ASSESSMENT OF INCOME DISTRIBUTION AND A HYPOTHETICAL FLAT TAX REFORM IN HUNGARY

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Abstract:

The paper presents evidence on the effects of taxes and benefits on household incomes in Hungary referring to the 2006 system and a hypothetical flat tax reform. For this, a microsimulation model is used, which is based on a matched sample of an income and a consumption survey and administrative tax records. The Hungarian budget receives more revenues from VAT than from PIT. This has major implications on equity, as while PIT is progressive, VAT is regressive, imposing a higher tax burden on low-income households. We highlight the importance of tax allowances. The absolute amount of total tax allowances tends to increase with income, and the share of allowances within total incomes is around 5-7% in all income groups, except the top fifth, where it declines. Targeting is thus inadequate, and it is especially so in case of child support. Family tax allowance reaches the bottom decile only to a limited extent. This is in sharp contrast with the universal child benefit, which is well targeted to the poorest. The second part explores the likely impact of the introduction of a flat tax, where VAT and PIT rates are set at 20%, and a tax free bracket for low incomes is kept. We show that a budget neutral solution would have a largely regressive effect, where 70% of the population would lose, with a minority on the top of the distribution gaining.

Keywords: Tax-benefit microsimulation, redistribution, flat tax reform, Hungary

JEL Classification: C8, D31, I38

1. Introduction

In Hungary, discussions on economic policy priorities often appear misguided. A typical argument is that less state and less redistribution is economically superior to more redistribution, which appears to be a simplistic backlash to the paternalist model of the socialist economy. Key indicators used in setting policy priorities are the ratio of spending or the ratio of revenues compared to the GDP. Yet little is known on the impacts of the structure of public spending and that of revenues, be it either short term or long term, and perhaps even less known is the interplay of the various specific instruments. Yet an "opposite" group of social scientists argue for increased social spending. Many of these arguments, however, disregard the opportunity cost of spending or the existence of budget constrains as such. A "caring state is a spending state" may be the logo of such argument. We believe that the focus of the debate needs to be fundamentally reshuffled, with more focus on empirical evidence and on microeconomic effects. We aim to promote this process with the presentation of research evidence on the redistributive impacts of the tax and benefit system as a whole. For this, we will use the national tax-benefit microsimulation model of the Ministry of Finance.

2. Motivation of the paper

Little is known on the effects of the tax-benefit system on the income distribution in Hungary. Empirical evidence, using Euromod, the European tax-benefit microsimulation model and the national models of Hungary and Poland compares the 2001 system of Hungary with those of EU15 countries and Poland [Sutherland, Levy and Paulus, (2006)]. The study finds that the distribution of original incomes is rather unequal, with a shape that is rather similar to that of the UK and Ireland, in contrast to the more equal distribution of Austria and Germany The role of the state in Hungary, however, is rather different from these Anglo-Saxon countries: due to its more generous public pension scheme, a considerable share of the benefits go to the top fifth as well, although to a much smaller extent than e.g. in France, Austria or Poland[i]. The tax system also seems to play a specific role in Hungary: taxes (including tax allowances), seem to be rather efficient in raising the incomes of those in the second to

fourth deciles, in contrast to all other countries, where the role of direct taxes is smaller and varies less in the bottom half of the income distribution. Contrary to popular belief, the tax burden on the top fifth seems to be rather close to the lower end of the range in the EU15. Taxes and contributions range between 22% (Portugal) and 46% (Denmark) as a proportion of gross incomes of the top quintile, while the ratio is 27% in Hungary. These comparative figures, however, do not highlight the role of specific benefits, neither those of tax allowances, and are constrained to distributional analysis by income quintiles, rather than other demographic characteristics.

Hungary appears to be a useful case study not only for the lack of detailed national evidence so far. Inequality has increased considerably during the years following economic transformation, both in terms of material resources but also in subjective well-being [Tóth, (2005), Lelkes, (2006)]. With the joining of the European Union, the country has officially become part of the EU's decision making process, including increased monitoring and the production of social indicators. Yet little is known on many policy instruments and their social impacts, for example tax allowances, and general welfare typologies, such as the much cited one of Esping-Andersen (1990) may not be applicable or particularly helpful for a potential European harmonisation [Lelkes, (2000)].

Flat taxes seems to be particularly popular in much of Eastern Europe, and have been introduced in the Baltic states, Russia, Ukraine, Georgia, Slovakia, Serbia, Romania, Macedonia, although with a varied definition on what is actually meant by flat tax. In many of these countries, personal income tax schemes sustained a tax free bracket for those with low incomes often with specific child tax credits. In addition, a social security contribution is often added to the seemingly low income tax rates, constituting a higher total tax burden in an economic sense. The evidence on the impact of these reforms seems to be sparse, partly because it proved to be difficult to disentangle the effect of flat tax reform from other parallel policy reforms, or external macroeconomic effects, and partly, because the lack of adequate micro data hinders such analyses. In Russia, for example, where revenues boosted following the tax reform, economic growth and high oil prices are likely to have played a dominant role rather than changing tax compliance, according to the IMF.

The introduction of a flat tax scheme is a recurring theme in Hungarian politics as well, although with not much reference to the details of such reform. The proponents believe that a significant simplification of the current scheme would increase tax compliance, and therefore would ultimately enable the reduction of the tax burden. Some also regard this tax scheme fairer than the current (progressive) one. The underlying core issue, however, seems to be the level of taxes and the complexity of the tax system as such, rather than the rates themselves. We argue that a flat tax scheme is not a precondition for the achievement of these goals, as the complexity of the system does not arise from the number of rates, but rather from the number of exemptions and the complex rules of defining the tax base. We show that the introduction of a flat income tax with a budget neutral solution (on a short run) would have a largely regressive effect, where the majority of the population would lose, with a minority on the top of the distribution gaining. These adverse effects need to be born in mind when discussing policy alternatives.

First we briefly present the TÁRSZIM2005[ii] model, including the underlying dataset, then analyse the redistributive effects of the tax system and that of cash benefits of 2006. The concluding section presents the potential impact of the introduction of a flat tax system in Hungary.

3. The Hungarian microsimulation model: TÁRSZIM

In many countries microsimulation techniques have been widely used in government and the academia, so there is little need to prove the legitimacy of it. For example, in the UK the Treasury and the Department for Work and Pensions publish their results regularly during the debate of the budget. EUROMOD, the European tax-benefit model has a whole network of researchers across Europe, with a diverse set of research results[iii]. Many governments in Eastern Europe, including e.g. Estonia, Poland, Slovenia have already commissioned the construction of such a model, although interestingly often at the initiation of independent researchers, who were well aware of the benefits and methodology of the technique[iv].

Microsimulation modelling has not so far been used in Hungary to prepare economic policy decisions, despite some earlier initiatives by the CSO and TÁRKI[v]. It was only in 2004, with a supportive finance minister, and the establishment of a new research unit, that the use of the technique

became possible. The tax-benefit model, named TÁRSZIM, was developed by the TÁRKI social research institute, and was commissioned by the Ministry of Finance.

3.1. Model features

The model includes personal income tax (PIT); tax allowances; indirect taxes (VAT); and the major social benefits [for details see Benedek and Lelkes, (2005) and TÁRSZIM2005 Manual]. As is the case for all such models, the parameters of all these policy instruments can be set according to actual or hypothetical scenarios, including for example the tax rates, and the entitlement criteria.

Similar to other existing tax-benefit microsimulation models, it only refers to the cash part of redistribution, thus ignores the consumption of public goods or benefits in kind, such as health care or education. The reason is that the pricing of these social services is complex on an individual level, the information on the consumption of the specific items is inadequate, and the implications of their consumption on inequality is often unclear[vi].

The model is able to simulate all central government taxes and benefits, but not local government ones. There are 3200 local governments in Hungary, with varying policies, so the impact of their practices (and potential policy changes) cannot possibly be modelled with the available dataset. Household revenues from local sources, however, constitute part of total incomes, as they are part of the income survey.

The unit of impact assessment can be the household or the individual. The model thus allows to analyse the interaction between household members. We can follow how changes in individual incomes (as result of policy changes) add up on a household level. This is of major relevance, as the unit of policy is often the individual, while incomes are shared within the household. Depending on the household composition, e.g. whether jobless people tend to be concentrated in jobless households or rather live with employed spouses, the impact of policies may vary a great deal.

TÁRSZIM is a static model, therefore it is suitable for assessing "day-after" effects, but it is not suitable for assessing behavioural responses in the area of labour market activity, and only to a very limited extent is it capable of assessing changes in consumption patterns.

3.2. The database

The database consists of three different datasets, an income and a consumption survey and an administrative data on tax records, which have been merged with probabilistic matching, based on region, age, income decile, and gender. The merged dataset thus includes information on income, consumption and taxation, beyond the essential socio-demographic information on households.[vii] The core dataset is the 2004 TÁRKI Monitor data, which contains individual demographic, labour market and household characteristics and income data of 2325 households and their members for 2003. This is supplemented by the 2003 database of the CSO (Central Statistics Office) Household Budget Survey containing detailed consumption data for about 8 thousand households. The third database is a random sample of almost 62 thousand observations, compiled by APEH (the Tax and Financial Control Administration), from the 2003 personal income tax returns.

The core dataset thus contains data from 2003. For analyses that relate to any year other than 2003 the basic settings need to be adjusted. Multipliers (adjusting for nominal growth between 2003 and 2006) are applied for the model used in this study. Multipliers regarding income items are calculated by the experts of the Ministry of Finance, while the price indices applied to consumption items are based on CSO data.

The VAT estimates of the model seem rather flat across income groups due to two types of errors. First, there was a rather high unit non-response rate in the original dataset, the CSO Household Budget Survey. The unit non-response was higher among the well-off, but unfortunately the actual extent of the problem is not revealed by the Statistical Office [CSO, (2004) pp. 29]. Second, the model assumes full tax compliance, in other words, that everyone pays the tax due on each HUF spent on consumption. As a result of all distortions the model seems to underestimate total VAT by 25% and VAT payment by higher income groups even more. As a result, we expect VAT to be more progressive in reality than estimated by the model.

In the next session we present the redistribution of the 2006 tax and benefit system in Hungary.

4. Effects of the 2006 tax and benefit system on income distribution

The poverty reduction effect of benefits is compelling: if the government suspended all cash benefits, poverty increased from 13% to 33% among the working age population, according to 2003 data, using a 60% of the national median income as a poverty threshold. Among the elderly, defined as those above the age of 65, poverty would multiply: from 9% to 67%. Similar calculations can be made for specific cash benefits, such as universal child benefit, unemployment benefit [e.g. Förster-Tóth (1997, 2001)]. These calculations are appropriate for presenting the effect of benefits on specific groups of the society and can demonstrate the relative importance of certain benefits. The limitation of these analyses is that they can be done only ex post, once data is available on past years, and that they can be done only for very specific policy instruments, disregarding the interaction of these. Therefore, their role in decision-making is limited. As opposed to these methods, microsimulation can be used for a comprehensive analysis of various instruments, and can be used for testing future policy scenarios.

4.1. Parameters of the tax and benefit system[viii]

Taxes on incomes:
▪ In 2006 a two-tier personal income tax regime was in place, with the following tax rates:

| 0 – | 1,550,000 | 18% |
| 1,550,001 – | | 38% |

▪ capital incomes are subject to 10%, 20%, 27% or 35% tax rates;
▪ the rates of employee pension contributions and health insurance contributions are 8.5% and 4%, respectively;
▪ employee tax allowance and supplementary tax allowance ensure that the minimum wage is tax exempt;
▪ family tax allowance applies to those with 3 or more children, may be shared between parents;
▪ other tax allowances refer to repayment of subsidised mortgage loans, life insurance and pension savings, adult education, charitable donations, etc.

Taxes on goods:
▪ there is a motor vehicle registration fee;
▪ the normal VAT rate is 20%, with a preferential rate of 15%. Certain products and services are subject to an even lower VAT rate;
▪ excise duty is levied on alcoholic beverages, tobacco products and fuel;

Major benefits:
▪ means tested: regular social assistance and housing benefit
▪ universal: child benefit and other family benefits (maternity benefit, etc.)
▪ gas-price subsidy
▪ other, insurance based benefits: pension, unemployment benefits, etc.

4.2. Redistribution in the 2006 tax and benefit system

First we analyse the redistribution effects of the tax and benefits system on the total population, that is, on all households. Besides taxpayers this category includes children, pensioners, the unemployed and other economically inactive groups. Figure 1 shows the tax liabilities and the social benefits of households (including gas price subsidy) as a percentage of disposable income. Substantial redistribution can be observed: tax payment accounts for a smaller percentage of disposable income than social benefits in the lower half of the distribution, i.e. the state collects smaller amounts from the first five deciles in the form of direct taxes than it returns to them in the form of benefits. Yet from the seventh decile upward households pay more to the budget than they receive as benefits. However if social security contributions are also taken into account, which finance mostly insurance based benefits, then the middle income groups are net financers of the system. It is also worth noting that although the top 3 deciles receive a substantial part of the benefits, it only counts for 2-5% of their disposable incomes (Figure 2).
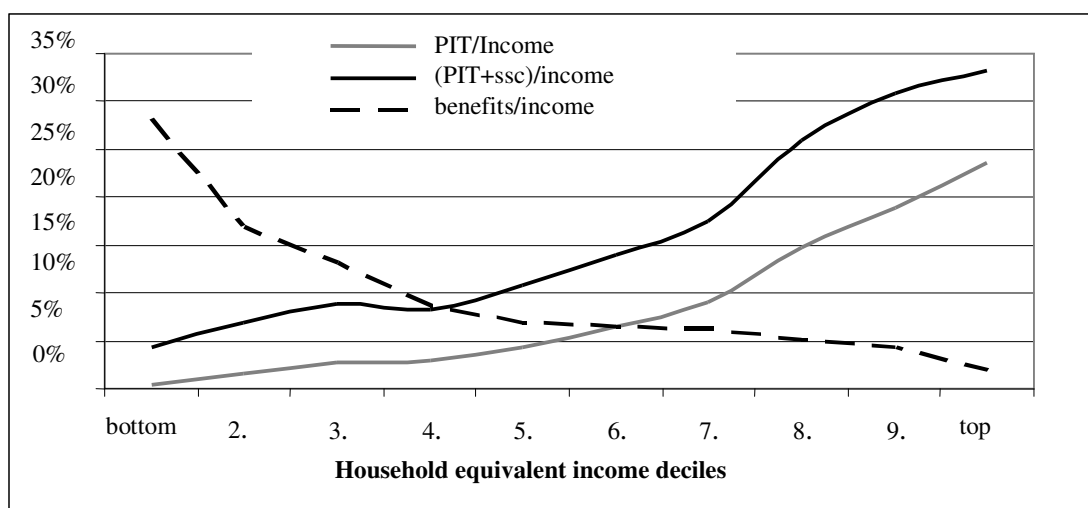
Figure 1 . Income taxes and cash benefits across income groups. Taxes (PIT), social security contributions (ssc) and benefits as a ratio of disposable income, %, households

Source: own calculations with TÁRSZIM2005
Note: benefits = universal child benefit + maternity benefits + gas price subsidy + regular social assistance + housing benefit

Figure 2 shows that a great proportion of benefits (plus family tax allowance) is allocated to the richer half of the population: the top five deciles get over 40% of the benefits. The bottom two decile groups get no more than 30% of the total spending. This may not be a problem per se, given that the welfare system's main function is not poverty alleviation per se, but also the smoothing of individual's incomes over the life cycle. Nevertheless, this ratio is not known and worth to be noted. Note also, that this figure does not say anything on the poverty alleviation effect of these transfers, nor does it include local means-tested social assistance. A final word on the results of the table: the decrease at the middle of the distribution is due to the fact that a high proportion of pensioners can be found here, who receive only a negligible share of the family benefits.
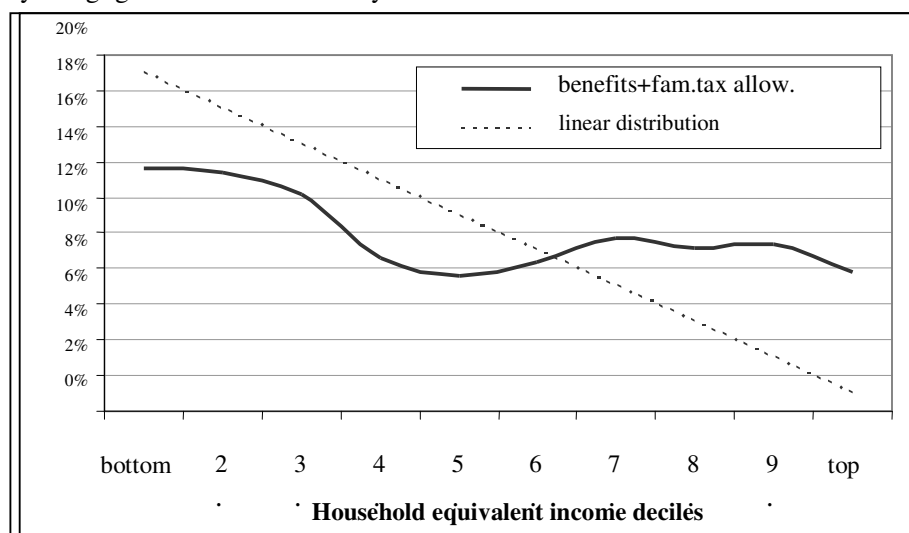

Figure 2: Where does budget spending go?
Distribution of the total sum of benefits and family tax allowance among deciles of households

Source: own calculations with TÁRSZIM2005

There is a great difference between the „intended" and actual progressivity of the PIT system, due to the impact of tax allowances and tax credits. This part of the analysis was conducted on the group of taxpayers, who make up less than 50% of the total population. In Figure 3 the per capita gross income and tax liability are arranged by net income, along with the implicit tax rate calculated as a ratio of the two. The difference between the two lines highlights the redistribution effect of tax allowances. The dashed line, the ratio of calculated tax to gross income, shows the rate of tax that *would be* borne by individuals in the various deciles *without the tax allowances.* This varies between 17% and 25% for the various groups, which is in line with the tax scheme. The implicit tax rate, indicated by the continuous line on the graph, which shows the ratio of *actual tax liability* to gross income taking tax allowances into account, is much more progressive and is more favourable to the less affluent groups of society. This rate is below 5% in the lower deciles, and then gradually rises along the income, until finally, in the top decile, it is up to 25%, which is almost as high as the rate calculated without the tax allowances. This suggests that the progressivity of the PIT system is rather weak when only the impact of tax brackets is considered, but becomes rather strong due to the effect of tax allowances.

The slight increase in the 2nd and 3rd decile groups is due to the fact that most of the self-employed belong here based on their declared income and they are not eligible for the most substantial tax allowance, the employee tax allowance.
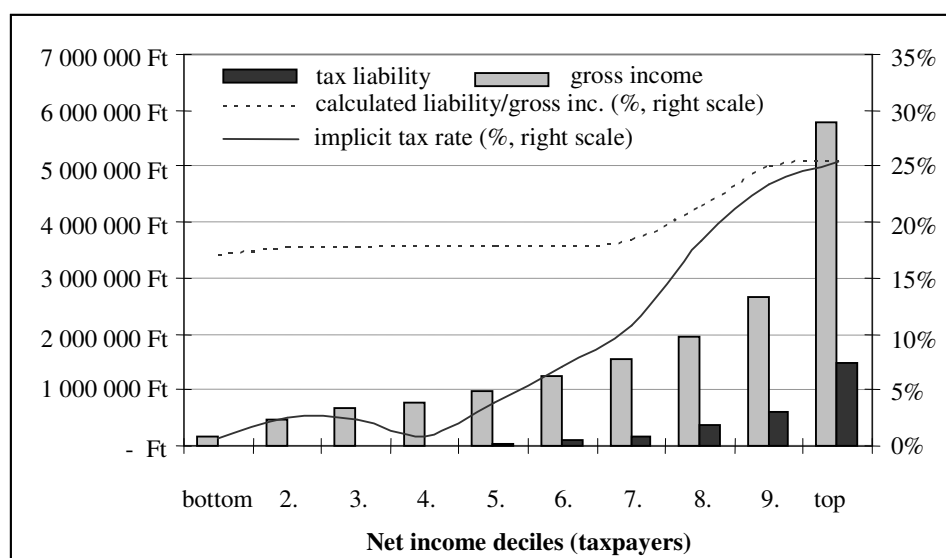

Figure 3. Gross income and tax liability, and the calculated implicit tax rate, 2006

Source: own calculations with TÁRSZIM2005
Note: implicit tax rate = actual tax liability/gross income (i.e. including tax allowances); calculated liability = tax calculated by the tax scheme + capital taxes (i.e. without tax allowances)

The Hungarian budget relies heavily on indirect taxes, and received about 63% higher amount from VAT than from PIT in 2006 [Ministry of Finance, (2007)], a typical phenomenon of economies with high tax evasion as the collection of the former is somewhat easier for the administration. Burden from both taxes falls on households (although note that some of the VAT is paid by corporations), but the progressivity is rather different. While PIT is progressive, VAT is actually regressive, in the sense that the share of VAT within incomes decreases as income increases (Figure 4). The reason of this phenomenon is that rich households differ from poor ones in terms of their savings rather than their spending. Redistribution via VAT is further complicated by the fact that goods under the preferential VAT rate (e.g. basic food items) are consumed in a similar amount by the rich and poor households, therefore the preferential rate subsidises all households to a similar extent. The progressivity of the

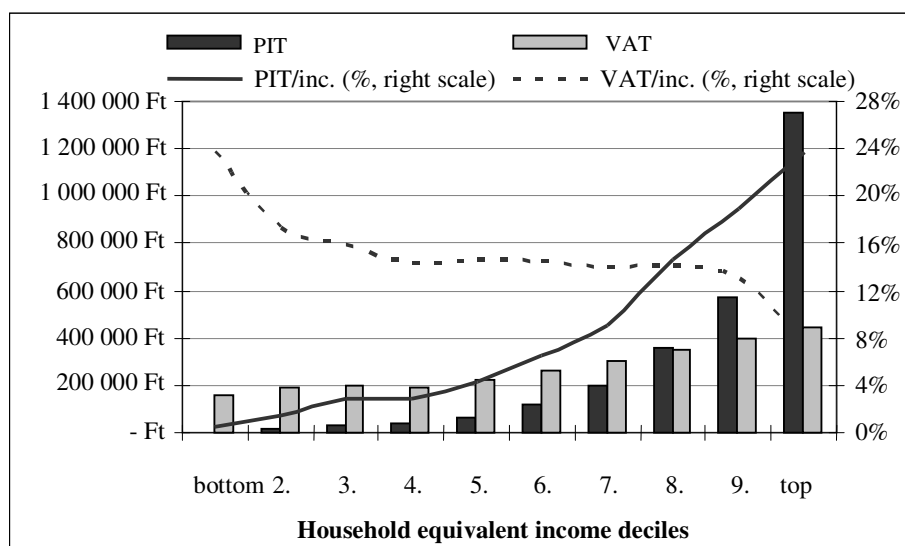VAT scheme might be also influenced by unit non-response in the consumption survey, as discussed before.

Figure 4. PIT and indirect tax (VAT and excise duties)
liability of households in forints and ratio of the disposable income

Source: own calculations with TÁRSZIM2005

The Hungarian data correspond to the theoretical propositions. In one of the first articles on this topic, Atkinson and Stiglitz (1976) argued that in an optimum income tax regime[ix] – if certain conditions are met with regard to the preferences of consumers – there is no need for indirect taxes (which may reduce the efficiency of the system). However it has been shown by several authors [e.g. Saez (2000)] that the information asymmetry between government and individuals still necessitates the application of indirect taxes. Another argument for indirect taxes is poor tax compliance, which precludes an optimum income tax regime. In the case of poor taxpayer morale, it is cheaper and easier to collect indirect taxes. Boadway, Marchand and Pestieau (1994) come to the conclusion that an optimum tax regime comprises a combination of direct and indirect taxes. With indirect taxes, however, for the sake of fairness, higher rates should be imposed on goods consumed more often by higher-income groups of society.

Although tax allowances seem to reach the poorest among the taxpayers, the picture is rather different when we focus on the disadvantaged within the whole population. The reason is rather intuitive: only a few households have labour income in the bottom decile, thus they cannot (fully) deduct tax allowances. In addition, pensioners, the majority of whom belong to the 4th to 7th deciles, are not entitled to most of these benefits either. On the other hand cash benefits do reach the poorest. It should be noted however that not all forms of tax allowances have poverty alleviation purposes, and some of them are not meant to be targeted to the poor. Figure 5 shows that the bottom decile receives a substantial amount of cash benefits, but cannot exercise tax allowances due to their low incomes. The second decile however can use both forms of support already. Nevertheless main beneficiaries of the tax allowances are in the top third of the distribution. It may not be surprising though, as tax allowances include preferential treatment of repayment of subsidised mortgage loans, life and pension savings, adult education, etc., which are often associated with the more affluent groups.
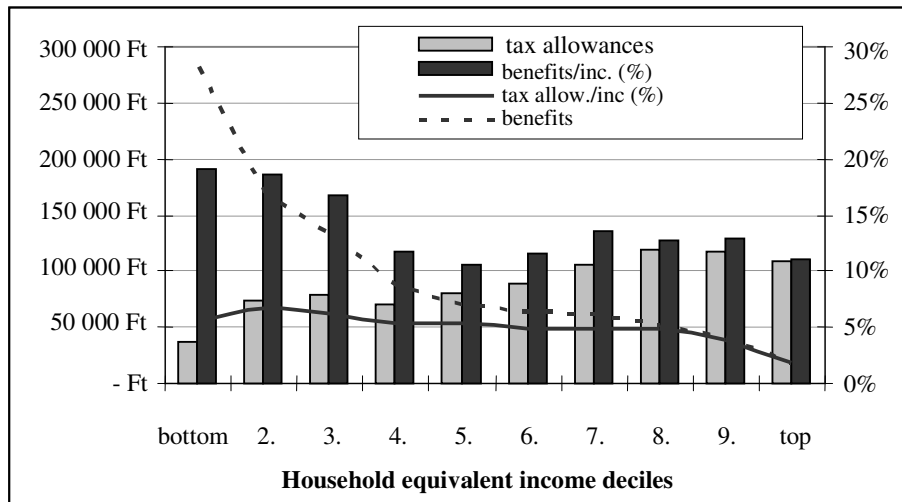
Figure 5 : Tax allowances and benefits per households in the deciles

Source: own calculations with TÁRSZIM2005

Employee tax allowance and family tax allowance are supposed to serve social purposes, but they do not reach the poorest decile sufficiently (Figure 6) either. The employee tax allowance is to guarantee that the minimum wage is exempt from PIT, and it is tapered away at higher income levels (the maximum amount of the allowance decreases to zero between 1.35 and 2 million HUF). Families with 3 or more children are eligible for family tax allowance. High proportion of these families belong to the lower deciles, therefore the targeting of this allowance is better, as a lower proportion goes to the upper half of the distribution, however the bottom 10 percent receives a lower proportion of this type of benefit than the second decile.
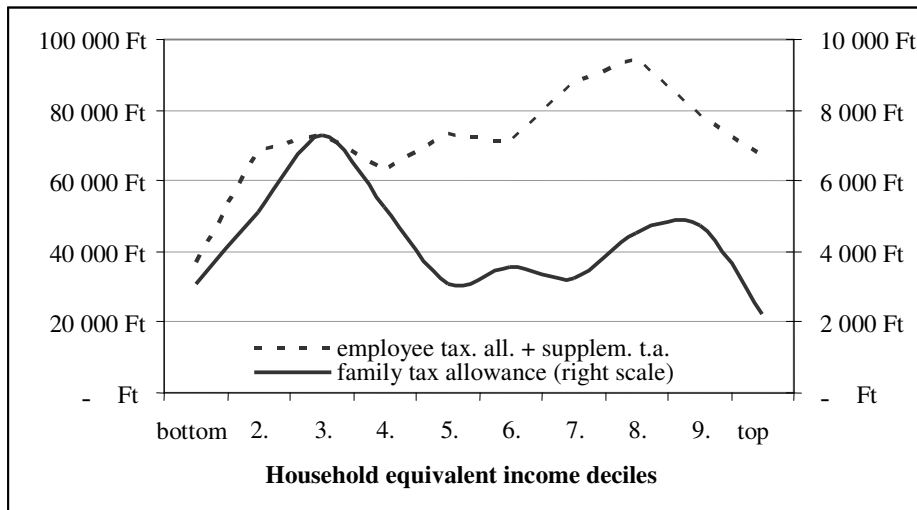

Figure 6: Average value of employee tax allowance and family tax allowance per households in various income deciles

Source: own calculations with TÁRSZIM2005
Note: the so-called "supplementary tax allowance" is added to employee tax allowance as they serve a similar purpose

The number of children is one of the main risk factors of poverty in Hungary. The universal child benefit, with its progressive amounts[x], is therefore rather successful in reaching the poorest income groups. In addition, this cash benefit is better targeted than tax allowances, which often cannot be fully deducted by those with low incomes. For example families with 4 or more children in the bottom decile group get about 50% of their total disposable income from this source, but even among the poorest 2-child families child support counts for about one third of their income. Although child support succeeds in reaching poor households well, the proportion of this benefit going to the upper half of the distribution is also remarkable, simply due to its universal nature.
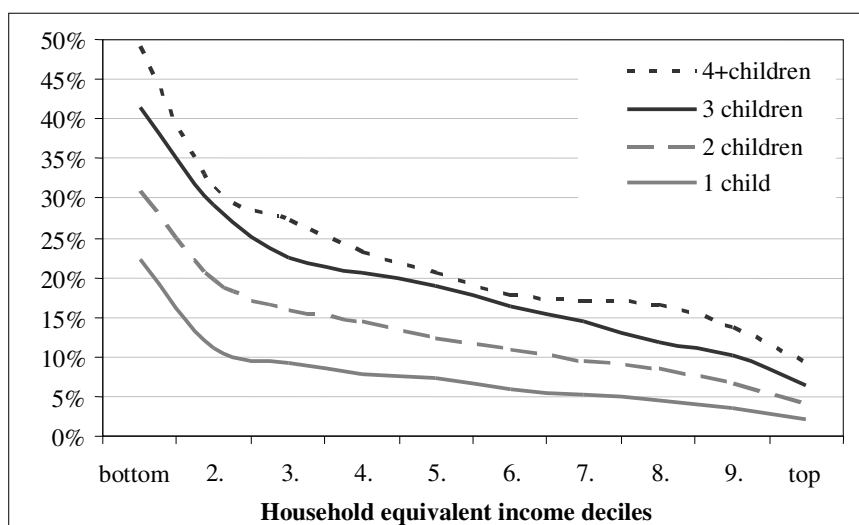

Figure 7: Proportion of the universal child benefit within total household income by income deciles and by number of children

Source: own calculations with TÁRSZIM2005

5. Effects of a flat tax system on incomes: gainers and losers

Flat tax appears to be a popular policy idea in Eastern Europe. The majority of Eastern European countries seem to have introduced such a scheme, starting with the Baltic states in the mid 1990s, followed by Russia, Ukraine, Georgia, Kazakhstan, Kyrgyzstan, Slovakia, Serbia, Romania, Macedonia later. Albania is planning to do so from 2008. Poland, and Greece is also considering such a move. In many of the countries it meant a simplification of the scheme, e.g. with the elimination of tax allowances, but also the lowering of average tax burden, although not in all of them. Lithuania, for example, set the flat rate at the highest bracket of the existing regime, 33%.

What is actually meant by "flat tax", varies a great deal per country. Very few countries have a flat tax scheme, where all types of incomes are taxed equally, including earnings, capital income and corporate income, and even less do tax consumptions to the same extent. Perhaps most strikingly, however, it would impose flat rates on people, irrespective of their income levels (and their abilities to conceal incomes, e.g. via transfers to foreign countries), thus giving up the role of the state in redistributing incomes via the tax system. This may save administrative costs, as all redistribution is costly, as claimed by Okun (1975) in his picturesque image of the leaky bucket. None of these countries, however, go for the "pure" version of it. In most cases, there are tax free limits for people with low incomes, at times also for families. Flat tax reform may have its appeal as it serves as an opportunity for simplifying the tax scheme, primarily from numerous tax allowances accumulated over long years due to interest groups rent-seeking. Simplicity saves takes administration costs and increases compliance.
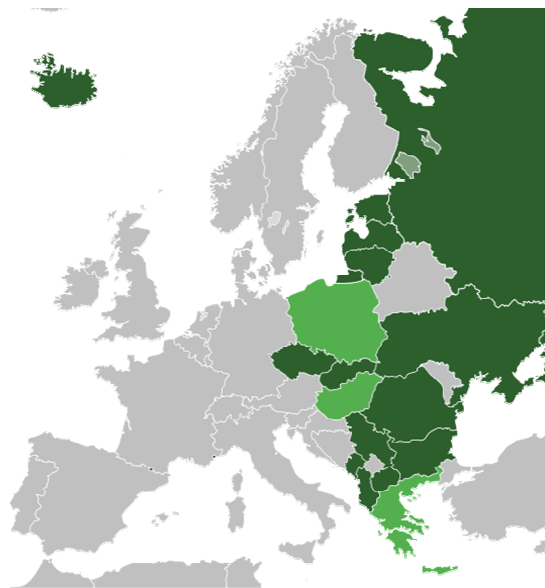
Figure 8: Flat tax systems in Europe, indicating countries which adopted a flat tax regime and those considering its introduction (Hungary, Poland, Greece)

Source: http://en.wikipedia.org/wiki/Flat_tax, Retrieved on 10 August 2008

Albeit the international popularity of the scheme, little is yet known on its impact on macro performance and on tax compliance. One of the success stories is Russia, where tax revenues have increased by 25% following the 2001 introduction of the scheme. Ivanova, Keen and Klemm (2005) find that the reform has probably increased tax compliance considerably (by one third) in Russia, it is not clear to what extent it is attributable to the parametric reform and to the increased law enforcement. The authors also highlight that oil revenues have increased massively in this period, resulting fast economic growth, thus producing greater tax revenues. Slovakia has introduced flat taxes as part of an overall structural reform, including pensions, social transfers, education, health care and the tax system. They introduced a uniform 19% tax rate (replacing 18 different rates), widened the tax base, and decreased, but not eliminated the progressivity of the tax system. The reception of the reform was positive by the international financial market, reflected in the improved country credit rating. On the other hand, there is no empirical evidence on the behavioral impact of the reform.

5.1 Microsimulation results

Referring to Hungary, we conducted a 'what if' type of analysis, where the tax regime parameters are entirely hypothetical. We take a tax regime that is somewhat similar to the one introduced in the course of tax reform in Slovakia, simpler than the existing Hungarian system: all tax rates (PIT and VAT) are set at 20%, there are no special tax rates but all incomes are combined and the flat rate is applied, the only allowance remaining is the employer tax allowance, the gas price subsidy is removed, but the means tested benefits, family benefits and insurance based benefits (including e.g. pensions) remain. The budgetary effects are not explored, yet we mean to present an example that is, on the whole, likely to be revenue neutral for the budget.

As mentioned before, the model is a static one, so it does not take account of behavioural responses. The economic outcomes are likely to be altered by behavioural responses. The virtue of such analysis is not prediction of long term outcomes, rather to show the day after effect, which is then likely to lead to certain actions. The policy relevance of such analysis is different, but equally relevant.

A 20% single tax rate would benefit primarily the higher-income groups. With the exception of the top fifth of the income distribution, there are no major differences in the PIT tax liability, the taxes paid by the richest would, however, be reduced substantially (Figure 9). VAT would increase in all

households and the gainers of PIT and VAT changes together would be the rich while losers would be the poor.
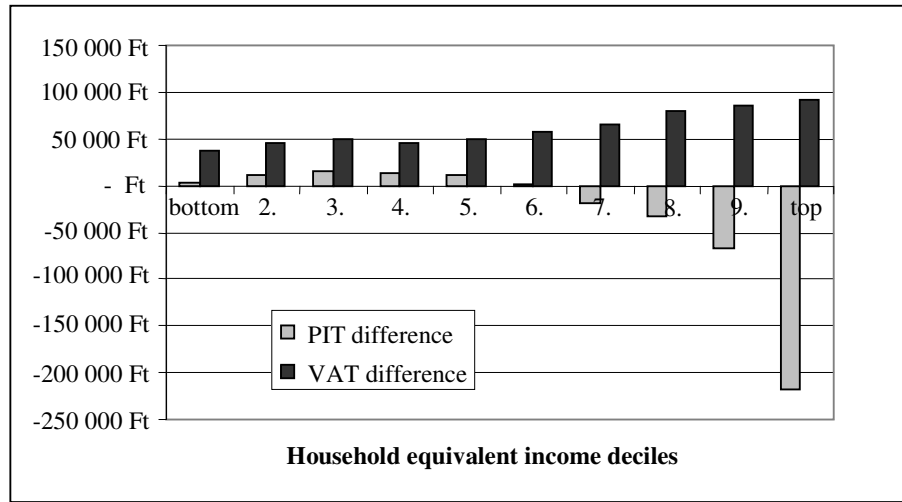

Figure 9: Increase in PIT and VAT liabilities of households compared to the 2006 system
(2006 vs 20% flat tax) by income deciles

Source: own calculations with TÁRSZIM2005

In terms of disposable income, the poorest would be affected worst by such a tax simplification (Figure 10). On the whole, only the top third of the distribution would benefit significantly, while people in the bottom half would be left with smaller disposable incomes.
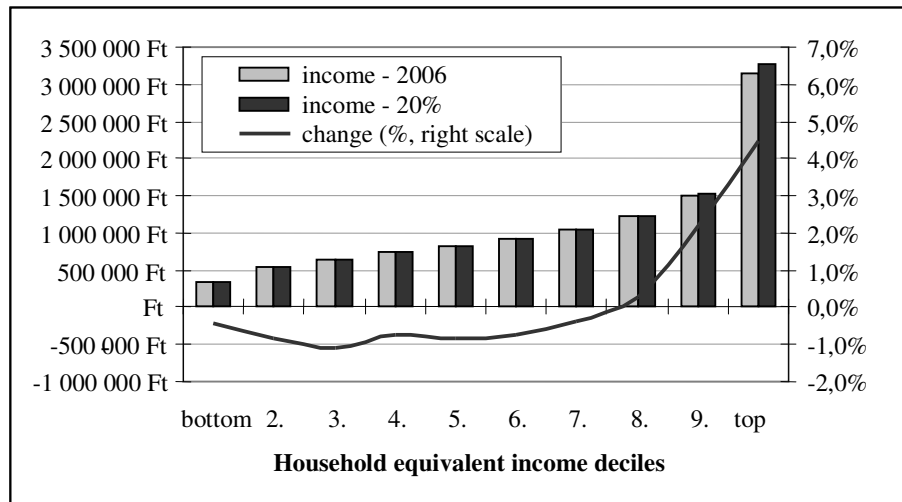

Figure 10: Equivalent disposable incomes in 2006 and after the tax simplification and % change

Source: own calculations with TÁRSZIM2005

Such a simplified tax system would benefit about 15% of households, while 15% of households would be worse off than at present. Income would not change substantially for the remaining households (Figure 11). Households gaining would be found at the top deciles while the proportion of losers is above 10% in each decile, but is the highest at the middle of the distribution. Therefore, the introduction of such a tax regime would reduce the extent of income redistribution.
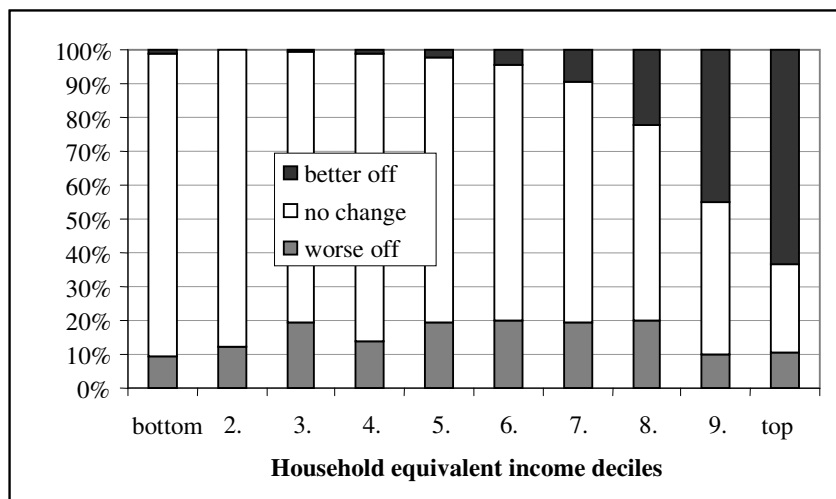
Figure 1. Distribution of households gaining/losing as a result of the changes

Source: own calculations with TÁRSZIM2005
Notes:
Worse off: whose per capita disposable income has dropped by more than 2%;
No change: whose per capita disposable income has not changed by more than 2%;
Better off: whose per capita disposable income has grown by more than 2%.

The political discussion and the debate of the theme should therefore be specific about the priorities and the parameters of such a reform, and any decision should be preceded by impact analyses of different kinds.

6. Conclusions

The paper presented evidence on the redistributive impacts of the current tax and benefit system and the possible effects of the introduction of a hypothetical 20% flat tax system in Hungary. There is little evidence on the size and impact of tax allowances, and they do not constitute part of the annual budgetary process. We showed that amount of tax allowances is substantial, and this type of benefits does not reach the poorest but rather the middle of the distribution. Cash benefits have a greater equalising role as they reach the poorest third of the population and significantly increase the disposable income of these groups. According to our calculations a Slovakian type flat tax system would mostly benefit the affluent households, while poorer losers are likely to lose out. The main reason is the changes in the income tax rates, with an increase at the lower and a decrease at the higher end, but the increase of the preferential VAT rate also plays a role. Future research options will significantly broaden by the incorporation of Hungary into the EUROMOD the European tax-benefit model [on Euromod see: Immervol, O'Donoghue and Sutherland, (1999); on the feasibility of enlargement Euromod to Hungary, see: Varga, Gabor, Szivos and Vajda (2006)]. Hungary is one of the four countries selected for the enlargement of the model as part of an ongoing project. The new version of the Euromod model would enable cross-country comparisons, including East and West, old and new member states. An interesting novel research area could be the estimation of the impact of tax evasion on income distribution. Microsimulation results, where the actual degree of tax compliance is taken into account rather than assuming full compliance, would provide more accurate insights into the restributive system as a whole.

7. Acknowledgements:

8. References:

[1] Alm, J., (1996), *What Is an „Optimal Tax System?"*, in: *National Tax Journal,* Vol. 49 no. 1, 117 – 133.

[2] Atkinson, A.B., Stiglitz, J.E., (1976), *The design of tax structure: direct versus indirect taxation*, in: *Journal of Public Economics* 6, 55– 75.

[3] Benedek, D., Firle, R., and Scharle, Á., (2006), *Degree and efficiency of redistribution*, in: *Ministry of Finance Working Papers* No. 17, Hungary.

[4] Benedek, D., Lelkes, O., Scharle, Á. and Szabó, M., (2006), *A magyar államháztartási bevételek és kiadások szerkezete 1991-2004 között* [The structure of general government expenditure and revenues in Hungary, 1991-2004], in: *Közgazdasági Szemle* **53**: 119 – 143.

[5] Benedek, D., Lelkes, O., (2005), *Assesment of Income Distribution in Hungary using a Microsimulation model*, in: *Ministry of Finance Working Papers* No. 10, Hungary.

[6] Boadway, R., Marchand, M., and Pestieau, P., (1994), *Towards a Theory of Direct-Indirect Tax Mix*, in: *Journal of Public Economics* 55, 71 – 88.

[7] Förster, M.F., Tóth I. Gy., (1997), *Poverty, inequalities and social policies in the Visegrád countries*, in: *Economics of Transition* **5**(2): 505 – 510.

[8] Förster, M.F., and Tóth, I.G., (2001), *Child poverty and family transfers in the Czech Republic, Hungary and Poland*, in: *Journal of European Social Policy* **11**(4): 324 – 341.

[9]Gábos, N.A., Szivós, P., and Györgyi, V., (2006), *Euromod I-CUE Feasibility Study: Hungary. The 2005 Tax-Benefit System.* Vienna, European Centre, Retrieved on 10 July 2007 from http://www.euro.centre.org/icue

[10] Immervol, H., O'Donoghue, C., Sutherland, H., (1999), *An introduction to EUROMOD*, in: *EUROMOD Working Paper* No. EM0/99.

[11] Ivanova, A., Keen, M., and Klemm, A., (2005), *The Russian 'Flat Tax' Reform*, in: *Economic Policy* 20(43): 397 – 444.

[12] Central Statistical Office, (2004), *Háztartás-statisztikai közlemények*, 25. szám, 2004. I. félév, Central Statistical Office, Budapest.

[13] Lelkes, O., (2000), *A great leap towards liberalism? The Hungarian welfare state*, in: *International Journal of Social Welfare* **9**(2): 92 – 102.

[14] Lelkes, O., (2006), *Tasting Freedom: Happiness, religion and economic transition*, in: *Journal of Economic Behavior and Organization* **59**(2): 173 – 194.

[15] Lelkes, O., (2007), *Tax-benefit microsimulation models in Eastern Europe*, in: *International Journal of Microsimulation.* 1(1): 54 – 56.

[16] Ministry of Finance, Hungary, (2007), *A központi költségvetés előzetes mérlege."* [Balance sheet of the central government, preliminary figures]. Retrieved on 15 July 2007 from www.pm.gov.hu

[17] Okun, A.M., (1975), *Equality and Efficiency: the Big Trade-Off*, Washington, The Brookings Institution.

[18] Redmond, G., (1999), *Incomes, incentives and the growth of means-testing in Hungary*, in: *Fiscal Studies* **20**(1): 77 – 99.

[19] Saez, E., (2002), *The desirability of commodity taxation under non-linear income taxation and heterogeneous tastes*, in: *Journal of Public Economics* 83, 217 – 230.

[20] Sutherland, H., Levy, H., and Paulus, A., (2006), *The effects of taxes and benefits on income distribution in the EU*, in: *Final Report of the Network on Social Inclusion and Income Distribution*, European Observatory on the Social Situation, financed by the European

Commission (DG Employment, Social Affairs and Equal Opportunities) http://ec.europa.eu/employment_social/social_situation/docs/sso2005_social_inclusion_report.pdf

[21] Szivós P., Rudas, T., Tóth, I. Gy., (1998), *TÁRSZIM97 Mikroszimulációs modell az adók és támogatások hatásvizsgálatára*, [Microsimulation model for analysing the impact of taxes and benefits]. *TÁRKI Társadalompolitikai tanulmányok* 10., TÁRKI, Budapest.

[22] TÁRSZIM, (2005), Professional microsimulation modell v3.2. Manual. TÁRKI Rt., Budapest.

[23] Tóth, I. Gy., (2005), *Jövedelemeloszlás. A gazdasági rendszerváltástól az uniós csatlakozásig,* [Income Distribution. From Economic Transition to the Accession to the European Union], Budapest, Századvég Kiadó. Andorka Rudolf Társadalomtudományi Társaság.

9. Notes:

i.   In Hungary, benefits make up 10% of gross incomes among the top quintile, while this ratio is about 20% in Austria and France.

ii. TÁRSZIM2005 model is the product of TÁRKI Social Research Inc., Budapest – the software was developed by VirgoSystems Kft. -, financed by the Ministry of Finance and Ministry of Social Affairs, using the datasets of APEH, CSO and TÁRKI.

iii. On the potential applications of EUROMOD see the publication series at http://www.iser.essex.ac.uk/msu/emod/publications/emodwp.php.

iv. For an overview of microsimulation models in Eastern Europe, see Lelkes (2007).

v.   On previous microsimulation modelling in Hungary see Szivós-Rudas-Tóth (1998), description of earlier model version of TÁRSZIM is presented on the relevant web page of TÁRKI: http://www.tarki.hu/research/mikro/index.html. See also Redmond (1999) on the results of the common model of CSO and University of Cambridge.

vi. Including the consumption of health care into someone's cash incomes would imply that people who are sicker would be shown as richer, simply due to the consumption of these services, with no obvious consequences of this „richness" on their well-being or utility.

vii. A detailed technical description of the compilation of the data file can be found in the Handbook of TÁRSZIM2005 Professional v3.2.

viii.For a detailed description of the Hungarian tax and benefit system see Benedek, Firle and Scharle (2006), and the structure of government taxes and spending, see Benedek, Lelkes, Scharle and Szabo 2006.

ix. An optimum tax regime is characterised by the following: as a result of market failures (external effects) the state needs to intervene in market mechanisms by applying taxes, i.e. the state needs to raise tax revenue. An optimum arrangement among the different tax systems is one that entails the smallest distortion or social cost (including primarily 'dead weight loss'). For more details on the subject see: James Alm (1996).

x.   The amount of benefit *per children* actually increases by the number of children (up to three children, where it stays the same for additional children). For example, a family with three children receives 3.8 times higher benefit than a one-child family.