# Taxes and Benefits:
# Work Incentive Effects of Policies[*]

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*Abstract*

*Using net replacement rates between net household income while out of work and in work, we investigate to what extent taxes and benefits may affect work incentives. We find that in 2006, net replacement rates are higher for low-income households and for households with children and a partner, attenuating work incentives. Work incentives are significantly affected by eligibility rules and the amounts of benefits, particularly unemployment benefit and social assistance. Next, we examine how the reform of social benefits introduced in 2007 affects work incentives. While social assistance is less generous, diminishing the incidence of high net replacement rates, the reform gives preferential treatment to households with some work income. Net replacement rates are also higher for households with children, who receive a substantially higher housing benefit, but some less well-off households consequently receive less social assistance. We also see that increased parental allowance has the same crowding-out effect on other income-tested benefits as higher housing benefit has on social assistance. In addition, the rise in parental allowance may lock eligible individuals in non-employment, increasing the loss of human capital. This is particularly important for lone parents, who face the highest specific unemployment rate compared to other household types.*

## 1. Introduction

Labor market institutions, particularly welfare benefits, have been identified as contributing to unemployment dynamics in market economies. For example, Nickell, Nunziata, and Ochel (2005) find that more than half of the rise in Western European unemployment from the 1960s to the first half of the 1990s is explained by changes in institutions, particularly welfare benefits, labor taxes, unions, and employment protection.[1]

The importance of financial disincentives for employed and unemployed workers is analyzed, for example, in Pedersen and Smith (2002). Based on a panel survey merged with administrative registers, they measure the financial incentives for Danish labor participants between employment and being on unemployment benefits, while they also account for fixed costs of work such as commuting and child care costs. The results show that in 1996, 6% of men and 13% of women had effective replacement rates higher than 100%, which they associate with substantial work disincentives. While they also include several attitude measures into the regressions,

[1] Blanchard and Wolfers (2000) argue on the other hand that the rise in unemployment is explained not by institutions themselves, but rather by interactions between institutions and shocks.

the main conclusion is that financial measures have the strongest influence on the risk of being trapped in unemployment. A negative impact of taxation on the labor market in developed economies is also indentified in Buti, Sestio, and Wijkander (2001). They conclude that in the past 20 years the importance of labor taxation has increased, leading to crowding out of labor for capital, particularly for low-skilled employees.

The evidence on the role of institutions in explaining unemployment paths is less straightforward for countries in Central and Eastern Europe (CEE). Boeri and Terrell (2002) find that relatively generous non-employment benefits in CEE economies established a wage floor in the 1990s that increased the pace of restructuring by shedding less productive labor. Their evidence, however, does not say whether welfare benefits are responsible for high unemployment rates. Focusing on the role of welfare benefits, Jurajda and Münich (2002) explore the mechanism of the rise in long-term unemployment in the economies of CEE using the case of the Czech Republic. They provide evidence on the importance of observable worker characteristics in driving Czech long-term unemployment and find a significant effect of welfare generosity on families with more than three children and low-educated parents. On the other hand, Commander and Heitmueller (2007) find little evidence that institutions, primarily unemployment benefits, can explain differences in unemployment rates or flows in the Czech Republic, Hungary, and Poland. They use OECD net replacement rates for specific family types and merge the rates with the individual level Labor Force Survey data, controlling for the number of children, marital status, and the length of unemployment.[2]

While the Czech tax system is comprehensively described, for example, in Bronchi and Burns (2000), there is only scant evidence on the interactions between taxes and benefits. Průša (2001) describes the social security system and displays distributions of households receiving particular benefits. His evidence is based on data from the Ministry of Labor. Using income surveys (Mikrocenzus), Večerník (2002, 2006) analyzes the joint effect of taxes and benefits on the distribution of household income. Based on household budget survey data, Schneider and Jelínek (2001) and Schneider (2004) examine in more detail the effects of the Czech social security system on household income distribution. Although some of these studies rely on individual-level data, their results concern aggregate measures. Jurajda and Zubricky (2005) calculate net replacement rates and marginal effective tax rates for a wide range of family types and earnings levels and assess how they affect work incentives. Hrdlicka et al. (2010) analyze the impact of the personal income tax reform introduced in 2008, focusing on changes in effective tax rates between 2006 and 2008. Their analysis thus captures changes in work incentives caused by the 2008 tax reform in interaction with changes in social benefits implemented in 2007.

The Czech labor market provides a unique opportunity to investigate the effect of welfare benefits on labor market dynamics. The unemployment rate was extraordinarily low in international comparison until the mid-1990s, but has increased since then (from 4.0% in 1995 to 7.3% in 2002).[3] The tax-benefit system may have

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[2] The OECD net replacement rates are calculated using tax-benefit equations for particular wage levels and types of households in order to investigate the prevalence of high net replacement rates, indicating the presence of unemployment traps (OECD, 2004; OECD, 2007; or Carone et al., 2004). The OECD regularly stresses that the existence of such a significant disincentive resulting from the loss in benefits when commencing employment affects the individual's leisure-labor substitution.

**Figure 1 Unemployment Rate by Household Types (%)**
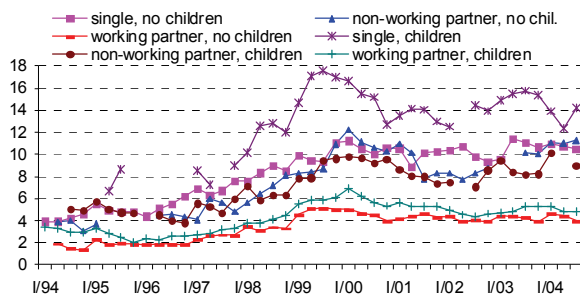


*Source:* Labor Force Survey.

contributed to the rise in unemployment. In particular, providing relatively high welfare income increases the reservation wages of the unemployed, attenuating job search incentives. Furthermore, if welfare benefits affect labor market dynamics, decreasing the package of welfare benefits would alleviate high unemployment.

To illustrate the effect of household composition on labor market performance, *Figure 1* shows specific unemployment rates for selected household types.[4] Six household types are defined, namely, without or with children, and also without a partner or with a partner (a second adult household member), either non-working or working. The results suggest that the unemployment rate increased for all household types at the end of the 1990s, particularly for single adults living with children (lone parents). On the other hand, the unemployment rate is the lowest for persons from households with a working partner, either with or without children; it increased by only about 3 or 4 percentage points between 1996 and 2000.

These results indicate that household composition, and particularly the presence of another adult person in the household and her or his labor supply, significantly affects the unemployment rate.[5] This suggests that labor supply is often a joint decision within couples. On the other hand, less labor market experience and low attachment to the labor market may to some extent explain the high unemployment rate of lone parents. These are important factors to incorporate into the analysis of the link between net replacement rates and labor market dynamics.

In this paper we ask to what extent Czech taxes and benefits may affect employment and unemployment. We derive tax-benefit equations for 2006 and, using these equations, we analyze for specific household types' net replacement rates between the net household income when a person stays at home and the net household income when the person works, assuming that the income of other household members, if

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[3] The unemployment rate increased after the mid-1990s due to a recession. This was associated with considerable changes in labor market flows. In particular, the inflow rate into unemployment almost doubled in the second half of the 1990s, while the outflow rate from unemployment decreased in that period, increasing the incidence of long-term unemployment (Galuščák and Münich, 2007).

[4] The specific unemployment rates comply with the ILO definition, i.e., an unemployed individual does not have a job, is actively seeking a job, and is ready to start working within two weeks.

[5] Sorm and Terrell (2000) explore demographic factors of labor market flows in 1994–1998 using the Czech LFS. They find that married people are more likely to be employed than single people.

any, is unchanged. We associate high net replacement rates with work disincentives.[6] We focus on the pecuniary motivation for job search, but other factors, such as job search monitoring by the authorities providing social benefits, are also important. We investigate which instruments particularly affect net household income, increasing net replacement rates. We analyze major changes to benefits introduced in 2007 and their effect on work incentives. In the paper we concentrate on the pure effects of the combination of taxes and benefits on labor market behavior, and neglect, for example, redistributive effects or the incidence of poverty rates.[7]

The paper is organized as follows. Section 2 describes the system of taxes and benefits in the Czech Republic in 2006 and the main changes introduced in 2007. We focus on those taxes and benefits which we use in the microsimulations. Section 3 describes the microsimulations. In Section 4 we discuss the results, while Section 5 concludes. Figures showing the main results are provided in the *Appendix*.

## 2. Taxes and Benefits

In this section we describe the Czech tax-benefit system in 2006 and the main changes introduced in 2007. The tax-benefit system in general consists of taxes and social and health insurance contributions and social benefits. Taxes and benefits are administered at the central level, with the exception of social assistance benefits, which are provided at the municipal level. We focus our description on benefits, which we use in the microsimulations, and on personal income tax and social and health insurance contributions paid by employees.[8]

Personal income tax[9] is paid by a person who has residence or lives in the Czech Republic for at least 183 days in a year. The tax base includes wages and salaries, income from business activities, capital income, rental income, and other income. Some types of income, such as income of authors of less than CZK 3,000 per month and dividends, are taxed at separate tax rates. The tax base does not include sickness benefits, state social support, social assistance, unemployment benefit, the amount of pensions lower than CZK 162,000 per year, stipends, tax bonuses, etc.

The income tax is paid from the tax base minus social and health insurance contributions and other tax deductible items such as gifts to charitable organizations and interest used for mortgage repayments. Married couples with at least one child all living in the same household could choose in 2006 to fill out a joint tax return. Four marginal tax rates were applied in 2006: 12%, 19%, 25%, and 32%. Taxpayers could deduct the following amounts from their income tax: personal allowance for each taxpayer, spouse allowance, disability allowance, student allowance, and allowance per child.

Social and health insurance contributions consist of social insurance (further divided into pension insurance, contributions for the state employment policy, and

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[6] We do not associate work disincentives with a specific threshold in the net replacement rate.

[7] We assume that the demand side of the labor market does not constrain work incentives. We also do not consider fixed costs of work related, for example, to commuting and child care. These costs would in principle lead to higher net replacement rates.

[8] See Galuščák and Pavel (2007) for a detailed description of the Czech tax and benefit system. Taxes and benefits are also described in Hrdlicka et al. (2010).

[9] Income tax is paid by corporations and individuals. Since the microsimulation model is household-oriented, the following paragraphs are devoted to personal income tax.

sickness insurance) and health insurance contributions. The contributory base is the gross wage plus any bonuses, but not income which is not subject to income taxation, occasional income, income taxed under a separate tax scheme, etc.[10]

Social benefits include social insurance benefits (unemployment benefits, sickness benefits, pensions), state social support (child benefit, social supplement, housing benefit, parental allowance, foster care benefit, birth grant, funeral grant), and social assistance (social assistance benefit, social care benefit). The system is organized around the *minimum living standard* (MLS), which is calculated at the personal and household level, and is intended to reflect the cost of living. Most types of benefits are then defined as given percentages of the overall family level MLS.

*Unemployment benefit* (podpora v nezaměstnanosti) is available to individuals actively searching for a job who were employed for at least 12 months in the previous three years and who are not receiving an old-age pension, full invalidity pension or sickness benefits. The benefit is non-taxable and is calculated from income net of social insurance contributions and income tax in the previous job. The amount of the benefit is 50% of the previous income in the first three months and 45% in the following three months of the unemployment spell, but not more than 2.5 times the MLS of an adult one-member household (i.e. at most CZK 11,050 per month in 2006). Furthermore, the benefit is paid for longer than six months for persons older than 50.

All benefits provided through state social support are non-taxable and may be divided between income-tested and non-income-tested benefits. Net household income for the purposes of income tests for state social support is defined as income net of income tax and contributions, sickness benefits, unemployment benefits, pensions, etc. The tax bonus per child is not included. A family is defined for the purposes of state social support (except housing benefit, for which all persons with the same domicile address are considered) as a person, dependent children, parents of dependent children, spouses or partners, and dependent children of dependent children (if they are not married, widowed or divorced) if they live with the person in the same household and meet the costs of living together.[11]

*Child benefit* (přídavek na dítě) is targeted at families with children if their net household income in the previous calendar year is less than $3 \times MLS$ of the family. The net household income which is tested for the purposes of child benefit is the net household income (defined above) plus foster care benefit and parental allowance (defined below). A *social supplement* (sociální příplatek) is available to families with at least one dependent child if their net income was less than $1.6 \times MLS$ in the previous quarter. Net household income for the purposes of the income test is the net household income relevant for the child benefit test plus child benefit. *Housing benefit* (příspěvek na bydlení) is available to families who own or rent a flat and whose net income was below $1.6 \times MLS$ in the previous quarter. A household or a family is defined as all persons residing at the same domicile address. The household may thus contain, for example, non-relative persons such as tenants. Housing benefit is received by the household head. Due to common practice, however, we assume for

[10] Employees pay 8.0% of their gross income in social insurance and 4.5% in health insurance.

[11] The definition of a family for the purposes of state social support and social assistance includes spouses or partners. Within personal income tax, spouse allowance may be applied for one's own spouse only.

the purposes of the microsimulations that a household is defined in the same way as for state social support and for social assistance. Net household income for the purposes of the income test for housing benefit is the same as for the social supplement. *Parental allowance* (rodičovský příspěvek) is a non-tested benefit available to a parent who cares in person and on a daily basis for a child up to four years old, or up to seven years old when the child is disabled. The amount of the parental allowance is $1.54 \times MLS$ of an adult person (CZK 3,696 in 2006).[12]

Social assistance includes social assistance benefits and social care benefits. *Social assistance benefit* (dávka sociální potřebnosti) serves as a last resort. When the net household income, including any state social support benefits, is less than the family-level MLS, the household is entitled to social assistance benefit that tops up the net household income to the household level MLS. Net household income is defined as the average monthly income, net of income tax and contributions, plus unemployment benefit, sickness benefit, pensions, and state social support. The tax bonus is not considered. Social assistance benefit may be increased to account for the cost of housing or costs related to health, etc. Conversely, it can be lowered if the person is not actively searching for a job or active in improving his or her own financial situation, etc. *Social care benefit* (dávka sociální péče) is a one-off specific allowance usually paid to disabled people for specific purposes.

In 2007, taxes and social and health contributions were not changed, but major changes to some benefits were implemented. The main pillar of the reform in 2007 was the changeover to a one-component construction of the minimum living standard level and the introduction of an existence minimum. Consequently, the income test rules were adjusted for child benefit and the social supplement. Major changes to parental allowance, housing benefit, and social assistance were introduced. The concept of the minimum living standard was changed to reflect the number of persons in the household only. In particular, household level MLS amounts are no longer defined, while the personal amounts account for the second and further adults in the household at a reduced rate. In addition to the new MLS concept, a so-called "existence minimum" of CZK 2,020 a month was introduced as the minimum amount necessary to survive. It replaces the MLS in the formula for social assistance benefits if an unemployed person does not cooperate to improve his situation (refuses job offers etc.). The existence minimum is not applied to dependent children or persons receiving full invalidity or old-age pension or older than 65.

The maximum amount of *unemployment benefit* was increased to 58% of the economy-wide average wage in the first three quarters of the preceding year, i.e. CZK 11,722, while it was CZK 11,050 in 2006. The formulas for *child benefit* and the *social supplement* were adjusted to reflect the changes in the MLS.[13] The amount of *parental allowance* increased substantially to 40% of the average wage in the non-profit sector two years before. In 2007 it was equal to CZK 7,582, while it was CZK 3,696 in 2006.

The construction of *housing benefit* was changed to account for housing costs. The household is entitled to this benefit if its housing costs are higher than

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[12] Other non-tested benefits include foster care benefit (dávka pěstounské péče), birth grants (porodné), and funeral grants (pohřebné).

[13] In January 2007, the amount of the birth grant was slightly increased.

30% (35% in Prague) of the net household income, while the housing costs are at most normative costs. The normative costs are declared by the Ministry of Labor and Social Affairs, reflecting the number of persons in the household, the number of inhabitants in the municipality, and the type of housing (rental and other). The amount of the housing benefit is equal to the difference between the normative costs and 30% (35% in Prague) of the net household income. If the net household income is lower than the MLS, the household is entitled to the benefit if its housing costs are higher than 30% (35% in Prague) of the MLS. The amount of the benefit is 30% (35% in Prague) of the MLS.

Within *social assistance benefit,* the net household income relevant for the income test reflects 70% of work and other income and 80% of unemployment benefits and sickness benefits. Within social assistance, a new benefit (***housing supplement***) is provided. It is targeted at households whose net household income, including housing benefit and social assistance benefit and after paying housing costs (at most the normative costs), is still lower than the MLS. Their income is then topped up to the MLS on the assumption that the individual actively seeks a job. Due to common practice, we assume that all individuals eligible for social assistance benefits meet the requirement of active job search.

## 3. Microsimulations

Using the information provided in the previous section, we write tax-benefit equations. For appropriate parameters from 2006 and 2007, the equations allow us to calculate personal income tax for any individual with taxable income, considering tax allowances, and social and health insurance contributions. Using the assumption on household composition, we determine the benefits for which the household is eligible and the resulting net household income. We simulate the following benefits: unemployment benefit, child benefit, social supplement, housing benefit, parental allowance,[14] and social assistance benefit.[15]

We define three household types without children and three household types with two children aged 6 and 4: a single adult, a one-earner couple (with a non-working partner), and two-earner couple (with a partner earning half of the full economy-wide average wage).[16] In order to investigate the effect of increased parental allowance in 2007, which is provided for caring for children younger than 4, we consider a further three household types with two children aged 4 and 2 as an alternative.

Applying the tax-benefit equations to these prototypal households, we calculate net replacement rates (NRR) as

$$NRR = \frac{y_{out}}{y_{in}}$$

where $y_{out}$ is net household income when the household member is out of work and

[14] Child benefit, social supplement, housing benefit, and parental allowance represent major benefits provided through state social support. In 2006, 32% of the costs for state social support were for child benefit, 13% for social supplement, 7% for housing benefit, and 40% for parental allowance.

[15] In 2007, housing supplement was a part of social assistance.

[16] Our choice represents the main household types. The same household types are used by OECD. See OECD (2007) and also Immervoll et al. (2004) for a discussion of the representativeness of these household types.

$y_{in}$ is net household income when the household member works, assuming that the gross income of the other adult partner in the household, if there is any, remains the same.[17]

We consider two out of work labor market states in $y_{out}$. The short-term unemployed are those receiving unemployment benefits (which expire after 6 months), while the long-term unemployed are defined as persons without unemployment benefits. We assume a household living in a small town in simulating housing benefit. Regarding social assistance, we assume that all the unemployed are actively seeking a job, so that when a household is eligible, social assistance benefits top up the net household income to the MLS amount.

The microsimulations do not capture income from the informal economy. In particular, income from unofficial work is not included in net household income, which is tested for the purposes of benefit eligibility. Households have incentives to declare low net household income in order to be eligible for social benefits. On the other hand, income from informal work leads to higher net replacement rates.[18] The non-take-up of benefits is another effect which is not captured by our micro-simulations. It reduces net replacement rates, thus increasing work incentives. Mareš (2001) shows that the non-take-up is in general less widespread than in other EU countries. Hence, we believe that our results are little affected by neglecting the non-take-up of benefits.

## 4. Results

We investigate net replacement rates for particular household types in 2006 in the case of transitions between employment and short-term unemployment (*Figure A1*), and between employment and long-term unemployment (*Figure A2*). We also decompose the net replacement rates into the contributions of net work income and particular benefits.

In general, net replacement rates are higher for low wage earners, as indicated in left-hand part of the NRR profiles, while they are also higher when children or a partner are present in the household. Regarding transitions into short-term unemployment (*Figure A1*), the amount of unemployment benefit significantly affects net replacement rates for all the household types. Social assistance is the main factor increasing the NRR for low wage earners among single individuals and households with a non-working partner, while the contributions of housing benefit and for households with children of child benefit and social supplement are lower.

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[17] Net replacement rates show how net household income drops when a household member becomes unemployed. NRRs thus indicate the degree of generosity of benefits while out of work. In fact, the drop in net household income is less pronounced for two-earner couples. A more relevant indicator of financial incentives to work may be the average effective tax rate, which relates the change in net household income to the change in gross earnings of a household member and is thus not directly affected by income earned by other household members. See OECD (2007) for definitions of work incentives indicators. In this paper, we use net replacement rates as an indicator of work incentives.

[18] Jurajda and Zubricky (2005) show that income from unofficial work significantly reduces the job-seeking incentives for unemployed persons. In particular, when taking up an official job, net replacement rates may be greater than 100%, since entering into the official employment figures results not only in the loss of some social support, but also in the loss of any income from unofficial work. Evidence on high disincentives to job-seeking of persons with income from unofficial work can also be found in Jahoda (2004).

For transitions between employment and long-term unemployment, where unemployment benefit is not provided, net replacement rates are driven primarily by social assistance in the case of single individuals and households with a non-working partner, or by the work income of the other partner, if there is any (*Figure A2*). For all household types, other benefits contribute to the net replacement rates, particularly for low wage earners.

Net replacement rates capture relative changes in net household income in the state without and with employment. In order to examine how the reform in 2007 affects net household income in both employment and unemployment, we investigate the contributions of taxes and social benefits to net household income in 2007 relative to 2006 in *Figures A3* to *A5*. While the left-hand panels show the changes in contributions to net household income in CZK for employed individuals, the middle panels concern the short-term unemployed with unemployment benefits, and the right-hand panels are for the long-term unemployed, who are not eligible for unemployment benefits.[19]

Among households without children (*Figure A3*), employed low wage earners living alone or with a non-working partner see a mild increase in their net household income due to higher housing benefit and social assistance, except for the lowest wages, where the social assistance is reduced. Social assistance benefits are affected by two factors in 2007. While the lower MLS in 2007 leads to a lower amount of social assistance benefits, the benefits are conversely increased by the introduction of reduction coefficients into the eligibility test for social assistance in 2007 (see Section 2). This favors households with work income, as more households with some work income are eligible for social assistance benefit in 2007. The increase in net income is hence about CZK 1,600 per month for individuals earning about 40% of the average wage from households with a non-working partner (left-hand middle panel in *Figure A3*).[20] The peak moves to 80% of the potential entry wage for the short-term unemployed from the same household category (middle panel in *Figure A3*). On the other hand, the short-term unemployed with a high entry wage benefit from the rise in the maximum amount of unemployment benefit in 2007 (see all middle panels in *Figure A3*). Finally, long-term unemployed persons living alone or with a non-working partner are worse off in 2007 than in 2006 (right-hand panels in *Figure A3*). While the housing benefit is higher, the reduction in social assistance due to the lower MLS leads to lower net household income in 2007 than in 2006 for households without a partner or with a non-working partner. On the other hand, the long-term unemployed from households with working partners (earning half of the average wage) see higher net household income in 2007 due to higher social assistance (right-hand bottom panel in *Figure A3*). This category benefits from the introduction of reduction coefficients into the income test for social assistance in 2007, leading to higher social assistance benefits for households with a working partner relative to households where the partner has no work income.

[19] In *Figures A3* to *A5* the left-hand part is the change in 2007 relative to 2006 in $y_{in}$ in (1), the middle part is the change in $y_{out}$ for the short-term unemployed, and the right-hand part is the change in $y_{out}$ for the long-term unemployed.

[20] Total net household income per period is used in income tests for social benefits. However, most workers work full-time in the Czech Republic, suggesting that the incidence of very low-wage earners is low, as the ratio of the full-time minimum to average wage was 38% in 2006.

The reform of benefits introduced in 2007 brought significant changes to the net income of households with children, as documented in *Figures A4* and *A5*. While the overall patterns are similar to those of households without children, households with children receive substantially higher housing benefit and also a higher social supplement, while for low wage earners and the long-term unemployed (single or with a non-working partner) the social assistance benefit is reduced. In particular, employed individuals either without or with a partner who does not work have a higher net household income if they earn up to 100% or 120% of the average wage (left-hand panels in *Figure A4*). On the other hand, all household types with short-term unemployed individuals (middle part in *Figure A4*) receive more in 2007 due to higher housing benefit, except for very low potential entry wages, where social assistance is reduced. Furthermore, the long-term unemployed are worse off in 2007 if there is no partner in the household, or have about the same net income if they have a non-working partner (right-hand upper and middle panels in *Figure A4*). They do not benefit from the increased housing benefit, because of a significant drop in social assistance due to the lower MLS in 2007. On the contrary, long-term unemployed individuals face higher net household income if there is a working partner in the household (right-hand bottom panel in *Figure A4*). Again, the reduction coefficients implemented in the eligibility test for social assistance benefits do not penalize households with work income as compared to households where no one works. Households with children also see a higher social supplement in 2007, while various positive and negative peaks in net household income are observed due to shifts in the eligibility criteria for child benefits.

The contributions of taxes and benefits to net household income are simulated in *Figure A4* for households with two children aged 6 and 4. In order to examine how the significant rise in the amount of parental allowance in 2007 affects the results, *Figure A5* shows the net household income change for households with two children aged 4 and 2 that are eligible for parental allowance. As parental allowance is not income-tested, all household types benefit from the increased parental allowance regardless of the labor market status of the person in question. However, households, particularly those with low wage earners or long-term unemployed individuals, face reductions in other benefits, so that the total change in net household income is lower than the amount of the increased parental allowance. The conclusion from this comparison is that while the parental allowance is higher for all, some less well off households lose by reductions in other income-tested benefits.

## 5. Conclusions

In this paper we ask to what extent Czech taxes and benefits may affect work incentives. We investigate net replacement rates between net household income in the states without and with work income of a household member and associate high levels of these rates with work disincentives. We first show that unemployment is related to household composition, particularly to the presence of a partner and her or his labor supply and also to children in the household. In particular, the specific unemployment rate is the highest for lone parents with children, while it is low for individuals from households with a working partner. This suggests that labor supply is often a joint decision within couples and that work habits due to household compo-

sition and labor market attachment affect labor market behavior. Hence, we simulate net replacement rates by household types.

We show that net replacement rates are higher in 2006 for low-income households and households with children or a partner. While unemployment benefit affects net replacement rates for the short-term unemployed, social assistance significantly affects the net replacement rates of households comprising low-wage single individuals and households with a non-working partner. Social assistance also largely determines the net replacement rates of households with long-term unemployed individuals living without a partner or with a non-working partner. Eligibility rules and the amounts of benefits, particularly unemployment benefit and social assistance, are thus important, as they may affect work incentives.

We also provide evidence on how the reform of social benefits introduced in 2007 impacts on work incentives through changes in net household income. We find that long-term unemployed persons living alone or with a non-working partner are worse off in 2007 than in 2006. They receive a higher housing benefit in 2007, but social assistance benefits are reduced, so that their net household income is lower in 2007 than in 2006. On the other hand, long-term unemployed individuals from households with a working partner benefit from the introduction of reduction coefficients into the eligibility rule for social assistance. While social assistance is in general less generous, diminishing the incidence of high net replacement rates for low wage earners from households with a non-working partner, the reform gives preferential treatment to households with some work income by increasing the amount of social assistance benefits

The reform in 2007 led to significant changes in the net income of households with children. The effect of the reform is in general the same as in households without children, but households with children receive substantially higher housing benefit. On the other hand, lower social assistance for households without a partner or with a non-working partner decreases their net household income. We also show that households with small children greatly benefit from a higher parental allowance in 2007, but some less well-off households (with low wage earners or long-term unemployed individuals) see a reduction in other income-tested benefits. Increased parental allowance thus has the same crowding-out effect on other income-tested benefits as higher housing benefit has on social assistance. In addition, the higher parental allowance may lead to a loss of human capital among parents by locking them in non-employment. This is particularly important for lone parents, who face the highest specific unemployment rate compared to other household types.

APPENDIX

**Figure A1  Contribution of Benefits to NRRs in 2006:**
**Transitions Into Short-Term Unemployment**
(Left: no children, right: two children aged 6 and 4)

**no partner**



**non-working partner**
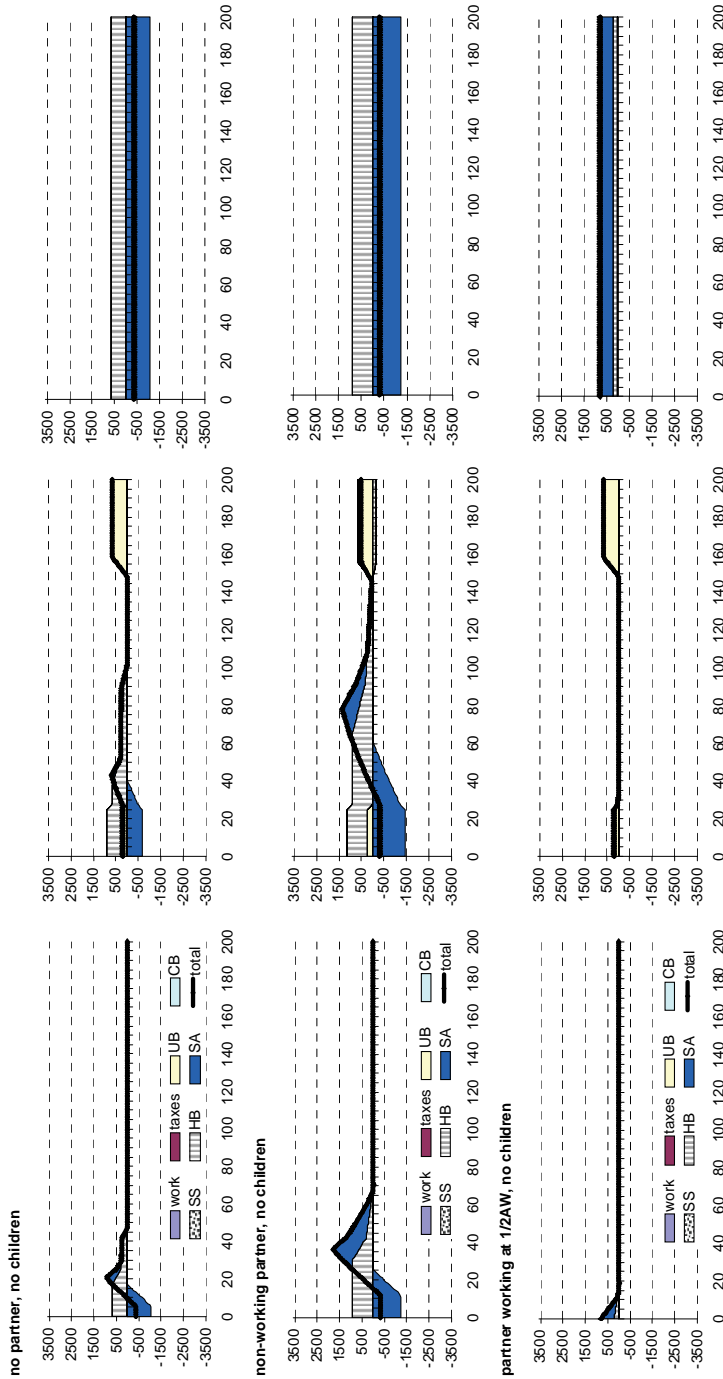


**partner working at 1/2 AW**
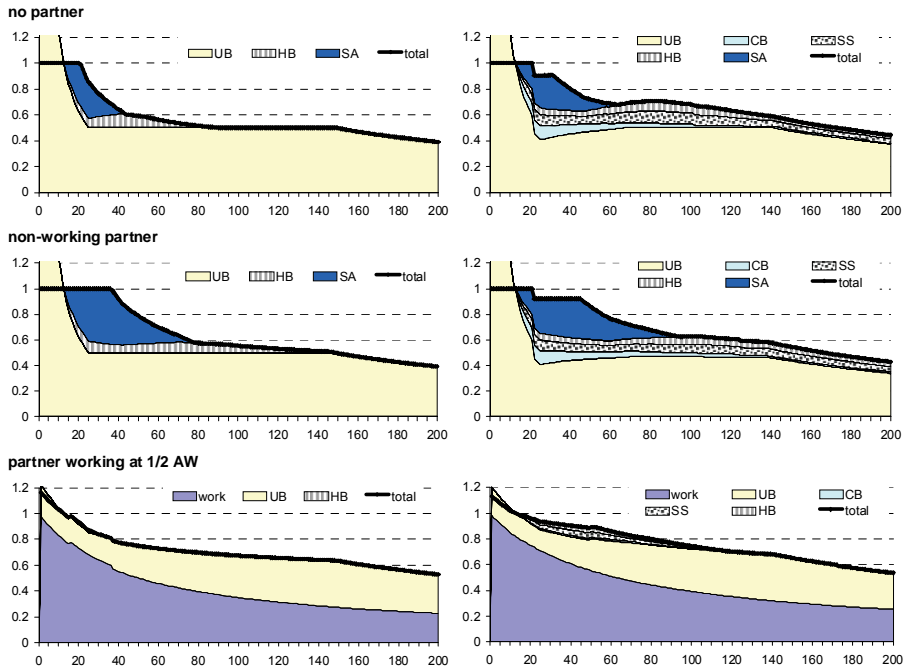


*Notes:* Transitions between employment and short-term unemployment; the wage in the relation to the economy-wide average wage in % is on the horizontal axis. Contribution of work income (work), unemployment benefit (UB), child benefit (CB), social supplement (SS), housing benefit (HB) and social assistance (SA). The ratio of the minimum to average wage was 38% in 2006.

**Figure A2  Contribution of Benefits to NRRs in 2006:**
**Transitions Into Long-Term Unemployment**
(Left: no children, right: two children aged 6 and 4)
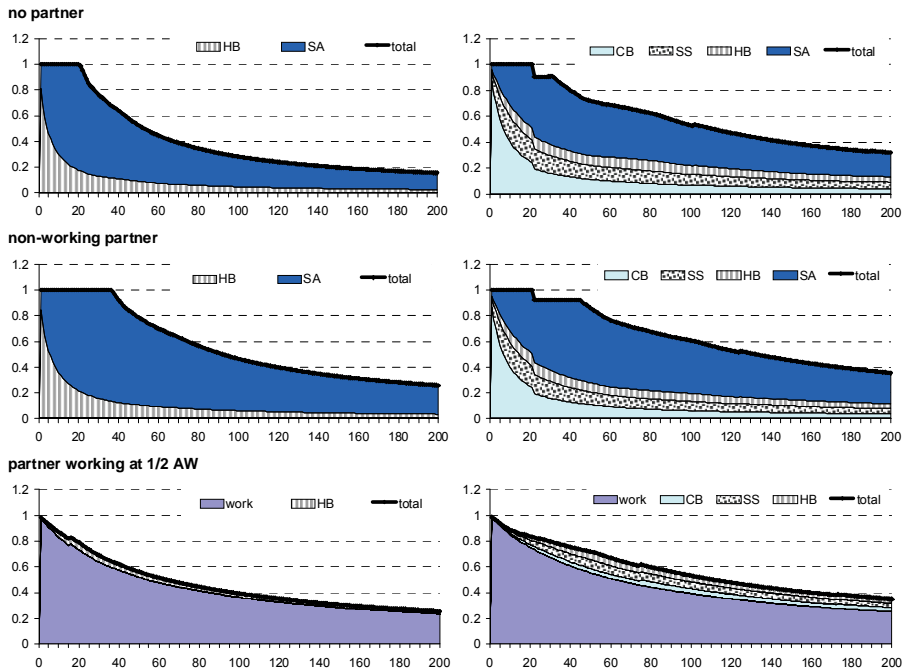


*Notes:* Transitions between employment and long-term unemployment; the wage in the relation to the economy-wide average wage in % is on the horizontal axis. Contribution of work income (work), child benefit (CB), social supplement (SS), housing benefit (HB) and social assistance (SA). The ratio of the minimum to average wage was 38% in 2006.

**Figure A3 Changes in Contributions of Taxes and Benefits to Net Household Income in CZK between 2006 and 2007 in Employment (left), Short-Term Unemployment (middle) and Long-Term Unemployment (right)**
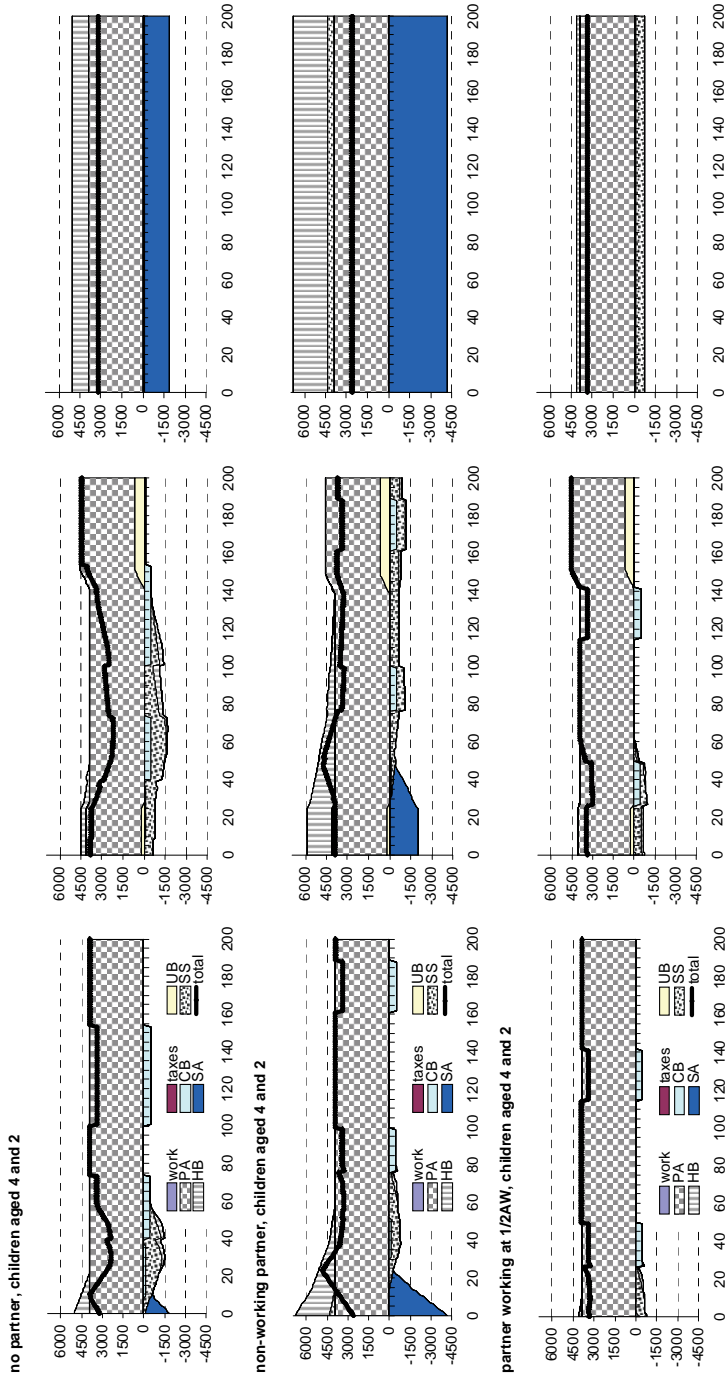


*Notes*: The wage (or entry wage for non-employed) in the relation to the economy-wide average wage in % is on the horizontal axis. Contribution of work income (work), taxes and social security insurance payments (taxes), unemployment benefit (UB), child benefit (CB), social supplement (SS), housing benefit (HB), social assistance (SA) and total change (total). The ratio of the minimum to average wage was 38% in 2006.

**Figure A4  Changes in Contributions of Taxes and Benefits to Net Household Income in CZK between 2006 and 2007 in Employment (left), Short-Term Unemployment (middle) and Long-Term Unemployment (right)**
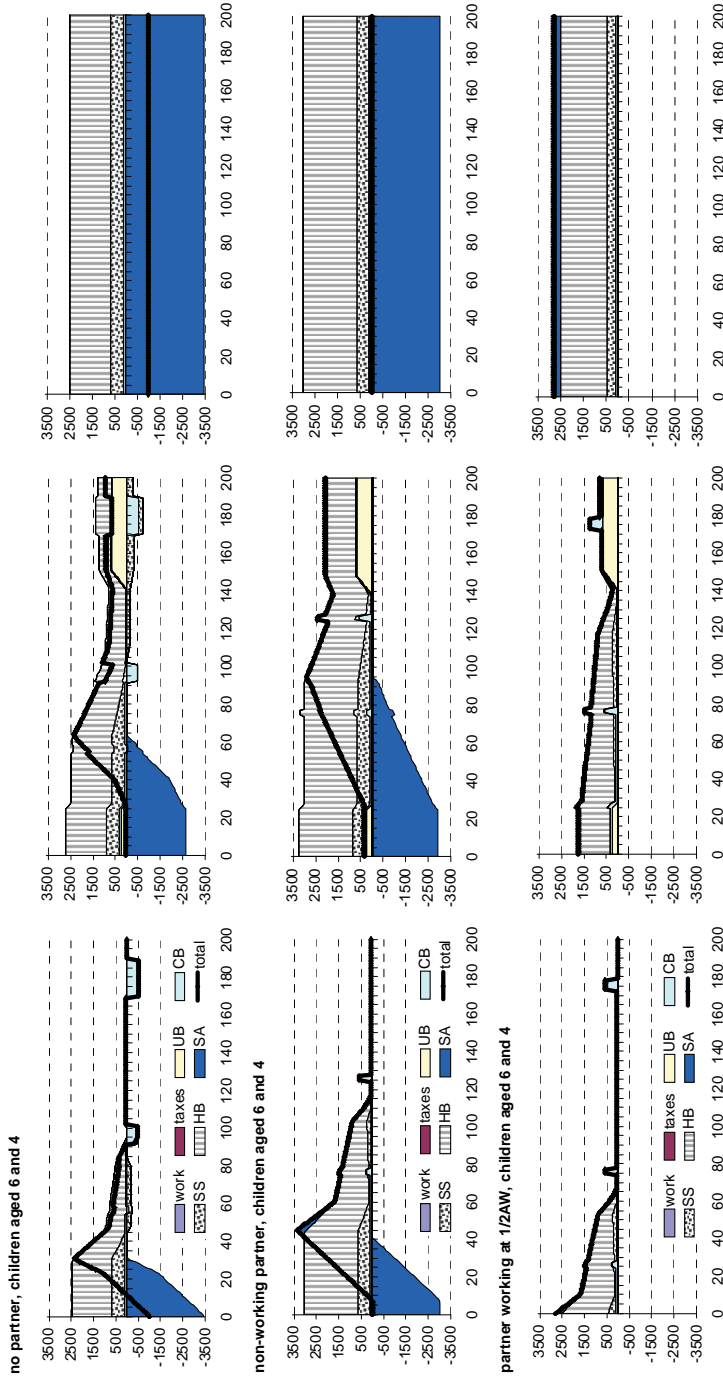


*Notes:* The wage (or entry wage for non-employed) in the relation to the economy-wide average wage in % is on the horizontal axis. Contribution of work income (work), taxes and social security insurance payments (taxes), unemployment benefit (UB), child benefit (CB), social supplement (SS), housing benefit (HB), social assistance (SA) and total change (total). The ratio of the minimum to average wage was 38% in 2006.

**Figure A5  Changes in Contributions of Taxes and Benefits to Net Household Income in CZK between 2006 and 2007 in Employment (left), Short-Term Unemployment (middle) and Long-Term Unemployment (right)**



*Notes*: The wage (or entry wage for non-employed) in the relation to the economy-wide average wage is % in on the horizontal axis. Contribution of work income (work), taxes and social security insurance payments (taxes), unemployment benefit (UB), child benefit (CB), social supplement (SS), housing benefit (HB), social assistance (SA) and total change (total). The ratio of the minimum to average wage was 38% in 2006.

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