS: Trends in Source and Uses of Funds
Nominal RSD, mn.

	2005	2006	2007	2008
	Actual	Actual	Actual	Actual
Use of Funds				
Maintenance and periodic rehabilitation	27468	28,658	26,692	24,101
% of GDP	1.62%	1.44%	1.15%	0.88%
Construction and reconstruction	5,677	6,777	6,333	7,899
Other	3162	2,398	1,996	2,640
Credit repayments	3655	1,451	2,684	2,969
Arrears to suppliers	0	10,159	16,140	22,262
TOTAL	39,962	49,444	53,845	59,870
% of GDP	2.36%	2.49%	2.31%	2.19%
Sources of Funds				
Excise duty on fuel	0	4,951	5,389	9,510
Toll revenue	9,684	12,838	14,685	16,499
Other own resources	1,673	1,262	1,400	1,548
Central budget	3,278	1,578	310	2,046
National Investment Plan (NIP)	0	2,261	5,799	6,046
Foreign borrowing	5,811	5,081	4,056	3,353
Donations and privatization proceeds	7,631	0	113	343
Funds carried forward				1,234
TOTAL	28,077	27,970	31,751	40,579

Source: PEPS.

125. Inadequate maintenance hastens the deterioration of any road at an increasing rate until reconstruction is necessary, at considerably greater expense than any short term saving in maintenance expenditure. Adequate maintenance can sustain the pavement of a road for a period far beyond the original design life, depending on traffic, ameliorating the need for any reconstruction. By contrast, inadequate maintenance leads to an increase in the rate of deterioration, hastening the failure of the pavement, and engendering a need to reconstruct the road, a need that could have been avoided. Heggie and Vickers (1998) report that reconstructing a paved road is three to five times more expensive than maintaining it, in current terms, and around 35 percent more in net present value terms.[58]

[58] Heggie, Ian, & Piers Vickers (1988) *"Commercial management and financing of roads"* World Bank Technical paper No. 409. Washington DC.

126. In Serbia, routine maintenance is underfunded. From 2005 to 2008, reported spending on maintenance (including related arrears) averaged RSD44 billion, after adjusting for inflation. While, this is close to the level estimated as necessary for the maintenance of main and regional roads, including routine winter snow clearing[59] it is inflated by the inclusion of upgrading expenditures. As a result, it remains unclear how much of the reported amount has actually been spent to maintain the road network, and how much has been spent on upgrading activities, which should be more appropriately categorized as capital expenditures. (In this regard, Article 59 of the Law on Public Roads defines the attenuation of gradients, curve straightening, the widening of pavement or shoulders, and the enlargement of at grade intersections as enhanced maintenance, whereas one would more logically regard those activities as capital expenditures.) Expenditures on maintenance *per se* are therefore lower than the reported figure. In addition, there are significant questions about the efficiency and efficacy with which PEPS uses the funds.

127. In addition to ongoing maintenance, the future financing requirements of the road sector include two forms of capital expenditure: (i) those that are necessary to clear the current maintenance backlog and return the road network to good condition; and (2) additional capital expenditure necessary to keep pace with growing demands and ensure that the country develops a road network that contributes to economic development.

128. The total costs of capital expenditures necessary to address the backlog of maintenance expenditure has been estimated at €1.45 billion (RSD113.1 billion). This estimate is based on the unit cost of specific activities using PEPS' 2008 price list, together with information on the current length of the network under PEPS' mandate, new road condition data, and a policy objective of achieving 'good' conditions for all reconstructed roads.[60] Willingness to accept a lower quality standard on lower category/volume roads, would result in a correspondingly decreased costs. The immediate budget implications of this figure depend on the time frame over which it would be implemented. As shown in Table 14, clearing the maintenance backlog would cost €290 million (RSD22.6 bn) per year if the work were completed in five years but €145 million (RSD11 bn) if it were completed in ten years. Given the other claims on the budget, the ten year time horizon would appear to be preferable.

[59] The latter calculation was made on the basis of PEPS' 2008 price list and assumes the following maintenance regime standard: 40 mm asphalt overlay every 5 years on motorways and main roads and the same overlay every 7 years on regional roads.

[60] A lower policy objective of only aiming for 'fair' condition for secondary roads would obviously reduce this estimate.

Table 14: Cumulative Maintenance Backlog and Annual Expenditure Needs
(Euro millions, 2008 prices)

Road Category	Cumulative Maintenance Backlog	Annual Expenditure to Address Maintenance Backlog		
		5 years	7 years	10 years
Motorways	32	6	5	3
Main roads	400	80	57	40
Regional roads	1,020	204	146	102
TOTAL	1,452	290	207	145

Source: Bank estimates.

129. With respect to expansions of the network, the Government intends to focus on Corridor X. A series of improvements in this corridor will enable Serbia to capitalize on its geographical position as a key transit country in the Pan-European Network. The total investment required for the modernization of infrastructure on Corridor X is significant, amounting to an estimated €2.079 billion.[61] Out of the total, €1,303 million would be financed by international financial institutions, including €1,088 million from the World Bank, EBRD, and EIB credit currently under preparation. The Government's contribution will nevertheless be considerable, totaling €774 million over the construction period, although over half of this sum represents transfer payments in the form of VAT , taxes and duties.[62]

DIRECTIONS FOR REFORM

130. **Reschedule works on Corridor X.** The fiscal impact of the Government's contributions to Corridor X will depend to a large extent on the phasing of construction works. The Government has stated that the original intention was to complete the work in

[61] Works on Corridor X would include: (i) the construction of a second 2-lane carriageway on 118 km of motorway between Horgoš-Novi Sad (Corridor Xb) at an estimated cost of €223 million; (ii) the construction of a motorway on 98 km of the section of corridor between Niš and the border with Bulgaria at Dimitrovgrad (Corridor Xc) at a provisional cost estimate of €749 million; (iii) the construction of a motorway on the corridor between Leskovac and the Macedonian border (Corridor Xd) at a provisional cost estimate of €658 million; and (iv) the completion of Belgrade Bypass, which would form an important section of Corridor X estimated cost €166 million. These costs include design, expropriation and construction costs and include VAT and supervision costs. They are likely to be revised after tender documentation has been produced, and as such remain provisional. On the other hand, expropriation costs may be overestimated, as current revisions to existing legislation mean that public land can be offered instead of financial compensation. This could lead to significant downward revisions to estimated expropriation costs.

[62] The Government has recently agreed with the World Bank that no VAT will be paid for the World Bank financed sections of Corridor X. As this merely reduces VAT revenues that would be paid to the treasury, it does not constitute a savings to the Government. It remains to be seen whether the same will be agreed with the EBRD and EIB.

four years. This is now acknowledged to be overly ambitious, if not unrealistic. In light of the time needed for land acquisition, the length of the tendering process, overall readiness for implementation, and the scale of the construction works, the objective of implementing and completing a €1.79 billion investment program over 4 years looks ambitious, if not unattainable.[63] Expenditures in 2009 are instead likely to be a small fraction of what is included in the Action Plan. Land acquisition takes a minimum of 6 months, and the length of the procurement process for the IFI financed sections of Corridor X is estimated to be a minimum of 6 months. This suggests that there will be little or no construction on these sections before 2010. In addition, PEPS funds earmarked for Corridor X land acquisition have yet to be released (as of mid-March 2009) as PEPS' 2009 Business Plan has yet to be approved by the PEPS board.

131. Given the likely time frame for implementation, three alternative scenarios for the phasing of Corridor X expenditures are proposed. Using provisional cost estimates, these phasing scenarios presume the works are completed in a 5 to 6 year period. All three scenarios assume that: (i) in 2009 full expropriation costs and 10 percent of construction costs for the Dimitrovgrad Bypass included in the Action Plan 2009; (ii) all World Bank-EBRD-EIB funded sections will take one year longer to build than the other sections; (iii) full expropriation and construction of the 20 km section of Horgoš-Novi Sad in the Action Plan take place in 2009; (iv) construction of Levosoje-Presevo in 2009 (see Table 15). Further assumptions are made to differentiate the scenarios:

- Scenario 1. In this scenario it is assumed that Corridor X is built over a 6 year period, with a limited amount of expropriation and construction taking place in 2009 due to limited funds and implementation constraints. Additional assumptions are that: (i) €23 million worth of construction on Belgrade Bypass in 2009, with the remaining construction evenly split in 2010, 2011, and 2012. (ii) full expropriation and design costs are made in 2010 for remaining World Bank-EBRD-EIB sections; (iii) the construction profile for the World Bank-EBRD-EIB sections are staggered such that the remaining 15 percent of construction costs are paid in 2010, 30 percent in 2011, 25 percent in 2012, 18 percent in 2013, and 13 percent in 2014; and (iv) the expropriation and construction profile for the remainder of the Horgoš-Novi Sad is 25 percent a year over 2010-2013.

- Scenario 2. In this scenario it is assumed that Corridor X is built over a 6 year period and uses the same set of assumptions as in Scenario 1, with the exception that the construction profile for the World Bank-EBRD-EIB sections are staggered such that 25 percent of construction costs are paid in 2010, 35 percent in 2011, 18 percent in 2012, 15 percent in 2013, and 8 percent in 2014. In other words, in Scenario 2 there is significantly more construction works over 2010-2011 for the World Bank-EBRD-EIB sections.

- Scenario 3. In this scenario it is assumed that Corridor X is built over a 5 year period. Additional assumptions are the following: (i) two year construction period for Belgrade

[63] The same conclusion was made in the World Bank Policy Note, "Options for the Development of the Road and Rail Infrastructure on Corridor X", August 2008. The costs for the works and phasing presented in this chapter differ from that of the Policy Note, given new information available since August 2008.

Bypass, with 50 percent expropriation and construction a year in 2009 and 2010; (ii) full expropriation and design costs are made in 2010 for remaining World Bank-EBRD-EIB sections; (iii) the construction profile for the World Bank-EBRD-EIB sections are staggered such that the remaining 40 percent of construction costs are paid in 2010, 40 percent in 2011, and 10 percent in both 2012 and 2013; and (iv) the expropriation and construction profile for the remaining sections of Horgoš-Novi Sad is 50 percent a year over 2010-2011. These assumptions lead to significantly higher expenditures over 2010-2011 and a large drop in 2012 and 2013.

132. These alternative scenarios lead to significant differences in the expenditures over the next two years. For 2009, they range from €125 million (RSD 9.75 bn) to €201 million (RSD 15.7 bn). For 2010 they range from €248 million to €343 million.[64] In Scenario 3 works are completed in 2013, but with high levels of expenditure that appear incompatible with fiscal constraints, the time frame for land acquisition and IFI procurement process, as well as overall implementation capacities of Koridor 10 D.O.O.. The table below shows the cost to the budget of the Corridor X works under the three scenarios. It assumes €1.3 billion of foreign borrowing, with loan disbursements paralleling construction on foreign-financed sections. (Debt service on foreign loans is not included.) The projected financing gap is largest in 2010 in all three scenarios, at over €343 million (including VAT), as this is when the expropriation costs will fall disproportionately in all scenarios and these costs are not funded by foreign borrowing.

Table 15: Estimated Cost to Budget for Corridor X in Three Scenarios, 2009-2014
(Euro millions, 2008 prices)

	2009	2010	2011	2012	2013	2014	TOTAL
Scenario I	125	248	143	130	94	33	703
Scenario 2	135	271	153	106	88	20	703
Scenario 3	201	343	178	26	26	0	703

Source: Bank estimates.

133. **Refinance Arrears.** In addition to the costs of maintenance and rehabilitation works and Corridor X construction, the Government also confronts the costs of paying down PEPS' arrears. PEPS has accumulated significant arrears to contractors. Outstanding arrears to suppliers for investment and maintenance services totaled RSD31.8 billion as of end 2008, slightly up from RSD31.3 billion in 2007.[65] The bulk of outstanding arrears, RSD29.5 billion, are owed to suppliers for maintenance works. According to PEPS, these arrears reflect decisions to go ahead with planned works despite a lack of funds. Arrears in construction works also reflect lower-than-expected funds from the National Investment Plan, but also the decision to finance projects ahead of elections and cost overruns. PEPS is awaiting a decision from the Ministry of Finance regarding a sovereign guarantee that would allow it to take out a commercial loan to repay RSD20 billion, the total level of guarantees as per the 2009

[64] Figures include VAT.
[65] These arrears are classified as operating liabilities to local suppliers in the Independent Auditor's Report for 2007 Financial Audit of PEPS.

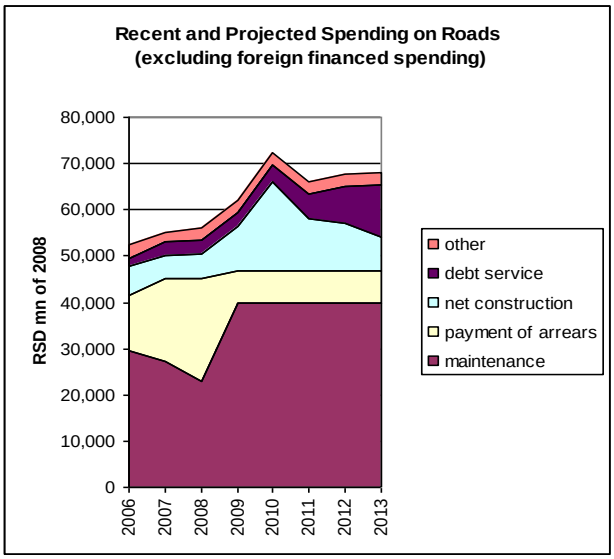

Figure 27

budget. An additional RSD1.6 billion of arrears to Jugopetrol is to be written off, in exchange for Government forgiveness of an equivalent amount owed to it by Jugopetrol. The remainder of arrears is programmed to be repaid in a 5 year period.[66]

134. Taken together, the immediate budgetary implications of the proposed maintenance and rehabilitation program, the construction of Corridor X, and the resolution of PEPS' existing arrears are fairly significant. As shown, in Figure 27, total Government spending in 2009 on roads, including PEPS expenditures financed from own source revenues and Government counterpart contributions to Corridor X, would be about ten percent higher, in real terms, than in 2008.[67] Spending would spike in 2010 with the increase in spending on Corridor X, and would the revert to its previous trajectory, gradually increasing as debt service on Corridor X works comes due.[68]

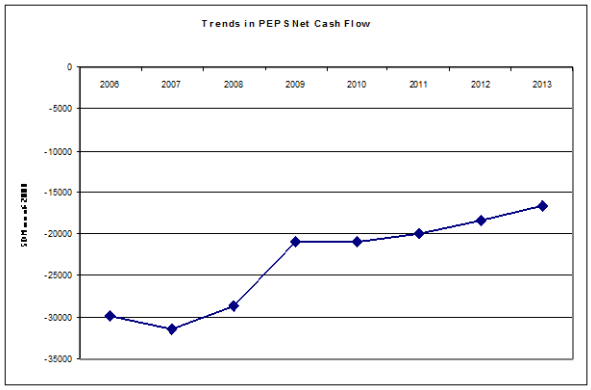

Figure 28

135. PEPS' financial situation would remain precarious. As shown in Figure 28, the agency's cash flow deficit, while declining, would remain substantial even under the somewhat optimistic assumption used in the projection.[69] One way of covering the immediate gap would be to implicitly lower

[66] Out of the total outstanding stock of arrears, RSD31.8 billion, RSD20 billion is expected to be repaid through commercial loan, RSD1.6 billion will be written off, with the remainder, RSD10.2 billion, to be repaid over a 5 year period.

[67] This projection assumes that the entire stock of arrears is refinanced at a real interest rate of 5 percent and five years maturity, and that foreign borrowing for Corridor X construction is financed at a real interest rate of 5 percent and a maturity of 30 years, with no grace period. Estimates for Corridor X are based on Scenario 1.

[68] The recently approved 2009 PEPS Business Plan foresees expenditures and revenues equal to RSD66,646, with no deficit. There are two main reasons why there is no forecast deficit. (1) toll revenue projections are optimistic given the economic contraction forecast for 2009; and (2) maintenance expenditures are significantly below what has been calculated as necessary by this Report. Expropriation for Corridor X (RSD2,305 million) is to be financed from PEPS' own resources, suggesting that if revenues are below what is projected, there is a genuine risk of an accumulation of arrears or the posting of a deficit in 2009.

maintenance standards on regional roads by continuing their neglect, which is what has tended to occur in recent years. Such an approach essentially would allow such roads to continue to deteriorate, ultimately raising the costs of restoring them to acceptable conditions.

136. **Raise Revenues.** An alternative would be to raise additional revenues. PEPS' non-investment expenditures are financed by fuel excise tax, toll revenues, and annual vehicle registration charges, as is the practice in other European countries. The rate of the excise tax on petroleum derivatives is set by the Ministry of Finance. A percentage of the revenues are earmarked for PEPS for the maintenance of state roads. PEPS' share has been increasing over time, from 10 percent in 2006, to 15 percent in 2008, to 20 percent in 2009.

137. A recent report on road financing in Serbia noted that increasing fuel tax revenues was not a very promising source of new revenue. As shown in Figure 29, prices for both diesel and petrol were relatively high, compared to other Balkan countries, even before the increases after 2006.[70] The Government's April 2009 fiscal package calls for a further increase in fuel tax revenues of about ten percent, which implies yet another price increase. Any increases on top of this would need careful consideration in terms of affordability. In principle, PEPS' revenues could be increased by raising the share of the fuel excise tax that is allocated to the agency. As noted earlier, it now stands at 20 percent. Given the central government's current economic difficulties, such a move would need to be considered carefully against the other spending commitments of the Government and other austerity measures.

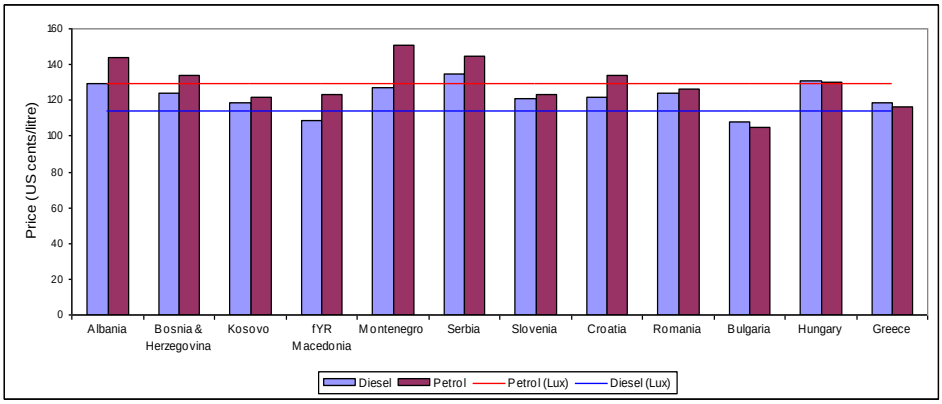

Figure 29: Fuel Price Comparisons
(US cents per liter, 2006)

Note : November 2006 prices.
Source: International Fuel Prices 2007 (GTZ 2007).

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[69] In addition to the expenditure assumptions cited earlier, this projection assumes that PEPS will receive 20 percent of the proposed increase in excise tax on fuel and that revenues from the excise tax, toll revenues and other own-source revenue will continue to increase at the rate of GDP growth over subsequent years. It assumes that maintenance expenditures will remain constant in real terms and that no construction works will be financed from PEPS own source revenues.

[70] Diesel (Lux) and Petrol (Lux) stand for the diesel and petrol retail prices in Luxembourg respectively, and are usually considered the benchmark for new EU accession countries. Source: GTZ (2007).

138. The possibility of raising tolls also appears limited in Serbia at this time. In the first half of 2006 toll rates for domestic vehicles were raised by 20 percent and a further 18 percent in February 2008. On February 22, 2009 the government decided to equalize the price of highway tolls for local and foreign vehicles, meeting a commitment it took on nearly seven years ago. The harmonization does away with the practice of charging foreign vehicles nearly twice as much as those registered in Serbia. This could potentially lead to a decline in toll revenue in 2009, although PEPS is forecasting a rise in transit traffic, and therefore a rise in toll revenue collected from foreign vehicles, from RSD 7,804 million in 2008 to RSD 8,647 million in 2009.[71] However, the early indications suggest that toll revenues are likely to be, at best, flat.

139. At first glance, it might appear that there is scope to increase overall level of tolls, but such a step needs to be viewed in terms of its affordability and in terms of the rates charged in neighboring countries that offer competitive routes. As shown in Table 16, Serbia's toll rates as of February 2009 are in line with those of neighboring countries with similar levels of GDP per capita. In the case of Category IV vehicles (vehicles with four or more axles) the rates appear to be on the high side, but these vehicles are the ones that do the most damage to the road network, and any change in this rate would need careful analysis. This suggests that there is limited scope for increasing toll rates, without compromising the competitive position of Serbia as a transit country for traffic.

140. PEPS can, nevertheless, take administrative steps to reduce costs and revenue leakage at tollbooths. A recent study of electronic toll collection (ETC) systems, funded by the Public-Private Infrastructure Advisory Facility (PPIAF), reviewed the existing toll collection system and made an assessment of reform options.[72] It found that ETC was little used, so that the advantages of such a system have not been exploited.[73] Over the medium-term, the study recommends that a private sector organization take over toll operations using the concessionaire model. In the short term, it recommends several more immediate measures. These include including equipping 'old-style' toll lanes with ETC and offering discounts to drivers who use them; making better use of video surveillance systems to reduce the extent of fraud; and reducing the number of vehicles eligible for exemptions. It is estimated that these measures could increase net toll revenues by ten percent. The report also finds that there is a relatively large number of vehicles which are exempt from paying tolls and recommends that in the short-term there should be a more detailed investigation of these exemptions.[74]

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[71] In the first half of 2007 there was a significant decrease in traffic volume due to waiting times in borders and truckers decided to reroute via Romania. This underscores the fact that Serbia faces a competitive environment for transit traffic and that increases in toll rates needs to take into account the impact it could have on traffic diverting to Corridor IV.

[72] Ian Catling Consulting, *Review of Existing Toll Collection System and Assessment of Reform Options, Draft Final Report*, January 2009.

[73] Evidence elsewhere suggests these investments are both economically and financially viable.

[74] The report found that 7,500 vehicles did not pay tolls in 2008, representing 930,000 journeys represents a significant number of toll passages and hence a significant amount of revenue which is not collected from these exempt vehicles. In addition, the 12 categories of exemption need to be reviewed.

Table 16: Cross Country Comparison of Toll Rates, 2008

	Category of vehicle (euros/km)				GDP per capita, 2008 (Euros)
	I	II	III	IV	
Bosnia	0.020	0.040	0.067	0.094	3,488
Croatia	0.055	0.084	0.124	0.195	10,370
Macedonia	0.032	0.049	0.081	0.117	3,369
Serbia	0.032	0.047	0.095	0.189	5,075

Note: Exchange rates from local currency to Euro as of February 22, 2009. Nominal GDP per capita data is from the IMF World Economic Outlook October 2008 and are estimates.
Sources: IMF, Bank estimates.

141. The prospects for increasing annual vehicle registration fees are good. Vehicle registration fees have not been raised since 2000 and appear low compared to other countries in the region. Table 17 presents the table of registration fees for different category of vehicles across countries in South East Europe. Serbia's rates appear to be relatively low across the board. Such an increase, while feasible, would not generate much revenues. Evening doubling the fees would generate only RSD400 million, or about 1.7 percent of PEPS estimated financing gap.

Table 17: Annual Vehicle Registration Fees, 2007
(€)

Country	Car	Bus	Medium truck	Heavy Truck	Trailer
Albania	18	44+285	45+396	60+835	70+835
Croatia	16-110	600	265	530	345
Bosnia and Herzegovina/RS	72-160	240	260	520	465
Bosnia and Herzegovina/FBH	12-125	420	175	415	490
Macedonia	17-93	140	280	740	400
Serbia (2009)	1-33	29	77	180	130

Note: Medium trucks weight 10 tons, heavy trucks 20 tons, and trailers over 20 tons.
Sources: Mihajlovic (2007), PEPS, Bank estimates.

142. Overall, the prospects for raising significant amounts of additional revenue from transport related taxes and fees appear to be limited. The Government is already committed to raising the tax on fuels. Further increases in highway tolls run the risk of diverting international freight traffic to other countries—although there is some scope for reducing costs and revenue leakage at tollbooths. Increases in vehicle registration fees, while feasible, will not raise much revenue. This makes it all the more important for PEPS to adopt measures to improve the efficiency of expenditure.

143. **Undertake Institutional Reforms.** The third option is to achieve better outcomes for the same amount of money. The lack of a professional approach to asset management, limited use of formal techniques of economic appraisal in project identification and prioritization, weakness in financial planning and the under-use of

performance contracting all contribute to inefficient resource use and the waste of budgetary funds.

144. The establishment and use of an asset management system is a prerequisite to better maintenance planning. This involves regularly collecting and computerizing data on pavement conditions and traffic counts. An economic decision model such as the Highway Design and Management Model (HDM-4) can then be used to identify priorities for maintenance, taking into account overall budget constraints. An ongoing World Bank project is financing improvements to the computerized road database. This is expected to be operational by the first half of 2009. PEPS should use the new database and the Highway Development and Management Model to identify those priorities for funding with the highest returns in order to ensure that only the highest priorities are supported with public money.

145. Efforts should also be made to improve project planning. PEPS' current planning and budgetary process is weak, as evidenced by the large gaps between actual and planned road works. (See Figure 30). Maintenance, rehabilitation and construction activities should be planned in advance using a medium-term development plan (MTDP) for the network. While routine maintenance activities can be easily incorporated into annual plans, the medium-term expenditures for periodic maintenance, rehabilitation, reconstruction, upgrades and new construction should be planned over a longer time-frame (e.g., 5 years.

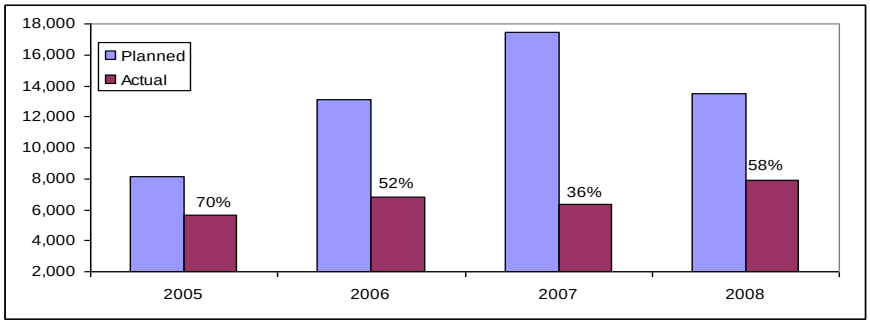

Figure 30: Planned and Actual Road Capital Expenditures
(RSD mn, current prices)

146. Third, PEPS should expand the use and the scope of performance-based maintenance contracts. Such contracts, in hybrid form, have been tested on a pilot basis in two regions, Mačva and Kolubara. The two pilot contracts, involving both winter maintenance and routine maintenance for 1,200 km of roads, were signed in August 2004 and ran through August 31 2008. The experience was very encouraging, with results suggesting significant reductions in costs. Unit costs for winter maintenance, for example, declined by 24 percent. This approach is now being extended to all twenty-five districts of Serbia, but there is significant opposition from the regional maintenance companies. In addition, the opportunity to extend the original pilot schemes in the two regions, in terms of the scope of activities that are subject to output based approaches, has

been missed, with PEPS management opposing testing an extension within the World Bank financed project, that could realize further savings.

147. Finally, over the medium term, the Government should reduce the size of the network for which PEPS is responsible. The recent Law on Public Roads clarified the legal status and respective responsibilities for the road network. As noted earlier, PEPS is assigned responsibly for national, magistral, and regional roads (Classes I and II) while local governments are responsible for municipal or local roads. However, this reclassification of the network was introduced without a prior inventory of the road network and the current use of each segment. Once a detailed inventory of the road network is completed, some of the lesser-used segments now under PEPS' jurisdiction could be reassigned to local governments.

Box 7: Will Structural Funds Help Finance Serbia's Transport Infrastructure Investments?

On 29 April 2008, the EU and Serbia signed the Stabilization and Association Agreement (SAA) and the Interim Agreement on Trade and Trade-related issues. The SAA will be submitted to parliaments for ratification and the implementation of the Interim Agreement will start as soon as the European Council decides that Serbia fully co-operates with the International Criminal Tribunal for the former Yugoslavia (ICTY). In its 2007-2013 Budget, the EU allocated €10 billion for the Instrument for Pre-Accession Assistance (IPA), to facilitate candidate and pre-candidate countries to strengthen their institutions to utilize EU structural funds as soon as they become full members. The IPA has replaced all previous instruments of support to countries with a candidate and pre-candidate EU membership status.

The IPA consists of a total of five specialized components for: a) assistance in the process of transition and capacity building aimed at meeting the EU membership criteria and strengthening of administrative and legislative capacities; b) assistance in regional and cross-border cooperation; c) regional development; d) development of human resources; and e) rural development and agriculture. Before it acquires the status of a candidate, Serbia will have access only to the first two components, that is, transition and market reforms funding, although infrastructure expenditure is allowed under Component 1. For this reason, for the time being, it is unlikely that the EU structural funds could help Serbia's large transport infrastructure needs.

RAILWAYS

148. Subsidies to the state railway company Zeleznice Srbije (ŽS) [75] cost the central government budget about RSD11.12 billion in 2008. Even this level is insufficient to cover the operating losses of the railway or to permit an adequate level of maintenance of the railway infrastructure or rolling stock. While freight traffic has been growing, passenger traffic has been declining, and the financial performance of both has continued to suffer. The Government is nevertheless planning to make a major investment in high speed rail in Corridor X. This chapter proposes a more modest and cost-effective set of initiatives

149. Overall rail traffic volumes have risen steadily since the start of the decade, after following precipitously in the late 1990s. As shown in Figure 31, the rise in traffic volume has been uneven, with a steady rise in freight traffic over the 2000-2007 period accompanying a decline in passenger traffic over the same period. In the first half of 2008, due to the unfolding economic crises, freight traffic decreased by 5.2 percent[76], driven by a 24 percent reduction in domestic freight traffic and static international traffic. Passenger traffic continued to decline (by 10.4 percent in terms of total numbers and by 6.1 percent in terms of passenger km.) The limited quantity and poor quality of passenger rolling stock, combined with unreliable and low quality services and increasingly competitive road transport explains much of the decline in passenger traffic. The average commercial speed in 2007 was on 43.3 km/hour.

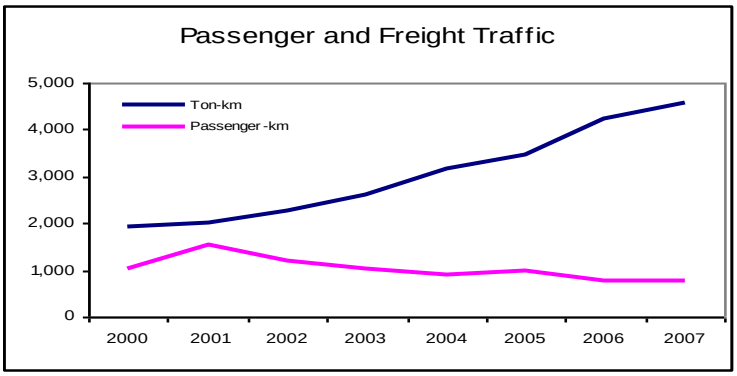

Figure 31: Trends in Passengers and Freight Carried by ZS
(mns of passengers/mn tons of freight)

150. Productivity despite improvements remains poor by EU standards. As shown in Figure 32, ZS has substantially reduced staffing levels over the past six years (by a

[75] Under legislation governing the sector, public rail infrastructure (i.e., trackage) is owned by the Republic and is open to all licensed rail transporters. ZS is, at present, the exclusive manager of Serbia's rail infrastructure as well as the primary provider of both passenger and freight services.

[76] Compared to the same period in 2007.

total of 12,000). In combination with the growth in freight, the ratio of traffic units, (tons of freight, numbers of passengers) to staff has steadily improved. But as shown in Table 18, the ratio remains considerably higher than regional averages. Through its redundancy plan, ŽS had been planning to reduce its staff to 19,400 by end-2007, in line with its obligations under a loan agreement with the EBRD, but has failed to achieve this target in part for lack of funding for severance payments.[77]

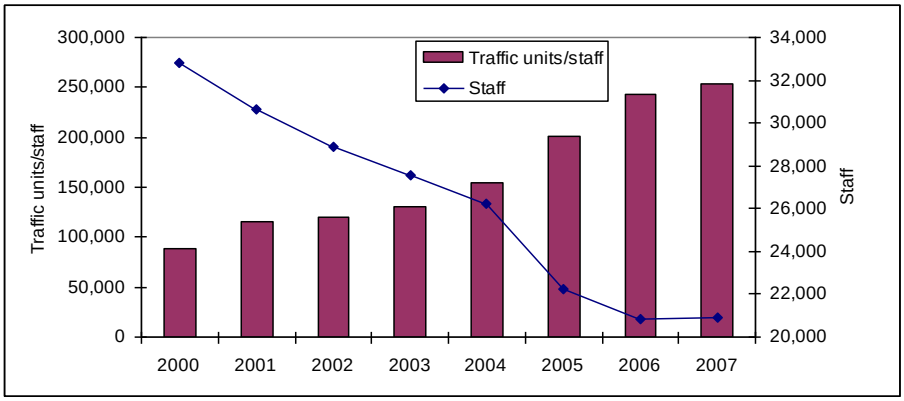

Figure 32: Trends in Traffic Units per Staff and Staff Levels

Source: ŽS.

151. The railway also ranks poorly in terms of equipment productivity (tons of freight per wagon per day), reflecting the age and poor quality of the rolling stock and traction units, and in terms of network usage. As shown in Table 18, Serbia's passenger traffic density (passenger-kilometers per kilometer of line) is among the lowest in the region, outranking only those of Bosnia and Albania.

[77] According to the Business Plan 2008, the severance payment for 1,800 employees is €13.2 million; for the existing 765 staff in excess of the target, a pro-rata calculation suggests that this figure would cost an estimated €5.6 million. This highlights the point that any reduction in wage costs will require a significant one-off budgetary effort.

Table 18: International Indicators of Railway Productivity, 2007

Country	Freight Wagon Productivity (ton km/wagons/day)	Locomotive Productivity (ton km/locomotive/day)	Staff Productivity (Traffic Units/Staff)	Freight Traffic Density (Ton km per km of line)	Passenger Traffic Density (Passenger km per km of line)
France	3,498	80,316	758,302	1,439	2,825
Germany	2,608	60,405	717,545	2,685	2,205
EU	2,276	39,350	683,260	1,806	1,806
Hungary	1,895	11,542	227,783	1,044	783
Poland	1,612	33,722	491,034	2,243	880
Croatia	1,444	40,130	383,989	1,313	592
Czech Republic	1,417	23,821	432,001	1,788	722
Serbia	**1,389**	**37,669**	**253,967**	**1,112**	**200**
Bosnia-Herzegovina	1,197	21,381	196,122	1,260	53
Bulgaria	1,034	21,454	409,148	1,171	602
Romania	692	18,820	315,820	1,265	697
Albania	205	2,547	52,235	125	121

Source: UIC.

152. Maintenance expenditure has been inadequate in the past, which coupled with the age of both the rolling stock and the infrastructure, has lead to a very poor quality of service. The existing railway infrastructure is in poor condition. There are about 3,256 km of railways used by ŽS, of which only 38 percent are electrified, and 8 percent are double-tracked.[78] The railway network is aging, with an average age of 38 years of age. Line speeds exceed does not exceed 60 km/hr on 52 percent of the network, while only 2.6 percent of the network has a line speed that exceeds 100 km/hr. Insufficient investments into maintenance has caused the instability and deformation of tracks, eroded tracks, rotten sleepers, and to preserve safety, temporary speed restrictions have been introduced, which is actually something of a misnomer, as limited resources mean that the restriction stays for a lengthy period of time. About 56 percent of the main lines last had a major overhaul more than thirty five years ago.

153. The rolling stock fleet is aged. The electric locomotive fleet amounted to a total of 144 locomotives in the 2007. But the active fleet is smaller than the notional inventory, with only about 60 percent of the total inventory of electric locomotives in operation. The current fleet of active freight wagons, which totals approximately 3,138 in working order, has an average operational age of 29 years of age, close to the end of their operational life. ŽS estimates that 66.4 percent of its rolling stock, 57.1 percent of passenger cars, and 49.7 percent of freight wagons are over 30 years old and it is clear that a considerable portion of this fleet will need to be retired from operational service in the next few years. In addition, the technical characteristics of the current fleet are inconsistent with current and projected market demands. A modernization plan, partly funded by an EBRD loan recently negotiated, includes the delivery of 38 self-propelled electric passenger cars.

[78] Total network length is 3,809 km, but this includes 334 km in Kosovo and Metohija, 39 km used only as factory sidings, and 180 km which are out of service.

154. ŽS has calculated required maintenance--assuming the average overhaul of tracks on wooden sleepers is 20 years and a track length of 3808 km--amounts to 190.5 km a year--while the annual average line overhaul over 2002-2006 was only 24.5 km a year, creating an annual average backlog of 166 km. In 2007, infrastructure expenditures, at RSD1.18 billion (US$16.4 million) was only 63.3 percent of what was planned, and in the case of maintenance for tracks and facilities on tracks, expenditures reached only 25 percent of planned levels. In the case of rolling stock, maintenance services reached 65.4 percent of planned levels in 2007. Current maintenance expenditures, ceteris paribus, will lead to increased deterioration of assets, with worsening service quality and increased risks of accidents.[79]

Table 19: Infrastructure and Rolling Stock Maintenance in 2006-2007
(RSD thousands, current prices)

	2006	2007 Planned	2007	2007 Actual as % of Planned
Infrastructure maintenance				
Maintenance services	361,566	1,210,460	505,939	41.8
Tracks and facilities on tracks	143,141	767,076	192,013	25.0
Substructure	36,030	342,091	121,601	35.5
Superstructure	107,111	424,985	70,412	16.6
Other	218,425	443,384	121,913	27.5
Material and spare parts	628,683	653,749	673,244	103.0
Total	990,249	1,864,209	1,179,183	63.3
Rolling stock maintenance				
Maintenance services	1,449,792	2,254,552	1,475,091	65.4
Traction cars	406,760	864,777	406,808	47.0
Towed cars	980,107	1,161,329	896,273	77.2
Other	33,131	207,591	75,942	36.6
Materials and spare parts	621,557	691,909	678,148	98.0
Total	2,071,349	2,946,461	2,153,239	73.1

Source: ŽS and Bank staff.

155. Despite some improvements, ŽS financial performance remains weak. The financial position of ŽS had deteriorated and reached unsustainable levels in 2000. The restructuring efforts and the recovery of freight traffic have led to a subsequent improvement, but ŽS commercial revenues remain insufficient to cover even labor costs. The company's operating losses are covered, in part, by Government subsidies, which now exceed its revenues from operations. The budget subsidy covers 54 percent of

[79] The number of accidents declined in 2007 from 33 to 30, with one train crash, 23 train derailments, four train collisions, one clash, among others, which resulted in 61 fatalities. The poor state of the infrastructure means that traffic speed restrictions are imposed on large segments of the network.

working costs and totaled SDN11.126 billion (1.02 percent of consolidated central government expenditure) in 2008. As shown in Figure 33, this level of subsidies (expressed as a percentage of GDP) is less than in neighboring countries (Bulgaria, Romania, and Croatia). In addition, ŽS incurs accounting losses in the form of uncompensated depreciation, debt servicing, and other non-operating costs. The working ratio, a key financial indicator, improved from 195 percent in 2005 to 179 percent in 2007, but remains unsatisfactory.[80] Cumulative financial losses totaled RSD93.7 billion in 2007.

156. One reason is that passenger tariffs are low. In 2007 the Government approved a price increase in passenger tariffs of about 20 percent, the first such rise since 2004. Tariff levels nevertheless remain considerably below those of neighboring countries. As shown in Table 20, in 2007, average revenue per passenger km, without adjusting for relative purchasing power, in Serbia was 9.3 percent lower than in Croatia and 37.6 percent lower than in Bulgaria. One of the factors affecting passenger revenue in ŽS are the number of passengers who are not paying for tickets and the low level of fines and limited fine revenue collected (see Box 8), as well as the large number of individuals possessing discount cards. Information dating from July 2008 reveals that: (i) 15 percent of passengers have a P-2 discount card, which allows free travel to railways workers from home to work; and (ii) 10 percent of passengers have a P-4 card, issued to railway staff, retired persons and members of their families, who have unlimited travel at 75 to 90 percent discount.

157. Railway passenger tariffs also remain lower than alternative transport modes, in particular buses. ŽS calculates that bus transport prices, when compared to regular second class train prices are about 70 to 150 percent higher, although the quality of bus service is considerably higher. This suggests that, within the limits imposed by differences in reliability and quality, passenger tariffs could be raised without a significant loss in passenger volumes. (Direct comparisons between different freight tariffs is not possible, as these: (i) vary by type of commodity, wagon, and service; (ii) discounts are offered to clients; and (iii) the average distance of transportation of the structure and volumes of commodities vary from one railway to another.)

[80] This is defined as the operating cost before depreciation and provisioning divided by the operating revenue, excluding budget support.

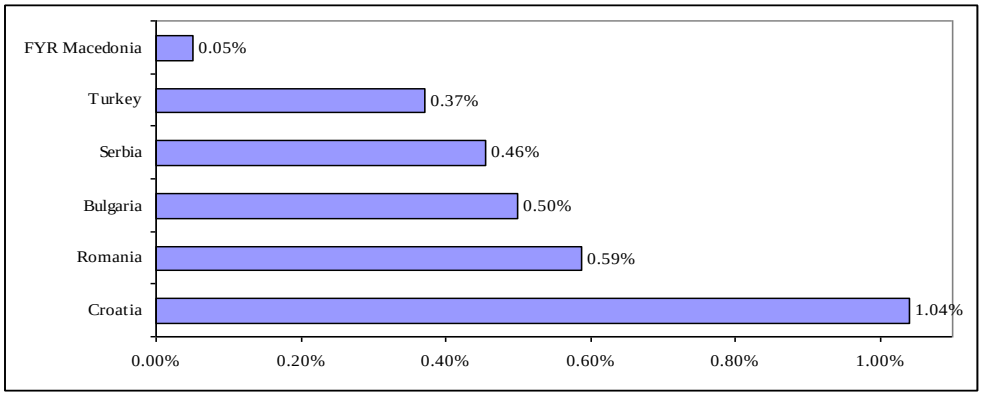

Figure 33: International Comparison of Budget Support to Railways
(% of GDP, 2007)

Note: Including debt service paid by the Ministry of Finance raises the total for Croatia to 1.5 percent of GDP.
Source: Bank staff estimates.

Table 20: International Comparison of Average Revenue per Traffic Unit

Country	Year	Passenger traffic				Freight traffic			
		Traffic Units (million PKM)	Operating revenue (million local currency)	Average revenue / Traffic Unit		Traffic Units (million NTM)	Operating revenue (million local currency)	Average revenue / Traffic Unit	
				Local currency	Euro cent			Local currency	Euro cent
Bulgaria	2005	2,389	141	0.06	3.02	5,163	269	0.05	2.66
	2006	2,422	165	0.07	3.48	5,225	274	0.05	2.68
	2007	2,423	187	0.08	3.95	4,711	302	0.06	3.28
Romania	2005	7,960	1,620	0.20	5.62	13,906	1,879	0.14	3.73
	2006	8,049	2,478	0.31	8.67	11,900	1,812	0.15	4.29
	2007	7,417	2,164	0.29	8.27	10,200	1,860	0.18	5.17
Macedonia	2005	94	100	1.06	1.74	530	1,278	2.41	3.93
	2006	105	108	1.03	1.68	614	1,459	2.38	3.88
	2007	109	115	1.06	1.72	778	1,863	2.39	3.91
Croatia	2005	1,266	310	0.25	3.31	2,835	641	0.23	3.06
	2006	1,362	336	0.25	3.37	3,305	724	0.22	2.99
	2007	1,611	371	0.23	3.14	3,870	764	0.20	2.69
Serbia	2005	910	1,563	1.72	2.02	3,565	7,150	2.01	2.35
	2006	837	1,626	1.94	2.45	4,232	8,817	2.08	2.63
	2007	762	1,716	2.25	2.87	4,552	8,851	1.94	2.48

Source: Bank staff and ŽS.

Box 8: Cracking Down on Scofflaws

Train operators are responsible for protecting their own revenue and as such must devise a revenue protection strategy. On long-distance journeys it is usually possible for on board train staff to examine passenger tickets. However, on urban and suburban routes, stops are frequent and trains are busy, so it is not always possible to check every passenger's ticket between stations. Visual inspection of tickets by staff at stations before allowing access to platforms is labor intensive and can be inconvenient to passengers. The operation of an effective penalty fares scheme is one means by which train operators can tackle ticketless passengers, offering a visible deterrent to all passengers and punishing violators.

The penalty fare scheme of Serbian Railways foresees that passengers who avoid ticket control or do not have the ticket and fail to report to the conductor shall pay the ticket charge and a fine equal to RSD 250 (US$3.4), while passengers who report to conductor on not having the ticket shall pay the ticket charge and RSD 120 (US$1.6). In addition, for the suburban train, Beovoz, the fine is double the normal price. A practice used in a number of railways is to charge a specific penalty or twice the full fare as a penalty, whichever is the greater. In the case of Serbia, as the penalty is set at an absolute level, the more expensive the ticket, the cheaper it is to pay a fine.

According to Serbian Railways, revenue generated from fines in 2005, 2006, 2007, and the first three quarters of 2008 amount to RSD 108,065 (US$ 1,483), which is a very low figure. The important point is that the value of penalty fares schemes is not solely in the revenue obtained from the total penalty fares charged, but also in the deterrent effect and resulting increase in normal ticket revenue. Levels of fare evasion are estimated by Serbian Railways to be between 1 to 10 percent. Given that 130 ticket offices have been closed, this increases the number of passengers who are obliged to pay on board and may have raised the number of passengers traveling without tickets. A recent initiative, No Passengers Without Fare, has raised public awareness of the issue, but has not been matched by an increase in the penalty fare or controls. It appears likely that a revision to the penalty fare scheme, a public awareness campaign and increased controls, could help reduce non-payment and generate revenue.

DIRECTIONS FOR REFORM

158. Both freight and passenger services will continue to play a key role in Serbia's transport system. Several measures are required to ensure that it does so at a cost affordable to the Government.

159. **Reduce staffing levels.** To reduce operating unnecessary costs, ŽS should proceed with its target for reducing staff to no more than 19,400 and should ensure that there is adequate funding for severance payments. Once a network rationalization program is developed and implemented (see below) staffing levels will need to be reviewed again.

160. **Abandon underused track.** ŽS will also need to define and implement a network rationalization program. This will enable the company to reduce its excess railway track and concentrate on the segments of the network where rail performs the most useful transport role. This rationalization is expected to bring its rail traffic density, currently at 1,311,630/TU/1km of network, some way towards levels in the EU countries which average (3,600,000/TU/ 1 km of network). This will also will reduce the maintenance backlog and costs considerably.

161. **Rationalize passenger services and subsidies** ŽS will have to reduce non-profitable passenger services, as defined in the Plan of Activities Regarding Reduction of Non-Profitable Services. The scope of these cuts will depend upon the Government's desire to continue to provide subsidies for socially necessary services. The legal framework for passenger subsidies is specified in the new Law on Railways, which became effective on March 1 2005, and which is consistent with the structure envisaged with the relevant European Commission Directives (Dir. 1991/440, 2001/12/13/14.) The Law created a legal framework for the introduction of a public service obligation (PSO). This would require the Government (a term which could include local governments) to provide explicit subsidies to ZS to cover losses on passenger services undertaken in the public interest. Production of the methodology for setting transport prices was finalized by a consulting firm in 2008, but the Government still needs to adopt regulations governing the content of PSO contracts, the method of calculating the amount of the PSO and the procedures for paying it.[81] Delays to date mean that the introduction of a new contractual relationship between the Government and ŽS has not taken place, and that subsidies are not tied to the performance of specific services.

[81] On the basis of the methodology as well as the projections set out in the Strategic Plan for 2006-2010, it was estimated that RSD3 billion (US$42 million) would be needed to finance the PSO for the second half of 2008, funded through local and central governments. If these projections are accurate, on annual basis the PSO would be about RSD 6 billion, considerably below the current subsidy, which exceeds RSD 10 billion.

Box 9: The New EBRD Loan: Reform Conditions

In May of this year (2009), the Government signed a €100 loan agreement with EBRD to finance the purchase self-propelled suburban passenger cars. As a condition of effectiveness, the loan requires the Ministry of Infrastructure to submit the methodology for calculating the amount of the Government's public service obligation. This is being prepared by consultants and is expected to be completed by end May, 2009. The Ministry of Infrastructure is then required to issue a by-law establishing the PSO by December 31 2010.

The loan further requires: (1) the adoption of separate business plans for each of ZS's business units (by December 31 2010); (2) the adoption of cost accounting for each sub-unit of the railroad's passenger services--international, local, urban, sub-urban--(by December 31 2010); (3) the preparation by the Ministry of Infrastructure of a by-law introducing track access charges and the publication of network statement on ŽS website (by December 31 2010); and (4) an increase in the proportion of passenger service costs to be covered by tariff revenues to 30 percent (by 2013). If successfully implemented, these will support the proposed reforms in the financing of the railway sector.

162. The Transportation Institute (CIP) has analyzed the data on revenues and costs for each segment of the network, to calculate the viability of passenger services. This analysis has been updated to reflect the new accounting system introduced in ŽS. The Government should finalize process for prioritizing which loss making services to support through the PSO and analyzing whether socially necessary passenger services are most cost effectively provided by rail.

163. **Increase passenger tariffs.** At the same time, ZS should increase passenger tariffs on lines where subsidies are not justified for social reasons. As noted above, existing passenger tariff levels are low, by regional standards. ZS should also take steps, such as increasing penalty fares, to reduce evasion.

164. **Restructure debt.** ZS has little prospect of emerging as a financially self-sustaining company with its existing stock of debt. As of the end of 2008, ŽS had long-term debt and liabilities to international financial institutions of €199.2 million (excluding debt owed to the World Bank.) The Government is now servicing the debt on the railroad's behalf. ZS is nevertheless required to reimburse the Government for debt service paid on IFI loans contracted before 2000, except those from the World Bank. Article 23 of the Decree on the Establishment of the ŽS specified the need for a Financial Consolidation (i.e., debt restructuring) Program. A Financial Consolidation Plan was prepared by the Committee appointed by the then- Ministry of Capital Investments—now the Ministry of Infrastructure—and was submitted in July 2007 to the relevant ministry. It has not yet been adopted. Due to data constraints, it is not clear that ZS is, in fact, paying any of the debt service it owes to the Government. If it is, the cost to the budget of forgiving this obligation could be considerable. In any event, the Government should not do so prior to a confirmed reform plan for ZS has been agreed upon and until it is assured that that ZS is in a position to cover its operating costs and remaining financial

obligations in the future. Premature debt forgiveness could reduce management's incentive to make the necessary reforms.

165. **Reconsider design speed in Corridor X.** Despite the precarious physical and financial condition of the existing network, the Government plans to begin a major modernization and reconstruction of the Corridor X railways. The stated objective is to raise speeds in this corridor to 160 km/hr, which will require among other things, electrification and the construction of a second railway track on a number of sections.[82] The total value of the necessary investment is estimated at about €1.7 billion to €2 billion, for total track length 1,016 km.[83]

166. The Government and ŽS should review the technical specifications for Corridor X, and in particular, the need to raise design speeds to 160 km/h. Project costs could be considerably reduced if speeds were raised to only 120 km/hr. This would be more in line with the composition and level of current and projected traffic. Freight traffic constitutes over 80 percent of total traffic and revenue, traffic which does not need high speeds. It would also be consistent with the design speed of the existing infrastructure. All electrical-technical plants on all lines on Corridor X, with the exception of the Niš-Dimitrovgrad line allow for speeds of 120 km/hr and 55.4 percent of lines were designed with route elements for speeds of 120 km/hr. and would be considerably cheaper. According to ŽS estimates, total superstructure and substructure costs are estimated at €880,000 per track km for a speed of 120 km/hr, but rise sharply to €2.12 million per track km in the case of 160 km/hr.[84] Given the cost differential of upgrading infrastructure from 120 km/hr versus 160 km/hr and the important maintenance backlog on other part of the railway network which will require upgrading over the medium to long-term, alternative options should be considered.[85] An agreement has been signed with German Railways to prepare a master plan for the modernization of Corridor X. This could review alternative design speeds. This master plan will be used as the basis to access EU funds for future investments in the sector.

167. **Address alternative constraints on rail traffic flow.** Another option, which may even be preferable in the short to medium term and likely to have higher economic returns, would be to defer large scale investments in upgrading the rail

[82] The *National Road and Rail Infrastructure Development Plan for the Republic of Serbia for 2008-2012* sets out the road and rail infrastructure projects that are considered national priority objectives.

[83] The Government's Action Plan 2009 for the Construction of Rail Corridor X was presented on 30/01/2009. It calls for work to start on three rail sections for a total cost of Euro 136.3 million. All three sections are to be financed by EIB credits in the amount of € 80 million, with the remainder to be financed from domestic resources.

[84] A comparison with the costs quoted by a railway company operating in the region suggests that these unit costs are on the high side, and may be applicable only to those parts of the infrastructure which are in the poorest condition. These alternative costs for scheduling a railway line overhaul for 1 km of track include €210,000 for materials, which is half of the cost quoted by ŽS, and an additional €110,000 of labor costs.

[85] In this regard, the argument echoes that in the World Bank, "Options for the Development of the Road and Rail Infrastructure on Corridor X", August 2008.

infrastructure on Corridor X, and focus instead on making only those investment necessary to address current speed restrictions and reduce the physical and institutional impediments at the border crossings. The required measures include: (i) relocation of the change of locomotives for freight trains and the related train technical checks (brake testing) from border crossing points to the nearest marshalling yard; (ii) implementation of information technology solutions to facilitate advance processing by railways and border agencies; (iii) promotion of joint processing of freight trains by Customs administrations at marshalling yards; (iv) improving of scheduling to build on the first three points. The improvement in trade facilitation at the border is likely to have a greater impact on the operating speed of transit traffic for modest cost, than significant investments in upgrading at this time. A program of investment to address all the speed restrictions, investing to return to the current design standard of 100 km/hr and 120 km/hr, and improving border crossing times, would appear to be the more logical choice in the circumstances.

168. **Postpone Works.** The time frame for the investments of Corridor X also need to be reviewed, given the financial costs of finalizing the restructuring process of ŽS, the investments on the Corridor X highway, and the Government's overall fiscal constraints. The Government should consider delaying the railway Corridor X rehabilitation until the road works in Corridor X are completed. In the interim an independent feasibility study should be commissioned to evaluate costs and benefits of all the proposed improvement options.

Box 10: Inland Waterways

Given its geographical position, Serbia has the potential for intensive river transportation as well as its canal network. The Serbian waterways network comprises approximately 1,600 km and includes, among others: (i) the Danube river over a total length of 588 km; (ii) the Sava river, which joins the Danube at Belgrade is currently restricted in use, but normally provides some 207 kilometers of navigable waterway leading into Bosnia and Herzegovina, Croatia and Slovenia; and (iii) the Tisa, which contributes 164 kilometers of navigable waterway leading to the Hungarian border. During the 1990s, inland waterway transport fell into poor condition due to a number of factors. Navigation is also hindered at several locations due to unexploded ordnance, the poor state of navigation locks, the state of existing ports, among other factors. While waterborne traffic increased in EU countries by 12 percent during 1970-1998, river transport in Serbia decreased in 1990-98 by 40 percent. Regarding annual transport volume and capacity, the most important ports are Belgrade, Pančevo, Smederevo and Prahovo. Most of the ports are connected with main railway lines and roads or are very close, which has strategic and logistic importance. Only ports Belgrade and Pančevo have container terminals, although the container transport volume is very low.

Inland waterways are an important transport mode in Serbia. They are the second most widely used form of freight transport after railroads. In order to help define the government's strategy in the sector, a Master Plan and Feasibility Study for Inland Waterway Transport for Serbia was prepared in 2005, with the aim of presenting the current situation and preparing feasibility studies for: (i) restoring unhindered navigation; (ii) rehabilitation the Serbian waterway transport network; and (iii) preparing a port development plan. The Master Plan makes an assessment of priority projects and provides a cost estimate for proposed river improvement works to solve bottlenecks. Initial construction costs for these improvements have been estimated at €203 million for the Danube, €58 million for the Sava, and €20 million for the Tisa.

The Directorate for Inland Waterways, PLOVPUT, is responsible for public works in relation to maintaining navigability, marking the waterways, developing and maintaining river information systems, and developing international and interstate waterways. Central government allocations to PLOVPUT are small, at about US$3 million in 2007-2008. The budget allocation for PLOVPUT in 2009, at RSD 205.6 million (US$2.8 million) remains inadequate to finance needed rehabilitation works. In addition, PLOVPUT has a little over US$400,000 of own revenues, but the total volume of funds allocated means that larger investments need to be financed by international financial institutions. Serbia's transport strategy recognizes the importance of inland waterways as a transport mode, while acknowledging that the infrastructure is inadequate. However, budgetary allocations are heavily focused on the road network and railways and have not provided the necessary funding for upgrading infrastructure.

SUMMING UP

169. The economic crisis will force Serbia to cut expenditures. The downward turn in economy and the dwindling of international credit would require the Government to reduce spending even if deficits were macroeconomically sustainable. And they are not. In the short term, the Government's best option is to pursue the measures specified in its agreement with the IMF: across-the-board cuts in the major economic categories of spending, particularly wages and capital works. Cuts in pensions would also be desirable if they were politically feasible. But these are not long term solutions. Over time, they would lead to a continuing deterioration of services. They do not address structural sources of inefficiency. The Government therefore needs to start on more fundamental reforms, even if the payoff, in fiscal terms, is not immediate.

170. The proposals discussed in this report have different fiscal impacts over different time horizons and differing degrees of impact on the efficiency of public services. In some cases, such as changes in pension parameters, the timing and scale of fiscal impacts can be determined with some accuracy. In other cases (such as the introduction of new payment mechanisms for health care) it cannot. This final chapter of the report summarizes the report's recommendations, estimates their fiscal impacts where this is feasible, and suggests immediate steps to be taken in conjunction with the 2010 budget.

171. **Pensions.** In terms of overall fiscal impact, the most important reforms will be in pensions. Extending the nominal freeze in pension benefits through 2010 would yield savings equal to about 3.5 percent of consolidated central government expenditure. Subsequently reverting to inflation-only indexation until such time as the replacement rate is more in keeping with levels in EU countries; limiting early retirement costs by reducing the number of years a worker can retire early and reducing pension benefits for such workers regardless of their years of contribution; and raising the retirement age for women to match that of men will have significant long term impacts on the Government's pension obligations. Their short term impacts will be smaller. Because changes cannot be imposed retroactively, limits on early retirement and increases in the retirement age for women will only affect new retirees. The impact of indexing to inflation (as opposed to wages) will also appear in the longer term, as the nominal growth in wages outpaces the rate of inflation. (In the short term, real wages may, in fact, decline.)

Table 21: Summary of Measures and Fiscal Consequences

	Total Spending (RSD bn.)		Annual Saving*
	2007	2008	
Pensions	340.16	386.4	
• freeze nominal pension benefits thru 2010, then index to inflation			3.5%
• phase in minimum age and reductions for early retirement			--
• phase in increase in retirement age for women			--
Health	153.4	168.9	
• close/consolidate underused primary clinics			
• reduce staffing in primary clinics and hospitals			
• reexamine benefits package and use of high technology			
• phase in patient-based payment system for primary physicians			
• phase in DRG's for hospital care			1.0%
Education86	128.1	104.8	
• consolidate under-enrolled primary classes within individual schools			0.3%
• consolidate under-enrolled primary classes among different schools in the same municipality			1.0%
Social assistance	54.8	58.9	
• lower cap and shorten duration of maternity benefits			
• increase MOP and child allowance			(1.0%)
Agriculture	25.0	31.2	
• means-test area-based payment			0.9%
Economy	25.3	32.1	
• close, privatize mines			0.1%
• scale back soft/unrecoverable loans to social enterprises			0.3%
Roads	44.0	61.0	
• realistically budget phasing of Corridor X works			**
• reschedule and repay PEPS arrears			(0.6%)
• increase toll collection efficiency, raise fuel tax			0.8%
Railways	7.5	11.1	
• reduce staffing, abandon underused track, rationalize passenger service and subsidies			0.4%
• reduce design speeds on Corridor X			**
• postpone works in Corridor X			**
* as percent 2008 consolidated central government budget execution ** one-time savings or postponement of expenditure			

172. **Health and education.** Both the health and education sectors suffer from overstaffing and the inefficient use of material inputs. In the short term, efficiency gains can be achieved by administrative fiat. In the health sector, the HIF should close

[86] Figure for 2007 is sum of former Ministry of Education and Sport and current Ministry of Education.

underused primary clinics and reduce staffing in both primary clinics and hospitals. It should reexamine its benefits package and its use of high-technology. But it should also begin to address the overall incentives confronting primary care physicians and hospital directors. To institutionalize incentives for efficiency, it should abandon input-based budgeting and shift to capitation-based financing for primary care, and DRG-based financing for hospital care. This fiscal impact of introducing capitation based financing for primary care cannot be determined with any accuracy. A rough idea of the potential impact of introducing DRG's for hospital payments is provided by Hungary's experience, where the introduction of DRGs reduced spending on acute care by 14 percent. If Serbia were able to cut total hospital spending by a similar proportion, the savings would total about RSD12 billion or about one percent of consolidated central government spending.

173. In primary education, the Ministry of Education, acting through its regional offices, could institute the consolidation of under-enrolled primary classrooms within individual schools over the 2009 summer school break. The savings would be fairly modest: about 0.3 percent of consolidated government expenditure. At the same time, the MOE could initiate the closure of under-enrolled schools and the transfer of their students to other schools within a given municipality. To this end, the MOE could proceed with its proposed centrally-driven rationalization plan. Alternatively, it could enlist local governments in this effort, by shifting to an enrollment based payment system and giving municipalities greater leeway in deciding which schools to close and where students should be transferred. Closing schools is likely to have considerably more impact that consolidating classrooms within schools alone. On an annual basis, the impact is calculated to be about one percent of consolidated central government expenditure. Taken together, the two measures would reduce consolidated central government expenditure by about 1.3 percent per year.

174. **Social assistance.** In principle, there is a case for introducing means-testing into the Government's two most expensive social assistance programs: maternity and veterans benefits. If this succeeded in cutting the costs by half, it would save the equivalent of 1.2 percent of consolidated central government expenditure. But it is not clear that such a step would be worth the political cost—or that means testing would actually produce this result. A more modest proposal would be to lower the cap on maternity benefits and reduce its duration to no more than one year.

175. The Government should instead focus on *increasing* spending on programs that are already means tested: the MOP and the child allowance. The recession is likely to further reduce the incomes of the poor and add to their numbers. The Government should consider increasing level of MOP and child allowance benefits. And it should prepare to fund an increasing number of beneficiaries. This would not be particularly expensive. Doubling funding for both programs would represent an increase of only one percent in consolidated Government spending.

176. **Subsidies.** There are potential savings in subsidies to agriculture and enterprises. The principal agricultural subsidy (the area based payment) is now costing

the Government about 1.9 percent of consolidated spending per year. If means-testing reduced that by half, the savings would be equal to 0.9 percent of consolidated spending. Closing and or privatizing the remaining state owned mines would save about 0.15 percent of consolidated expenditure. Terminating subsidies to socially owned enterprises would save 0.3 percent.

177. From a fiscal standpoint, the more immediate issue is the cost of the Government's proposed program of soft loans to private firms and consumers. While the scale of the proposed investment in the FIAT/ZASTAVA venture has been reduced, it has been replaced by an increase in credit subsidies. This may be justified in light of the present economic crisis. But from a longer term perspective the Government should reconsider the level of subsidies that it intends to provide (in the form of equity, subsidized or unrecovered loans, and tax breaks) to attract future private investors. At this point the number is not large. But it could become large.

178. **Roads.** In the roads sector, the time required to complete land acquisition and other preconstruction activities on Corridor X is likely to reduce the level of Government contributions to this project in 2009 and 2010. Adjusting the timetable for road works in Corridor X (from scenario 3 to scenario 1) would reduce costs to the Government budget[87] by about 0.5 percent of consolidated government expenditure in 2009. This would, of course, merely shift these costs into future years. This could nevertheless be wise, given the Government's immediate fiscal constraints.

179. With respect to expenditures on road maintenance, there appear to be few immediate options for savings, beyond stretching out the timetable for addressing the existing maintenance backlog. The company also confronts the prospect of paying off a large stock of arrears, although the proposed commercial loan will allow these costs to be spread out over several years. The Government's plan to increase fuel taxes will help pay for some of this, as would improvements in toll administration. (Raising the fuel tax alone is expected to generate RSD1 billion, assuming PEPS continues to receive 20 percent of the revenues of the tax.) But estimates of even a minimal program of road maintenance and rehabilitation still imply a budget subsidy to PEPS for road maintenance equal to about 1.8 percent of consolidated central government expenditures.[88] Over longer term, institutional reforms in PEPS—better identification of maintenance and rehabilitation priorities, timely payment of contractors (which will reduce future bid prices) and wider use of performance contacts reduce the need for subsidies.

180. **Railways.** In the rail sector, immediate savings could be achieved by postponing major works in Corridor X. Postponing planned expenditures in 2009 by one year would save RSD4.4 billion. or 0.4 percent of consolidated expenditure.[89] Again, this

[87] Excluding costs financed by foreign loans.

[88] Of this about one-third would be required to pay the estimated debt service on PEPS' current stock of arrears.

[89] This figure refers to savings in the Government's own contribution and exclude expenditures that would be financed from foreign loans.

would delay, rather than eliminate these costs. Permanent savings could be achieved by reducing the proposed design speed of the proposed works from 160 km/hr to 120 km/hr. This would reduce the costs of the project by 60 percent, or RSD86 billion.

181. In terms of recurrent expenditures, there are potential savings in reducing railway subsidies. These are now equal to 0.8 percent of consolidated central government expenditure. How far subsidies can be reduced will depend, in part, on the impact of the proposed cost-cutting measures--further reducing staff, abandoning under-used track, terminating underused passenger services—and on the Government's willingness to raise tariffs. It will also depend on the costs upgrading what remains and the Government's interest in retaining certain passenger services for social reasons. Cutting subsidies in half, would reduce expenditures by 0.4 percent of consolidated central government expenditure.

182. In total, the immediate savings yielded by these proposals are fairly significant. Summing only the savings that can be roughly quantified yields a total equal to about eight percent of consolidated central government expenditure. The proposed increase in the MOP and child benefits, along with the start of debt service on PEPS arrears, would reduce that figure to 6.7 percent. Although the fiscal impact of structural reform will become more evident over the medium term, their most important impact will be on the efficiency of public service delivery. These reforms will stand Serbia in good stead even after economic growth resumes.


IBRD 34847
SERBIA
SELECTED CITIES AND TOWNS
OKRUG (DISTRICT) CAPITALS
POKRAJINE (PROVINCE) CAPITALS
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
OKRUG (DISTRICT) BOUNDARIES
POKRAJNE (PROVINCE) BOUNDARIES
INTERNATIONAL BOUNDARIES
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HUNGARY
ROMANIA
CROATIA
BOSNIA AND HERZEGOVINA
MONTENEGRO
ALBANIA
FYR MACEDONIA
BULGARIA
VOJVODINA
SERBIA
KOSOVO
BELGRADE
Novi Sad
Priština
Subotica
Kanjiža
Senta
Bajmok
Bačka Topola
Ada
Kikinda
Sombor
Apatin
Sivac
Kula
Bečej
Elemir
Temerin
Zrenjanin
Bačka Palanka
Šid
Fruska Gora
Indija
Ruma
Alibunar
Vršac
Pančevo
Bela Crkva
Sremska Mitrovica
Šabac
Zminjak
Prnjavor
Železnik
Kovin
Obrenovac
Smederevo
Požarevac
Golubac
Kladovo
Danube
Sava
Vlasic Planina
Loznica
Mladenovac
Homoljske Planina
Deli Jovan
Majdanpek
Petrovac
Velika Plana
Negotin
Ljubovija
Valjevo
Povlen
Maljen
Drina
Velika Morava
Žagubica
Beljanica
Bor
Gornji Milanovac
Kragujevac
Rogacica
Ravni Gaj
Jagodina (Svetozarevo)
Ćuprija
Zaječar
Užice
Požega
Čačak
Paraćin
Rtan
Zlatibor
Soko Banja
Juhor
Kraljevo
Zapadna Morava
Knjaževac
Zaglavak
Ivanjica
Cemerno
Kruševac
Aleksinac
Midzor (2168 m)
Ušce
Veliki Jastrebac
Javor
Zelgin
Prijepolje
Niš
Balkan Mts.
Sjenica
Golija
Raška
Prokuplje
Bela Palanka
Beloljin
Suva Planina
Pirot
Kopaonik
Novi Pazar
Radan
Južna Morava
Rogozna
Sitnica
Prepolak
Leskovac
Vlasotince
Kosovska Mitrovica
Vučitrn
Peć
Daravica (2656 m)
Beli Drim
Priboj
Surdulica
Vranje
Gnjilane
Bosilegrad
Orahovac
Bujanovac
Đakovica
Uroševac
Preševo
Ljuboten (2486 m)
Prizren
Sar Planina
To Kiskoros
To Szeged
To Arad
To Timisoara
To Vinkovci
To Bijeljina
To Carbunari
To Gura Vail
To Vidin
To Sarajevo
To Gorazde
To Podgorica
To Sofia
To Pernik
To Kumanovo
To Skopje
To Tetovo
To Kukes
SERBIA
19°E
20°E
21°E
22°E
46°N
45°N
44°N
43°N
0 25 50 75 Kilometers
0 25 50 Miles
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