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Addendum to EM 12/17

An update, a correction, and an extension, of an evaluation of an illustrative Citizen's Basic Income scheme

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An update, a correction, and an extension, of an evaluation of an illustrative Citizen's Basic Income scheme*

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Abstract

This is an addendum to EUROMOD working paper EM 12/17, which updates, corrects and extends the previous evaluation of an illustrative Citizen's Basic Income scheme. Debate about Citizen's Basic Income – an unconditional and nonwithdrawable income for every individual – has shifted in character. An earlier phase related to the proposal's desirability; then followed debate about its feasibility; and now attention has turned to questions of implementation. Working paper EM 12/17 operationalised characteristics of two implementation models in terms of changes that might be required in existing UK tax and benefits systems, and it evaluated the implementation methods in relation to a wider variety of indicators than previous exercises of this kind: poverty and inequality indices, tax rate rises required for revenue neutrality, household disposable income gains and losses, households' abilities to escape from means-testing, and marginal deduction rates. This addendum employs EUROMOD H1.0+ to update the evaluation of one of the two implementation methods, to make a correction in one of the marginal deduction rates, and to extend the evaluation by calculating the number of households able to escape from all means-tested benefits, and by calculating the gains and losses that would be experienced by households containing individuals with disabilities.

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1. Introduction

In the UK two designations have been common currency for an unconditional and nonwithdrawable income for every individual: Basic Income, and Citizen's Income. (Sometimes 'Universal' has prefixed 'Basic Income'.) This addendum, like the working paper on which it is based, will employ the term 'Citizen's Basic Income', which has been increasing in popularity.

Debate about Citizen's Basic Income has shifted in character during the last five years. An earlier phase related to the proposal's desirability; then followed debate about its feasibility; and now attention is turning to questions of implementation (Torry 2013; 2015b; 2016c; 2017). The EUROMOD working paper EM12/17 evaluated the following illustrative Citizen's Basic Income scheme:

> A Citizen's Basic Income for every UK citizen, funded from within the current tax and benefits system. Current means-tested benefits would be left in place, and each household's means-tested benefits would be recalculated to take into account household members' Citizen's Basic Incomes in the same way as earned income is taken into account. (Torry, 2016e: 7)

As a previous working paper showed (Torry, 2014), a Citizen's Basic Income scheme that abolished existing means-tested benefits, and that was funded purely by making adjustments to the current Income Tax system, would generate significant losses for low income households. A Citizen's Basic Income scheme that both abolished existing means-tested benefits and avoided losses for low income households would need additional funding from outside the current tax and benefits systems. In the foreseeable future such additional funding is unlikely to be forthcoming. In the longer term a Citizen's Basic Income large enough to enable current means-tested benefits to be abolished while not imposing losses on low income households might be a possibility, but its current infeasibility suggests that in the short term any feasible implementation of a Citizen's Basic Income will need to leave the current means-tested benefits system in place.

The research behind this working paper has been guided by the same principle as previous working papers: that is, as few changes as possible will be made to the current tax and benefits system, consistent with the other aims in view: revenue neutrality (Hirsch, 2015), which I shall take to be a net cost or saving of no more than £2bn; and the avoidance of significant losses, particularly for low income households. I shall also assume that raising Income Tax rates by more than 3 percentage points would be politically infeasible (Hirsch, 2015), but that equalising National Insurance Contributions at 12% across the whole earnings range would be just, sensible, and acceptable. This working paper, like EM12/17, calculates the Citizen's Basic Incomes payable under such conditions, and evaluates the implementation method in relation to poverty and inequality indices, the numbers of households able to escape from means-tested benefits of various kinds, and household disposable income gains and losses. The advent of EUROMOD H1.0+ and updated FRS data enables the results to be more up to date than those of previous working papers (Torry, 2014; 2015a; 2016a; 2016b; 2017). The opportunity is taken to correct a mistake made in EM12/17 in relation to one of the marginal deduction rates, and to extend the evaluation of marginal deduction rates; and also to add two new evaluations: calculations relating to the number of households able to escape from means-testing entirely, or to be within striking distance of doing so; and calculations relating to individuals with disabilities.

2. The illustrative Citizen's Basic Income scheme

The Citizen's Basic Income scheme to be tested is constructed as follows:

- Child Benefit is increased by £20 per week for each child.
- National Insurance Contributions (NICs) above the Upper Earnings Limit are raised from 2% to 12%, and the Primary Earnings Threshold is reduced to zero. This has the effect of making NICs payable on all earned income at 12%. (This seems to me to be an entirely legitimate change to make. The ethos of a flat rate benefit such as Citizen's Basic Income is consistent with both progressive tax systems and with flat rate tax systems, but not with a regressive tax system (Atkinson, 1995)).
- The Income Tax Personal Allowances are set at zero.
- Citizen's Basic Income levels are set as follows: An Education Age Citizen's Basic Income (ECBI), for 16 to 19 year olds no longer in full-time education, is set at £40 per week; a Young Adult's Citizen's Basic Income (YCBI), for people aged 20 to 24, is set at £50 per week; a Working Age Adult Citizen's Basic Income (WACBI, or simply CBI), for people aged 25 to 64, is set at £63 per week;[1] and a Citizen's Pension, for everyone aged over 65, is set at £40 per week. The existing National Insurance Basic State Pension is left in place. (In this particular scheme the ECBI is not paid to someone still in full-time education, in recognition of the fact that their main carer is receiving Child Benefit on their behalf.)
- Income Tax rates are adjusted as required in order to achieve revenue neutrality.

It might be suggested that it would be better either to retain Child Benefit as it is and pay a separate small Child Citizen's Basic Income at the same rate for every child, or to abolish Child Benefit and to pay an equal Citizen's Basic Income, and that to pay an enhanced Child Benefit at different rates for the first and for the second and subsequent children would compromise the principle that everyone of the same age should receive the same level of income. This might be true in theory, but in practice the situation is more complex. Every Citizen's Basic Income scheme envisages that Child Citizen's Basic Incomes will be paid to the main career, as is Child Benefit: so what is happening in practice is that children receive no Citizen's Basic Incomes while their main carers receive varying amounts in relation to the number of children in their families. This means that to pay different amounts for the first and for the second and subsequent children would simply vary the already varying amounts paid to main carers of children, and that it would preserve sufficient of the unconditionality principle by ensuring that every main carer of the same number of children would receive the same total level of Citizen's Basic Income, made up of their own Citizen's Basic Incomes and those for their children. To enhance the level of Child Benefit is therefore legitimate in practice as well as conforming to our principle of making the smallest number of changes possible. (A similar approach is taken by Painter and Thoung, 2015.)

[1] The calculation is as follows: Income Tax Personal Tax Allowance in 2017-18 was £11,500. Removing the allowance would mean additional Income Tax of 11,500 x 0.2 = £2,300 being paid. The Primary Earnings Threshold for National Insurance Contributions was £157 per week. Reducing the threshold to zero would mean additional National Insurance Contributions of 157 x 52 x 0.12 = £979.68. The total additional payment would be 2,300 + 979.68 = 3,279.68, which translates as £63.07 per week: so a Citizen's Basic Income of £63 per week would compensate for the loss of the Income Tax Personal Allowance and the reduction of the Primary Earnings Threshold to zero.

Net cost, and household gains and losses

As in previous working papers, I evaluate the effects of the Citizen's Basic Income scheme on household disposable incomes rather than on individuals' disposable incomes. There are good arguments for both approaches. It is individuals who receive income, so gain or loss is an individual experience; and within a household income is not necessarily equitably shared, so the amounts that individuals receive might be more relevant than the amount that the household receives. However, we can assume that in most cases income is pooled within households, at least to some extent, so if one member gains and another loses then the household might be better off, and that might be a more significant factor than that one member of the household has suffered a loss in disposable income. Because households are of different sizes, an absolute gain or loss is not particularly relevant. However, percentage gains and losses are relevant, so this is the measure that we use.

Table 1 summarises the results obtained from microsimulation of the scheme proposed here.[2]

[2] The method is as follows: A new set of benefits is created in the UK country system in EUROMOD: a Citizen's Pension (CP) for over 65 year olds, a Citizen's Basic Income (CI) for adults aged between 25 and 64, and a Young adult's Citizen's Basic Income (CIY) for adults aged between 20 and 24, and an Education age Citizen's Basic Income (CIE) for anyone between 16 and 19 not in full-time education (- they are named separately, but all of them are calculated in the same policy in EUROMOD (BCI)). In the definitions of constants, levels are set for these Citizen's Basic Incomes, and all Personal Tax Allowances are set at zero. So that the additional taxable income is taxed at the basic rate, and not at the higher rate, the first tax threshold is set at £43,000. The National Insurance Contribution (NIC) Primary Earnings Threshold is set to zero, and in the NIC calculation the NIC rate above the Upper Earnings Limit is set to 12% (to match the rate below the limit). Child Benefit rates are increased by £20 per week. As a transitional measure, and in the cause of an easy transition, the Education age Citizen's Basic Income is not paid to a young person still in full-time education, in recognition of the fact that their main carer is receiving Child Benefit on their behalf. The Citizen's Basic Income total is added to the benefits total and also to the means applied to means-tested benefits. Simulations of the 2017 tax and benefits system and of the Citizen's Basic Income scheme generate two lists of household disposable incomes for the entire Family Resource Survey sample. These then generate a list of gains (negative gains are losses), the gains are multiplied by the weighting figures supplied with the FRS survey results in order to scale up the survey sample to the entire population, and the total of the grossed up gains then gives the net cost of the scheme. To convert EUROMOD's monthly figures to annual figures the total is multiplied by 12. A process of trial and error adjusts the Income Tax rates until the net cost falls to no more than £2bn per annum. (For information on the household weights contained in the FRS data, see De Agostini, 2017: 50.) Household original incomes are then ordered, the bottom 20% are selected, the gains are calculated, and then the percentage gains. (It is the bottom 20% of the population of households, not the bottom 20% of the sample.) The percentage gains are then ordered and the households suffering losses of over 10% and of over 5% are selected. The weights attached to each of the relevant selected households are then added together to obtain the number of households in the whole population affected by such losses. The process is then repeated for all households.

Table 1: An evaluation of an illustrative Citizen's Basic Income scheme with the working age adult Citizen's Basic Income set at £63 per week.

Citizen's Pension per week (existing state pensions remain in payment)	£40
Working age adult Citizen's Basic Income per week	£63
Young adult Citizen's Basic Income per week	£50
Education age Citizen's Basic Income per week	£40
(Child Benefit is increased by £20 per week)	(£20)
Income Tax rate increase required for strict revenue neutrality	3 %
Income Tax, basic rate (on £0 – 43,000)	23 %
Income Tax, higher rate (on £43,000 – 150,000)	43 %
Income Tax, top rate (on £150,000 –)	48 %
Proportion of households in the lowest original income[3] **quintile experiencing losses of over 10% at the point of implementation**	1.62 %
Proportion of households in the lowest original income quintile experiencing losses of over 5% at the point of implementation	2.67 %
Proportion of all households experiencing losses of over 10% at the point of implementation	1.90 %
Proportion of all households experiencing losses of over 5% at the point of implementation	9.88 %
Net cost of scheme	£2bn p.a.

We can conclude that the scheme would be revenue neutral (that is, it could be funded from within the current income tax and benefits system); that the increase in Income Tax rates required would be feasible; and that the scheme would not impose significant numbers of significant losses on low income households. In theory there should be no losses for low income households because current means-tested benefits would still be in place and would be recalculated to take account of households' Citizen's Basic Incomes and changes in net incomes. Further research on the detail of the Family Resources Survey data would be required to discover the particular household circumstances that generate losses. Losses for higher income households will be due to increased Income Tax and National Insurance Contribution rates on higher earnings.

[3] Households can be ordered either by disposable income or by original income. There are arguments for both approaches. To order by original income ensures that the same households remain in the lowest quintile throughout the exercise, whereas disposable incomes change once the Citizen's Basic Income scheme is implemented, meaning that households shift between quintiles. However, it is disposable income rather than original income that more directly affects a household's wellbeing, and other indices, such as inequality and poverty indices, generally relate to disposable income, so it is changes in disposable income that interest us. I have employed different approaches in different working papers. Here I choose to order households by original income. The EUROMOD statistics application employs disposable income deciles, so in the tables and figures below relating to poverty and inequality, the indices relate to disposable income deciles rather than gross income deciles.

We can conclude that the scheme would be financially feasible.

Changes to means-tested benefits claims brought about by the scheme

Tables 2 and 3 give the results of calculations based on microsimulation of the current scheme and of the Citizen's Basic Income scheme. The new element in this table is the calculations for all means-tested benefits.

Table 2: Percentage of households claiming means-tested social security benefits for the existing scheme in 2017 and for the Citizen's Basic Income Scheme

	The existing scheme in 2017	**The Citizens Basic Income scheme**	**% reduction**
Percentage of households claiming out-of-work benefits (Income Support, Income-related Jobseeker's Allowance, Income-related Employment Support Allowance)	12.7%	10.7%	15.6%
Percentage of households claiming more than £100 per month in out-of-work benefits (defined as above)	12.4%	5.1%	59.1%
Percentage of households claiming in-work benefits (Working Tax Credits and Child Tax Credits)	13.1%	10.8%	17.7%
Percentage of households claiming more than £100 per month in in-work benefits (defined as above)	11.8%	9.8%	16.6%
Percentage of households claiming Pension Credit	6.2%	5.7%	7.8%
Percentage of households claiming more than £50 per month in Pension Credit	5.3%	4.5%	14.1%
Percentage of households claiming Housing Benefit	16.2%	16.2%	0.3%
Percentage of households claiming more than £100 per month in Housing Benefit	15.1%	14.9%	0.9%
Percentage of households claiming Council Tax Benefit	21.0%	20.1%	4.5%
Percentage of households claiming more than £50 per month in Council Tax Benefit	15.5%	13.8%	11.4%
Percentage of households claiming any means-tested benefits	33.2%	30.9%	6.9%
Percentage of households claiming more than £100 per month in means-tested benefits	29.2%	24.7%	15.3%
Percentage of households claiming more than £200 per month in means-tested benefits	26.6%	21.3%	20.2%

Notes: EUROMOD microsimulation of both the 2017 tax and benefits system and the Citizen's Basic Income scheme generates information on the number of claims for each social security benefit for the two options, and also information on the total cost of those benefits and on the average values of benefits claims. To obtain the numbers claiming benefits the weights attached to the households in the survey that are claiming the relevant benefits are added together. The FRS data employed by EUROMOD H1.0+ is uprated 2014/15 data, and so is

based on data collected before Universal Credit and localised Council Tax Reduction began to show up in the data (De Agostini, 2017: 56, 65, 69, 72-4).

Table 3: Percentage reductions in total costs of means-tested benefits, and percentage reductions in average value of household claims, on the implementation of the Citizen's Basic Income scheme

	Reduction in total cost	Reduction in average value of claim
Out-of-work benefits (Income Support, Income-related Jobseeker's Allowance, Income-related Employment Support Allowance)	72.8%	67.8%
In-work benefits (Working Tax Credits and Child Tax Credits) (see note for table 2)	23.2%	6.7%
Pension Credit	34.3%	28.7%
Housing Benefit	3.2%	2.9%
Council Tax Benefit (see note for table 2)	10.2%	5.9%
All means-tested benefits	30.7%	25.5%

These results show that the Citizen's Basic Income scheme:

- would reduce by 15.6% the number of households claiming the out-of-work benefits Income Support, Income-related Jobseekers' Allowance, and Income-related Employment Support Allowance; would reduce the total cost of these benefits by 72.8%; would reduce by 67.8% the average amount of these benefits received by households claiming them; and would reduce by 59.1% the number of households receiving more than £100 per month in these benefits.
- would reduce by 17.7% the number of households claiming in-work benefits Working Tax Credits and Child Tax Credits; would reduce by 23.2% the total cost; would reduce by 6.7% the average amount of benefits received by households claiming them; and would reduce by 16.6% the number of households receiving more than £100 per month in these out-of-work benefits.
- would not alter by very much the number of claims for Housing Benefit, nor their average value, and so would not alter the total cost of Housing Benefit. This suggests that a Citizen's Basic Income scheme of this type – i.e., that was strictly revenue neutral, and did not impose appreciable losses on low income households at the point of implementation – would not help to solve the problem of housing costs. A solution based on housing supply will need to be found.
- would reduce by more than one third the total cost of Pension Credit, and the average value of household claims would fall by more than a quarter. The number of claims for Pension Credit would fall by 7.8%, so the reduction in total cost is due mainly to the reduction in the average value of claims. (The current transition from Basic State Pension to a Single Tier State Pension will change this picture by removing most elderly households from Pension Credit. The slow transition from Basic State Pension to the Single Tier State Pension (STP), which will be paid at the level of income to which Pension Credit's Guarantee Credit raises pensioner income for everyone with a complete

National Insurance record, will substantially reduce the number of claims for Pension Credit. Once roll-out of the STP has been achieved, it will be relatively simple to abandon the National Insurance record conditionality and turn the STP into a Citizen's Pension.)

- would reduce by 6.9% the number of households receiving means-tested benefits; would reduce the total cost of these benefits by nearly a third; would reduce by a quarter the average amount of these benefits received by households claiming them; and would reduce by 15.3% the number of households receiving more than £100 per month in these benefits, and by one fifth the number receiving more than £200. A lot of households would find it far easier to come off means-tested benefits than they do now.

The poverty, inequality and redistributional effects of the Citizen's Basic Income scheme

The data employed in this section are generated by the statistics application attached to EUROMOD H1.0+.

Table 4 shows the changes that the illustrative Citizen's Basic Income scheme would bring about in relation to poverty and inequality.

Table 4: Changes in poverty and inequality indices brought about by the Citizen's Basic Income scheme

	The current tax and benefits scheme in 2017	The Citizen's Basic Income scheme	Percentage change in the indices
Inequality			
Disposable income Gini coefficient	0.30	0.27	9.2%
Poverty headcount rates			
Total population in poverty	12%	8%	33.3%
Children in poverty	14%	6%	56.3%
Working age adults in poverty	12%	9%	29.4%
Economically active working age adults in poverty	4%	2%	39.4%
Elderly people in poverty	11%	9%	11.6%

Notes: These figures are generated by the EUROMOD H1.0+ statistics application. Poverty is defined as household incomes below 60% of median household income (De Agostini, 2017: 67-9).

We can conclude that

- the Citizen's Basic Income scheme would deliver a significant reduction in inequality;
- even more significantly, child poverty would fall by a half, and working age poverty would also fall substantially.

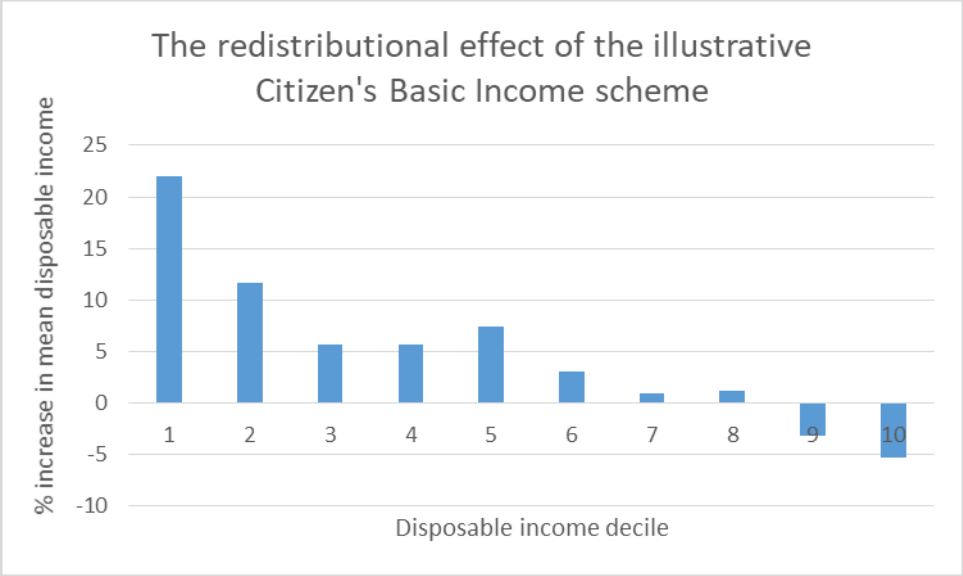
Table 5 and figure 1 show the aggregate redistribution that would occur if the Citizen's Basic Income scheme were to be implemented.

Table 5: The redistributional effect of the illustrative Citizen's Basic Income scheme

Disposable income decile	1	2	3	4	5	6	7	8	9	10
% increase in mean disposable income	22.0	11.7	5.7	5.7	7.4	3.1	1.0	1.2	-3.2	-5.3

For the purposes of this exercise households are ranked by total equivalised disposable incomes (De Agostini, 2017: 67).

Figure 1: The redistributional effect of the illustrative Citizen's Basic Income scheme



The table and graph show that the scheme would achieve manageable and useful redistribution from rich to poor, with those households often described as the 'squeezed middle' benefiting from the transition as well as the poorest households.

Marginal effective tax rates

Would individuals be more or less likely to seek paid employment, or to seek additional earned income, if they were paid a Citizen's Basic Income? Factors often discussed in this context are the marginal effective tax rate (METR: also called the marginal tax rate, the marginal withdrawal rate, or the marginal deduction rate): a measure of the extent to which an employed individual's additional earned income fails to result in additional disposable income; and the participation tax rate (PTR): a measure of the extent to which an unemployed individual's new earned income fails to result in additional disposable income. While a wide variety of factors will determine whether an individual seeks paid employment, or seeks additional earned income, if a substantial rise in earned income results in only a small rise in disposable income then further employment market engagement is less likely to be forthcoming. Because the marginal effective tax rate and the participation tax rate are factors that can be measured, and other factors cannot be measured so easily, these particular indicators might sometimes be given more prominence than they deserve: but because they

can be measured, and because they are likely to be at least of some significance, this paper, like the previous working paper EM12/17, defines and calculates a variety of different marginal effective tax rates and participation tax rates.

The marginal effective tax rate measures the extent to which additional earned income does not result in additional disposable income. If y is the earned income before an increase, y' is earned income after an increase, d is disposable income before the increase in earned income, and d' is disposable income after the increase, then the marginal effective tax rate, METR, is given by (1-((d'-d)/(y'-y))) x 100. So if an additional £200 in earnings results in an additional £150 of disposable income, the marginal effective tax rate is 25%.

Until 2003 the Department for Work and Pensions published in printed form a set of graphs and tables that showed the marginal effective tax rates experienced by a range of household types across a wide range of earnings at £10 intervals (Department for Work and Pensions, 2003). The tables then went online for a couple of years before publication ceased. It would be enormously valuable to the research community for the calculation and publication of the tables to resume. This working paper is not the place for an attempt at such a major exercise. Instead, it offers sufficient information to enable us draw some tentative conclusions about possible employment market effects.

Here I shall take two different approaches:

Marginal effective tax rates, method 1

EUROMOD's 'MTR' add-on calculates marginal effective tax rates (METRs) for all individuals who are earning an income. The add-on increases by 3% the earned income of each working age adult in the household in turn and calculates the increase in the household disposable income that this generates. If y is an individual's original earned income, d the original household disposable income, and d' the final household disposable income, then the METR is given by (1-((d'-d)/0.03y)) x 100. I follow Makovec and Tammik (2017: 21-2) in removing from the list of METRs generated for the FRS sample any METRs with values over 150% and any with negative values.

This method assumes that in every household every individual adult has complete knowledge of the household's financial resources, that all household members possess equal power in relation to household resources, and that each individual's motivation is a function of household disposable income.

Marginal effective tax rates and participation tax rates, method 2

A second method increases the earned income of every individual 16 years old and above by £200 per month, and calculates the change in that individual's disposable income. This method therefore generates results for individuals already in employment, and also for individuals not in employment. For someone not in employment who enters employment, the ratio between the change in disposable income and the new earned income is the Participation Tax Rate (PTR); and for someone already in employment, the ratio between the change in disposable income and the change in earned income is the Marginal Effective Tax Rate (METR). A high PTR represents an 'unemployment trap', and a high METR a 'poverty trap'. In relation both to individuals initially in employment and to those not, a household's benefits income is assumed to be received by the individual to which the payment is made rather than by the household as a whole; and the earnings of all adults in the household are increased at the same time (as opposed to method 1, which increases each earned income in turn). The

calculation is the same for both the PTR and the METR: If d is the individual's original disposable income and d' is their final disposable income, then the PTR/METR is given by (1-((d'-d)/200)) x 100. £200 per month represents something between half a day a week and a day a week of additional employed hours at the National Living Wage, and so represents the kind of real world employment market decision with which many individuals might be faced.

This method does not assume equal knowledge or sharing of a household's financial resources within the household, but it does assume that each individual's motivation is a function of the payments that they receive. So if one member of a couple receives Working Tax Credits payments on behalf of the household, then they and not their partner will be assumed to be influenced by any decrease in that payment; and if the other member receives Child Benefit, then they and not their partner will be influenced by that.

The reality in relation to household members' knowledge and sharing of household resources will generally lie somewhere between the two methods' assumptions for each household, with I suspect very few households at either end of the spectrum.

A set of results for the current tax and benefits scheme and for the illustrative Citizen's Basic Income scheme are given in the following tables and graphs.

Results for method 1

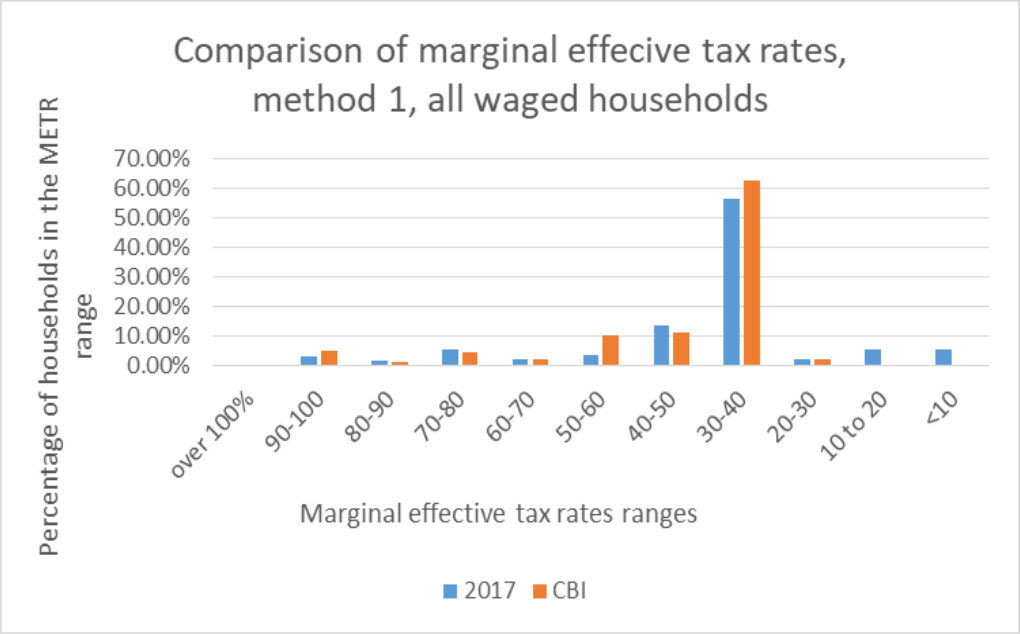
Table 6 and figure 2 give the results for METRs calculated using method 1.

Table 6: Results for method 1: Average marginal effective tax rates and numbers of marginal effective tax rates at various levels for households containing gainfully employed working age adults, both for the current tax and benefits system and for the illustrative Citizen's Basic Income scheme, when individuals' earned incomes rise by 3%

Marginal effective tax rates	Percentage of individuals experiencing these METRs with the current tax and benefits system	Percentage of individuals experiencing these METRs with the illustrative Citizen's Basic Income scheme
Over 100%	0.14%	0.25%
90% to 100%	3.21%	5.15%
80% to 90%	1.61%	1.51%
70% to 80%	5.58%	4.86%
60% to 70%	2.11%	2.01%
50% to 60%	3.46%	10.29%
40% to 50%	13.74%	11.08%
30% to 40%	56.59%	62.58%
20% to 30%	2.24%	2.07%
10% to 20%	5.78%	0.07%
Under 10%	5.54%	0.02%
Median METR	33.16%	37.22%

Method 1 studies only households in which at least one adult has earned income. As we have already seen, some households containing gainfully employed individuals will escape from Working Tax Credits (although not necessarily from Housing Benefit), but others will experience raised Income Tax rates, and some will experience higher National Insurance Contributions. Median METR rises by approximately 12%.

Figure 2



Results for method 2[4]

Results for method 2 are given in table 7 and figures 3 for METRs experienced by waged households, table 8 and figure 4 for METRs experienced by the households in the bottom earnings quintile, and table 9 and figure 5 for PTRs experienced by unwaged households.

[4] Method 2 is as follows: An additional calculation is added to the National Minimum Wage function (yem) in EUROMOD that adds £200 per month to the earned income of every individual over sixteen years of age. (The NMW parts of the policy are switched off.) The effect is to add £200 to the original income of every individual over the age of sixteen. EUROMOD is run to generate disposable income lists both before and after the change in earned income, for both the current tax and benefits system and for the illustrative Citizen's Basic Income scheme. METRs/PTRs are then calculated, and for all of the individuals experiencing METRs/PTRs within the required range the weights provided in the FRS data are added together to give the total number of over 16s experiencing that range of METRs. These figures are then compared with the total number of over 16s in the population as represented by the total of the weights for every over 16 in the FRS data.

It is here that an error was made in EUROMOD working paper EM12/17. The METRs and PTRs obtained for the current benefits system were far higher than expected. A mistake could not be found in the calculations based on the EUROMOD output files. However, the mistake has now been discovered. Similar high METRs and PTRs were found to be delivered by turning on the Citizen's Basic Income policy function for a EUROMOD run to calculate figures for the current benefits system, so that must be what happened. No such error has been made on this occasion, and the results that have been delivered are those that would have been expected.

Table 7: Results for method 2: Proportions of initially waged individuals over the age of 16 experiencing various marginal effective tax rates, both for the current tax and benefits system and for the illustrative Citizen's Basic Income scheme, when all adults' earned incomes are raised by £200 per month

Marginal Effective Tax Rates	Percentage of individuals experiencing these METRs with the current tax and benefits system	Percentage of individuals experiencing these METRs with the illustrative Citizen's Basic Income scheme
Over 100%	3.94%	3.13%
90% to 100%	0.81%	1.47%
80% to 90%	0.65%	0.76%
70% to 80%	1.54%	2.42%
60% to 70%	1.70%	2.38%
50% to 60%	2.39%	10.57%
40% to 50%	14.20%	11.72%
30% to 40%	58.19%	65.19%
20% to 30%	4.13%	2.19%
10% to 20%	5.74%	0.14%
Under 10%	6.72%	0.01%
Median METR	33.83	36.60

Figure 3

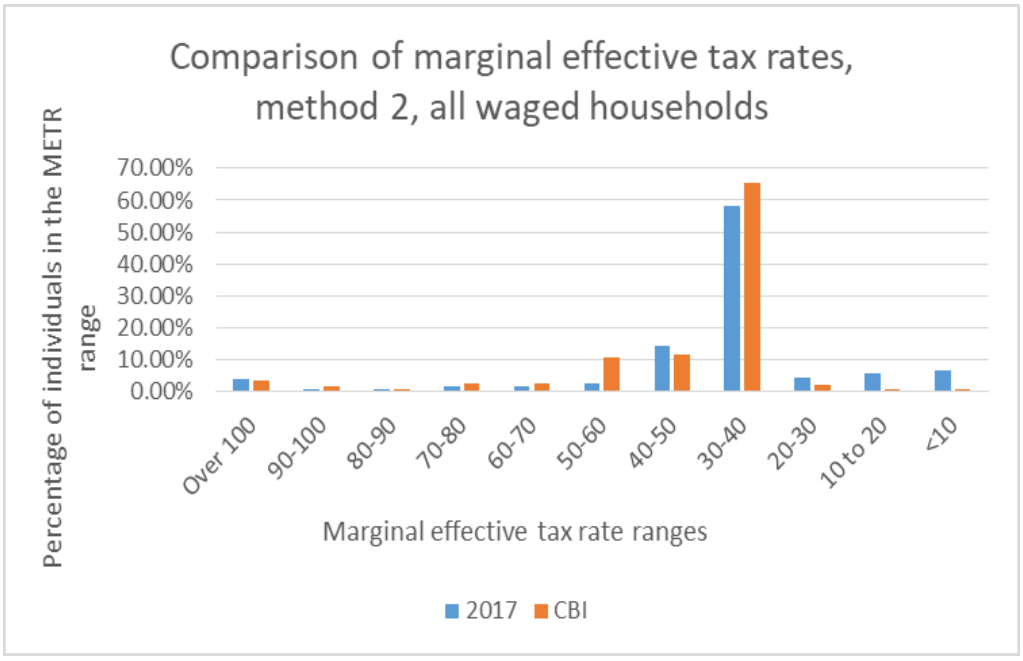


Table 8: Results for method 2: Proportions of initially waged individuals over the age of 16 and in the bottom earnings quintile experiencing various marginal effective tax rates, both for the current tax and benefits system and for the illustrative Citizen's Basic Income scheme, when all adults' earned incomes are raised by £200 per month

Marginal Effective Tax Rates	Percentage of individuals experiencing these METRs with the current tax and benefits system	Percentage of individuals experiencing these METRs with the illustrative Citizen's Basic Income scheme
Over 100%	6.38%	6.82%
90% to 100%	2.99%	3.15%
80% to 90%	2.58%	2.07%
70% to 80%	1.38%	3.85%
60% to 70%	1.57%	0.98%
50% to 60%	2.21%	1.04%
40% to 50%	1.68%	3.57%
30% to 40%	12.04%	73.88%
20% to 30%	13.16%	4.54%
10% to 20%	22.92%	0.10%
Under 10%	33.09%	0.00%
Median METR	18.21%	35.00%

Figure 4

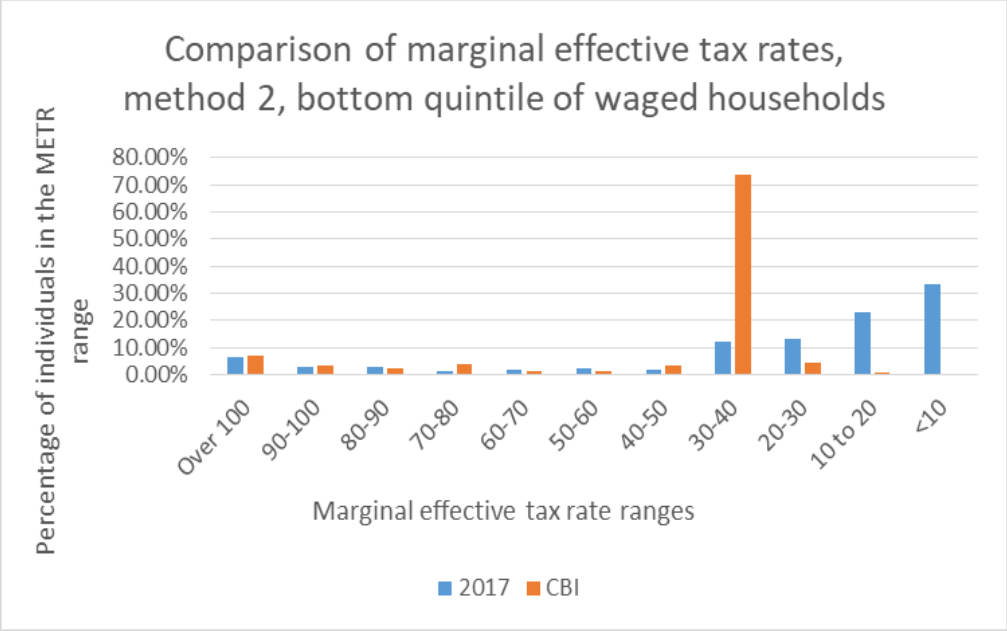
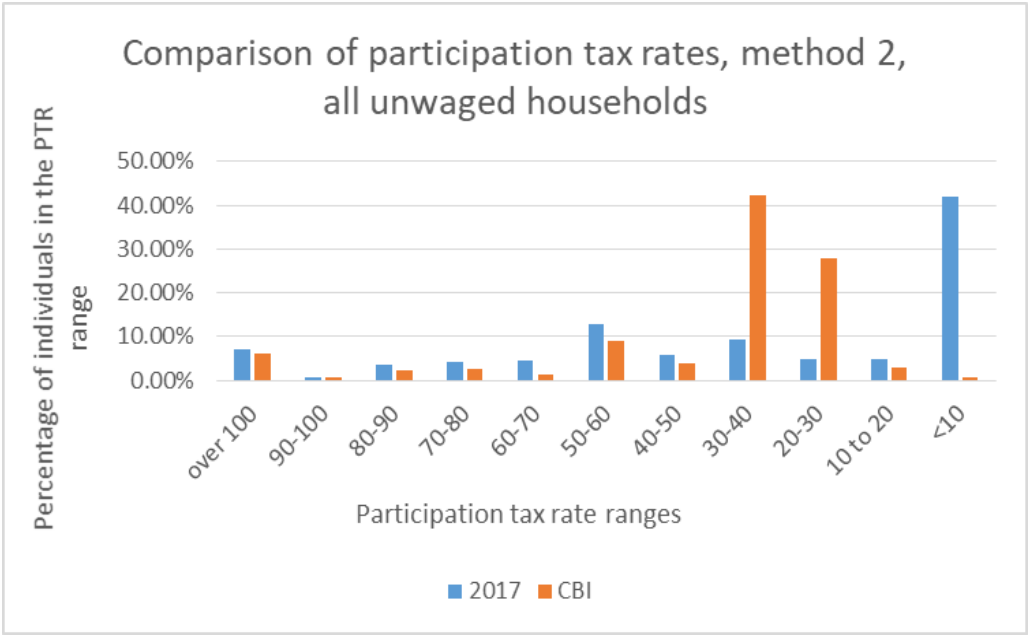


Table 9: Results for method 2: Proportions of initially unwaged individuals over the age of 16 experiencing various participation tax rates, both for the current tax and benefits system and for the illustrative Citizen's Basic Income scheme, when all adults' earned incomes are raised by £200 per month

Participation Tax Rates	Percentage of individuals experiencing these PTRs with the current tax and benefits system	Percentage of individuals experiencing these PTRs with the illustrative Citizen's Basic Income scheme
Over 100%	7.01%	6.14%
90% to 100%	0.74%	0.59%
80% to 90%	3.47%	2.42%
70% to 80%	4.35%	2.74%
60% to 70%	4.54%	1.42%
50% to 60%	12.98%	9.07%
40% to 50%	5.87%	3.82%
30% to 40%	9.35%	42.20%
20% to 30%	4.75%	27.95%
10% to 20%	4.91%	2.99%
Under 10%	42.05%	0.67%
Median METR	32.00%	35.00%

Figure 5



Method 2 captures the effect of increases in the incomes of the individual and of their partner on the net income of the individual, whether incomes be made up of wages, benefits payments, or both. A very mixed picture emerges. As we would expect, the fact that everyone earning an income is now paying Income Tax and NICs on all earned income increases the number of individuals experiencing METRs and PTRs between 30% and 40%, and in the case of initially unwaged households of individuals experiencing PTRs between 20% and 30% as well. The numbers experiencing higher PTRs fall, which is welcome, and is again what we might expect. Patterns relating to METRs at higher rates are somewhat difficult to interpret. We have already discovered that large numbers of households would no longer be receiving means-tested benefits, and none of those households would still be experiencing the high METRs and PTRs that they were experiencing before the implementation of the Citizen's Basic Income. Method 1 can only capture effects for waged households (- there will soon be a EUROMOD application for PTRs along the lines of the current application that calculates METRs), so only those households that come off in-work means-tested benefits will show up in these statistics: hence the relatively small reductions in the numbers of individuals experiencing high marginal deduction rates (in this case METRs). Method 2 can and does capture the effect for PTRs.

Gains and losses for individuals with disabilities

A question frequently asked is how a Citizen's Basic Income scheme would affect people with disabilities. Here it would seem most realistic to evaluate individual net income changes rather than changes in household net incomes. Results for the illustrative scheme are as follows:

Table 8: Gains and losses for individuals with disabilities.

Proportion of individuals with disabilities experiencing losses of over 10% at the point of implementation	8.20 %
Proportion of individuals with disabilities experiencing losses of over 5% at the point of implementation	9.60 %
Average gain for individuals with disabilities	£854 p.a.

A somewhat confused picture emerges. On average, individuals with disabilities gain £845 p.a., but the complexity of the current benefits system for people with disabilities, compounded by the complex way in which the current benefits system relates to households containing members with disabilities, means that some individuals with disabilities will lose money. This does not necessarily mean that their households will do so.

3. Conclusion

Because the only changes required in order to implement this illustrative Citizen's Basic Income scheme would be

- payment of the Citizen's Basic Incomes for every individual above the age of 16 (apart from those between 16 and 19 still in full-time education), calculated purely in relation to the age of each individual,

- increases in the rates of Child Benefit,
- changes to Income Tax and National Insurance Contribution rates and thresholds, and
- easy to achieve recalculations in existing means-tested benefits claims,

the entire scheme could be implemented very quickly.

This simple scheme would substantially reduce poverty and inequality; it would remove large numbers of households from a variety of means-tested benefits; it would reduce means-tested benefit claim values, and the total costs of means-tested benefits; particularly for the large number of households no longer on means-tested benefits, it would provide additional employment market incentives to the extent that marginal deduction rates affect employment market behaviour; it would avoid imposing significant numbers of losses at the point of implementation; and it would require almost no additional public expenditure.

This simple illustrative scheme could be both feasible and useful.

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