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Fiscal Adjustments in Transition Economies: Social Transfers and the Efficiency of Public Spending

A Comparison with OECD Countries

Social security contributions and outlays in the economies of Central Europe do not differ much from those in the OECD countries, so experience in the OECD countries is relevant to them. The main problem: Loose eligibility criteria that allow too much pension money to go to early retirees.

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Summary findings

Despite a dramatic shift away from subsidies in the early years of transition, the countries of Central Europe still show signs of unsuccessful fiscal adjustment, insufficient deficit reduction, and loose spending policy.

High social transfers and low efficiency of government spending remain two challenges of fiscal adjustment and long-term sustainability of budgetary policy choices.

A cross-country regression analysis shows that the problems with high social-security outlays are largely the result of loose eligibility criteria (many pensions go to early retirees) under current state pay-as-you-go pension systems — and not so much to old populations or high replacement rates.

Fakin and de Crombrugghe suggest that transition economies should strive for a real social consensus on the reform of future pension rights. The transition to a funded pension system could be financed by a combination of:

• Government debt.

• Proceeds from privatization.

◦ Efficiency gains from lowering and/or restructuring government spending in favor of infrastructure, retraining, and market-oriented tertiary education.

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FISCAL ADJUSTMENTS IN TRANSITION ECONOMIES:
SOCIAL TRANSFERS AND EFFICIENCY OF PUBLIC SPENDING

Comparative analysis with OECD countries

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SUMMARY

Despite a dramatic shift away from subsidies in the early years of transition, the countries of

Central Europe still show signs of an unsuccessful fiscal adjustment, insufficient deficit

reduction and loose expenditure policy. Consequently, high social transfers and low efficiency of

government spending remain two main challenges of fiscal adjustments and long-term

sustainability of budgetary policy choices. The cross-country regression analysis shows that the

problems with high social security outlays are largely due to loose eligibility criteria (i.e. to a

large number of early retirees) under current state pay-as-you-go pension systems - and not so

much to old populations or high replacement rates. It is suggested that transition countries

should reach social consensus on the reform of future pension rights. The transition to a funded

pension system could be financed by a combination of : (i) government debt, (ii) privatisation

proceeds, (iii) efficiency gains from lowering and/or restructuring of government expenditure in

favour of infrastructure, retraining and market-oriented tertiary education.

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Contents

1. Introduction

Fiscal sector reform is an integral part of medium-term strategies for sustainable growth in the CEC's (i.e. Central European Countries). Governments in transition economies face a difficult task of working both on the quantity and the quality of fiscal adjustments. The quantity of fiscal adjustment corresponds to a need to contain short-term fiscal imbalances. The quality of fiscal adjustment requires the " structural " fiscal sector reform which will reduce the still overwhelming role of the state in the CEC's by reordering expenditure priorities and reorganising the tax system. The study focuses on the structural, market-oriented fiscal reform which can be guided by the following traditional principles of government action: Efficiency, Equity, Macroeconomic stability, taking into account the more specific constraints of feasibility and sustainability in transition countries.

This paper relies mainly on cross-country comparisons to assess budgetary priorities and burdens. Reforms should not necessarily imitate the fiscal structure found in the other parts of the world. Nevertheless, persistent differences should be justified by specific conditions or specific objectives of the CEC in the people's and taxpayers' interests.

1.1. Comparative budgetary structure : Some statistical facts

Some stylised facts of comparative budgetary structure (see Table 1a) are as follows :

(1) A very high but somewhat declining share of GDP is redistributed by the general government in a typical CEC.

(2) For the structure of government revenues (see Table 1a) three facts stand out:

■ The reliance on the indirect taxes (including domestic taxes on goods and services or turnover taxes & international trade taxes) was 'low', but is rising .

■ The share of social security contributions in government revenue is already higher than in the OECD and is expected to rise.

■ Reliance on personal income and property taxes is low, but reliance on profit taxes used to be very high and it declined sharply.

(3) Comparing the structure of expenditures (see Table 1b) reveals four key orientations:

■ CEC have reached high level of social security outlays , which amounted for 45% of total expenditure in 1992. In Asian and Latin American countries (with lower GDP per capita and low government spending), social expenditure is only 14% while some of them experience fast real GDP growth.

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Table 1a. Regional Breakdown of Economic Performance

Indicator	Regional Unweighed Averages			
	OECD 1992	Central Europe		Asia & Latin America 1992
		1988/89 without Slovenia	1992	
GDP per capita in current $	19489	n.a.	3379	2356 (without Singapore)
Government Expenditure in % of GDP	44.33	54.2	50.8	19.91
Government Revenue in % of GDP	42.6	50.7	47.6	19.77
Inflation Rate	8.14	n.a.	27.73	14.29 (without Argentina)
Unemployment Rate	8.50	0.0	11.90	4.67
Direct Taxes in % of Expenditure	33.65	24.78	20.52	30.56
Indirect Taxes in % of Expenditure	29.07	29.89	31.10	55.49
Social Security Contributions in % of Expenditure	22.99	24.48	33.47	8.63
Borrowing and others in % of Expenditure	14.29	20.85	14.91	5.32

Source: Fakin & de Crombrugghe (1996), p.6.

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Table 1b. Regional Breakdown of Government Expenditure by Type

Type of Government Expenditure by Function in % of Total Expenditure	Regional Averages				Type of Government Expenditure by Economic Classification in % of Total Expenditure
	OECD	Central Europe		Asia & Latin America	
		1988/89 (*)	1992		
Social Security Outlays	34.54	21.16	43.49	13.78	Social Security Outlays
Subsidies	2.03	24.62	7.96	27.96	Subsidies
Economic Services	10.59		18.90	16.74	
Health	12.62		13.20	7.07	
Education	12.35		8.58	15.09	
Defence	2.54		1.73	11.72	
	13.61	8.08	13.33(*)	21.94	Wages
	6.64	5.62	4.15	17.52	Investment
General Public Services & Other	25.33		6.14	7.64	
	43.18	40.52	31.07	18.8	Goods and Services & Other

Source: Fakin & de Crombrugghe (1996), p.7.

Note: (*) Data for Slovenia are non available.

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■Explicit subsidisation remains above the OECD average but has been reduced significantly. Under central planning, subsidies complemented taxes as instruments of the plan . Implicit subsidies (usually not reported) remain widespread. They take the form of tax reductions and in some cases privileged credits.

■CEC devote a higher share of their expenditure on health than on education. The converse applies in Asian and Latin American countries, while OECD countries give about the same share to each (12%). Given the potential contribution of education to growth and even to health, the priorities of the CEC's seem awkward.

■Government investment fell quite dramatically under the recent financial pressures on the budget . This might be seen as a missed opportunity for growth, especially in the field of infrastructural investment.[1]

To conclude, **the current situation in the CEC**, with increased transfers and government wages **may indicate** (especially with coalition governments) :

First, **unsuccessful fiscal adjustment with insufficient deficit reduction and loose expenditure policy**[2],

Second, **the preference for care over opportunities**[3].

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[1]See also de Crombrughe and Lipton (1994).
[2] Alesina and Perotti (1995).
[3]Opportunities dominate in Asia, where subsidies are actually lower than in Latin America and targeted towards business development rather than business protection (Rodrik, 1995). See also de Crombrugghe, (1994).

1.2. The questions

The dramatic change of macroeconomic policy environment after the beginning of transition in 1989 forced most of transition countries into budgetary retrenchment and structural adjustment. The analysis in section 1.1. appears to suggest that **social transfers and efficiency of government spending represent two main challenges for the long-term sustainability of budgetary and policy choices in transition economies.**

From the policy perspective the following questions are extremely important. Does « big » governments in the CEC spend efficiently taxpayers' money? If the social transfers are « too high », what are the structural determinants of social transfers (pensions)? How do the size of the government and the level of social transfers affect intergenerational equity (i.e. equality in current income)? If CEC are to initiate fiscal adjustment in the field of social spending, which pension reform strategy should they pursue? And last but not least, how to pay for the cost of the pension reform?

1.3. The outline

The paper is organised as follows. Section 2 briefly reviews the literature. Section 3 uses regression estimates to identify the main determinants of taxes and expenditure across countries. The focus is on the impact of the age structure of population and the retirement policy on social transfers across countries. In section 4 we discuss the results of non-parametric efficiency analysis, and possible avenues for budgetary reform and saving. Section 5 provides a policy

recommendation. It stipulates various ways of financing a transition to the multipillar pension system and its implications for the efficiency of public spending. Section 6 concludes. Sample and variable description are given in appendix.

2. A brief literature review

Although of extreme policy relevance in the periods of structural reforms, changes in the composition of a government's budget are usually omitted from standard macroeconomic analysis. A comprehensive theory of public expenditure is still missing; the existing literature is mainly empirical. Our paper draws from four strands of this literature. The first is the comparative analysis of patterns of government expenditure (and taxation). Heller and Diamond (1990) observed in developing countries a marked change in expenditure priorities away from fixed assets and capital transfers toward interest, subsidy and transfer payments. Burgess and Stern (1993) studied tax structure in developing and industrial economies to uncover patterns of taxation most suited to different types of countries. Studies of transition countries focus on the relation between budget balance and budget composition (Transition Report, 1994; Barbone and Marchetti, 1995; Barbone and Polackova, 1996; Dabrowski, 1995, Fakin and de Crombrugghe, 1996; Sachs, 1995; World Development Report, 1996). They all note a fast expansion in social welfare expenditure. A second source is the work on fiscal adjustments in OECD countries especially, the observation by Alesina and Perotti (1995) that countries which did not restructure the expenditure were less able to maintain fiscal equilibrium. Our third source is the literature on non-parametric efficiency analysis (Tulkens, 1993), more specifically the cost-efficiency

approach which was applied to the Belgian municipalities by Vanden Eeckaut, Tulkens and Jamar (1993). Fourth, the policy implications of our empirical analysis can be related to a vast policy-oriented literature[4] on: (i) the choice of a tax system (Musgrave & Musgrave, 1984; Newbery, 1993 & 1995), on the design of a social security system (Feldstein, 1974; Hombug, 1990; Breyer and Stroub, 1993; Averting the Old-Age Crisis, 1994; Gruner, 1995;), and on the growth-diminishing effect of distortionary taxes and growth-enhancing effect of productive government services (Barro, 1990 & 1991; Barro and Sala-i-Martin, 1995; Cashin, 1994; de Long and Summers, 1991; Sachs and Warner, 1996).

3. Structural determinants of social transfers

3.1. General environment

Social transfers have been identified as a major and growing item of total government expenditure in transition countries. Moreover they appear as a distinctive feature compared to the other countries. A first step in the analysis is to try to find the structural determinants of social spending as a part of the overall tax and expenditure policy of a broad sample of countries.

In Table 2, the main components of public revenue and expenditure are regressed on the key constraints identified in the literature: income per capita (at purchasing power parity) and the old-age dependency ratio (number of people younger than 65 years). Regional Dummies are added for Central Europe (Dummy 1), Latin America (Dummy 2) and Western Europe (Dummy 3). The base

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[4] Detailed discussion of this source would exceed the purpose of our study.

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year for cross-country regressions is, given the availability and comparability of statistical data, the year 1992.

The seemingly unrelated regression (SUR) method has been used. It exploits more efficiently the information contained in the residuals. The SUR estimation (Zellner, 1962) deals with the unobserved country specific determinants of expenditure across equations which may be the same. Indeed there is some correlation between the residuals for some countries across single equations. In addition, we effectively deal with shares of different categories of government spending in GDP. The following results are relevant to the social security transfers.

(1) **Income per capita is a significant determinant** of the share of social spending in GDP as of the shares of total, health and education expenditure in GDP. On the revenue side income per capita explains weakly the share of social security contributions in GDP. It has a significant positive effect on direct taxes an a negative one on indirect taxes.[5]

(2) **The age structure of population**, i.e. old-age dependency ratio (DDO is the ratio of working-age population and the old people), **has no significant effect** on (total and) social spending once the « European Effect » (i.e. the oldest populations in the sample) is taken into account. It still has a marginally significant effect on health expenditure.

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[5] The positive relation between income per capita and total spending (EXPGDP is total public expenditure in % of GDP) is especially significant when purchasing power parity adjusted GDP (GDPHS) is used rather than the current dollars (GDP$WB, see Table on p.33 in Fakin and de Crombrugghe, 1996). A positive relation can be explained by a high cost of a number of public goods and social provisions included in public spending. It is also difficult to tax poorer and rather informal economies. The estimated regression coefficients are higher with GDPHS than with GDP$WB (compare Table 2 with Table on p.33 in Fakin and de Crombrugghe, 1996). This is in line with the emparical observation that rich countries have a lower GDP in purchasing power parities than in current $, while the contrary is true for poor countries.

It is interesting to note, that another structural variable, the share of population living in cities turned out to be globally insignificant, while it was itself strongly correlated with GDP per capita and the Latin American dummy. In addition, the acceptance of inequality could have played a role. But the ex-post measures that we have (like the share of income in the richest decile), performed poorly in this broad sample, while showing some negative correlations with GDP per capita, the Western and Central European dummies and a positive correlation with Latin America.

(3) In addition to the income per capita effect there is an even **stronger « European Effect » in social spending and in social security contributions**[6]. The coefficients for the CEC Dummy are even larger than those for the European Union. It means that experiences and policy solutions from the OECD are of direct relevance for reforms in the CEC.

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[6] Speaking of regional effect, the positive correlation of subsidies of Latin America (Dummy 2) is noteworthy. Subsidies are relatively difficult to explain with structural variables. They are discretionary and despite some succes stories in Asia, their contribution to the economic performance remains uncertain.

Table 2. SUR Estimates for Taxes and Functional Expenditure (GDPHS)

	Const	DUMMY 1	DUMMY 2	DUMMY 3	*DDO*	GDPHS	R^2	F
SOCIAL	-0.31 (-0.6)	14.73 (5.29**)	1.47 (0.86)	7.69 (3.84**)	*-0.02 (-0.07)*	3.89 E-4 (1.93+)	71.6	16.2
DIRECT	-4.87 (-0.94)	5.56 (1.88+)	-1.03 (-0.56)	5.79 (2.76**)	*0.58 (1.83+)*	9.45 E-4 (4.35**)	58.1	8.89
TTAXGDP	13.70 (4.44**)	3.72 (2.04*)	-1.97 (-1.68)	3.98 (3.13**)	*-0.26 (-1.33)*	2.72 E-4 (-2.03*)	56.6	9.1
SOCGDP	3.66 (0.86)	15.96 (6.41**)	1.57 (1.00)	7.33 (4.04**)	*-0.31 (-1.21)*	6.16 E-4 (3.54**)	84.2	33.1
EXPGDP	17.28 (2.77**)	25.38 (6.80**)	-3.27 (-1.36)	17.37 (6.67**)	*-0.01 (-0.03)*	11.97 E-4 (4.44**)	87.1	47.2
SUBSIDY	-0.51 (-0.14)	2.53 (1.21)	3.20 (2.54*)	1.37 (0.92)	*0.33 (1.49)*	2.30 E-5 (0.15)	34.5	3.5
HEALTHGDP	3.95 (1.83+)	-0.10 (-0.08)	-0.28 (-0.36)	0.41 (0.48)	*-0.25 (-1.91+)*	3.76 E-4 (4.06**)	77.5	23.4
EDUGDP	2.39 (1.49)	1.17 (1.29)	-0.50 (-0.91)	1.01 (1.57)	*0.005 (0.05)*	1.77 E-4 (2.65*)	57.2	8.0

Legend:
highly significant ... ** < 0.01
significant ... * < 0.05
marginally significant ... + < 0.10
+ or - denotes the sign of estimated regression coefficient

Method of estimation: SUR i.e. seemingly unrelated regressions (Zellner, 1962).
See Appendix III for variable descriptions and rules of presentation.

Source: Fakin and de Crombrugghe (1996), p.9; see also pp.33-34.

3.2. Early retirement and the generosity of the pension system

Apart from the global significance of GDP per capita, the aggregate analysis identified a strong

« European Effect » for social transfers, total expenditure, and for social contributions. The CEC

have a low income per capita, but seem to follow West-European patterns in social transfers, rather

than take their place on the income line. This section tries to see whether this 'European specificity'

can be explained (see Table 3 below) in a 'narrow sample' of OECD and CEC.

Table 3. Social Transfers, Government Wages and Effective Dependency Ratios

	-	DDO	GLABOUR	SOCWAGE	UNEMPLOY	R^2 F Obs.	Missing/ Residuals
ADR	-	-0.25 (-4.45**)	-0.02 (-3.83**)	-	0.03 (4.80**)	60.3 10.1 24	None/ Slo. -0.2 Po. -0.2
ADR	-	-0.25 (-3.97**)	-0.02 (-3.57**)	-0.002 (-0.97)	0.03 (4.84**)	64.7 7.7 22	None/ Cz.R. +0.1 Po. -0.1
	GDP$WB (* 10E-4)	DDO	GLABOUR	SOCWAGE	TRANSFER	R^2 F Obs.	Missing/ Residuals
SOCEXP	-	-3.23 (-1.51)	-0.53 (-2.44*)	0.38 (5.16**)	-	62.6 10.0 22	None/ Cz.R.-10.8 Po. -8.0 Slo. +8.2
SOCGDP	-	-2.33 (-2.90**)	-	0.28 (8.53**)	-	78.4 36.8 23	None/ Cz.R. -5.2 Po. -4.0
WAGESEXP	-6.32 (-3.31**)	-	-	-	-0.25 (-3.55**)	61.7 15.3 22	Slo./ Hu.. -6.6 Cz.R. -8.3

Note: .

In the regression for WAGESEXP, GDPHS as well as DUMMY1 were significantly negative, the latter being accompanied with stronger income effect. ADR was marginally significant and positive. GINVGDP was significantly positive. Regressors GINVEXP, POPULATION and UNEMPLOY were nonsignificant.

Regressors DUMMY1, GDPHS, POPULATION, INEQUAL, UNEMPLOY, ADR, GINVGDP, GINVEXP were never significant in the regressions for SOCEXP and SOCGDP. In ADR regressions INEQUAL, INVGDP, SOCGDP were never significant. DUMMY1 was highly significant in combination with UNEMPLOY and GLABOUR, where GLABOUR turned out to be insignificant and R^2 was only 46.3.

See Appendix III for variable description and rules of presentation.

First, we try to explain the actual number of retirees, measured by the actual dependency ratio (ADR). Second, we examine the relation between shares of social expenditure in total public spending and in GDP (SOCEXP & SOCGDP) with demography and income policy choices.

The actual dependency (ADR) is largely explained by the demographic dependency ratio (DDO), as could be expected. The generosity of the benefits, measured by the wage replacement rate (SOCWAGE) seems however to have no effect on the actual number of retirees of the countries in the sample. Other variables nevertheless have a small but significant effect: the share of government employment in total employment (GLABOUR, negative effect) and the unemployment rate (UNEMPLOY, positive effect). This last variable indicates that early retirement is a way to deal with unemployment, but not to eliminate it. Job security in government reduces the cases of early retirement and may actually be a substitute for it in case of labour market problems. These observations point to the eligibility rules in the determination of the number of retirees.

Social expenditure as a share of government expenditure (SOCEXP) or as a share of GDP (SOCGDP) depends upon the number of retirees as expected, but also and very significantly upon the generosity of the benefits (SOCWAGE). Given the previous observation on the number of retirees, simultaneity problems in the econometric estimation can be expected to be minimal. Nevertheless we preferred to use the demographic dependency ratio DDO as a regressor here rather than the actual one (ADR).

Our observations have important retirement policy implications: The absence of relation between the number of retirees and the benefits they earn gives governments two independent policy instruments: eligibility rules and the generosity of the benefits. With a given social security budget it would thus be possible to raise pensions and tighten access, or the converse. It should also be possible to reduce the relatively large burden of social expenditure by raising the effective retirement age, keeping benefits constant.

The absence of relation between income per capita and retirement or retirement spending is noteworthy. In the larger sample of Table 2, there was a positive relation but also a strong European effect. In fact most of the European countries of the OECD and the Central Europe were above the income line. It is thus normal that the relation vanished in the smaller sample. The purpose of Table 3 is to explain the determinants of the European effect.

It is also interesting to point to two variables which tend to reduce government wage expenditure: income per capita and social transfers. The negative relation with income per capita was also present in the larger sample for the SUR regressions of the economic classification of expenditure (Fakin and de Crombrugghe, 1996, Table 2b). Rich countries seem to have found a way to master their wage expenditure despite usually higher wage levels and higher relative wage costs. For any given level of income per capita, the possibility to substitute government wage expenditure for social transfers seems to be present as it is for government employment as a substitute for early retirement.

To conclude generally on pensions and government employment: It seems that **national preferences dominate price and income effects**. Some governments just choose to retire more people, other to employ more of them.[7] Most governments choose retirement when they also face unemployment. The total cost of high unemployment and abundant retirement is usually high. But the generosity of the individual transfers (SOCWAGE) can vary, and so explains the cost of the policy, given the number of beneficiaries.[8] The number of beneficiaries is indeed controlled administratively by the design of the pension system - and is, assuming that pensions are usually attractive, the result of an independent policy choice. Specifically, **the problems with high social security outlays in the CEC are largely due to** the excessive number of early retirees, i.e. **to loose eligibility criteria for early retirement** under the current pensions systems.

3.3. Expenditure policy choices

Finally we note (see Table 4) that total government expenditure in the OECD and CEC's tends to be independent of income per capita - as is social expenditure - but to be related to specific policy choices. Unequality, measured by the share of income of the 10 percent richest, appears as a key determinant for low government spending in the sample.[9] Egalitarian countries tend to spend more as do countries with a large government payroll or with generous pension benefits

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[7] For the unemployment problem in Europe compared to the United States a similar idea is expressed in CEPR (1995).

[8] It is important to clarify that pensions are not too high in the sense that they would attract a lot of people into early retirement out of the labour force. 'The incentive effect' of pensions is in fact ruled out by the institutionalized eligibility criteria (under pay-as-you-go systems). Rather, in some countries pensions may be too high because, given the number of pensioners, the replacement rates (SOCWAGE) are too high.

[9] We could not find the same relation between social spending and unequality. Other elements of total spending play an egalitarian role, possibly government employment. Social spending depending on the way it is targeted and the way it raises the income of the insiders at the expense of the outsiders could also contribute to unequality. Further research would be needed.

(SOCWAGE). The high government expenditures are also linked with a low share of investment spending in the total (GINVEXP).

The low investment of high spenders may be a cause of a slower growth of income per capita in the long run. We have not been able to test this growth effect, especially given the limited significance of any recent growth figures for Central Europe. Nevertheless referring to the literature quoted in the section 2, it can be expected that low investment and large tax distortions are harmful for growth. Social security can be efficiency enhancing in the few cases where it raises the productivity of the labour force by selecting the most productive workers but its financing on a pay-as-you-go basis can have negative effects on investment and hence on growth.

Table 4. The Size of Public Redistribution

	GDPHS (* 10E-3)	INEQUAL	GLABOUR	GINVEXP	TTAXREV	SOCWAGE	R^2 F Obs.	Missing/ Residuals
EXPGDP	-	-0.99 (-2.26*)	0.54 (2.69*)	-0.91 (-2.62*)	-	0.12 (1.90+)	82.4 16.4 19	Cz.R./ Hu. -5.3

Note:
Regressors DUMMY1, DDO, ADRDDO, ADR were not significant. DEBTGDP was marginally significant in a regression with INEQUAL and GLABOUR.
See Appendix III for variable description and rules of presentation.
Source: Fakin and de Crombrugghe (1996), p.12.

The regression analysis of total and social expenditure thus shows that **the CEC's and many of the other European countries** are off the income line and **have opted for generous and/or easy accessible social transfers, large government payrolls and egalitarian distribution of income**. They face nevertheless high unemployment and low investment rates. We leave the

growth effects of these choices to the other branches of the literature. We now turn to another type of evaluation of these policy choices: the efficiency analysis. This is necessary to see whether the high spenders dominate the low spenders in a number of performance indicators related to government action and public welfare or should learn from countries which perform as well at a lower cost.

4. Efficiency of public spending

The medium-term strategy for the reform of the budget should include elements for monitoring the efficiency of government performance. Non-parametric efficiency analysis (Tulkens, 1993; Vanden Eeckaut, Tulkens, Jamar, 1993) is just an example of how the efficiency of government spending can be tested.[10] It compares a number of outputs (government services) with the input cost (represented by the aggregate government expenditure). The output indicators used in the illustrative test were: patents, university entry, infant mortality, life expectancy, old-age demographic dependency ratio and telephone mainlines. This list includes two important parameters of the pension system namely demographic dependency ratio and life expectancy. Each output indicator is a full variable and it is never weighted. A country is identified as inefficient only if there is another country which does better in all output indicators with no more government expenditure. A better performance than the lower spenders in any single indicator saves a country from inefficiency. The results are summarised in Table 5 below.

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[10] For the conceptual framework, and its application to the poverty problems and corresponding social expenditure policies see Cornia et.all. (1987), and Pleskovic & Sivitanides (1993).

Table 5. Summary of Cost-Inefficiency Cases

Inefficient	EXPGDP	Potential revisions of spending in the sample	Expenditure per capita in PPP	Potential revisions of spending in the sample	Expenditure in current $ per capita	Potential revisions of spending in the sample
Belgium	55.2	1	10024	1	-	-
Hungary	54.5	7	-	-	-	-
Italy	51.3	1	9095	1	10496	1
Poland	50.7	15	-	-	-	-
Slovenia	49.4	10	5335	2	-	-
Czech Republic	48.5	7	-	-	-	-
Greece	47.1	2	-	-	-	-
Portugal	39.3	1	-	-	-	-

Note: See Appendix II for details.
Source: Fakin and de Crombrugghe (1996), p.23; 22-25 for detailed description of results.

Judged by the sample of the OECD and CEC's, the striking result is that a transition economy can find between 7 and 15 countries[11] which spend a lower share of current GDP, and reach better results on all the performance indicators selected for the test. It may seem that the private sector in CEC can contribute to the satisfaction of our performance indicators. This doesn't invalidate our indicators at all. On the contrary, it reminds especially transition countries that the welfare objectives of the society require a government intervention only where there is a

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[11] The list of countries is given in appendix III.

demonstrated market failure. Furthermore, such an intervention doesn't always take the form of direct provision of services but also (above all) the form of regulation [12].

An additional output indicator, which has not been used to set up Table 5 is the degree of income inequality. If the income inequality is measured by the share of income of the 10 percent richest, the CEC's and Belgium would become efficient because all the countries whose government spends less have a more unequal income distribution. The share of income of the 40 percent poorest is probably a better indicator of the social role of the state. Using this indicator, it is still possible to find a few countries where the poor get more while the government spend less than in Belgium and the CEC's. This discussion of income redistribution also shows the price at which it comes: huge government expenditures and poor performances in all other indicators of public action. Newbery (1993 and 1995) also suggests that the reforming CEC's could tolerate some increase in income unequality in order to achieve a better overall performance.

It thus seems plausible that **CEC could lower their government expenditure and/or restructure in favour of infrastructure, retraining and market -oriented tertiary education.** Such fiscal adjustment can be expected to improve their medium-term performance in efficiency indicators, and to enhance long-run economic growth. The question is, how to shift government spending away from social transfers?

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[12] As for instance, an old-age income insurance under a funded pension system rather than state pensions on a pay-as-you-go basis.

5. Pension Reform

The CECs' governments are facing the problems of: (i) high social security outlays due to loose eligibility criteria under the current state pay-as-you go pension system, and (ii) given the structure of government expenditure, relatively low efficiency of public spending. To solve these problems the CECs should **reach social consensus on the reform of future pension rights**. In other words, they should introduce a multipillar pension system[13], which would recognise the diversity of national circumstances and operationalise the introduction of a country-specific combination of the two pure pension systems: capitalisation system and pay-as-you-go-system. It is important to note that: First, the introduction of a (partially) funded system creates an extra cost, as when a pay-as-you-go system was introduced the first generation of retirees was made strictly better-off. Second, if the transition from the present state pay-as-you-go system is successful, the pension reform would be growth enhancing. Third, selective generosity and in particular, eligibility criteria are much less of a financial problem under a funded pension system.[14] The crucial question therefore is: Which tax instruments are to be used to finance transition?

Based on the theory a transition from a pay-as-you-go to capitalisation system can be financed by different tax instruments: (1) lump-sum contributions (Breyer and Stroub, 1993) in the form of

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[13] Following the proposition made by International institutions (Averting the Old-Age-Crisis, 1994), the pension system would have three pillars: Pillar 1 is a mandatory, tax financed, public pay-as-you-go system; Pillar 2 is mandatory and fully funded pension system; and Pillar 3 is private owned and fully funded.

[14] We demonstrated (see Table 3) that one of the main factors of excessive social transfers is selective generosity. Pensions in the funded system are unequal because savings are unequal and not because of unequal expenditure. Furthermore, eligibility criteria are not such a problem under the funded system as the retirement date is a function of savings. To the contary, under the state pay-as-you-go system retirement date is uniformly legislated.

an uniform ceiling of maximal pensions, (2) consumption tax (Feldstein, 1994), (3) external or public government debt (Hombug, 1990), (4) state assets (International Institutions), and (5) inheritance (wealth) taxation or taxation of bequests (Gruner, 1995). There are however a few practical limitations which has to be taken into account. Further increases of indirect taxation (i.e. introduction of environmental taxes and/or increased sales taxes) would indeed improve the efficiency of the tax system and increase public income generating capacity[15], but might be detrimental to the intergenerational equity (i.e. equality in current income). Inheritance taxation doesn't seem to be a practically viable solution, as the share of wealth taxes in government revenues in most of developed countries account for less than 3% of GDP. Similarly, lump-sum contributions can not be practically implemented. We therefore propose that **CECs finance the pension reform by a combination of: (i) external or public government debt (ii) state assets canalised from privatisation programmes, and given the results of our analysis, (iii) efficiency gains[16] from lowering and restructuring of public spending,** and possibly, by further increases in sales taxes and introduction of environmental taxes.

6. Conclusions

In summary, the main findings of comparative analysis of patterns of government expenditure and taxation in CECs vs. OECD countries are as follows. First of all we found a strong « European Effect », which indicate that CEC are not so much different from OECD countries for social security contributions and outlays. Consequently, experiences and policy solutions

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[15] Measured as a share of revenues in GDP.
[16] Expenditure management is most likely growth-enhancing and increases the amount of fiscal revenue given the share of taxes in GDP.

from the OECD do matter for the CEC. Second, regression analysis demonstrate that the problems with social security spending is largely due to loose eligibility criteria for early retirement, i.e. to a large number of early retirees. Third, non-parametric efficiency analysis reveals « cost-inefficiency » of transition governments. It seems that CEC the could enhance their efficiency by lowering and restructuring their government expenditure. The reform of future pension rights would contribute to this end. Fourth, it is recommended to introduce a country-specific multipillar pension system . The transition from current pay-as-you-go to capitalisation system need to be financed by a combination of : (a) government debt, (b) state assets derived from privatisation, (c) efficiency gains from expenditure management.

7. Appendix

I. Regression Estimates

a) A NOTE ON THE REGRESSION TABLES 2,3,4.

The tables always contain the following information:

Equations are in rows. Independent variables (regressors) are on top of each column.

R^2 is the determination coefficient.

T-statistics are in parenthesis.

Significance levels are indicated as follows ** < 1%, * < 5%, +< 10%.

Symbols for variables with description are given in the table "List of Variables and Country Samples and Dummy Variables", below.

Single regressions were estimated for an alphabetically ordered sample of OECD and Transition countries.

Missing observations and residuals are explicitly named for transition countries only.

(Abbreviations: Cz.R. for Czech Republic, Hu. for Hungary, Po. for Poland, Slo. for Slovenia)

Residuals are given for transition countries when they exceed the one-standard-deviation band.

b) *Seemingly Unrelated Regressions* were estimated for an alphabetically ordered sample of OECD, Transition countries, Latin American and East Asian Countries.

II. Non-Parametric Efficiency Analysis

Table. Efficiency Analysis

Inefficient	EXPGDP	Degree	Comparator	EXPPP	Degree	EXP$	Degree
BELGIUM	55.2	95.8	NORWAY	10024	95.2	-	-
Hungary	54.5	64.2	Switzerland	-	-	-	-
		70.3	Spain	-	-	-	-
		72.8	United Kingdom	-	-	-	-
		81.5	Germany	-	-	-	-
		83.9	Austria	-	-	-	-
		89.0	France	-	-	-	-
		97.1	Norway	-	-	-	-
ITALY	51.3	89.1	AUSTRIA	9095	92.2	10496	97.4
Poland	50.7	50.1	Japan	-	-	-	-
		69.0	Switzerland	-	-	-	-
		71.8	USA	-	-	-	-
		72.2	Australia	-	-	-	-
		73.2	New Zealand	-	-	-	-
		75.5	Spain	-	-	-	-
		(77.5	Portugal)	-	-	-	-
		78.3	United Kingdom	-	-	-	-
		82.6	Ireland	-	-	-	-
		87.6	Germany	-	-	-	-
		90.1	Austria	-	-	-	-
		(92.9	Greece)	-	-	-	-
		94.5	Canada	-	-	-	-
		95.7	France	-	-	-	-
		(97.4	Slovenia)	-	-	-	-
SLOVENIA	49.4	51.4	JAPAN	5335	96.0	-	-
		70.9	Switzerland	-	-	-	-
		74.9	Australia	-	-	-	-
		75.1	New-Zealand	-	-	-	-
		80.4	United Kingdom	-	-	-	-
		84.8	IRELAND	-	94.8	-	-
		89.9	Germany	-	-	-	-
		92.5	Austria	-	-	-	-
		97.0	Canada	-	-	-	-
		98.2	France	-	-	-	-
Czech Republic	48.5	72.2	Switzerland	-	-	-	-
		75.1	USA	-	-	-	-
		79.0	Spain	-	-	-	-
		81.9	United Kingdom	-	-	-	-
		91.5	Germany	-	-	-	-
		94.2	Austria	-	-	-	-
		100.0	France	-	-	-	-
Greece	47.1	74.3	Switzerland	-	-	-	-
		97.0	Austria				
Portugal	39.3	87.1	Switzerland	-	-	-	-

Note:

EXPPP = EXP$/$PPP where EXP$ = (EXPGDP*GDP$WB)/100. and $PPP = GDP$WB/GDPPPWB

where: EXPPP ..... government expenditure per capita in 1992 purchasing power dollars, EXP$ ..... government expenditure per capita in 1992 US$, $PPP ..... the dollar price of one unit of PPP, PPP ..... purchasing power parity of 1 US$.

Source: Fakin and de Crombrugghe (1996), pp.30-31.

III. List of Variables and Country Samples with Dummy Variables

Table . List of Variables with Symbols

SYMBOL	VARIABLE
ADR	actual dependency ratio (RETIREES/EMPLOYED)
DDO	old age demographic dependency ratio (i.e. working age population (15-64)/old people (65 and 65+))
DIRECT	direct taxes in % of GDP (direct taxes = corporate taxes + individual taxes)
DIRTAX	direct taxes in % of taxes, fees and contributions (DIRECT/TAXES*100)
DUMMY 1	transition dummy
DUMMY 2	Latin-American dummy
DUMMY 3	European union & Norway dummy
EDUGDP	public expenditure on education in % of GDP
EMPLOYED	employees in thousands
EXPGDP	total public expenditure in % of GDP
EXP$	the 1992 US$ total government expenditure per capita (EXPGDP*GDP$WB/100)
EXPPP	the 1992 purchasing power parity dollar total government expenditure per capita (EXP$/$PPP)
GDPPPWB	GDP per capita in the 1992 purchasing power parity dollars
GDP$WB	GDP per capita in current international $
GDPHS	Heston-Summers gross domestic product in purchasing power parities per capita
GINVEXP	government investment in % of total public spending (GINVGDP/EXPGDP * 100)
GINVGDP	government investment in % of GDP
GLABOUR	government employment in % of total employment employees in public administration and defence, education services, medical and health services, and other in % of total employment
HEALTHEXP	health expenditure in % of total public spending
HEALTHGDP	health expenditure in % of GDP (HEALTHEXP*EXPGDP/100)
INDIRECT	indirect taxes in % of GDP (indirect taxes = domestic taxes on goods and services + international trade taxes +'other')
INEQUAL	inequality (percentage share of income or consumption in the highest 10% of income distribution)
INFANTM	infant mortality per 1000 of live births

continued

SYMBOL	VARIABLE
INFL	inflation rate (average) in %
INTAX	indirect taxes in % of taxes, fees and contributions (INDIRECT/TAXES*100)
LIFE	life expectancy at birth in years
LIQUID	liquidity (quasi money for 1992 divided by GDP in current prices for 1992)
PATENTS	total patent applications per 100.000 of population
POPULATION	total population in thousands
REVGDP	total public revenues in % of GDP
RETIREES	POPULATION-labour force (employed+unemployed) - young (age group of 0-14)
SOCEXP	social transfers in % of total public expenditure (SOCGDP/EXPGDP*100)
SOCGDP	social transfers in % of GDP
SOCIAL	social security contributions in % of GDP
SOCTAX	social security contributions in % of taxes, fees and contributions (SOCIAL/TAXES*100)
SOCWAGE	replacement rate or pension-wage rate (SOCGDP/WAGEGDP*100)
SUBSIDY	share of subsidies in % of GDP
TAXES	Taxes, fees and contributions in % of GDP (TAXES =indirect taxes + direct taxes + social security contributions + compulsory fees, fines and penalties)
TAXGDP	total tax receipts & social security contributions in % of GDP
TELEPHONES	telephone mainlines per 1000 of inhabitants
TERTIARY	university education rate (proportion of age-group concerned per thousand of age-group entering tertiary education)
TRANSFER	subsidies and current transfers in % of total expenditure and lending minus repayments
TTAX	turnover tax (taxes on goods and services) & tariffs in % of TAXES
TTAXGDP	turnover tax (& tariffs) in % of GDP (TTAX * TAXGDP /100)
TTAXREV	turnover tax (& tariffs) in % of total public revenues (TTAXGDP/REVGDP * 100)
UNEMPLOY	unemployment rate
WAGESEXP	share of wages in government expenditure
$PPP	the dollar price of one unit of purchasing power parities (GDP$WB/GDPPPWB)

Table. Country Samples and Dummy Variable

COUNTRY NAME	Sample	DUMMY 1	DUMMY 2	Dummy 3	COUNTRY NAME (cont.)	Sample (cont.)	DUMMY 1	DUMMY 2	DUMMY 3
Argentina			1		Japan	*			
Australia	*				Rep.Korea				
Austria	*			1	Malaysia				
Belgium	*			1	Mexico			1	
Brazil			1		Netherlands	*			1
Canada	*				New Zealand	*			
Chile			1		Norway	*			1
Columbia			1		Pakistan				
Costa Rica			1		Philippines				
Czech Rep.	*	1			Poland	*	1		
Denmark	*			1	Portugal	*			1
Finland	*			1	Singapore				
France	*			1	Spain	*			1
Germany	*			1	Slovenia	*	1		
Greece	*			1	Sweden	*			1
Hong Kong					Switzerland	*			
Hungary	*	1			Thailand				
India					Turkey	*			
Indonesia					U.K.	*			1
Ireland	*			1	U.S.A.	*			
Italy	*			1	Venezuela			1	
TOTAL					42	26	4	7	15

Legend:
* a country belongs to the small sample (used for single-regression estimates) with OECD countries and Transition economies
All countries belong to the large sample (used for seemingly unrelated regressions).

Legend for Regional Dummies:
DUMMY 1   Transition or Central European countries
DUMMY 2   Latin American countries
DUMMY 3   the European Union Countries & Norway

Note: The table indicates when a country dummy takes value 1, for all other countries the dummy has zero values.

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