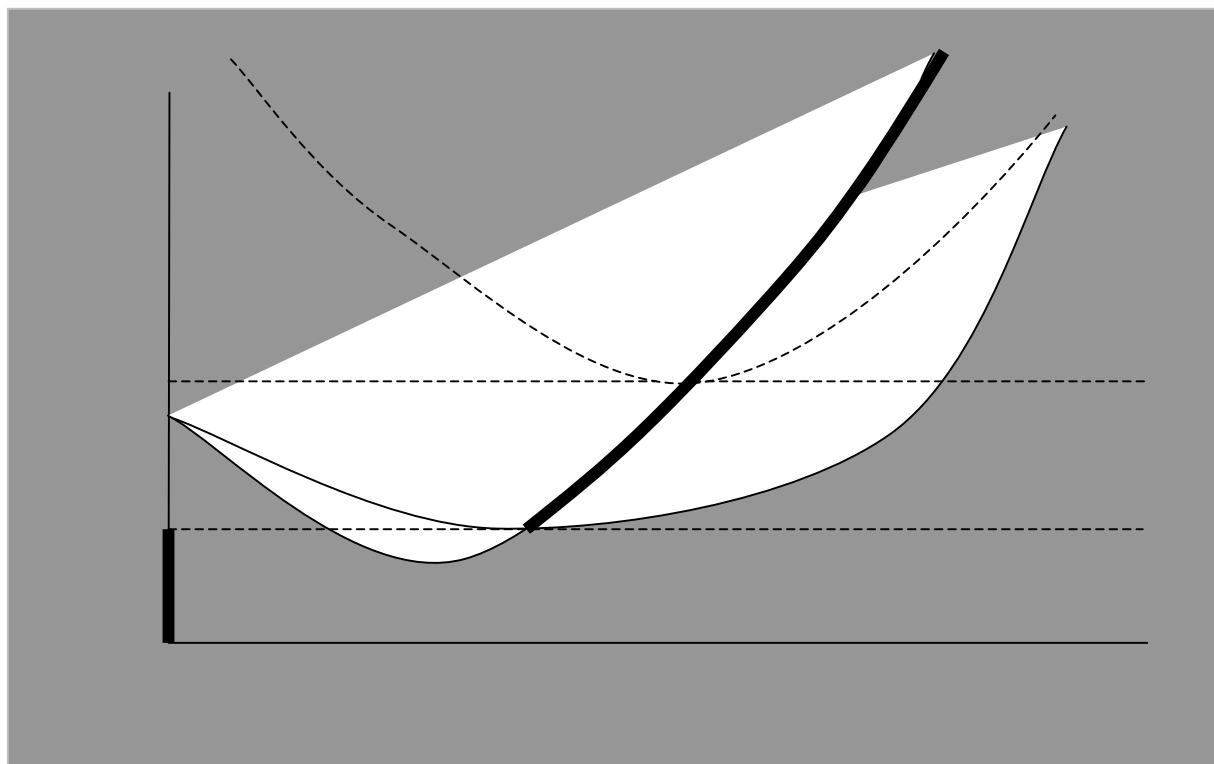
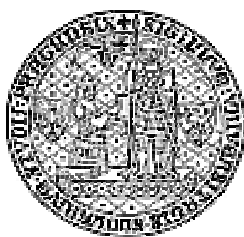


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Ondřej Schneider, Tomáš Jelínek: Distributive Impact of
Czech Social Security nad Tax Systems: Dynamics in Early
2000's



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DISTRIBUTIVE IMPACT OF CZECH SOCIAL SECURITY AND TAX SYSTEMS: DYNAMICS IN EARLY 2000's^x

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Abstract

In this paper, we analyze the Czech social and tax systems and their impact on income distribution. We use regular household surveys, organized and published by the Czech Statistical Office (CSO), for years 1999-2002. This longer time span allows us to identify some trends in the Czech social security system and their impact on well-being of various income groups. We find that while the total cost of the Czech social security system were not escalating in the period of 1999-2002, the illness benefit – already the largest spending program – rose by enormous 72% in these four years. This largesse failed, however, to improve income of the poorest households as the benefit is very inefficient in increasing income of the poorest households. We also find that spending on more focused programs (social supplement and parental allowance) rose the least. Last but not least, we analyzed the impact of tax deductions on the income distribution in the Czech Republic. These deductions represent a massive transfer, comparable to all social benefits combined. Our analysis shows, that the impact of tax deductions on income of the poorest decile fell significantly over the period of 1999-2002.

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Introduction

In this paper we continue our research into the Czech social and tax systems and their impact on income distribution. An introductory study on this subject was published in 2001 in which we examined in detail the social and tax systems and their impact on poverty in the Czech Republic.¹ In that paper we focused on a single year 1999 as we did not have a longer series of data. In this paper we use regular household surveys, organized and published by the Czech Statistical Office (CSO), for years 1999-2002. This longer time span allows us to identify some trends in the Czech social security system and their impact on well-being of various income groups. Namely, our goal is to show the impact of social benefits and income tax deductible allowances on income distribution in the Czech Republic and cost of these programs.²

As we noted in the 2001 paper, “targeting of majority of social programs [in 1999] is quite good. More than one fourth of all goes to households in the lowest income decile. Three fourth of all expenses goes to households in the lower half of income spectrum.”

In this paper, we find that while the total cost of the Czech social security system were not escalating in the period of 1999-2002, the illness benefit – already the largest spending program – rose by enormous 72% in these four years, as the benefit was made more generous in 2000. This largesse, costing the state budget as much as CZK 28bn in 2002, failed, however, to improve income of the poorest households. We also find that spending on more focused programs (social supplement and parental allowance) rose the least while the worst focused programs (unemployment and illness benefits) rose faster (significantly faster in the case of illness benefits).

Last but not least, we analyzed the impact of tax deductions on the income distribution in the Czech Republic. These deductions represent a massive transfer, comparable to all social benefits combined. Tax deductions, due to the Czech system whereby deductions were made from the tax base, not the tax due, were less effective in redistributing to poor households. Our analysis moreover shows, that the impact of tax deductions on income of the poorest decile fell significantly over the period of 1999-2002.

The paper is organized as follows: in the first section, we briefly describe the Czech social security system and its cost in the period 1999-2002. In the second chapter, we look at the effects of the system on the income of typified Czech households. In the third chapter we turn to the microeconomic data and discuss merits of the household survey data and their developments in the analyzed period. Fourth chapter adds tax deductions to the discussion. Fifth chapter presents the analysis of the distributive impact of various social benefits on Czech households. The sixth chapter presents a discussion of budgetary cost of these programs and the following chapter attempts to measure efficiency of various programs and their developments in the period of 1999-2002. We close the paper by brief conclusions and tentative policy recommendations.

1. Social Security System in the Czech Republic

The new social system was created in the early 1990's as a social safety net for everyone in need. When analyzing social security we concentrate on following social

¹ See Czech Journal of Economics and Finance, 12/2001.

² Pension system analysis could be found e.g. in (Schneider, 2001) or (Schneider, 2003).

benefits: child allowance, social supplement, parental allowances, other social benefits, unemployment benefits and illness benefit as they are included in the household budget survey.³ Hereby analyzed benefits imply state expenditures of more than CZK 55bn in 1999 rising to almost CZK 75bn in 2002. As a share in GDP it represented 3,0% in 1999 rising eventually to 3,3% in 2002. The first four items are formally part of social support system, while unemployment benefit and illness benefit are part of social security system. The social support system has the direct goal to increase income of poorest groups in society and it is naturally subject of our concern. The social security system plays double role: on one side it imitates insurance, when higher contributions means higher benefits, on the other side computation of benefits is so much distorted that “social insurance” is more another tool for social redistribution than some type of insurance and we thus include it in our analysis.⁴

The state social support, created in 1995, consists of nine different benefits, three of them means-tested, five untested and one combined (see below). The benefits might be separated into two main groups: those supporting families (child allowances, parental allowances, social allowance for childcare) and those aimed at poor families (social supplement, various housing benefits). Besides, there are two untested benefits, as to illustrate the cradle-to-grave approach of the Czech social security system: birth and funeral benefits. From the fiscal point of view, child allowances were easily the biggest scheme, with annual costs around CZK 13bn, followed by the parental allowances (CZK 8bn) and social supplement (approx. CZK 6bn). The remaining schemes are marginal in fiscal terms, but perhaps substantial in social terms.

The whole construction of the social support allowances is based on the legal minimum living standards. Minimum living standards serve as a basis for both the determination of the income levels up to which the allowance is due, and the determination of the amount of allowance (in terms of the fixed multiples of the minimum living standards).⁵ This way, both the levels of benefits and the eligibility criteria are automatically indexed whenever minimum living standards are changed.

Means-tested family benefits

i) *children allowances* -- supplementary income for the purpose of raising a child. Annual costs in 1999 were CZK 12.5bn. Since January 1993, the amount of the monthly allowance has been a function of the age of the child, ranging from 340 CZK (for a child less than six years of age) to 490 CZK (for a child over 15 years of age).⁶ Since October 1995, the size of the benefit depends also on the household income.

Families with income of up to triple of the minimum living standard for their type of family are eligible for some allowance. If the total income is less than 1.10*MLS for their family type, the benefit equals 0.32*MLS of a child for each dependent child. Families with income in the range of 1.10-1.80*MLS are eligible for 0.28*MLS of a child for each

³ In order to limit the scope of the analysis, we have left out most of the Social Insurance system, such as old-age and invalidity pensions, the whole range of benefits for disabled persons as these have to engage many specific features and aims.

⁴ The same could be said about Old-Age Pension System, which the biggest social programs in all OECD countries. For its size and specific purpose we do not include it in our analysis.

⁵ For a detailed discussion of minimum living standard, their developments and interactions with the Czech labor market, see Schneider (2004c).

⁶ Before 1993 the allowance was a function of the total number of children in the family, where the marginal increment was positive.

dependent child. Families with income in the range 1.80-3.00*MLS are eligible for 0.14*MLS of a child for each dependent child. Entitlement lasts as long as the child is dependent. A parent has to re-apply each year and her income during the preceding *year* is tested. A dependent child is defined as any unmarried child under the age of 26 years as long as he/she is a student in a defined type of secondary or higher educational institution or cannot (due to a long-term illness or disability) earn any income. Until the age of 18 also a registered unemployed not receiving unemployment benefits is considered to be a dependent child.⁷

ii) *social supplement when caring for a child* -- additional supplementary income for the purpose of raising a child paid to a family with at least one dependent child and having an income below 1.6*MLS. Entitlement: a parent has to re-apply quarterly; income of the preceding *quarter* is tested. The level of the benefit is defined as follows:⁸

$$SA = MLS1 - \frac{MLS1 * I}{MLS2 * 1.6}$$

where: *SA* = social allowance when caring for a child

MLS1 = sum of individual minimum living standards of all dependent children

MLS2 = minimum living standard of the family (sum of individual standards and household minimum)

I = family income

iii) *housing allowances* -- A household is eligible when the joint income of all persons permanently residing in a flat falls below 1.4*MLS for this type of a household, irrespective of the ownership type of the flat (also inhabitants of the self-owned flats are eligible) and irrespective of the actual housing expenses. A household has to re-apply quarterly and the income of the preceding *quarter* is tested. The level of the benefit is scaled to three income bands, i.e. whether family income falls below 1.0, 1.2 or 1.4 MLS.

iv) *transportation benefit* -- is a benefit introduced after the subsidies to pupil and student transport fares were phased out and it is partly means tested and partly untested. Any dependent child studying in a municipality different from his/her permanent residence municipality is eligible. Families, where children did not complete compulsory schooling (9 years), are eligible for the benefit irrespective of the family income. If a dependent child studies at the secondary or higher educational institution, only a family with income below 2.0*MLS is eligible. Construction of the benefit level is based on the price of public transport and the resulting sum depends on the type of a school attended and regularity of transportation (daily, weekly, etc.). Entitlement is established yearly.

Transportation benefit is seen as the most administrative complicated and probably not well targeted (no data is available, as the benefit is not observed by the household surveys

⁷ The child allowances are formally means-tested but in reality 90% of families qualify for a benefit and roughly 50% for the highest of benefits. They are also unnecessary long in terms of child age – until 26 years if a child keeps studying. The child allowances are often combined with the social supplement that is more targeted at poor but it is not clear why to have two programs at all.

⁸ The benefit is scaled up further when either the children or the parents are ill with a long-term illness or disabled, or when the household is formed by a single parent (the scaling coefficients are different for each situation).

(see below). Thus, costs of the scheme – almost CZK 1bn in 1999 – are difficult to measure against any measurable outcome.

Non-tested family benefits:

i) *parental allowance* -- a payment to a parent caring personally full-time for a child 4 years old or younger or for a handicapped child under the age of 7 which is not placed in nursery, kindergarten or any other institution for preschool children. A parent is eligible for the benefits unless he/she receives health insurance, unemployment benefits or maternity leave benefits. Until 2004, the parent might earn the sum lower or equal to his/her personal minimum living standard at most in order to qualify for the benefit.⁹ The size of the benefit was defined as 1.1 times the personal MLS of the parent.¹⁰

ii) *benefit at the birth of a child* -- is a one-time benefit provided upon the birth of a child. The size of the benefit is a multiple of the individual MLS of a newly born child and depends on a number of children born simultaneously, rising nonlinearly.¹¹

iii) *lump sum funeral benefit* -- is paid to a person that organized a funeral and is fixed at 5,000 CZK.

All of the social support benefits are non-taxable but are included in the income of a household applying for the income support under the system of Social Assistance.

The Unemployment Compensation System

An unemployment compensation system (UCS) was put into effect January 1, 1990 and it has undergone several changes since. It began as a generous one until reforms put into place on January 1, 1992 made the level of benefits (base on wage replacement rates) and eligibility criteria more restrictive. In January 1996, new reforms increased the replacement rates for the new entrants and certain other groups of unemployed and widened again the eligibility criteria.

In January 1, 1996 the base for the maximum changed to the minimum living standard for an adult in a one-person household and currently the ceiling is 2.5 of the MLS (2.9 of MLS for unemployed in a retraining course). There is no minimum benefit since 1992.¹² Benefits are not indexed to inflation, nor are they taxed.

Illness benefits

Illness benefits substitute lost income during short illness. They are financed from a special surcharge on the payroll tax and are redistributive in nature, as their level is topped. An ill worker is entitled to the benefits from the very first day of his/her illness and there is no cost-sharing by employers. It is no surprise, thus, that the system is often used for short-term

⁹ As of 2004, this provision was scrapped and the parental benefit is no longer tested on parents' income. Parents must not, however, put their children to a permanent, state sponsored kindergarten.

¹⁰ The parental benefit is particularly long (four years). Long tenure of the benefits was meant to shield women from high unemployment but as any deformation of the labor market disadvantage women who often find it difficult to return to the labor market after raising one or even two children. Therefore, the system lowers labor force at high costs to the taxpayer.

¹¹ 4.0*MLS when one child was born, 5.0*MLS per child when two children were born and 9.0*MLS per child when three or more children were born.

¹² Unemployed are eligible to the minimum living standards, discussed above.

off-loading of unneeded workers. On average, 7% of workers claim a illness on any working day in the Czech Republic.

The benefit formula is rather complex, as it calculates the daily benefit level from average gross income in last three months. While first CZK 360 of the daily income comes fully into the formula, only 60% of the income in the CZK 360-540 does and income above the CZK 540 daily (CZK 16 thousand monthly, or 150% of the 1999 average wage) is forfeited completely when the illness benefit is calculated. The benefit is then equal to 69% of the adjusted income (50% for first three days). The costs of the illness benefit system, together with other social programs, are summarized below in the table 1.

Table 1: Cost of selected social security programs (CZK bn., current prices)

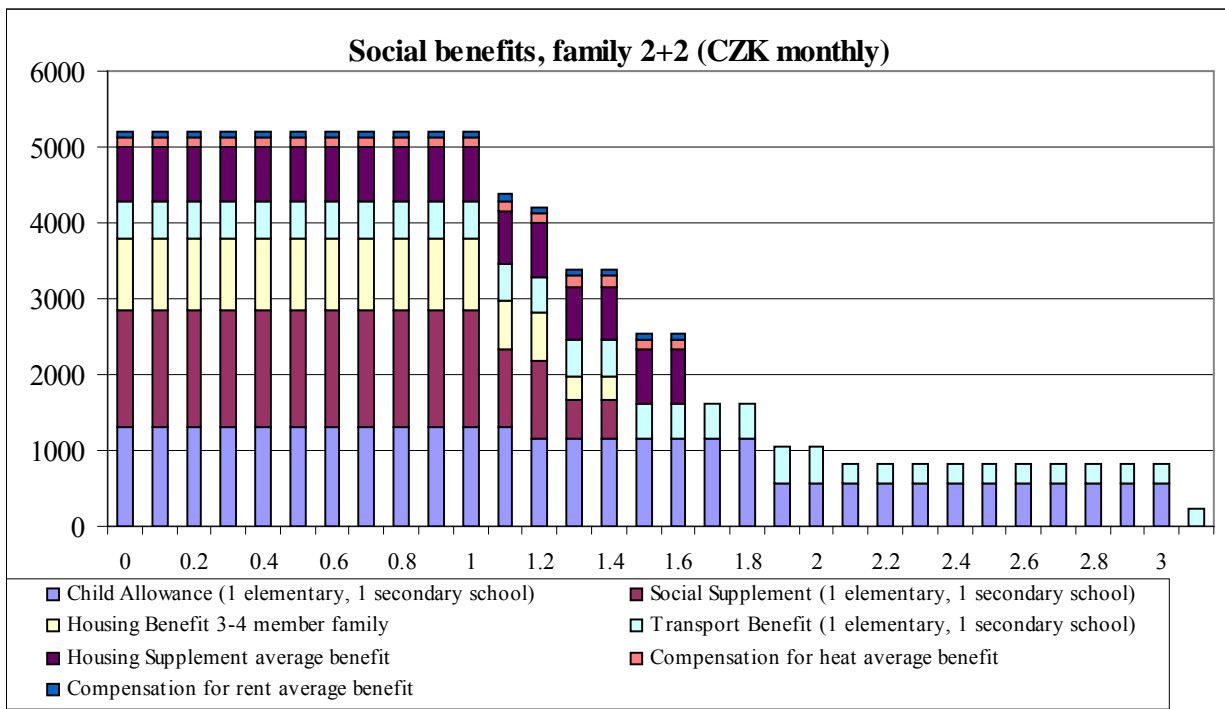
	Child allowance	Social supplement	Parental allowance	Other social allowance	Illness benefits	Unemployment benefits
1999	12,500	6,251	7,718	4,000	16,467	5,700
2000	12,748	6,199	7,692	5,038	23,716	5,680
2001	12,799	6,041	7,701	6,055	25,716	5,229
2002	13,353	6,271	8,022	6,050	28,318	6,210
Index 2002 to 1999	106,8%	100,3%	103,9%	151,3%	172,0%	108,9%

2. Effects of the system

It is not easy to assess the combined effects of various social programs, as benefits are often means-tested and always depends on the family size. However, in order to understand the system impact on the Czech labor market and the efficiency of the system, it is necessary to model its functioning.

We have thus constructed two “typical families” consisting of two adults and two children (or one child only). A two-child family is entitled to a series of benefits: first it gets children allowances if its income is not above 3 MLS. If the family income is below 1.4 of MLS, it is entitled to the social supplement and housing benefit. Until its income is below 1.6 MLS, the family gets also further “housing supplement”. The younger child is entitled to a transportation benefits no matter what is the family income, the older, however, gets this benefit only if the family income is lower than 2 MLS. Altogether, the family could receive as many as seven different benefits of the state social support system (we leave aside the social insurance system). Of course, if the social support benefits are not enough to lift the family above the minimum living standard, its income is topped by the social assistance to reach the MLS. The following Chart 1 illustrates the system:

Chart 1: Social benefits of a family of four (CZK for multiples of MLS)

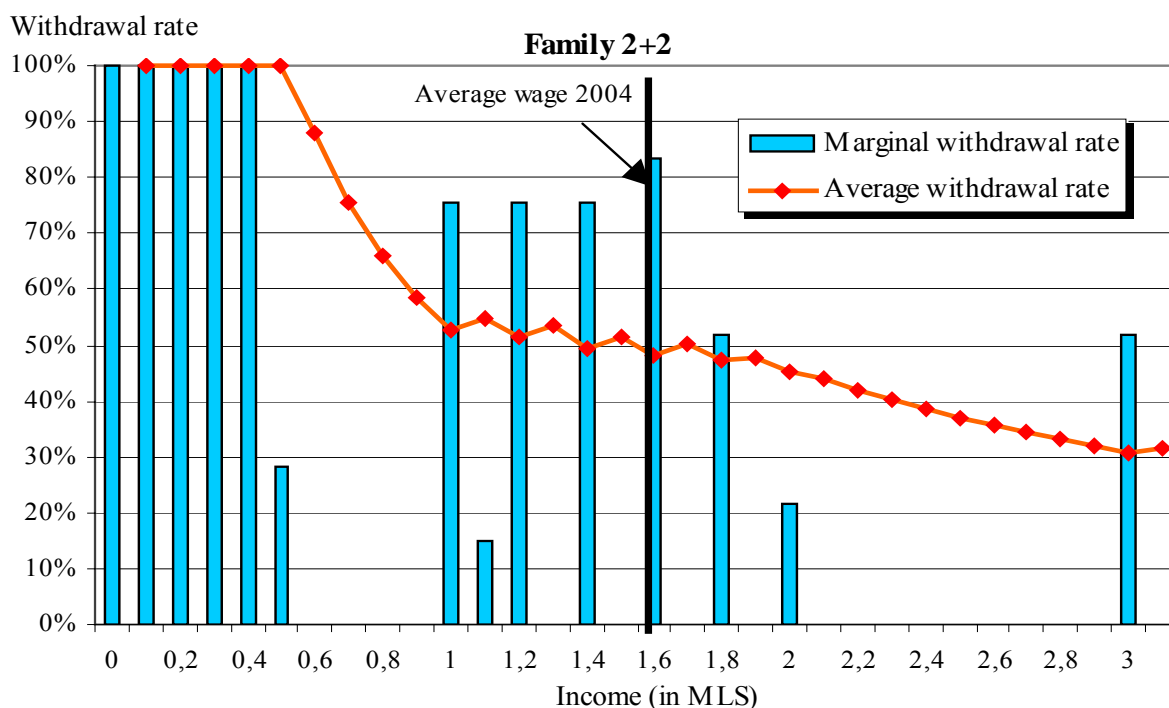


Note: the table does not reflect the "top-up" component of the social system that tops income of this model family to CZK 11,030.

The complexity of social benefits as just described deforms obviously incentives to work, as raising the family income above some of thresholds eliminates some social benefits. “Imputed tax rate”, i.e. the rate at which social benefits are withdrawn when work income rises is as high as 100% for income up until 50% of the family MLS. In other words, all work income lower than 50% of the family MLS is “100% compensated” by withdrawing social benefits.

Only after this threshold is reached, the family may actually boost its income by accepting a job. The average “withdrawn rate” remains high, however, and gets to 50% when the work income reaches MLS. It remains at this level until the work income crosses the national average wage and only then slowly declines further – see Chart 2.. On top of it, the marginal withdrawn rate reaches as much as 80% as various benefits are withdrawn at 1.2, 1.4, 1.6, 1.8, 2.0 and finally 3 multiples of the MLS. The average “withdrawn rate” hovers around 50% well until the work income reaches 2 MLS

Chart 2: Withdrawal "tax" rates for a family of four (% for multiples of MLS)



It seems, thus, fair to say that the effects of the social assistance and social support are quite detrimental for the work incentives, especially for bigger families who face drastic “withdrawal rates” when they seek a job. Please note that we take the wage in net terms, i.e. after income tax and social contributions were paid. While low wage may be tax-exempt (see below more on tax credits) social contributions are paid from each wage and reach 47.5% of the before-the-tax wage (out of which 12.5% is paid by the employee and 35% by the employer) – see below. This further complicates employment of low-skilled workers.

3. Statistical data

In order to get representative data on households' income we use the household survey, a regular and long-term panel study of more than 3,000 Czech households provided by the Czech Statistical Office (CSO). Despite the fact that this survey is mainly concerned with household consumption we believe it can be used for analyzing income distribution of Czech households, even though we are aware that they are not strictly representative. Household budget survey, for example, does not include households where the head is unemployed or where the head is retired but other members are employed.¹³

The household survey is conducted on a monthly basis and for our purposes we used the period of 1999-2002 – the most recent available. The survey is representative with respect to the income, age, social status and number of children. Thus, it is very likely representative with respect to many social benefits, as they are mostly based on the income status of the family or on the number of children in the family. The one benefit that should be treated carefully is the illness benefit, as there is no apparent link to characteristics that are being

¹³ According to some researchers – e.g. J.Večerník (1998) – the household budget survey does not reflect proper income differentiation in the Czech society. For our analysis it would be appropriate to compare results of Microsensus 1996 and household budget survey from 1996. Unfortunately we did not have relevant data for such comparison.

targeted by the household survey. However, as the table 2 shows, a half of households typically receive the benefit at some point. Moreover, beneficiaries are evenly distributed among all deciles, so the illness benefits seem to be widespread and thus the survey covers them in a proper manner. We have excluded, however, a variable "other social assistance" that was received by mere 3% of the sample and in some deciles it was almost non-existent. The benefit had a little impact on overall distribution; nevertheless, it was important for families who actually were receiving it.

Table 2: Main social benefits, number of recipients and average benefits (1999 data)

	Child allowances		Social supplement		Parental allowances		Other social support		Unemployment benefits		Illness benefits		Tax allowances	
	Number	Average benefit	Number	Average benefit	Number	Average benefit	Number	Average benefit	Number	Average benefit	Number	Average benefit	Number	Average benefit
D1	185	4205	147	4004	94	8780	135	2470	33	4751	117	5615	226	5413
D2	160	3843	96	2389	63	9269	93	1850	31	5016	102	5648	207	5704
D3	144	3690	58	1916	44	9102	64	1258	22	4728	97	4832	206	6008
D4	149	3609	33	1001	31	7528	57	1561	16	2614	114	4379	218	6192
D5	110	3481	20	1133	21	6274	49	1267	13	2950	99	5391	204	6260
D6	111	3167	8	343	10	7324	28	1059	15	4811	115	3883	212	6476
D7	81	2568	3	562	8	6628	16	1804	13	3527	114	3558	208	6724
D8	42	2203	2	1250	2	11597	15	1797	11	4229	107	4263	203	6767
D9	29	2040	2	2512	9	6004	11	3135	12	2798	96	5075	203	6927
D10	7	2211	1	1678	3	8796	5	2616	3	3059	90	2949	202	7944
	1018		370		285		473		169		1051		2089	

* Average benefits is calculated as an average from those households actually receiving the benefit.

As we were mainly concerned with distribution impact of the social security system (and tax credits as well) we used a constructed "market income" as a base for sorting households. The "market income" is calculated from the household survey where the reported net income is adjusted for received social transfers and for paid taxes. The resulting "market income" should simulate income the household would have had if there had been no government taxes and transfers. We should note, though, that taxes paid include in our concept also social contributions. In this respect, we had to recalculate social contributions paid by employees, as they report only a part of the social contributions as the bulk is "paid for" by employers. In fact, though, the whole tax burden is employees' so we have increased their paid taxes by amount of social contributions paid by their employees.¹⁴ The survey covers households (as opposed to individuals) but it provides extensive demographic and income statistics, so it is rather straightforward to construct a distribution of incomes on individual basis, as we assumed that all family members have the same share in the family income. It is often argued that larger families enjoy "returns to scale" as some household expenses are similar for one-member family and for more numerous families. To that extent, the CSO provides "weights" of additional family members: while the first member counts for one unit, the remaining adults for 0.7 and children of age 0-13 for 0.5 of the unit. We used this "adjusted consumption scale" in our calculations.

¹⁴ Note, that self-employed pay (and report) the whole social contributions, so we needed no adjustment in those cases where the household head was self-employed.

While this survey probably underweights both richest households (that have little incentive to cooperate with the CSO) and poorest households (that are difficult to reach and that may find the CSO questionnaires too complicated), it does provide the most comprehensive and complex set on information households' incomes and expenditures.

4. Tax deductible allowances

The Czech tax code is often blamed for too high complexity and unnecessary high number of loopholes. However, compared to other more developed countries tax codes, the Czech one is still in its infancy. However, the state does extend tax credits to some preferred activities: thus interest paid on mortgage is tax deductible, some fringe benefits are tax free (transport subsidies, catering, pension insurance and since 2001 also life insurance). There are various income groups that qualify for a tax credit; however, from the point of view of the social security only few make any impact.

Tax deductible allowances are called “tax expenditures” in the economic literature, because a tax payer saves money through this mechanism. We could get the same result if the total income is taxed and “tax deductible allowance” would be paid directly from the state budget. But the tax-deductible allowance is considered to be more efficient and administratively friendly tool. Tax deductible allowance brings higher nominal gain to higher income groups, because it lowers their tax in higher tax brackets.¹⁵

Most important are tax credits: on own “needs” on children and dependent spouses, summarized in Table 3. These benefits are, as the whole Czech tax system, exclusively individual, i.e. any member of a family can claim them, but on his/her income only. Their fiscal costs are substantial, albeit only estimated. Using very simple model,¹⁶ we estimate that the individual tax-deductible allowances were worth CZK 33bn in 1999 and 2000 and about CZK 36bn in 2001 and 2002. Children and spouse tax deductible allowances cost the state budget further CZK 17bn. It is, thus, important to look at the tax allowances’ distributive aspects as well.

Table 3: Main tax allowances and their cost (CZK annually)

	1999	2000	2001	2002
Individual tax credit	34 920	34 920	38 040	38 040
Child credit	21 600	21 600	23 520	23 520
Spouse credit	19 884	19 884	21 720	21 720
Total cost (CZK bn)	48,5	48,8	51,9	51,8

Source: Ministry of Finance, own estimates

Clearly, these tax credits are regressive in nature, but their distribution impact is rarely analyzed. Given the fact that the Czech tax system is progressive with marginal rate rising from 0% to 32% (and to 40% until 2000) the tax credits distribute disproportionate benefits to

¹⁵ If each individual can deduct CZK 34 920 from its labor income, an individual in the highest tax bracket saves little less than CZK 14 000. An individual in the lowest tax bracket of 15% would save only a little more than CZK 5 000.

¹⁶ We estimated budgetary costs of individual allowances using the labor force statistics. The children and spouse allowances were estimated using the number of children and the average number of children in a family.

well-off. Their administration, it is claimed, is cheaper than the social security's and they do not discourage from accepting a formal employment. However, there has been no analysis as to what extent these tax credits fulfill government goals in social policy.

5. Redistribution effects of the system

In our analysis we tried to show a) how efficient are various social programs in lifting net income of households, b) what are the costs of this. The following Table 4 summarizes our results concerning increase in net income of ten deciles of households. The household survey distinguishes six social security schemes: child allowances, social supplement, parental allowances, unemployment benefits and a group of other social support. We also add the tax-deductible allowance, although this is a special program treated separately.

As the following table shows, in general terms the Czech social security system is rather well *targeted at the poorest decile whose income was boosted by 30-40% in various years. The system* was less generous to the second poorest decile that gets "only" 12-19% increase in income. The third decile gets a 8-12% boost. The boost then uniformly decreases to about 5% for the fifth decile and eventually to about 1% for the richest decile.

The dynamics of the system's redistribution function is rather complex. Year 2000 was marked by a massive shift vis-à-vis 1999 towards the poorest decile: its income boost increased by more than 5 percentage points. At the same year, all deciles but the richest one received a lesser boost in their incomes from the combined social benefits, the biggest loser being the second decile that lost almost 7 percentage points. These changes were driven mainly by the illness benefits developments, but the second decile lost in all social benefits (most surprising and dramatic is the collapse of unemployment benefit – while in 1999, 21% of total unemployment benefits went to the second poorest decile, in 2000 it was only 7%).

In the following year 2001, the poorest decile fared much worse: its income rose after social transfers by less than 30%, due to the uniform fall of all social benefits. The second poorest decile recovered a little, mainly due to higher illness benefits. Other deciles lost again, marking the year as the least generous in the analyzed period.

The last year in our sample, 2002, saw a small improvement for all deciles, most pronounced for the second and the third decile whose incomes were increased by social benefits by 16.3% and 10.4% respectively, i.e. by almost 3 percentage points more than in 2001. As always, the illness benefits were behind higher social benefits in 2002.

Table 4: Income boosts received by different deciles from various schemes per individual and per year 1999-2002

1999 data	Child allowances	Social supplements	Parental allowances	Other social support	Unemployment benefits	Illness benefits	TOTAL	Tax deductible allowance
Decile 1	7.6%	6.1%	8.3%	3.6%	1.8%	6.4%	33.8%	11.8%
Decile 2	4.7%	1.7%	5.3%	1.3%	1.3%	4.8%	19.2%	9.0%
Decile 3	3.4%	0.7%	3.1%	0.5%	0.6%	3.6%	12.1%	8.2%
Decile 4	3.0%	0.2%	1.4%	0.5%	0.2%	3.0%	8.4%	7.6%
Decile 5	2.2%	0.1%	0.7%	0.3%	0.3%	3.0%	6.6%	6.8%
Decile 6	1.7%	0.0%	0.4%	0.1%	0.4%	2.0%	4.8%	6.4%
Decile 7	0.9%	0.0%	0.2%	0.1%	0.2%	1.9%	3.4%	6.0%
Decile 8	0.4%	0.0%	0.1%	0.1%	0.2%	1.9%	2.7%	5.4%
Decile 9	0.2%	0.0%	0.2%	0.1%	0.1%	1.7%	2.3%	4.8%
Decile 10	0.0%	0.0%	0.1%	0.0%	0.0%	0.6%	0.8%	3.9%
2000 data	Child allowances	Social supplements	Parental allowances	Other social support	Unemployment benefits	Illness benefits	TOTAL	Tax deductible allowance
Decile 1	7.9%	6.0%	8.1%	4.5%	1.6%	9.8%	39.1%	8.9%
Decile 2	3.3%	0.9%	3.4%	0.7%	0.4%	3.4%	12.4%	5.2%
Decile 3	2.6%	0.3%	2.3%	0.4%	0.8%	3.7%	10.3%	5.2%
Decile 4	2.3%	0.1%	0.7%	0.3%	0.6%	3.1%	7.2%	5.3%
Decile 5	1.6%	0.0%	0.3%	0.3%	0.3%	2.6%	5.3%	5.0%
Decile 6	1.1%	0.0%	0.3%	0.1%	0.3%	1.8%	3.8%	4.9%
Decile 7	0.7%	0.0%	0.2%	0.1%	0.2%	2.5%	3.8%	4.5%
Decile 8	0.3%	0.0%	0.1%	0.1%	0.2%	2.4%	3.3%	4.1%
Decile 9	0.1%	0.0%	0.0%	0.0%	0.2%	1.6%	2.0%	4.0%
Decile 10	0.0%	0.0%	0.1%	0.0%	0.1%	0.9%	1.1%	3.4%
2001 data	Child allowances	Social supplements	Parental allowances	Other social support	Unemployment benefits	Illness benefits	TOTAL	Tax deductible allowance
Decile 1	6.0%	4.9%	6.3%	3.2%	1.3%	6.9%	29.3%	8.3%
Decile 2	3.6%	1.1%	3.0%	1.1%	0.5%	3.9%	13.6%	5.6%
Decile 3	2.1%	0.1%	1.8%	0.3%	0.5%	2.6%	7.8%	4.8%
Decile 4	1.8%	0.1%	0.8%	0.2%	0.4%	2.4%	5.7%	4.4%
Decile 5	1.3%	0.0%	0.6%	0.2%	0.4%	1.9%	4.4%	3.8%
Decile 6	0.9%	0.0%	0.1%	0.1%	0.2%	1.8%	3.1%	3.8%
Decile 7	0.4%	0.0%	0.1%	0.1%	0.2%	1.9%	2.9%	3.6%
Decile 8	0.3%	0.0%	0.1%	0.0%	0.1%	1.5%	2.0%	3.3%
Decile 9	0.1%	0.0%	0.0%	0.0%	0.1%	1.1%	1.3%	3.1%
Decile 10	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.8%	2.6%
2002 data	Child allowances	Social supplements	Parental allowances	Other social support	Unemployment benefits	Illness benefits	TOTAL	Tax deductible allowance
Decile 1	6.0%	4.6%	5.2%	3.4%	1.8%	9.2%	31.0%	7.5%
Decile 2	3.7%	1.4%	3.3%	1.4%	0.7%	5.6%	16.3%	5.4%
Decile 3	2.6%	0.5%	1.8%	0.9%	0.7%	3.6%	10.4%	4.6%
Decile 4	2.0%	0.2%	1.2%	0.5%	0.7%	3.0%	7.7%	4.2%
Decile 5	1.4%	0.0%	0.9%	0.2%	0.6%	3.0%	6.3%	3.9%
Decile 6	1.1%	0.0%	0.4%	0.3%	0.4%	2.1%	4.3%	3.7%
Decile 7	0.7%	0.0%	0.3%	0.2%	0.2%	2.1%	3.6%	3.4%
Decile 8	0.4%	0.0%	0.2%	0.1%	0.3%	1.7%	2.5%	3.1%
Decile 9	0.2%	0.0%	0.1%	0.0%	0.1%	1.6%	2.0%	3.0%
Decile 10	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.9%	2.5%

When we compare various social programs, we may identify three rather well targeted programs and three wider spread schemes. Best "targeted" social programs are the social

supplement and the parental allowance scheme. The social supplement advances income of the poorest decile by 5-6% and all but ignores the six richest deciles altogether. However, the social supplement was somewhat losing its income-increasing power vis-à-vis the poorest decile (it lifted its income by 6.1% in 1999 but only by 4.6% in 2002). Perhaps surprisingly, the parental allowance scheme is targeted very well: it moved up income of the poorest decile by 5-8% and the second decile's income by about 3%, making little impact elsewhere. But again, the poorest decile fared best in 1999, when its income was lifted by 8.3% by the parental allowance benefit, but the increase slid to 5.6% in 2002. The "other social support" category showed as a rather targeted benefit as well, but its analysis is complicated by its composite character.

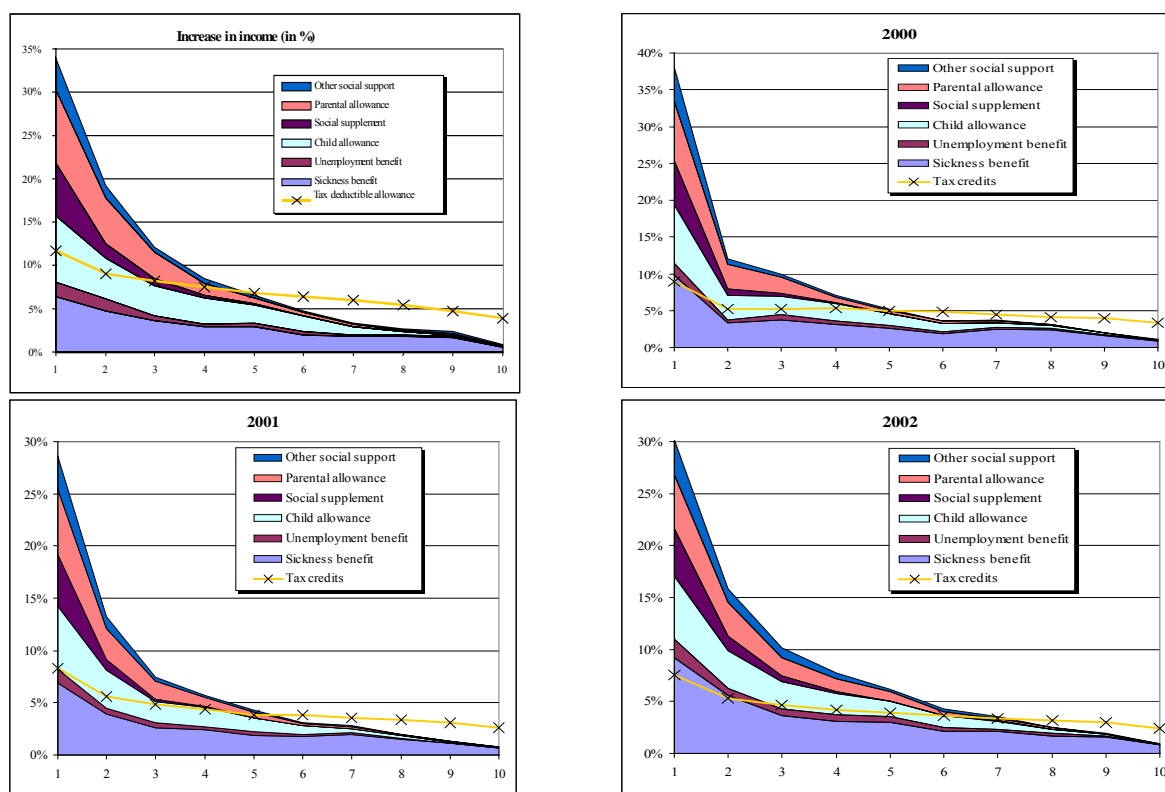
Child allowances are rather problematic: they do distribute towards the poorest decile (rise of income by 6-8%), but they keep boosting income of all income groups, which makes them unnecessarily expensive (see below). However, the budgetary cost of children allowances spend on the richer 50% of households did fall during the analyzed period. While in 1999 more than 20% of all benefits went to the richer households, their share fell to 13-14% in 2000-2002.

The illness and unemployment benefits are allegedly "insurance-based" but due to the severe ceilings on these benefits, they resemble standard social security schemes. That is why we can assess their redistribution effects. Table 4 shows that unemployment benefits are the better targeted of the two: they typically boost income of the poorest deciles by 1-2%, and largely ignore the rest of income groups. Illness benefits are much more spread (and expensive - see below), as they enhance the poorest income by 6-10%, but the rest of population gets a 2-3% bonus as well.

Table 4 also shows the distribution impact of tax deductible allowances. We can see that the impact of tax allowances was decreasing in the period 1999-2002. While they boosted the poorest decile's income by 12% in 1999, the boost fell to 7.5% in 2002 and all deciles shared the same development. Tax allowances are also, by their construction, less progressive than social benefits. The middle deciles' incomes were increased by 4-6% and the richest decile gained 4% in 1999 and only 2.5% in 2002. In absolute terms, though, the richest decile is the winner as the average gain from tax credits per person in this decile was almost CZK 8,000 in 1999 and more than CZK 9,000 in 2002. The gain falls to about CZK 5,000 for the poorest decile for the whole period.

The following charts illustrate redistribution effects of various social security schemes graphically. Chart 3 shows how the income transfers to various deciles are structured, i.e. how much is contributed by various social schemes. We may immediately notice the more steep redistribution line in 2000 and 2001. The lines show impact of tax credits that will be discussed separately.

Chart 3: Income increases from various social schemes 1999-2002(in %)



6. Budget costs of the social system redistribution

The Czech social security system has considerable costs that burden the public budgets. The Table 5 shows that the total costs of various social programs increased from CZK 53bn in 1999 to CZK 68bn in 2002, i.e. from less than 3% to 3.3% of GDP. Tax deductible allowance represents tax expenditure of further CZK 49-52bn, i.e. about 2.5% of GDP. It is thus of utmost importance to analyze what impact these costs have on the income redistribution. We assess this issue by breaking up the total costs of various programs as they are distributed to the ten deciles of households. Funds spent on the lowest decile should have the highest "social marginal utility", while funds distributed towards well-off deciles are thought to be less significant. Of course, this is not to say that all money distributed to, say, five upper deciles are wasted. Some of the money will always end up with the rich. Also, in some cases comprehensible means testing would be administratively unattainable or too expensive. However, some of transfers to well off can be eliminated or scaled down without any apparent loss of welfare.

The most expensive social scheme in the Table 5 is the *illness benefit* on which CZK 28bn was spent in 2002. The poorest decile gets most of the money distributed via the scheme (about 25%), but significant sums (about one third) go to well-off deciles and even to the richest decile. A radical reform of the system, perhaps based on private insurance could save almost 34% of the costs (CZK 10bn in 2002 that went toward the five richest deciles that surely do not need state assistance). The reform would, though, require a shift in the government policy and would not be administratively easy.

The second most expensive program is the notorious *child allowance* scheme on which CZK 12-13bn is spent annually. We discussed its arithmetic in the chapter 2, and the Table 5

only underlines the arguments raised there: the program spends about 20% on the richer half of the Czech households. These funds may be saved without much complication, as the program is already (poorly) means-tested, so by changing the coefficient of eligibility the government would save CZK 2-3bn.

Other programs are less costly and generally better targeted. *Both parental allowances and social supplements* are concentrated on the poorest decile and funds spent on well-off households are probably unnecessary consequence of the program's' administration. Similarly, *unemployment benefits* go predominantly towards the poorest (two poorest deciles receive almost 50% of all benefits).

Taken together, the poorest decile gets about 40% of the total social programs' costs (less in 1999, more in 2000). Two poorest deciles, an alternative target group, received 46% of the total funds distributed in 1999 and more than half of the funds in 2000-2002 period. Should the Czech government target three deciles, as would the 1.8 of MLS threshold suggest, the share of funds spent on these three deciles was 59% in 1999, 68% in 2000, 67% in 2001 and 62% in 2002. Whether this share is appropriate remains an open issue.

The budget cost of the *tax deductible allowances* were distributed most equally across all income deciles. Still the poorest decile's cost of around CZK 8bn is the highest. However, the second highest costs are associated with the richest decile: around CZK 6bn is handed to the richest households in the Czech Republic - see table 5.

7. Measuring efficiency of social programs

The efficiency of individual programs is very difficult to measure, because social projects have different goals and are devoted to different social groups. The commonly used approach, which is also adopted in this paper, is to concentrate on budgetary cost of individual programs and its distribution across income groups. This approach gives us interesting information about individual programs but it does not give us tool for their mutual comparison.

We have tried to construct a unique efficiency measure for all social programs. Our basic assumption is that the main objective of social policy is to help poorest groups of population, i.e. lowest income group decile. We look at how much it costs to lift income of a respective target group by one percentage point. If, for example child allowances, with the total costs of CZK 12.5bn in 1999, lift income of the poorest decile by 7.6%, the cost of 1% increase is CZK 1.6bn. If, on the other hand, parental allowances, with the total costs of CZK 8bn in 2002, boost income of the poorest deciles by 5.2%, the costs of 1% increase is CZK 1,5bn (see Table 6).

On this measure, parental allowances and social supplement are the most efficient. Parental allowances were the most efficient in 1999-2001 period: it cost less than a billion to lift the poorest decile's income by 1% by this benefit in 1999 and 2000. However, the parental allowances became less efficient in 2002, as their cost jumped to 1.5bn per percentage point of income of the poorest decile. Social supplement program needed a little more than one billion to deliver the same boost in 1999 and 2000. This program became the most efficient in 2002: while its costs did increase, they rose to 1.35bn only.

Social supplement is, by definition, targeted at the poorest households and should serve as a benchmark of efficiency for other programs. Relative efficiency of parental allowance scheme follows from the fact that families with children have usually lower than average income and it is thus “cheaper” to lift their income by 1%. If one parent stays at home to look after children and so has right to receive parental allowance family income falls to the lowest income groups.¹⁷

Children allowances fare worse with costs of CZK 1.6bn in 1999 and more than 2.2bn in 2002. Programs, which are based on “social insurance” concept, are less efficient to increase income of the poorest population. Unemployment and illness benefits both needed more than CZK 3bn to increase income of lowest decile by 1% in 2002.

Tax allowances are the least efficient program, measured by our proxy. It cost as much as CZK 6bn to lift income of the poorest decile by 1%. However, as noted above, tax deductions have other merits as well. Most importantly, they do not discourage from work and are cheaper to administer.

¹⁷ However, in reality some families report only one parent income while the other parent has also its own income.

Table 6: The costs to move up target groups' income by 1% in CZK billion.

	Children allowances	Social supplement	Parental allowances	Unemployment benefits	Illness benefits	TOTAL	Tax deductible allowance
1999	1643	1020	927	3206	2593	1557	4116
2000	1615	1026	951	3574	2412	1562	5454
2001	2120	1230	1229	3909	3745	2169	6251
2002	2209	1355	1546	3508	3077	2201	6880

8. Conclusions

Our analysis of main social benefits and tax credits impact on household income distribution, which is monitored by Household Budget Surveys, has brought several results. The first result seems to be that targeting of majority of social programs is quite good. More than one third of all expenses (38% in 2002) in relation to six studied social benefits (child allowance, parental allowance, social supplement, other social support, illness benefit, and unemployment benefit) goes to households in the lowest income decile. Three fourth of all expenses goes to households in the lower half of income spectrum. If we take as an example probably the best targeted program – i.e. social supplement – targeting could be improved in a way that upper half of richer households would get instead of 25% of social benefits only 10%. If implemented, this would save about 0.5% GDP from the state budget without affecting households with lower than average income.

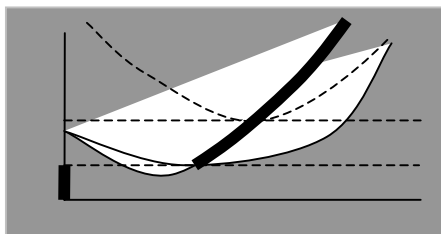
We also constructed a proxy measuring efficiency of various social programs. If we assume that the government's social welfare function gives dominant importance to the poorest decile of households, it should strive to increase its income by the most efficient programs, i.e. social supplement and parental allowances. However, when we look at the budgetary developments in the 1999-2002 period, the Czech government aggressively increased spending on social programs that are least efficient. Expenditures on illness benefits jumped by more than 70% in the four-year period and expenditures on unemployment benefits increased by 9%. These are the least efficient programs.

Expenditures on most efficient programs – social supplement and parental allowances – stagnated. Social supplement expenditures remained constant even in nominal terms, while parental allowances expenditures grew by 4% only. However, the government's welfare function remains unspecified so we can only guess which programs best reflect government's priorities.

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