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Alternatives to Paying Child Benefit to the Rich: Means Testing or Higher Tax?

Abstract

Transferring public benefits to people in no need of them appears to be a waste of public money. Thus, there seems to be support for a move away from universal child benefits and towards means testing. This study presents a critique of this overly-simplistic view and proposes a very simple alternative: instead of withdrawing the transfer as a function of income, which raises marginal tax rates for low and middle income parents, with accompanying detrimental effects on labour supply, redistribution can be achieved by an ambitious universal schedule financed by increased income taxation of the rich. The role of the child benefit is discussed analytically in a piecewise linear schedule. Moreover, the argument is illustrated with reference to the design of the child benefit scheme for Norway, demonstrating the labour supply/redistribution trade-offs of the alternatives by results from simulation models.

JEL-Codes: J130, J220, C250.

Keywords: child benefit, labour supply, income distribution.

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1 Introduction

There is considerable variation across countries in the design of their child benefit schemes. Schedules may vary in the extent to which they are targeted towards specific groups of the population, such as lone parents, and a further key distinction lies in the way in which the transfer varies with the income of the recipient. In 19 out of 27 of the European countries included in the family benefit review of Bradshaw (2012), there are universal child benefit schemes. But universal schemes are under attack (Bradshaw, 2012; Van Lancker and Van Mechelen, 2015; Leventi, Rastrigina and Sutherland (2016). Some important institutions, such as the World Bank, the OECD and the European Commission, seem to argue in favor of income tested transfers. For example, in OECD (2011a) it is argued that in times of constraint on public budgets, one should ensure that those most at risk do not lose (p. 58).

Although we certainly agree that scarce resources should primarily go to the poor and provision of child benefit support to the very rich therefore can be seen as a waste, this paper argues for more careful study of the alternatives to universal benefit schemes. Given that the purpose of child benefit targeting is to reshuffle the transfer towards low-income families, we ask why the deadweight losses and participation disincentives should be borne by families in the middle of the income distribution, as is often the implication of means testing. One obvious alternative to means testing is to maintain the universal design, but at the same time to increase the taxation of the rich through the income tax, i.e., simply claw back the transfer from the higher end of the income distribution by using the tax system.

We discuss the design of the child benefit both analytically and by results from simulations. First, we use diagrammatic analysis to illustrate the effects of replacing a universal schedule with a means tested schedule, and next we demonstrate how two alternative designs of the child benefit, means testing and a tax financed universal schedule, affect labour supply and distributions of well-being, using simulation models. We employ non-behavioural and behavioural micro simulation models, presenting results for several measures of well-being, including distributions of disposable income and money metric utility.

As already noted, several countries have already introduced means testing of the child benefit. In the U.S. there is no general child benefit scheme¹ but there are several means tested programs directed towards families with children, such as the Temporary Assistance for Needy Families (TANF), the Earned Income Tax Credit (EITC) and the Supplemental Nutrition Assistance Program (SNAP), see Ben-Shalom, Moffitt and Scholz (2012). In the UK the universal child benefit scheme was replaced by a schedule introducing a "High Income Child Benefit Charge" in 2013, which means that the schedule is tapered off between £50,000 and £60,000 of earned income: 1% of the child benefit is paid for every £100 of income between £50,000 and £60,000 earned, based on the highest individual income of the family (rather than joint income, as is often

¹But there are propositions to change this, see the proposal by Shaefer et al. (2018) to convert tax credits into a universal monthly child allowance.

the case in other countries). In addition, the transfer schedule of the U.K. includes "in-work" benefits, such as the Working Tax Credit. Similar to the EITC of the U.S., the phase-out design of this type of support in effect makes it means tested.

We shall use the child benefit system of Norway for empirical illustration. According to the present Norwegian schedule, parents are entitled to a child benefit for each child below 18 years of age. In 2020 the recipients get 1,054 Norwegian kroner (NOK) per child per month (€107; \$120).² Single parents are also entitled to extended child benefit and infant supplement. Extended child benefit means receiving benefit for one child more than the parent actually has, whereas the infant supplement, 660 NOK (€67; \$75), is paid (extra) for children 0–3 years of age.³ The total cost of the schedule reached 16.5 billion NOK (€1.67 billion; \$1.87) in 2019. This corresponds to approximately 3.2 percent of the revenue from the personal income tax. However, in order to finance the developments of child care services, the policy-makers have kept the child benefit nominally frozen over the period 1996–2019. This has further added to the concern about the general economic impact, with some suggesting that it can be redefined as a support schedule for the poor. Although there has been an evident growth in income over the last decades in Norway, some groups among families with children have been falling behind: the number of children living in poor families has increased quite substantially. Such developments have certainly contributed to the demand for more targeted transfer schedules.

This paper argues that instead of concentrating the support to the poor, one should consider keeping an ambitious universal schedule. In the simulations of alternative child benefit schedules we therefore let an upgraded universal schedule, financed by increased taxation at high income levels, represent an alternative to means testing. More specifically, we establish a 2016-schedule by letting the 1996-schedule, which still prevails in nominal terms, be adjusted to 2016-prices. The increased expenditures are paid for by increasing the rates of two top brackets of the Norwegian "step tax" schedule. Thus, this alternative can be characterized as the "tax financed upgraded universal schedule".⁴

The rest of the paper is organized as follows. In Section 2 we refer to the evidence on means testing, also explaining why it has become such a heated issue in the Norwegian public policy debate. Section 3 sets the scene analytically, by clarifying the role the child benefit plays in a piecewise linear tax schedule with individual incomes as the tax base, such as the Norwegian tax function, and discussing the implications of targeting. Further, in Section 4 we place the debate on child benefit design into the Norwegian context, referring to the development in child poverty and the labor supply responsiveness of parents, which are two essential components in the discussion. Next, in Section 5 we present results of the empirical investigation of means testing and the alternative –

²Average exchange rates for 2019 are used to obtain values in euros and U.S. dollars.

³From 1 September 2020 a new differentiation is in place, as families with children 0–6 receive additional 300 NOK (€30; \$34) per month in support.

⁴It follows that all tax payers subject to taxation by the two top brackets of the income tax contribute to the financing of this alternative, not only families with children.

universality in combination with tax increases on top incomes. We use simulation tools to describe distributional and labour supply effects of the alternative designs, including describing effects of changes in terms of changes in money metric utility (equivalent variation). In order to connect more closely to the theoretical elaboration in Section 2, we also, in Section 6, present results for couple households alone. Section 7 concludes the paper.

2 The child benefit and the means testing debate

Means testing of the child benefit connects to the theoretical optimal tax literature in several ways, see overviews in Kaplow (2007) and Kleven and Kopczuk (2011). One part of the literature emphasizes that the existence of children or household size can be used as a "tagging device", along the lines of Akerlof (1978), addressing the screening problem of governments, as formulated by Mirrlees (1971).⁵ For example, Immonen et al. (1998) and Blumkin, Margalioth and Sadka (2015) discuss the optimal design of tax/transfer schemes that involve elements of both tagging and means-testing. Thus, design of transfer programmes can also be used for self-revelation, as in Besley and Coate (1995), who suggest that the optimal schedule exhibits means testing. The focus may also be moved from benefits in a screening setting to more directly on poverty alleviation (Paulus, 2016); see for example Kanbur, Keen and Tuomala (1994) and Creedy (1996). Note also that in the literature on the performance of means tested and universal transfer schedules there are references to the danger of a "paradox of targeting", connecting to a political economy aspect of means testing. Optimal targeting may imply that a particular group may receive less support when their needs increase (Keen, 1992). In more general terms, this can be referred to as the danger of more narrowly defined programs receiving less political support, which may undermine its sustainability (Gelbach and Pritchett, 1997).⁶

When attention is directed towards the predominantly empirical part of the literature, the child benefit may give responses along several dimensions, as effects on fertility, parents' labour supply and child development. The empirical evidence points to relatively clear labour supply reducing effects of the sheer existence of such schedules, in accordance with standard income effects. For example, González (2013) finds that mothers are less likely to be employed in the first year after receiving a substantial birth grant in Spain and both Milligan and Stabile (2007) and Schirle (2015) provide results which are consistent with the Canadian child benefit schedule having labour supply reducing effects for both single and married mothers. Similarly, Hener (2016) finds that increased generosity resulted in a substantial reduction in mothers' labour supply,

⁵Within this reasoning, the use of children as an indicator of earning capacity may come from a specialization on the quantity of children.

⁶In other words, when the political support for targeting is taken into account, optimal support for the very poor is not necessarily a policy that targets benefits as narrowly as possible (Moene and Wallerstein, 2001).

when using a major reform of the German child benefit schedule in the mid-1990s for identification of effects.

Both the Canadian and German experiences suggest that more generous child benefit schemes result in positive effects on child outcomes. For example, Hener (2016) refers to parents investing more time in children, whereas Milligan and Stabile (2009) find evidence consistent with increased parental time and family income having a positive impact on child development. Note also that there is evidence suggesting that the parents use the child benefit money differently from other types of income, see for example Lundberg, Pollak and Wales (1997), Kooreman (2000), and Woolley (2004). For example, the first of these studies shows that paying child benefit to mothers gives higher expenditures on food and children's clothing. Blow, Walker and Zhu (2012) also find that the child benefit is spent differently, but paradoxically, it appears to be spent disproportionately on adult-assignable goods, such as alcohol.

The main question here is not whether we should uphold a child benefit scheme or not – the discussion concerns the design of the scheme, or to what extent the support should be means tested. Thus, the background for the present study is related to the reasoning behind the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC) of the U.S. and the Working Tax Credit (WTC) and the Child Tax Credit (CTC) of the U.K. These schedules play a vital anti-poverty role and provide increased assistance to poor parents who earn low wages but are able to maintain employment. But given the means testing of the support, as credits are phased-out, the labour supply effects might be detrimental. However, the evidence suggest that the EITC succeeds in increasing employment, particularly among less educated women and those workers with multiple children, see Hotz and Scholz (2003), Eissa and Hoynes (2011), Nichols and Rothstein (2016), and Chan and Moffitt (2018). For example, Meyer (2010) argues that the EITC has sharply increased the fraction of single mothers who work. The relationship between child development and the EITC has also been explored: Dahl and Lochner (2012) use variation across years in predicted EITC income and find that a \$1,000 increase in family income raises a child's math and reading test scores by 6 percent of a standard deviation.

In Britain, in 2003, the Working Families' Tax Credit was replaced by the WTC and the CTC, which implied, among other things, that the phase-out rate was reduced. It seems that the introduction of the WTC and the CTC worked differently on singles and couples. Using a structural labour supply model, Blundell, Brewer and Shephard (2004) predict that the new scheme increases lone mothers' participation by 3.38 percentage points, whereas mothers and fathers in couples reduce and increase labour supply by 0.35 percentage points and by 0.92 percentage points, respectively.

The in-work benefit schedules of the U.S. and the U.K. have not spread to Norway. As in the other Scandinavian countries, in Norway universal transfer schedules have dominated. Norway may enjoy a reputation as a country with an active family policy, orientated towards families being able to combine having children and maintaining a strong connection to the labour market for both genders, the so-called dual-earner model. However, Norwegian family policy has been an arena of substantial political

controversy over the last couple of decades, and certainly not all new directions can be seen as promoting the dual-earner family model.

To illustrate some key dilemmas of family policy, we shall briefly refer to some main issues of the recent Norwegian debate. In particular, the cash-for-care reform, which was introduced in 1998, generated a heated debate on the rationalisations and directions of family policies. The reform introduced a monetary compensation for not using subsidized care at child care centers, for parents of children aged 1 or 2. The three main aims of the reform were that parents should be provided with more time to care for their own children, to give families freedom of choice of care provider, and to equalize public support to families, independent of care alternative (Ellingsæter, 2003). The support equalization argument was strengthened by the fact that access to subsidised care in centers at that time (late nineties) was severely constrained.

Since then, there has been massive expansion in the child care center participation rate in Norway, particularly for children under 3 years of age. Policy-makers formalized their efforts to increase the supply of center-based care through the so-called "child care compromise", approved by the Parliament in spring 2003. The agreement included a plan for termination of queues for care at child care centers, and introduced a substantial reduction in child care fees, regulated by a maximum monthly parental pay. By 2009, the policy initiative had resulted in a market for center-based care from which the Government could guarantee all families of children older than 1 year access to a slot at a center. For 2020, the maximum monthly fee is set to 3,135 NOK (€318, \$356), which implies that the parental fee covers approximately 14 percent of the costs for children under 3, and approximately 25 percent for children aged 3–5 (Lunder, 2015).

Importantly from the perspective of the present paper, in order to finance the developments of the child care services, the policy-makers have kept the child benefit nominally frozen since 1996. This means that the redistributive power of the child benefit has been considerably reduced over time. As a result, the child benefit for one child amounted to almost 4 percent of the median household income for families with children in 1996, but only 1.5 percent in 2016. Although means testing of the child benefit has been discussed for decades, the lack of economic uprating may have changed the view on the role of the child benefit. As an example, in a recent white paper (Ministry of Children and Equality, 2017), the group of experts was split on whether to means test or not, with the majority arguing that the support has lost its overall distributional impact, and might as well be turned into a transfer specifically directed towards the poor.

3 Analytics of means testing

For a government to make a universal transfer to all households, regardless of how high their incomes may be, may seem nonsensical, and the alternative of targeting the transfer to those "really in need" by a system of means testing would seem to be simple common sense. Certainly, that alternative could reduce the nominal amount of

public expenditure accounted for under the heading of the programme concerned, for example "child benefits" or "child support", and therefore could be claimed to be "cost reducing". Implicit also is the idea that the total expenditure on the programme could then be focused entirely on "those in need", though such an outcome is not inevitable in reality: it could be used to fund tax cuts, for example in top tax rates, transfers to other income groups or reductions in public expenditure.

The simple political rhetoric however masks a number of analytical issues, discussed in this section, that have to be dealt with before it can be claimed that the introduction of means testing is a desirable policy change. Analytically speaking, a piecewise linear tax system under which the tax base, typically either individual or joint household income, is divided into brackets and a different tax rate is paid on income falling in each bracket, is equivalent to a set of pairs of numbers, the first representing a lump sum transfer to the taxpayer and the second an amount of tax clawed back, given by the taxpayer's marginal tax rate multiplied by her total taxable income.

This holds whether or not the household receives a child benefit payment. What really matters are the costs and benefits associated with any particular tax structure, as well as society's evaluation of the fairness with which that system shares the aggregate burden of taxation across households. The real cost of the tax structure is not the nominal amount of public expenditure involved in the system of transfers, since these can always be clawed back by an appropriate set of tax rates, but rather the deadweight losses arising out of the distortions to incentives that the tax system as a whole creates.⁷

To clarify this, we use a diagrammatic analysis to illustrate the effects of replacing a system of universal child benefit payments with a simple means tested system involving a tapered withdrawal of benefits above a given income threshold. In Figure 1 we show the relationship between individual pre-tax income, Y , and individual after-tax income, C , roughly based on the Norwegian tax system,⁸ for an in-work individual. The income bracket $(0, Y_1]$ represents a "tax free allowance", the tax rate is zero, so for a worker in this range pretax and post tax income are equal and the taxpayer is on the 45° line. For pretax incomes in the bracket $(Y_1, Y_2]$ the tax rate is $100t_1\%$, and is paid on the amount of income $Y - Y_1$, and so taxpayers in this bracket are located on the line segment above $(Y_1, Y_2]$. It is then *as if* they received the lump sum a_1 and paid the rate t_1 on their entire income Y , so that their pre- and post tax incomes satisfy the equation $C_1 = a_1 + (1 - t_1)Y$.

For bracket $(Y_2, Y_3]$ the tax rate is $100t_2\%$ and so someone in this range pays tax equal to $t_1Y_1 + t_2(Y - Y_1)$ and is located on the line given by $C_2 = a_2 + (1 - t_2)Y$. For (Y_3, ∞) the line is $C_3 = a_3 + (1 - t_3)Y$. The decreasing slopes of the linear segments reflect the assumption that $t_3 > t_2 > t_1 > 0$. The entire figure represents a budget constraint facing every taxpayer: choice of labour supply implies a pretax income and

⁷Also relevant are the costs associated with the administration of the tax system, but here we assume these are not significantly different between universal and targeted systems. This biases the argument in favour of the latter, since targeting is likely to involve higher administration costs.

⁸We have smoothed the brackets and merged the top two tax rates into one. The sum of the C -values for the two individuals represents total disposable income of the household.

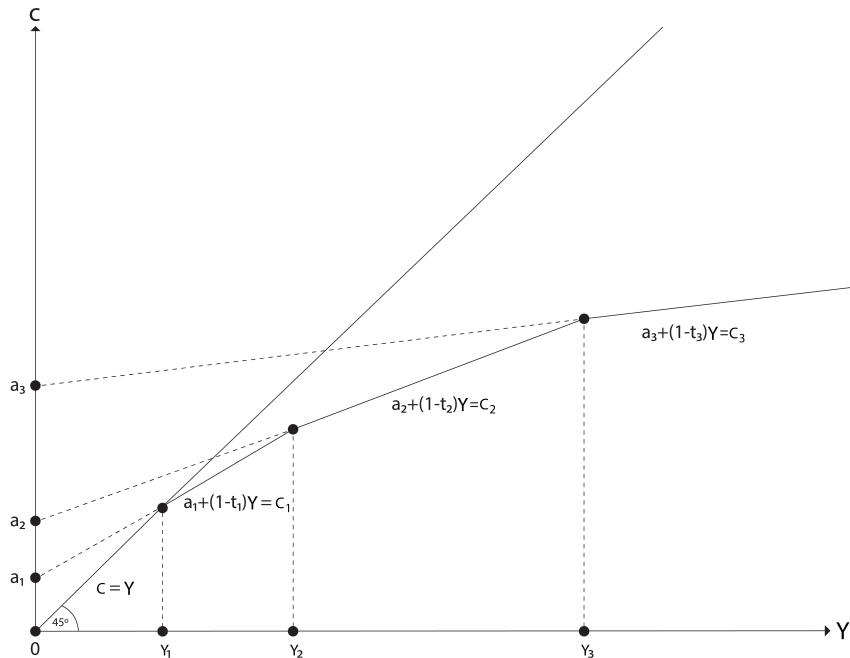


Figure 1: A piecewise linear tax system

therefore a point somewhere on one of the linear segments.

This suggests that any piecewise linear tax system can be defined in two entirely equivalent ways: one as a sequence of brackets, $[0, Y_1], (Y_1, Y_2], (Y_2, Y_3], \dots$, with associated tax rates $0, t_1, t_2, \dots$, and the other as a series of lump sum payments and associated tax rates applied to total income, $(0, 0), (a_1, t_1), (a_2, t_2), \dots$, with the lump sums being defined as

$$a_1 = t_1 Y_1; \quad a_2 = a_1 + (t_2 - t_1) Y_2; \quad a_3 = a_2 + (t_3 - t_2) Y_3 \quad (1)$$

In effect, the "lump sum transfer" can be thought of as a tax refund compensating for taxing the *entire* income Y at the *marginal* tax rate appropriate to that income.

A computer programmed to calculate individual tax payments under each system would produce exactly the same results and the computational burdens in each case are hardly different. Yet the second system could be described as one with "lump sum transfers" increasing with the income bracket together with an associated tax clawback. The point of this discussion is to show that however we may want to describe the system, clearly what is important analytically is the particular structure⁹ as defined firstly by the bracket limits Y_1, Y_2, \dots and secondly by the tax rates $0, t_1, t_2, \dots$.

We now show in Figure 2 the types of tax structure implied by giving a subset of the households in the economy a lump sum transfer, for example a child benefit, and then the difference to this structure introducing a simple form of means testing

⁹The papers by Apps et al. (2014), Apps et al. (2016) and Apps and Rees (2018) explore the issue of the optimal structure of such systems in some depth, both for single individuals and for two-earner households. We discuss some of their results further below.

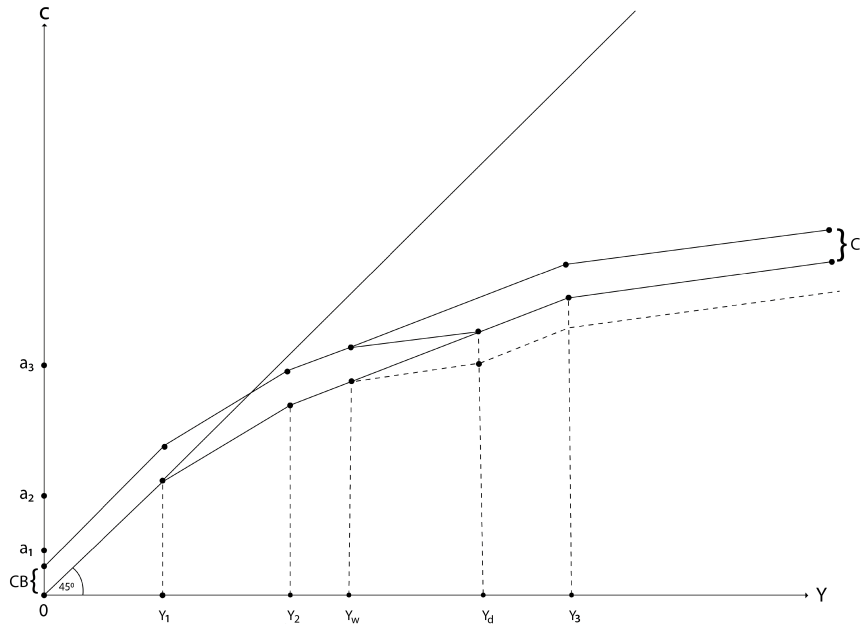


Figure 2: A piecewise linear tax system with transfers and means testing

makes. The upper schedule in the figure is simply a vertical displacement of the lower part (ignore the broken lines for the moment), with the vertical distance between them representing the value of the transfer, denoted CB . Thus the system with transfers has the same structure of marginal rates as that without, but the transfer is untaxed - it is a straightforward addition to disposable income. This figure of course applies only to those individuals receiving the child benefit, the remainder of the taxed population faces the schedule shown by the lower part of the figure. In the case of a child benefit system where the transfer is paid to mothers, for example,¹⁰ we could think of Figure 2 as applying to mothers who receive the benefit, with non-working mothers clustered at the origin and working mothers distributed along the Y -axis. Their partners, together with all individuals without children, would be taxed according to the lower schedule.

Suppose that it is now decided to means test the child benefit and phase it out over the income range $Y_W - Y_D$ by choosing an appropriate withdrawal rate and adding this to the marginal tax rate over this range. In effect then, for the benefit recipients, working mothers, this adds an additional tax bracket and removes the portion of the upper schedule beginning at Y_W . The new effective tax rate is $t_2 + t_W$ where $t_W > 0$ is the withdrawal rate required to reduce the lump sum benefit to zero at Y_D . In the figure, this obviously implies that the marginal tax rate for taxpayers receiving child benefit in the interval $[Y_W, Y_D)$ is above that for other taxpayers in the $(Y_2, Y_3]$ bracket.

¹⁰Here we are concerned with a system of *individual taxation*, as in the Norwegian and UK systems, where spouses' individual incomes are taxed under the same tax schedule. In a joint taxation system such as those in the USA and Germany, taxable income is the sum of the individual incomes divided by 2, and this would give the Y -values shown in the figure. In the French joint tax system total income is divided by a number $k \geq 2$ which depends on the number of children in the household.

As drawn, $t_2 + t_W$ also exceeds the top marginal tax rate t_3 , as a comparison of the slopes of the respective line segments shows, but this need not inevitably be the case. Obviously t_W is higher the smaller the length of the interval $[Y_W, Y_D)$.

The consequence of withdrawal of benefit is that all mothers with incomes above Y_W are made worse off, as are their households. For mothers with incomes to the right of Y_D work incentives at the margin are unaffected, since their marginal tax rates are unchanged. However, their *average* tax rate has risen and disposable income has fallen, and this could affect their ability to pay for child care¹¹ and their participation decision.

For mothers within the withdrawal range the marginal tax rate is now also higher and this creates a deadweight loss resulting from the reduction in their work incentives.¹²

Thus the overall effect of the targeting policy is to replace the set of lump sums and marginal rates existing under the universal payments system with a new system of lump sums, tax rates and tax brackets, and, other things equal, with a higher total cost in terms of deadweight losses. Against this, there is a saving in the total budgetary cost of the transfer programme.

A marked feature of the new system made clear by the figure is the loss of full progressivity in the marginal rate structure: Why is it better to have the highest marginal rates around the middle of the distribution rather than a structure of marginal rates beginning at Y_W which preserves progressivity, for example by extending the phase-out interval to Y_3 ? Why indeed give women with children the same marginal rate structure as those without children outside the phase-out interval $[Y_W, Y_D)$? We need a more fundamental evaluation of the policy that goes beyond the crude argument for "not giving transfers to higher income households".

This evaluation of the policy would ideally need to take account of the following considerations.

I. The use(s) to which the budgetary cost savings would be put and the benefits and costs associated with that need to be specified. For example, if the budgetary cost savings were simply used to reduce top marginal tax rates, there would be reductions in deadweight losses to the extent determined by the compensated labour supply elasticities of top income earners, which may however be very small, and a reduction in the progressivity of the tax system overall. If they were used to reduce aggregate public expenditure then we would need an estimate of the marginal social cost of public funds. If the purpose is to channel the whole child benefit expenditure to the lowest income women, why are the deadweight losses and participation disincentives associated with funding this concentrated on women in the middle of the distribution?

II. The income base for means testing has to be considered. The discussion in this paper so far has assumed that this would be the mother's income, since she is the

¹¹Assuming this is non-zero. It would seem inconsistent to apply means testing for child benefits and not for subsidies to child care.

¹²Note that this latter cost would be avoided, while achieving the same reduction in total expenditure on child benefit, if there had been a 100% withdrawal at a suitably chosen income level in the interval $[Y_W, Y_D)$, though of course the effects following from a higher average tax rate would remain.

recipient of the child benefit,¹³ but clearly there are other possibilities. As mentioned in the Introduction, the UK reform made the income withdrawal a function of the income of the primary earner, who is typically male but in a minority of households is female. The child benefit continues to be paid to the mother. In diagrammatic terms, that implies that effectively there are now four possible schedules rather than just two:

(i) The upper schedule in Figure 2 continues to apply unchanged for mothers who are not primary earners.

(ii) The lower schedule continues to apply to fathers who are not primary earners, as well as to individuals in households without children.

(iii) The schedule with the withdrawal segment, as just discussed, now applies only to mothers who are primary earners.

(iv) There is a new component of the schedule, which applies to primary earners who are fathers. This is illustrated by the broken line beginning at Y_W in the right hand portion of the figure.

Presumably the argument for this would be that male compensated labour supply elasticities as well as participation elasticities are lower than female and so deadweight losses would be lower in this case.

A withdrawal tax base that is also often suggested is household joint income, $Y^J = Y^P + Y^S$, where Y^P is primary earner's income and Y^S that of the second earner. This obviously involves a departure from the tax system based on individual income depicted in Figure 2, since, over the withdrawal range, the household faces the joint tax bill

$$T = t_P Y^P + t_S Y^S + t_W (Y^P + Y^S), \quad (2)$$

where t_P and t_S are their respective marginal tax rates on their individual incomes. In this case the labour supply decisions of both earners over this range are distorted at the margin, since $dT/dY^P = t_P + t_W$ and $dT/dY^S = t_S + t_W$.

However, withdrawal on the basis of joint income does not change the fact that the disincentive effects resulting from increases in marginal tax rates are concentrated on households with joint incomes within the withdrawal range. As Figure 2 shows, the effects on households with incomes above the withdrawal range are lump sum income effects, their marginal tax rates are unchanged. If, as we show below (Section 4), working mothers have significantly higher labour supply elasticities at both the intensive and extensive margins than high income men, then in the aggregate the deadweight losses from a means-testing policy will be higher than those associated with increasing the tax rate on all top incomes. This is because a higher proportion of lower and middle income earners are female, a higher proportion of top income earners are male.

Since the deadweight losses and therefore the costs of introduction of means testing vary across these alternatives, the one that is chosen should be specified for any policy

¹³It might be argued that the identity of the recipient of the benefit does not matter, if the household members pool their incomes into a common budget constraint and take consumption decisions that are unrelated to the identity of the income earner. However, there is considerable empirical evidence that this is not the case - the identity of the recipient does matter. See for example Lundberg, Pollak and Wales (1997).

evaluation.

III. The loss of social benefits, in addition to the increased deadweight losses, that arise from contracting the scope of the child benefit policy have to be taken into account. The "targeting" argument seems to ignore these entirely. There are three main arguments here against the introduction of means testing.

First is the well-known argument (see for example Atkinson (2015), Ch. 8) that means testing reduces the extent of take-up of benefits by people who are entitled to them. This seems to be empirically validated and therefore implies a loss of benefit in terms of the goals of the child support programme.

Second is the argument that we refer to as the "life cycle/fertility externality". Given that people expect the social insurance system rather than their children to look after them in their old age, as might have been the case before the introduction of the system, they ignore in taking their fertility decisions the fact that (at least in a pay-as-you-go system) the future ability of society to do this depends inter al. on the size of the working population. Child benefits therefore are a Pigovian subsidy to correct this externality associated with inadequate fertility levels, rather than simply a transfer payment intended only for poorer families.

The third argument also has a life cycle element and is based on the observation that capital markets are imperfect, especially in respect of the ability to borrow. Especially in that stage in their life cycle in which younger children are in the household, couples are faced with increased consumption costs, reduced leisure, and typically a significant loss in earned income as one parent reduces her labour supply in order to supply child care. In a perfect capital market they would be able to borrow against future income to smoothe this impact, but unsecured borrowing may be very expensive or even unavailable. Child benefits may be viewed therefore as a response to this market failure. They are also important for the children as well as the parents, since they permit them to have greater consumption and investment in human capital than would otherwise be possible. These benefits could well be positive across a wide range of the household income distribution.

Moreover, the fact that they are funded by taxation on older people whose children have grown up means that in a life cycle context they are "repaying" the implicit debt incurred through the child benefit payments. In this context, we can think of the generation that introduced means testing as in some sense violating an implicit intergenerational contract. In any case they are the generation that gains most, because they received the benefits of past transfers and are not going to pay for them in the future.

In the following we shall enter into a more detailed discussion of effects of means testing, in terms of discussing detailed evidence on effects on the labour supply and the distribution of well-being, by contrasting its effects to an alternative where we let an upgraded universal schedule be financed by increased taxation at high income levels. Static non-behavioural and behavioural simulation models are employed in the descriptions.

4 Some key components of the balance

4.1 Responsiveness of parents

Before entering into the discussion of the simulation results, we discuss some characteristics that form the background for a discussion of the design of the child benefit schedule. As emphasized by Brewer, Saez, and Shephard (2010), the argument for means testing is strengthened if we find that the families are not very responsive to changes in the budget constraint. Further, the design of the child benefit should be based on its role as a redistributive tool given the present conditions. We have already noted that in the Norwegian context the child benefit has lost some of its redistributive power because of the standstill in rates (since 1996). To fill out the picture, we refer to recent developments in incomes for families with children and how they are distributed.

Kornstad and Thoresen (2004) argued against targeting of the child benefit and one main reason was the detrimental female labour supply effects. There is still reason to pay particular attention to the labour supply of mothers as several studies find that females are more responsive to changes in the budget constraint than males. For example, in the comprehensive review of labour supply responsiveness in Blundell and MaCurdy (1999), one finds large gender differences in own wage elasticities, with men's elasticities near zero and women's substantially higher, between 0.5 and 1.

Table 1 reports labour supply elasticity estimates according to the present estimates of the labour supply model, i.e., with data from the 2014 version of Labor Force Survey. The table shows average labour supply elasticities for single males and females and for partners in couples, also differentiating between responses at the intensive and extensive margins for females.¹⁴ For persons in couples also cross elasticity estimates are shown. The estimates confirm that Norwegian females show more responsiveness than males. The total (both extensive and intensive margins) Marshallian (own) wage elasticity for females in couples is above 0.3, whereas the corresponding male elasticity is approximately 0.1.

The elasticity estimates presented in Table 1 are smaller than the response estimates reported in the previous investigation of means testing based on Norwegian data, see Kornstad and Thoresen (2004). Thus, these results for Norway are in accordance with several studies arguing that there is a movement towards less responsiveness for females, see for example Blau and Kahn (2007) and Heim (2007).¹⁵ Decreasing female work responsiveness over time in Norway is also found in Jia and Thoresen (2020).

¹⁴Since there are very few males in our data who have chosen the no-work option, we do not differentiate between the extensive and intensive margins for males. The no-work choice is restricted to individuals who voluntarily decide not to participate in market work, which for example means that the unemployed are not included in the data set used in the estimation.

¹⁵Goldin (1990) predicts that factors such as diminishing stigma, effects of divorce, and increased career orientation result in female responsiveness approaching that of males. It is also worth noting that Norwegian parents of preschool children also show small responses, see Thoresen and Vattø (2019).

Table 1: Uncompensated wage elasticities for individuals in couples and singles. Estimates based on data for 2014

	Female own wage elast.	Male own wage elast.	Female cross wage elast.	Male cross wage elast.
Individuals in couple				
Prob. of work (extensive margin)	0.135		-0.048	
Cond. on working (intensive margin)	0.197	0.095	-0.043	-0.009
Unconditional (total)	0.332		-0.091	
Single individuals				
Prob. of work (extensive margin)	0.012			
Cond. on working (intensive margin)	0.057	0.009		
Unconditional (total)	0.069			

4.2 Child poverty and distribution of income

The increase in poverty among families with children has certainly contributed to the discussion of child benefit design being put on the policy agenda in Norway, see the upper diagram of Figure 3. When measuring child poverty as the share of children (under 18) living in a household with disposable income less than 60 percent of median income, child poverty has increased from around 8 percent in 2005 to almost 13 percent in 2017.¹⁶ This pattern has generated calls for offsetting initiatives, in which to target transfers towards poor families is an obvious candidate. However, as we argue in the present paper, this view is simplistic: it is possible to upgrade the schedule and in effect do not waste money on the rich by letting them pay for the more ambitious schedule.

At the same time we have witnessed a steady increase in incomes, see the middle diagram of Figure 3. Between 1993 and 2017 median income for families with children has increased by more than 60 percent in real terms, when the income development is measured against a benchmark defined by CPI inflated 1993-income (solid line). The growth in median income for families with children is in line with the development for the whole population,¹⁷ where the latter is illustrated in the figure by letting the 1993-income be inflated by the average wage increase over the period (small dotted line).

The development in income inequality is depicted in the lower diagram of Figure 3. It shows that except for the period around the tax reform of 2006,¹⁸ the overall

¹⁶It is worth noting that children with an immigration background, either born abroad or in Norway with immigrant parents, are clearly overrepresented among the poor. The combination of many children and less market work in these families contributes to this.

¹⁷In light of this, one may ask how the preferences for redistribution develop when income grows. Needless to say, this has been an important research question for a long time, as for example illustrated by numerous contributions after the introduction of the median voter model of Romer (1975) and Meltzer and Richard (1981). According to the survey in Alesina and Giuliano (2011), the empirical evidence seems to indicate that aversion to redistribution increases in income.

¹⁸The tax reform of 2006 involved a pre-announced increase in the taxation of dividends and capital

income inequality has been stable at a relatively low level.¹⁹ Thus, although the overall income inequality has been more or less unaltered over the last decades, a larger share of families with children is falling behind. Consequently, there are calls for both more support to this group of families and more efficient use of policy instruments.

gains in 2006, which made it economically advantageous to transfer dividends before the reform. This explains the peak in 2005, see Thoresen et al. (2012) for further details.

¹⁹Norway belongs to the low end of the international income inequality range, see, for example, OECD (2011b).

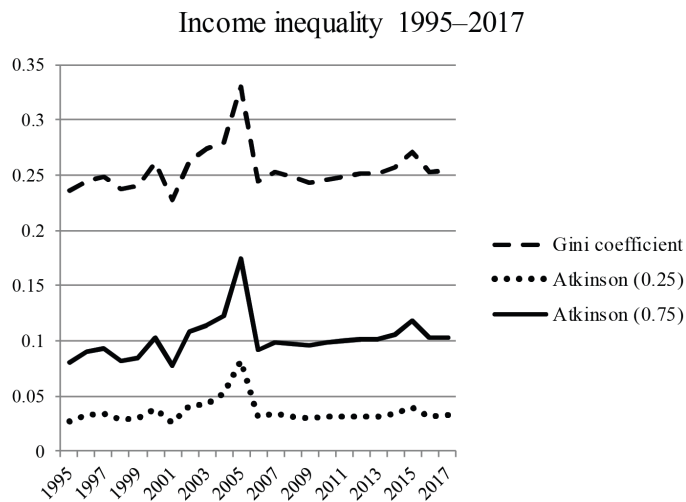
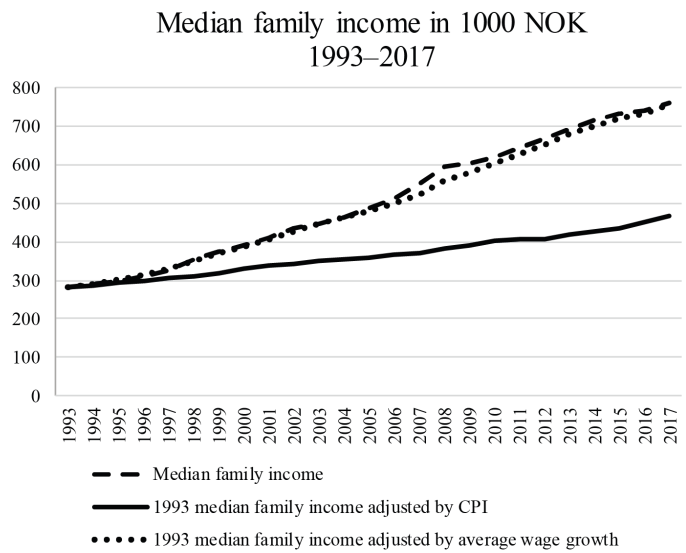
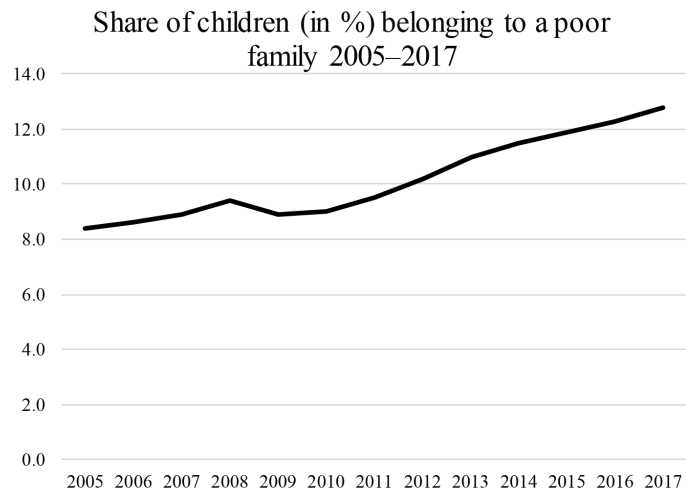


Figure 3: Developments over time: child poverty, income growth, and income inequality

5 Empirical evidence on effects of alternative schedule designs

5.1 Use of simulation models

To illustrate the trade-off between distributional ambitions and labour supply effects, we turn to simulation results where we use non-behavioural and behavioural models to describe the effects of means testing. We employ models belonging to the Norwegian microsimulation model system LOTTE (Aasness, Dagsvik and Thoresen, 2007). Firstly, we show direct distributional effects by employing a (standard) non-behavioural tax-benefit model, named LOTTE-Skatt. Next, the labour supply effects for wage earners are described by a discrete choice labour supply model (LOTTE-Arbeid).²⁰

A discrete choice model referred to as the "job choice model" is employed, which represents an extension of the conventional discrete labour supply model by van Soest (1995). The job choice variant accommodates that individuals have preferences over job characteristics other than hours of work and face restrictions in their choice of job characteristics and hours of work, see Dagsvik et al. (2014) and Dagsvik and Jia (2016) for further details. The model is estimated by combining information from the Income and Wealth Statistics for Households (Statistics Norway, 2018) and the Labor Force Survey (Statistics Norway, 2019). The version of the model used in the present context is estimated on data for 2014. With respect to the labour supply responsiveness, it is important to note that we rely on a unitary family labour supply model, which means that the family is seen as a single decision-making unit. Thus, even though the child benefit is transferred to the mother, it affects the behaviour of the spouse too.²¹ But the labour supply responses of fathers are different, as already seen in Section 4.

At the outset it is important to note that labour effects also emanate from standard response regularities. For example, there is negative labour supply response to increased non labour income (child benefit), similar to a standard income effect. Furthermore, the main effect with respect to means testing comes from the increased marginal tax rates in the phase out income intervals.

In the following we shall see to what extent the labour supply effects moderate initial (non-behavioural) effects of changing the child benefit schedule. This means that we will present labour supply effects across income deciles. Given the probabilistic nature of the labour supply model, we obtain income by taking expectations across the discrete choices for each individual or household. However, in the reporting of distributional effects, individuals are not ranked by their simulated income, but by observed income (or equivalent income) from data. This means that the same individuals are compared in each decile.

²⁰The simulation models are named as they belong to the group of key modeling tools made available and used by Norwegian policy-makers.

²¹It is acknowledged though that the evidence reported above, that children benefit from the child benefit being transferred to mothers (and not fathers) (Lundberg, Pollak and Wales, 1997), may signify that parents do not always pool their income.

Importantly, as the labour supply model describes behavioural responses of prime aged (25–62) wage earners, labour supply effects among other groups are set equal to zero. In effect, this means that the responses from the self-employed are neglected.²² Since the increased taxation that pays for the enhanced universal schedule applies to all (not only families with children), distributional effects are measured in the whole population, independent of having children or not. But as the theoretical discussion in Section 3 in particular applies to couple households, in addition to discussing distributional effects for all wage earners (in Section 5.2), we report evidence, separately, for couple households in Section 6.

We describe the distributional effects of changes in the child benefit schedule both before and after behavioural effects and both in terms of effects on disposable income and money metric utility. For the latter we discuss the distribution of equivalent variation (EV). For couples, in Section 6, we also show results when units are ranked according to other measures of well-being: non-weighted household income, primary earner’s income and so-called full income. Full income is defined by letting both spouses in all couples work 37.5 hours per week, which is the working hours of a full time job in Norway.

5.2 Means testing or higher tax?

As discussed in the Introduction, the Norwegian child benefit has been nominally frozen since 1996, as the focus has been directed towards a substantial expansion in the provision of highly subsidised child care. This has raised concern about the economic significance of the child benefit for families with children, and some have argued that it should be redesigned to a support-schedule primarily for poor families. One alternative is therefore to use the same amount of money as today,²³ but target the support towards low-income families – to means test the transfer. Our answer here is that should consider another alternative: to increase the universal rate and let it be financed by higher tax rates on high income levels.

To illustrate the effects of means testing we discuss a means testing schedule suggested by a Norwegian expert-group concerned with transfers to families (Ministry of Children and Equality, 2017). To avoid a so-called notch point in the budget constraint, where individuals are strictly worse off by working marginally more at the point where the means-tested benefit expires, a tapered withdrawal schedule is employed, in which the transfer is tapered off by 13.5 percent for each NOK in income above thresholds. The means testing starts at gross income levels NOK 478,000 (€48,500; \$54,400) and NOK 386,000 (€39,200; \$43,900) for couples and single parents, respectively. Thus in an income interval after these thresholds the support is phased out, where the length of the interval is determined by the size of the support, for example how many children

²²A tax simulation model for the self-employed requires a completely different decision model. It is however worth noting that the share of self-employed in proportion to the total workforce is low in Norway, around 7 percent (Berg and Thoresen, 2020).

²³Here we illustrate by the child benefit budget of 2016, which was NOK 14.4 billion (€1.46; \$1.64)

there are in the family. To maintain an unaltered budget, the (yearly) benefit rate is increased simultaneously, from NOK 11,640 (€1,180; \$1,320) to NOK 38,800 (€3,940; \$4,410) per child.

The effect of means testing is contrasted to an alternative where the child benefit support of 1996 is put into effect in 2016.²⁴ This implies that the 2016-rate is increased by approximately 60 percent, from NOK 11,640 (€1,180; \$1,320) to NOK 18,600 (€1,890; \$2,110) per child (for the year). Expenditures increase by NOK 8.6 billion (€860million; \$970 million), which is financed by increased taxation of high-income earners: the two top brackets of the Norwegian "step tax" on earnings are both increased by 3.35 percentage points, up from 10.7 percent and 13.7 percent.²⁵ Thus, the schedule uprate is financed by increased tax rates on high income levels for all, not only for families with children.

Table 2 describes the direct distributional effects (before labour supply effects) of both alternatives, compared to the 2016-benchmark. Recall that effects are measured in the whole population, independent of having children or not, since the increased taxation that pays for the enhanced universal schedule applies to all (not only families with children). The income rankings in the following build on equivalent disposable income, which is derived by aggregating income over household members, weighing with an equivalence scale (the so-called EU-scale²⁶), and letting each household be represented with as many persons as there are household members.²⁷ In the next section we shall refer to labour supply effects for alternative rankings, based on other income concepts.

Table 2 reveals a clear difference in the direct distributional effects between the two alternative child benefit designs. The means testing implies that families in deciles 1–3 gain most, whereas families in deciles 5–10 lose. Accordingly, there is a substantial drop in the number of children living in poor families, from 11.8 percent in the benchmark to 7.7 percent. With reference to the discussion in Section 3, this example illustrates that means testing is not only paid for by the rich, but that it hits the middle part of the income distribution too.

In contrast, the distributional gains under a tax financed re-established 1996-schedule are more wide ranging, see effects on disposable income by the tax financed universal alternative in Table 2. The effect on disposable incomes consists of the sum of effects from increased child benefit and increased taxation (separate columns in Table 2). Only the two upper deciles lose under this alternative, as for families in these deciles (on average) the increased tax exceeds the increased child benefit. Thus, in contrast to means

²⁴Recall that the present child benefit schedule is a result of the schedule being nominally kept at the 1996-level.

²⁵To obtain marginal tax rates, the ordinary income rate (25 percent in 2016) and the social insurance rate (8.2 percent) are added to these rates, which gives 43.9 percent and 46.9 for the two brackets (before the change), respectively.

²⁶This equivalence scale gives a weight of 1.0 to the first adult household member, 0.5 to the second adult household member and 0.3 to children.

²⁷This procedure is in accordance with what Ebert (1997) describes as Method 3.

testing, increased universal rates also go to the middle parts of the income distribution, the "middle class". Correspondingly, the reduction in child poverty is smaller than under means testing: the share of poor children goes down, but only from 11.8 percent to 10.2 percent. This is consistent with our theoretical discussion in Section 3.

Table 2: Direct (non-behavioural) distributional effects of changes in the child benefit. All households

Decile	Disp. income	Changed schedule					
		Benchmark		Means testing	Tax financed universal		
		Income tax	Child benefit	Disp. income	Disp. income	Income tax	Child benefit
1	122,600	23,600	4,600	8,800	2,700	100	2,700
2	224,900	40,700	5,700	8,000	3,300	100	3,400
3	270,000	62,000	5,800	5,100	3,300	100	3,500
4	306,400	78,100	5,800	1,800	3,200	300	3,500
5	340,100	95,400	5,900	-1,300	3,000	500	3,500
6	373,400	113,500	5,500	-3,700	2,500	800	3,300
7	411,100	135,300	5,300	-4,900	1,700	1,400	3,100
8	458,500	163,200	4,700	-4,600	300	2,600	2,800
9	531,200	210,100	4,000	-4,000	-2,600	5,000	2,400
10	802,200	397,500	3,500	-3,400	-12,200	14,300	2,100
Child poverty		11.8		-4.1		-1.6	
Child benefit rate		11,640 per child		38,800 per child		18,600 per child	
Inc. threshold, lone parents		-		386,000		-	
Inc. threshold, couples		-		478,000		-	
Phase-out rate of benefit		-		0.135		-	
Tax rate change		-		-		+3.35%-points, brackets 3 and 4	
Child benefit expenses		14.4 billion		0.0 billion		8.6 billion	
Income tax revenues		470.9 billion		0.0 billion		8.5 billion	
Revenue balance		456.5 billion		0.0 billion		0.0 billion	

Note: All incomes are measured in terms of equivalised income, with the individual as the unit of analysis.

Table 3: Aggregated labour supply responses. Wage earner households

	Benchmark		Changes			
			Means testing		Tax financed universal	
	Hours	Man-years	Hours	Man-years	Hours	Man-years
All wage earners	35.05	1,418,000	-0.24	-10,000	-0.24	-10,000
Children in the household	35.13	662,000	-0.51	-10,000	-0.31	-6,000
No children in the household	34.99	756,000	0.00	0	-0.18	-4,000

Note: Hours refer to mean working hours per week. A man-year is defined as 37.5 hours per week. Wage earners are divided into two categories depend on whether there are children (< age 18) in the household.

But improved distributional effects come at the cost of reduced labour supply. Table 3 summarises the labour supply effects of the two alternatives (compared to the benchmark), for wage earner households.²⁸ It turns out that the overall reductions in labour supply effects are more or less identical: working hours are reduced by 0.24 hours on average by both alternatives. Recalculated into reductions in man-years, these effects correspond to approximately 10,000 man-years being withdrawn from market work. The two alternatives differ with respect to which groups of the population that are affected. The tax-financed upgraded child benefit schedule implies that effects both come from families with children adjusting their labour supply behavior to the new tax/transfer schedule and from other taxpayers subject to the increased tax on high income. For the means testing alternative the labor supply reduction is concentrated on wage earners with children in the household, as wage earners without children are not affected by the new child benefit schedule.

As expected, these effects influence child poverty. Table 4 shows that initial (non-behavioural) effects on child poverty are substantially modified by accounting for labour supply responses. Under means testing, the overall reduction in child poverty is 3.2 percentage points, compared to a (direct effect) reduction of 4.1 percentage points. Table 4 shows that the child poverty rate is down to 7.7, initially (direct effect), and then up to 8.6 after accounting for behavioural effects. Also the child poverty reducing effect of the universal schedule is weakened by the income effect following from the increased child benefit to parents at the low end of the income distribution. But the behavioural effect is smaller compared to under means testing. Now, the behavioural effect increases the child poverty rate from 10.2 to 10.6.

Figure 4 summarises how the distribution of household earnings are affected by the two alternative child benefit schemes. The figure clearly demonstrates that gains at low income levels are much larger under means testing, but that they gains quickly disappear a income grows. Thus, the middle parts of the income distribution either gain very little or lose.

²⁸Household member are defined as wage earners or potential wage earners, i.e., households with self-employed, pensioners and unemployed are excluded.

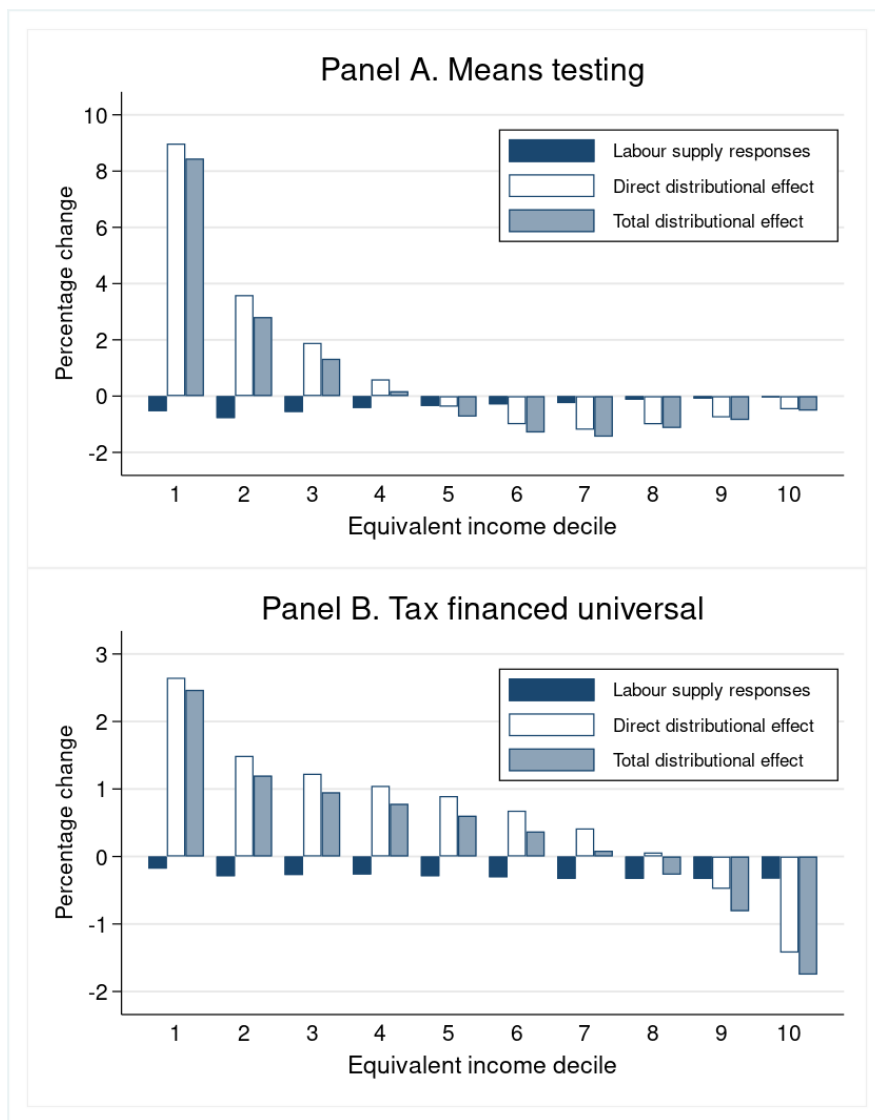


Figure 4: Effects of changes in the child benefit. Direct distributional effects, labour supply responses and total distributional effects in deciles. Percentage change, all households

Table 4: Direct and total effect on child poverty and revenue balance

	Benchmark	Changes			
		Means testing		Tax financed universal	
		Direct	Total	Direct	Total
Child poverty (share in %)	11.8	-4.1	-3.2	-1.6	-1.2
Child benefit expense (billion)	14.4	0.0	0.7	8.6	8.6
Income/wealth tax revenue (bill.)	471	0.0	-2.4	8.6	4.6
Revenue balance (billion)	457	0.0	-3.1	0.0	-4.0

Note: The direct effect assumes no behavioral responses. The total effect includes predicted behavioral responses (where the expected change in labour income is subtracted from the observed income for each wage earner).

As an alternative to descriptions of policy changes in terms of effects on disposable income, we describe the policy changes in terms of effects on changes in money metric utility. We employ the EV measure, which is the maximum amount of money that the individual is willing to pay to avoid the policy change. In practice this means that we derive measures of EV by using the optimal choices of the economic agents, pre-reform and post-reform, obtained from the labour supply model.²⁹ We find it convenient to measure EV in terms of negative values, which means that Figure 5 shows measures of how much the agents are willing to pay to let the policy change to happen. We see the same pattern as in Table 2: means testing is highly valued by the poor, whereas negative values are seen for the middle of the income distribution. The distributional gradient is (somewhat) flatter for the universal alternative, with positive valuation of the change for lower and middle income levels, and then clear negative values at the high end of the income distribution.³⁰

²⁹Dagsvik, Locatelli and Strøm (2009) and Dagsvik, Jia and Thoresen (2020) provide further details about how measures of EV can be obtained, given that a discrete choice labour supply model is employed. It should be noted that there are controversies concerning interpersonal comparison of (cardinal) measures of utility, see the review in Slesnick (1998).

³⁰As a matter of terminology, note that Figure 5 equivalent EV (vertical axis) and equivalent income (horizontal axis). It means that both measures of equivalent variation and disposable income are weighted with equivalence scale.

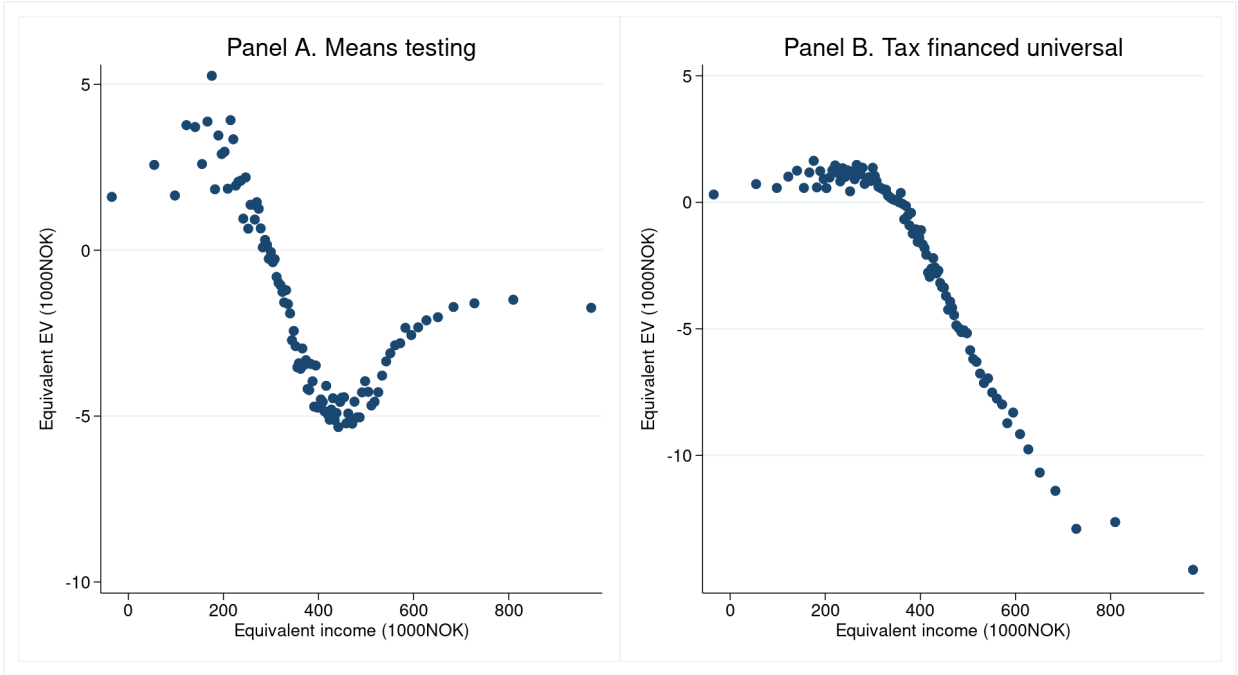


Figure 5: Equivalent variation (EV) against income level. All households

6 Couple households results

6.1 Effects on working hours

The analytical discussion of means testing in Section 3 most closely connects to behaviour of spouses, and in this section we shall present simulation results for couple households only. As above, we address effects on couples both with and without children, since the tax financed improved universal schedule also involves increased tax payments by households without children. Further, given that the distribution of labour supply effects described in Figure 4 depends on individuals being ranked according to equivalent income, it is interesting to see to what extent the pattern of labour supply effects can be retrieved for other definitions of income or well-being. Figure 6 shows distributions of labour effects for females and males for three other definitions of income: household disposable income without weighting with an equivalence scale; disposable income of the primary earner; and full income. Recall that the latter income concept is calculated here by letting both spouses in all couples be represented by working hours corresponding to a full time job, which is 37.5 hours per week in Norway.³¹

The difference in labour supply effects between the two alternative schedules is

³¹This income concept is meant, at least to some extent, to control for the measurement error following from conventional methods that ignore the importance and even the existence of household production. Some households may wrongly be characterised as belonging to a low-income household because their market income is low.

clearly depicted in Figure 6. Means testing gives a large reduction in working hours at low levels of income, and in particular for mothers. Males are less influenced by the changes, which follows from males being less responsive than their female counterparts. The labour supply effects for a more ambitious universal schedule are (in contrast) relatively equally distributed across the income distribution.

Table A1 in the Appendix provides further evidence on the difference between the two alternatives with respect to the response across gender. It shows that among families with children, mothers, in particular, reduce their labour supply under means testing, see figures for unconditional working hours (extensive margin + intensive margin). Reductions are 0.60 and 1.25 hours of work for females in couple and single females, respectively. These figures are well above corresponding estimates both for males under means testing and for females under the tax financed re-established 1996-schedule. Interestingly, a strengthened universal schedule has relatively similar labour supply effects on females and males in couples; -0.32 and -0.27, respectively.

The other main message of Figure 6 is that the distribution of labour supply effects is relatively robust to alternative income definitions. The results for means testing are close to what is conveyed by Figure 4. Although we observe somewhat more dependence on the income concept with respect to the tax financed universal alternative, the main impression is that the labour supply effects are relatively equally distributed across deciles, irrespective of the definition of income.

Next, in Table 5 we show labour supply effects with respect to combinations of wage levels of the spouses: nine combinations of low (L), median (M) and high (H) wages. Whereas labour supply effects of the enhanced universal schedule are relatively equally distributed on the combinations, the table shows that means testing has strongest effects on persons with low wages. These results therefore suggest that means testing may induce initially poor people to reduce their labor supply, and in that sense act in direction of a poverty trap, working to prevent people from moving out of a situation with little market work. Table A2 in the Appendix presents results of similar calculations for males.

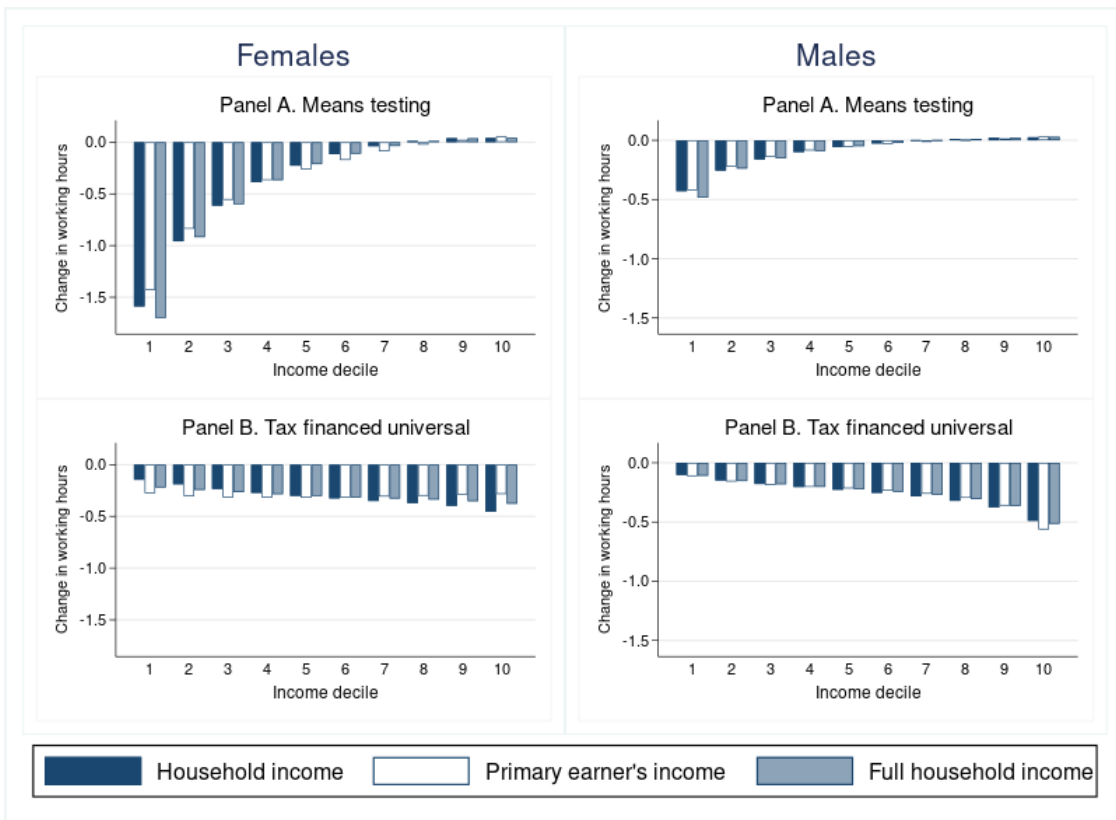


Figure 6: Distribution of reductions in labour supply in couples (mothers and fathers), for different definitions of income

Table 5: Female labour supply effects of changes in the child benefit schedule by combinations of female/male wage levels in the couple

			Wage combinations: female/male wage rate levels								
			L/L	L/M	L/H	M/L	M/M	M/H	H/L	H/M	H/H
		Participation	0.938	0.935	0.917	0.969	0.968	0.959	0.987	0.982	0.976
Benchmark		Work. hours, int. marg.	32.73	32.72	32.17	34.08	34.00	33.66	35.04	34.82	34.47
		Uncond. working hours	30.76	30.65	29.58	33.05	32.94	32.33	34.59	34.19	33.67
Change		Participation	-0.014	-0.011	-0.007	-0.008	-0.007	-0.004	-0.004	-0.004	-0.002
	Means testing	Work. hours, int. marg.	-0.35	-0.26	-0.12	-0.24	-0.18	-0.08	-0.15	-0.10	-0.04
		Uncond. working hours	-0.77	-0.58	-0.31	-0.48	-0.40	-0.21	-0.28	-0.22	-0.11
	Tax financed	Participation	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	universal	Work. hours, int. marg.	-0.24	-0.23	-0.22	-0.28	-0.27	-0.29	-0.33	-0.34	-0.34
		Uncond. working hours	-0.28	-0.25	-0.23	-0.31	-0.29	-0.31	-0.34	-0.36	-0.37
Number of observations			434	532	134	526	1201	510	127	520	575

Notes: Wage rate levels (per hour) defined by percentiles: L=low wage, 0-25; M=medium wage, 25-75; H=high wage 75-100.

Changes measured in absolute values of hours of work.

6.2 Redistribution among wage earner couples

Whereas Figure 4 describes distributional effects of alternative schedules for all households, Figure 7 shows direct and total distributional effects (including labour supply effects) when restricting to wage earner couples. Figure 7 shows several interesting findings. Firstly, we note that we most households lose when restricting to couples and thereby excluding lone parents. Secondly, the difference between the two alternatives in terms of distributional effects stands out very distinctively. In particular, the labour supply effects (included in total effects) harm incomes at the low end of the income distribution under means testing. In contrast, a tax financed universal schedule is primarily paid by the rich. Thirdly, results are very little sensitive to the choice of definition of income.

Finally, in Figure 8 we show how changes in money metric utility (EV) (for the two alternatives) distribute on the wage levels. Whereas (negative) EV is fairly equally distributed under means testing, the individuals (in couples) with high wage are worse off under a tax financed universal schedule.

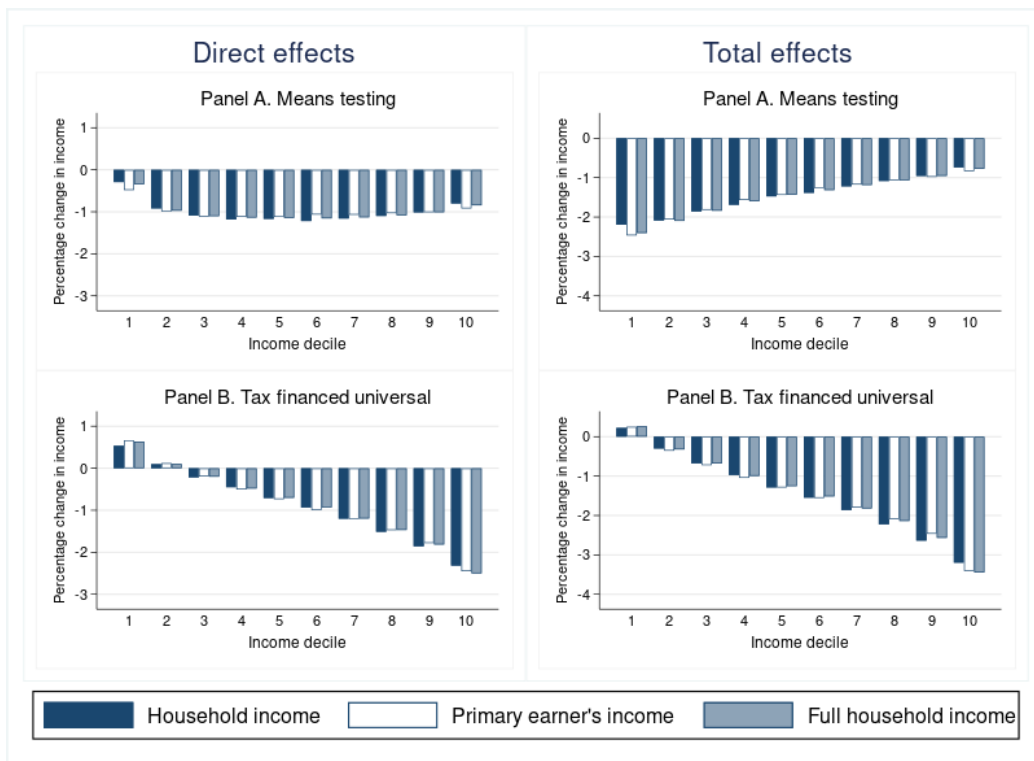


Figure 7: Direct and total distributional effects. Wage earner couples

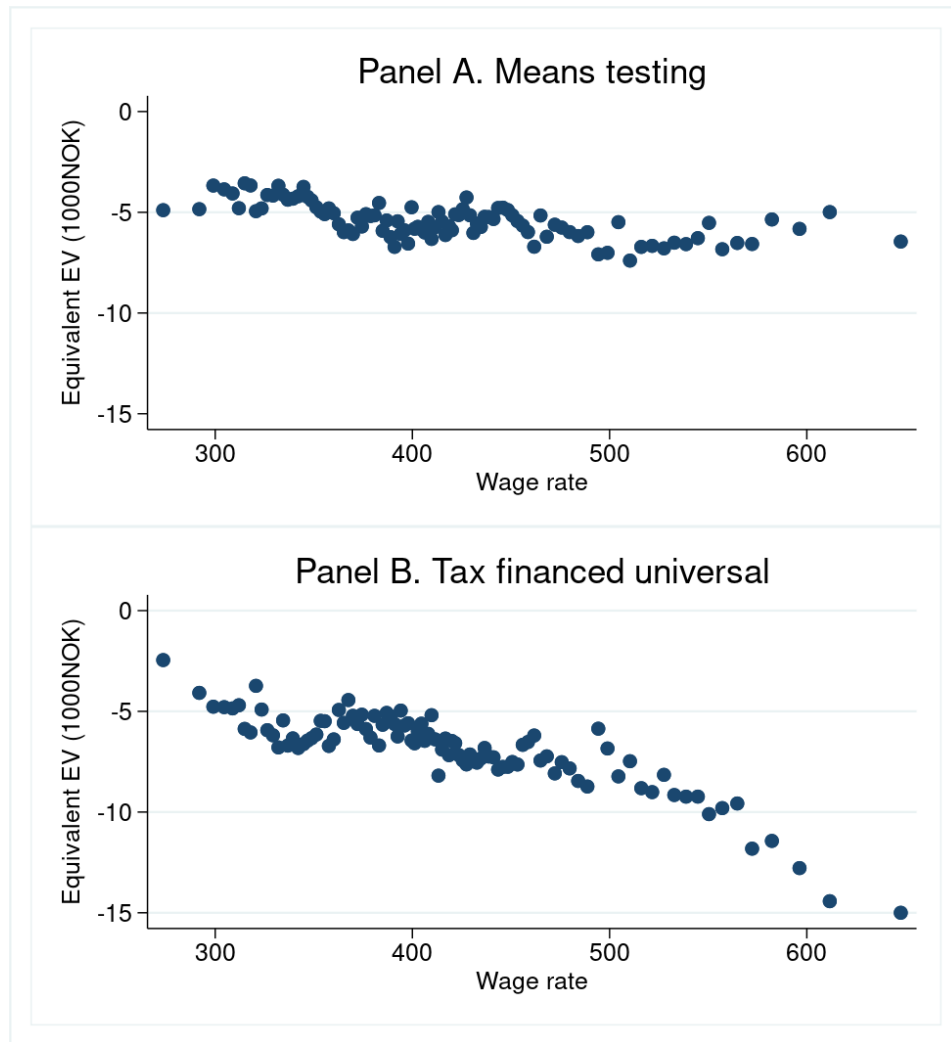


Figure 8: Equivalent variation (EV) against wage level, wage earner couples

7 Conclusion

Universal transfers, as child benefit to all, can be characterized as a waste of money on the rich. But is the answer to giving benefits to people in no need of them to target the support towards the poor through means testing? This paper argues against this simplistic view. At least, it is argued, we need a more fundamental evaluation of the policy that goes beyond the crude argument for "not giving transfers to higher income households". Here it is shown that redistribution can be achieved through higher taxation of the rich in combination with upholding a universal schedule.

One important message is that the "middle class" are treated differently by the child benefit designs discussed. For example, proponents of means testing must ask themselves why it is better to have the highest marginal rates around the middle of the distribution. Also the poor may experience detrimental effects of means testing: it acts in the direction of a poverty trap as poor people reduce their labor supply further when getting means tested support.

The empirical results presented in this study provide evidence of exactly this. We see that means testing is harmful for the labour supply in general, but in particular for individuals with low and middle incomes. As mothers are more responsive than males, our predictions here give reasons to expect that means testing results in a substantial reduction of female working hours, which in turns leads to less income among the poor. In particular, we see this pattern for couples. Although a more ambitious universal schedule does not alleviate child poverty to the same degree as means testing, we think that such a schedule is preferable, sending part of the bill to the high-income households without children.

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A Table appendix

Table A1: Labour supply effects of changes in the child benefit by groups of individuals

			Families with children				Households	
			Couple		Single		without	
			Female	Male	Female	Male	children	All
		Participation	0.964		0.948		0.976	0.977
Benchmark		Work. hours, int. marg.	33.82		34.05		33.77	35.81
		Uncond. working hours	32.64	38.44	32.41	37.73	34.99	35.05
		Participation	-0.011		-0.017		-	-0.003
Change	Means testing	Work. hours, int. marg.	-0.27		-0.76		-	-0.14
		Uncond. working hours	-0.60	-0.15	-1.25	-0.15	-	-0.24
	Tax financed	Participation	-0.001		-0.006		-0.001	-0.001
	universal	Work. hours, int. marg.	-0.29		-0.29		-0.16	-0.22
		Uncond. working hours	-0.32	-0.27	-0.45	-0.09	-0.18	-0.24

Changes measured in absolute values of hours of work

Table A2: Male labour supply effects of changes in the child benefit schedule by combinations of female/male wage levels

			Wage combinations: female/male wage rate levels								
			L/L	L/M	L/H	M/L	M/M	M/H	H/L	H/M	H/H
	Benchmark	Uncond. working hours	37.39	38.06	38.80	37.41	38.19	38.98	37.21	38.13	38.83
Change	Means testing	Uncond. working hours	-0.20	-0.14	-0.07	-0.14	-0.10	-0.05	-0.09	-0.06	-0.02
	Tax fin. univ.	Uncond. working hours	-0.20	-0.25	-0.32	-0.19	-0.25	-0.33	-0.18	-0.25	-0.33
Number of observations			434	532	134	526	1201	510	127	520	575

Note: Wage rate levels (per hour) defined by percentiles: L=low wage, 0-25; M=medium wage, 25-75; H=high wage 75-100