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Mechanics of Replacing Benefit Systems with a Basic Income: Comparative Results from a Microsimulation Approach

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ABSTRACT

Mechanics of Replacing Benefit Systems with a Basic Income: Comparative Results from a Microsimulation Approach[1]

Recent debates of basic income (BI) proposals shine a useful spotlight on the challenges that traditional forms of income support are increasingly facing, and highlight gaps in social provisions that largely depend on income or employment status. A universal "no questions asked" public transfer would be simple and have the advantage that no-one would be left without support. But an unconditional payment to everyone at meaningful but fiscally realistic levels would likely require tax rises as well as reductions in existing benefits. We develop a comprehensive BI scenario that facilitates an assessment of the resulting fiscal and distributional effects in a comparative context, undertake a microsimulation study to quantify them, and propose a simple decomposition to identify the mechanisms that drive effects in different country contexts. Results illustrate the challenges, but also the strengths, of existing social protection systems. A BI would fix benefit coverage gaps that exist in many countries, but would require very substantial tax rises if it were to be set at a meaningful level. As support would not be targeted on those most in need, it would not be a cost-effective way of directly reducing income poverty.

JEL Classification: C81, D31, H22, H55

Keywords: basic income, targeting, individualisation, conditionality, microsimulation

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[1] This is an extended version of a policy brief published under the title "Basic income as a policy option: Can it add up?". The opinions expressed and arguments employed herein are solely those of the authors and do not necessarily reflect the official views of the OECD or of its member countries. This paper makes use of EUROMOD, which is maintained, developed and managed by the Institute for Social and Economic Research (ISER) at the University of Essex, in collaboration with national teams from the EU member states. We are indebted to the many people who have contributed to the development of EUROMOD. The process of extending and updating EUROMOD is financially supported by the European Union Programme for Employment and Social Innovation "Easi" (2014-2020). Data sources for EUROMOD results reported in this note are as follows. Finland: microdata from the EU Statistics on Incomes and Living Conditions (EU-SILC) made available by Eurostat (59/2013-EU-SILCLFS); France and Italy: national EU-SILC PDB data made available by respective national statistical offices; United Kingdom: Family Resources Survey data made available by the Department of Work and Pensions via the UK Data Archive. None of the individuals or organisations mentioned in this acknowledgement are responsible for the analysis or interpretation of the data reported here.

Mechanics of replacing benefit systems with a basic income: Comparative results from a microsimulation approach

1. Introduction

The concept of a basic income (BI), an unconditional flat-rate transfer paid to everyone, is not new (Widerquist *et al*, 2013). In several countries, some groups already receive unconditional public transfers. The most important universal payments are child or family benefits (in many European countries, see e.g. OECD, 2017a) and basic old-age pensions (in about half of OECD countries, see OECD, 2015). Examples of earlier high-profile experiments of more universally accessible income transfers include those in Canada and the United States in the 1970s.[2] But to date, no country has put a BI in place as a principal pillar of income support for the working-age population. In this paper, we undertake a cross-country analysis of the direct fiscal and income consequences of replacing existing social benefits paid with a comprehensive BI for those below retirement age.

Recently, there has been a remarkable upsurge in attention to BI proposals in OECD countries, including in those with long-standing traditions of providing comprehensive social protection.[3] A growing interest in simple, reliable and accessible income support can be linked to major economic trends and to social concerns associated with them, including growing inequality, a rise in atypical forms of employment, also associated with the digital transformation, the risk of job losses due to automation, as well as perceived imbalances between work, family and leisure.

Tony Atkinson was a key figure in the BI debate. Combining theoretical reasoning with rigorous empirical analysis, his work systematically confronted and disentangled the key objectives and constraints of universal income support. Among his numerous notable contributions are his 1995 book 'Public Economics in Action' (Atkinson, 1995), which examined a combined BI and flat tax proposal in a comprehensive public-finance perspective, including a tax-benefit model to examine the fiscal consequences of a BI in the United Kingdom for both government and households across the income spectrum. His more recent book, 'Inequality: what can be done?' (Atkinson, 2015), proposed a BI as part of a suite of policies designed to reduce inequalities. The fiscal and distributional effects of a concrete BI scenario was, again, assessed in the specific socio-economic and policy context of the United Kingdom.

Although the design of a BI is very simple, existing tax and transfer provisions are not, and the impact of moving towards a BI therefore depends crucially on the characteristics of

[2] These experiments involved a negative income tax rather than a basic income, which differs in a number of important respects, being income related and assessed at the family rather than the individual level.

[3] A 2-year national experiment of a BI for 2,000 recipients of unemployment assistance benefits has begun in Finland, and experimental changes to remove job search requirements or earnings tests from social assistance benefits are being trialled in the Netherlands and in Ontario, Canada. Other experiments have been proposed recently in the United States and elsewhere.

the tax and benefit provisions it would replace. Single-country studies such as Atkinson's (1995, 2011), while clearly instructive and necessary, are difficult to generalise in a way that is informative in the international debate. We build on Atkinson's work by using microsimulation techniques to examine the impact of replacing existing social protection system with a BI in four countries with different population and labour-market structures, and very different tax and transfer policies: Finland, France, Italy and the United Kingdom. We analyse a BI that would be paid to all individuals at or below working age (i.e., younger than the statutory retirement age prevailing in each country), that is budgetary neutral, and parsimonious in its specification, in the sense that the specifics of the reform scenarios are in large part derived endogenously from parameters of the existing benefit systems. As a simple counterfactual form of income support, the effects of such a reform also shed light on the features, strengths and weaknesses of existing, and much more complex, policy designs.

A BI would present a major departure from several of the key principles governing existing tax-benefit policies. To unpick the resulting mechanics of a BI reform in different policy contexts, we undertake a simple decomposition analysis that separately focuses on what may be thought of as different discrete and sequential steps when moving from existing social protection systems to a comprehensive BI.

Results show that in Finland and France, replacing existing non-elderly cash transfers and tax-free allowances with a BI set at the same level as guaranteed minimum income (GMI) benefits would be roughly budget-neutral: only a small adjustment to the BI amount would be necessary to achieve full budget neutrality. By contrast, in the UK the budget-neutral BI amount would be 28% below the level of current GMI benefit levels. In Italy, the budget-neutral BI amount would be much higher than the level of a GMI benefit introduced in 2016, but still low compared to the other countries considered here. In all countries, a budget-neutral BI would be far from distributionally neutral: few households would see their incomes unaffected, and most would either gain or lose significantly. Gains are concentrated at middle income levels where benefit receipt is less common under existing systems. Significant losses are most common at older ages when people are more likely to benefit from social-insurance benefits that are typically set significantly above GMI benefit levels in existing social protection systems.

The decomposition analysis shows that differences in the impact across countries reflect the extent to which their existing social transfers depart from the unconditional, individualised and flat-rate support that would be provided by a BI. For instance, in the UK, where social insurance benefits are not common, the impact of 'levelling down' benefit entitlements to GMI levels is small. Abolishing existing benefits would in this case bring relatively limited savings and financing a BI at the level of GMI benefits would therefore require significant tax increases. At the same time, the a BI would have a more sizeable effect on the accessibility of support in the UK than in other countries, as the combination of existing benefit conditionality, means-testing and non-take-up mean that comparatively sizeable proportions of UK families currently receive no income support at all.

The paper proceeds as follows. We first discuss the arguments that have been used in favour of a BI, as well as criticisms (Section 2) before describing our empirical approach and data (Section 3), and the parameters and fiscal costs of the BI policy scenario we examine (Section 4). Section 5 presents results focussing, in turn, on gainers and losers, separating out the different channels by which a comprehensive BI would affect family incomes and government budgets, the direct effects of the budget-neutral BI on income poverty, and a short discussion of work incentives. In light of these results, we reflect on

the advantages and disadvantages of different alternative, less comprehensive, types of BI in the concluding section.

2. Basic income: Rationale and criticisms

We define a BI as a cash transfer paid to all individuals below normal statutory retirement age. The amount paid is the same for all adults, and a flat payment is also made in respect of dependent children, though the amount is different. Such a BI would be markedly different from existing social protection systems in a number of respects:

1. In contrast to existing social insurance benefits, the amount received is flat-rate and not related to previous earnings,
2. It is also not means-tested, so the amount received does not depend on individual or family income or assets,
3. Coverage is universal among the working-age population, not focused on particular categories of individuals or families,
4. A BI is individual rather than family-based, and amounts received per adult or per child do not depend on family composition, or on the circumstances of other family members,
5. Although not means-tested, the BI is fully taxable, so it is effectively worth less to those with higher incomes who face higher marginal income tax rates.

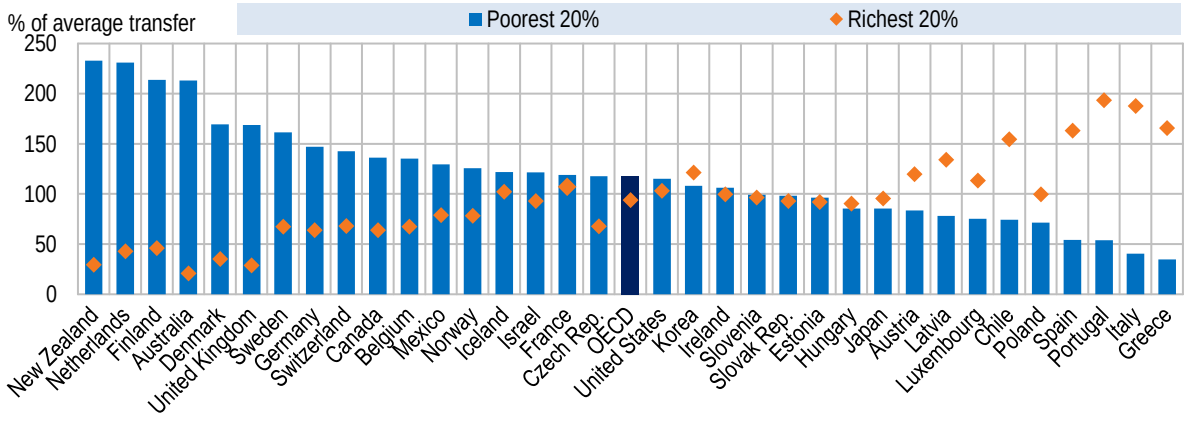
Both advocates and opponents of a BI may focus on a sub-set of these features. Much of the most recent interest in a BI, also in response to labour-market developments, has focused on the greater benefit coverage it would entail. For instance, current and future evolutions in labour markets may be blurring lines between traditional employment, different forms of independent work, and new types of atypical employment, making it harder to reliably assess whether someone is working at all. As a result, maintaining effective support through existing social protection systems becomes more difficult if entitlement is, in large part, modelled on employer-employee contracts, stable career patterns, and social compacts, which can appear outdated today (Abraham et al, 2017; Katz and Krueger, 2017; OECD, 2017b; Colombino, 2015). Even now, when a large majority of workers are still in traditional forms of employment, in around half of OECD countries, fewer than 50% of active jobseekers receive unemployment support (OECD, 2017c). Lower-tier safety nets, such as minimum-income benefits for the poor, are typically less accessible still, partly because of the negative stigma that can come with claiming these transfers. Incomplete coverage is one of several reasons why low-income groups in some countries are less likely to benefit from cash support than better-off families (Figure 1).4 If existing targeting strategies do not provide reliable support for all those in need then moving towards greater universality is one option for keeping social protection accessible. Likewise, if the gains from technological advances are concentrated among a few while the majority lose out as a result of technological unemployment or lower wages, then a BI could be used as a means for compensating the losers (Hughes, 2014). If losses were very widespread, a BI might be an effective way of achieving this objective. However, a complete absence of targeting may require taxes to be raised very

[4] In addition, not all social transfers are designed to redistribute from rich to poor. Significant benefit entitlements among higher-income groups are a result of making social-insurance benefits and pensions available to a sizeable share of working-age individuals (e.g., in France, see notes to Figure 1, and in Southern European countries).

substantially in order to finance a BI, or it may require setting the BI at such a low level that it would cause hardship for those without any other sources of income.

Figure 1. Targeting of existing benefits.

Transfers received by working-age individuals in low and high-income groups, 2013 or latest year available



Note: Age group 18-65, 18-62 in France. Public social cash transfers at the household level, adjusted for household size. Income groups refer to disposable incomes. Additional data provided by France show that, without counting old-age and disability pensions, the bottom 20% in France receive about three times as much as the top 20%.

Source: Authors' calculations based on the OECD Income Distribution Database.

An entirely unconditional BI would also sever links between carefully balanced rights and responsibilities of job seekers and would represent a notable departure from key principles of "active" social and employment policy in many OECD countries. For instance, a key element of existing policies to promote the prompt (re)integration of job seekers into employment (activation strategies), is that benefits and employment support are tied to active participation in job-search and labour-market integration measures (Immervoll and Scarpetta, 2012). Targeting these incentives and services to job seekers would become more difficult if everyone is a benefit recipient and benefit conditionality no longer exists. Despite an absence of a quid-pro-quo for benefit recipients, financial work incentives can, however, be significantly stronger under a BI as the absence of means testing and the universal nature of the BI mean that benefits are no longer lost when moving into employment or increasing working hours. Nonetheless, to the extent that a BI would require tax increases to finance it, work incentives may weaken for some groups due to higher tax burdens. For some groups, the income gains associated with a BI may also reduce the need to work and, hence weaken work incentives (though not welfare). But if the BI reform is revenue neutral, average income effects would be small or zero. The net impact of a BI on work incentives and employment is ultimately an empirical matter, which is hard to quantify in the absence of large-scale experiments. The present paper does not attempt to quantify behavioural responses but instead discusses the effects of the BI scenario on work incentives. The results of some behavioural microsimulation studies suggest that a BI would in fact likely reduce labour supply overall as work incentives would weaken for groups who are particularly responsive to these incentives, such as married women (e.g. Colombino, 2014, Scutella, 2004).

The universal coverage of a BI would involve paying income support to middle and higher-income groups. At the same time, it would charge them taxes to finance it, which can be inefficient as it amounts to "giving with one hand and taking with the other". But, as shown in Figure 1, replacing existing benefits with a uniform BI may actually reduce support to the rich in some cases. Furthermore, universal benefits can reduce efficiency costs as administration efforts are lower when there is no need for an elaborate verification of socio-economic circumstances associated with categorical or mean-tested benefits.[5]

Some authors have emphasised the individualised nature of a BI (e.g. Parker and Sutherland, 1991). Unlike benefits that are targeted to certain family configurations, or depend on a partner's income, a BI would safeguard some degree of control over money and spending power to each adult in a household. As everyone would receive their own BI, it might help prevent financial dependence within couples. However, at the same time, ignoring the family context is another way in which a BI can be less well targeted on those in situations of greater need.

Other advantages or disadvantages of BI are potentially important but more indirect. Giving additional support to all employees may alter the balance in wage negotiations and lead to attempts by employers to reduce wages in response. But if taxes would increase as well, and especially if the reform is budgetary neutral, there would be little or no net benefit on aggregate, making such attempts by employers more difficult. Moreover, similar concerns arise also for existing support programmes, notably in-work benefits, and they can be addressed through measures that conserve an adequate representation and bargaining power of low-wage workers (e.g., through statutory minimum wages or collective bargaining). Indeed, proponents of a BI argue that it would play a major role in ensuring adequate remuneration, by giving workers a better outside option that would allow them to reject low-quality employment.

Finally, from a broader economic-policy perspective, a potential downside of a non means-tested BI is that, unlike unemployment support or means-tested benefits, it does not act as an automatic stabiliser: since it is paid regardless of income or employment status, spending levels do not go up during a downturn.

The relative importance of the benefits and drawbacks of the different aspects of a BI is not only relevant for an overall judgement of the desirability of a BI, but also for the choices that would need to be made regarding its design. For example, those primarily concerned with giving each individual control over a certain amount of income, or to redistribute the gains from technological progress more equitably, might choose to set a BI at a relatively low level and retain existing categorical and means-tested benefits to provide additional targeted support to particular vulnerable groups. By contrast, those more concerned with low or declining benefit coverage might advocate for a BI at levels similar to existing out of work benefits to fill the gaps left by existing forms of support. There is also a trade-off between raising the BI amount (and associated taxes) and maintaining strong work incentives. To provide a counterfactual in this debate, we take a comprehensive approach in the simulations that follow and assess a scenario where a BI replaces most existing support schemes for working-age people, and where the BI amount

[5] Administration costs of social protection systems in European countries range from 1% to 6% of total spending (Eurostat, 2017). Evidence from the US suggests that the administrative costs of a non-means tested benefit represent 1-2% of the total cost, but this can be four to five times higher for means-tested benefits (Colombino, 2015).

corresponds to support provided by existing GMI benefits. Fuller details, and a rationale for this particular counterfactual, follow in Sections 3 and 4.

3. Data and microsimulation model

We use EUROMOD, the population-based tax-benefit microsimulation model covering all 28 Member States of the European Union, which, for more than two decades, benefited from Tony Atkinson's contributions and support (Immervoll *et al.*, 1999). EUROMOD employs household micro-data from the European Survey of Income and Living Conditions (EU-SILC) and national SILC surveys in combination with countries' detailed tax and benefit rules to calculate tax liabilities and benefit entitlements for representative population samples (Sutherland and Figari, 2013). These calculations are repeated under the different policy scenarios with and without the BI in place in Finland, France, Italy and the United Kingdom. The baseline scenario corresponds to the policies that were in place in 2015,[6] and the hypothetical BI scenarios are described in more detail in the next section below. Comparing incomes across scenarios allows us to examine aggregate fiscal effects, adjust BI amounts to achieve budget neutrality, and assess the resulting distributional impact across the full range of working-age households.

Non-take-up of benefits is known to be significant for some means-tested benefit programmes (see e.g., Bargain *et al*, 2012 and the references cited in Chareyron and Domingues, 2016). It is therefore important to consider incomplete take-up of existing benefits: a BI would likely have near-complete take-up, and failing to account for non-take-up would underestimate the gains of lower-income households arising from a BI. In Italy, the extent of means-tested benefits, and hence the associated role of non-take-up, is small. For the other three countries. EUROMOD models non-take-up in cases where information on the extent of non-take-up of a particular benefit is available. This includes means-tested benefits in the UK and social assistance in Finland and France. For some other means-tested benefit programmes, EUROMOD does not account for non-take-up and, if BI does not suffer from any non-take-up at all, gains from a universal BI for lower-income groups might in these cases be somewhat larger than is suggested by the results reported here However, the overall significance of non-take-up for the results is expected to be small relative to the total impact of the BI in extending coverage to all.[7]

4. A hypothetical scenario for examining a basic income in a comparative context

The starting point for the counterfactual scenario is a BI set at the level received by those supported by GMI that existed in 2015. Italy had no nationally applicable GMI benefit in 2015, and we instead use the level of a benefit introduced in 2016 as a reference (see note to Figure 2). **Figure 2** shows that the income provided by existing GMI benefits is typically well below the poverty line. But even so, in most countries, a BI paying an equivalent amount to everybody would cost significantly more than existing cash

[6] The 2012 waves of EU-SILC and FRS data are used with financial variables uprated in line with observed growth of different income categories (wages, pensions etc.) to 2015.

[7] For instance, in the UK, where non-take-up is known to be significant, EUROMOD calculations indicate that the proportion of working-age families not receiving an earnings-replacement benefit payment (the "coverage gap") would decline by 4% if there was full take-up of Income Support, Job Seekers' Allowance, Employment and Support Allowance and Child Tax credit. (By contrast, the coverage gap would of course disappear following introduction of a BI paid to everyone.)

transfers (existing per-capita non-elderly benefit spending is well below the level of GMI benefits in most countries). In the simulations reported below, the BI amount for adults is set at the GMI amount received by a single person without children, and the amount for children is set such that the amount received by a two-adult two-child family without any earned income is the same as under existing policies.

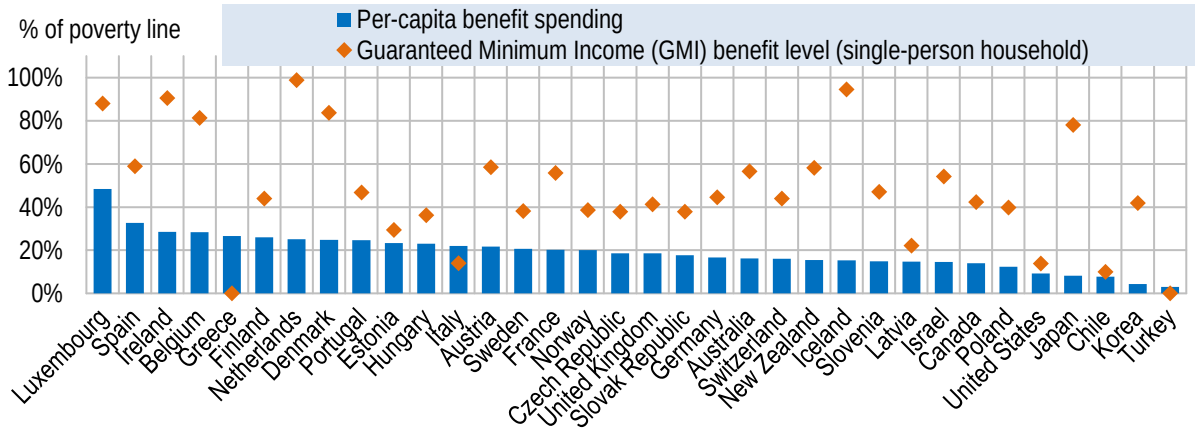
The BI in our scenario is unconditional and paid independently of own income or employment circumstances. Unlike existing GMI systems which are family-based, the BI is an individual-level benefit that is also entirely independent of family circumstances and the income or employment situation of other family members. All individuals receive the BI if they reside in the country and are below the current main statutory retirement age: younger than 65 in Finland and Italy, younger than 65 (men) or 62 (women) in the United Kingdom, and younger than 62 in France.

The BI is comprehensive in the sense that it replaces most existing benefits supporting working-age individuals and their children, including unemployment benefits, social assistance and other generalised minimum-income schemes, in-work benefits, early retirement pensions (i.e. pensions paid to those below retirement age whatever their official label), student maintenance grants and family benefits. However, those currently entitled to support intended to compensate for specific needs or circumstances – such as the costs related to a disability or of renting suitable accommodation – would typically lose out from a flat-rate BI set at GMI levels. This is a principal trade-off between social protection that is responsive to people's situations, and unified universal support: to avoid hardship being 'built into' the reform, and to make the scenario politically more realistic, some form of targeted cash transfer, for instance disability or housing benefits, may need to be kept in place alongside a BI. The reform scenario we consider therefore assumes that disability benefit claimants can retain any higher amounts they receive under existing systems (i.e., none of them receive less following the BI reform). Similarly, we retain existing housing benefits for rented accommodation but include the BI in relevant income tests. The BI reform scenario does not directly affect the incomes of people above normal statutory retirement age, or the provision of public services, such as health, education, care, or other in-kind supports, which are all assumed to remain in place unchanged.[8]

[8] The (net) incomes of individuals above retirement age are protected in our reform scenario. Although the scope of the simulation exercise is limited to individuals of working-age or below, the incomes of those above retirement age still enter the analysis to the extent that they share a household with younger people.

Figure 2. Non-elderly benefit spending per capita and guaranteed minimum income level

In percent of the poverty line, 2013



Note: Poverty line is 50% of median household income adjusted for household size using square root of household size. Per-capita spending is in gross terms and refers to total cash transfer except old-age and survivor pensions, but including early-retirement benefits where these can be identified, divided by the number of residents aged below 65 (62 in France). Where receipt of old-age pensions among working-age individuals is relatively common (e.g. in France), true per-capita amounts of all "non-elderly" benefits is significantly higher. Some countries (e.g. Luxembourg) pay significant amounts of benefits to non-residents; dividing total expenditure by the resident populations only overestimates true per-capita amounts in these cases. Social assistance amounts refer to the main means-tested safety-net benefit available for working-age people and do not include cash housing benefits that may be available separately. No nationally applicable general GMI entitlements existed in Greece and Turkey. Social Assistance in Italy refers to the *Sostegno per l'inclusione attiva* GMI programme that started being rolled out nationally in 2016; no nationally applicable GMI programme existed prior to that.

Source: Authors' calculations using OECD Social Expenditure, Income Distribution and Tax-Benefit Policy databases.

As seen in Figure 2, setting the BI at the level of GMI benefits typically requires substantial additional benefit expenditures and, in a budgetary neutral setting, higher government revenues to finance them. In order to anchor the financing strategy on each country's existing tax-policy setting, we first tax the BI alongside other incomes, making it subject to income tax in the same way as employment income. This reduces its cost and makes it better targeted to lower-income groups, whose income-tax rates are lower.

Sizeable additional revenues for financing the BI scenario come from abolishing any existing tax-free allowances or equivalent zero-rate tax bands.[9,10] Removing tax-free allowances has commonly been part of BI proposals, including those by Atkinson (1995, 2015), as the rationale for allowing individuals to keep a portion of their income tax-free becomes less convincing when everyone receives a minimum level of income. Moreover, unlike means-tested benefits, a BI does not get withdrawn when people start earning more. Work incentives are strengthened as a result, and this permits taxing the first dollar

[9] In the simulations reported here, any zero-tax bands in income-tax and social contribution schedules are abolished by shifting the tax-schedule downwards by a corresponding amount. An alternative would be to expanding only the width of the first non-zero-rate bracket, while keeping other tax-band limits unchanged. This would not, however, be equivalent to removing a tax-free allowance. It would also raise substantially less revenue and would result in the largest relative tax-burden increases for low-income groups.

[10] Tax rates and all other tax rules remain the same as in the 2015 baseline policy.

or euro earned, while still lowering marginal effective tax rates for many low-income earners (typically the group most likely to work more in response to stronger incentives).

In Finland and Italy, the additional revenue from making the BI taxable and abolishing tax-free allowances is more than sufficient to cover the extra costs of a BI at current GMI levels over existing benefit spending. In the simulations, the resulting surplus revenue is used to finance a more generous BI amount. In France, additional revenues from abolishing tax-free allowances roughly offset the additional cost of a BI set at GMI levels: a budget-neutral reform would then require only a small reduction in the BI level below GMI levels (or, alternatively, a small further tax rise). By contrast, in the United Kingdom, the cost of a BI at GMI levels would significantly exceed current spending on cash benefits and tax-free allowances. A budget-neutral BI reform in the United Kingdom would require a more sizeable reduction of the BI amount below GMI levels. The resulting net-of-tax budget-neutral BI amounts used in this paper are shown in **Table 1**.[11]

In each of the four countries, very large tax-revenue changes are needed to finance a BI at these levels, and tax reforms would therefore need to be an integral part of budget-neutral BI proposals. Even though headline tax rates remain unchanged, abolishing tax-free allowances and making BI taxable means that everybody would pay income taxes on the BI, and on all their other income. Tax burdens would go up for most people as a result. In Finland and the UK, the additional tax revenue would contribute a significantly larger share of gross BI expenditures (60% and 68%, respectively) than the savings from abolishing or reducing existing benefits. This additional tax revenue amounts to 10.2% of GDP in Finland and 6.1% of GDP in the UK. In France, higher tax revenues would contribute around half (51%) of gross BI expenditure, and the tax-GDP ratio would rise by 5.6%. In Italy, higher tax payments would represent a lower share of BI spending (28%) but the implied increase in tax revenues would still be large and tax revenues would rise by 2% of GDP.

[11]. Alternatively, the BI could be kept at GMI levels and budget neutrality could be achieved by raising (all) personal income-tax rates by 2% in France and 25% in the UK, while tax rates could be reduced by 5% in Finland and by 31% in Italy. In Italy, revenues from income tax and social contributions would be 13% lower as a result. But in Finland (+57%), abolishing tax-free allowances and making BI taxable means that revenues would be much higher than before the reform even with these tax-rate reductions. In France, the combination of a small increase in tax rates and the abolition of tax-free allowances increases income tax revenues by 44% and in the UK, the increased tax rates in such a scenario would nearly double revenues from income tax and social contributions (+95%).

Table 1. Monthly net-of-tax BI amounts that would cost the same as existing benefits and tax-free allowances

	Adult	Child (<18)	Poverty line for single person
Finland	EUR 527	EUR 316	EUR 1074
France	EUR 456	EUR 100	EUR 909
Italy	EUR 158	EUR 158	EUR 737
United Kingdom	GBP 230	GBP 189	GBP 702

Note: Hypothetical reform where a BI would replace most existing working-age benefits, as well as the tax-free allowance. See main text for details. BI amounts are shown after tax and are 9% higher than existing single-person GMI in Finland and as much as 97% higher in Italy. In France, the budget-neutral BI amount would be 2% below current GMI levels and in the United Kingdom, the budgetary neutral BI amount would be 28% below current GMI levels. Poverty line is 50% of median household income adjusted for household size using square root of household size.

Source: Authors' calculations using EUROMOD.

5. Assessing the impact of a comprehensive basic income

Winners and losers

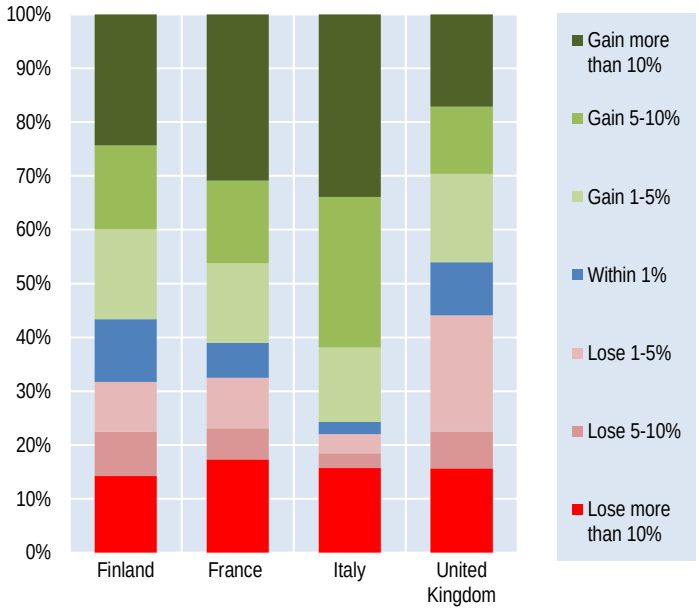
A budget-neutral BI reform would not be distributionally neutral, as the complex incidence of existing social benefits means that replacing them with a universal flat-rate benefit would produce non-trivial patterns of gains and losses. Overall, a large majority would see either significant gains or large losses (**Figure 3**). This would be most pronounced in France and Italy, countries where the benefits that a BI would replace are largely based on social insurance. Those receiving social insurance benefits (e.g. early retirees, and many unemployed) would normally lose out from their replacement with a BI at GMI levels. Because early retirement pensions are only received by those approaching retirement age, losses would be especially frequent in the 55-64 age bracket (**Figure 4**).

Benefit recipients who would lose out from a BI reform in France and Italy may belong to different income groups, which is one reason why the proportions of households with losses would be roughly the same at very different income levels (**Figure 5**). Those not qualifying for any social benefit under existing policies (or not taking it up) would gain if the BI exceeds the increase in their tax burden, and lose otherwise. As a result of very low benefit coverage in Italy, a large majority of individuals in all income groups would benefit from a BI. In France, many of the losses that would occur for higher-income households are driven by the tax changes accompanying the hypothetical BI reform (notably the removal of the zero-tax band). In France, and to a lesser extent in Finland and the United Kingdom, income gains would be most common in middle-income households – they do not qualify for means-tested benefits under existing systems, but would receive the BI after the reform. They would also lose less from the abolition of tax free allowances than higher-income households. In general, lower-income households are more likely to receive means-tested income support under existing policies and therefore would be less likely to gain as the BI is set at similar levels to GMI. A result specific to the United Kingdom is that there would be a higher share of gainers in the lowest-income

group than in the groups with slightly higher incomes. One reason is the significant non-take up of means-tested benefits: as a result, a substantial number of poor families not currently covered by means-tested benefits would gain from a universal BI.

Figure 3. Gainers and losers

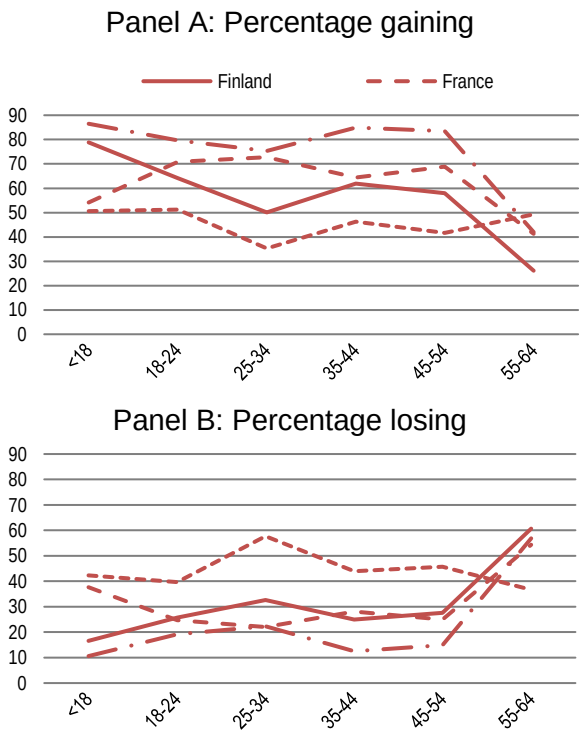
in % of individuals in working-age households



Note: See Table 1. Working-age households are those with at least one person aged below the main statutory retirement age.

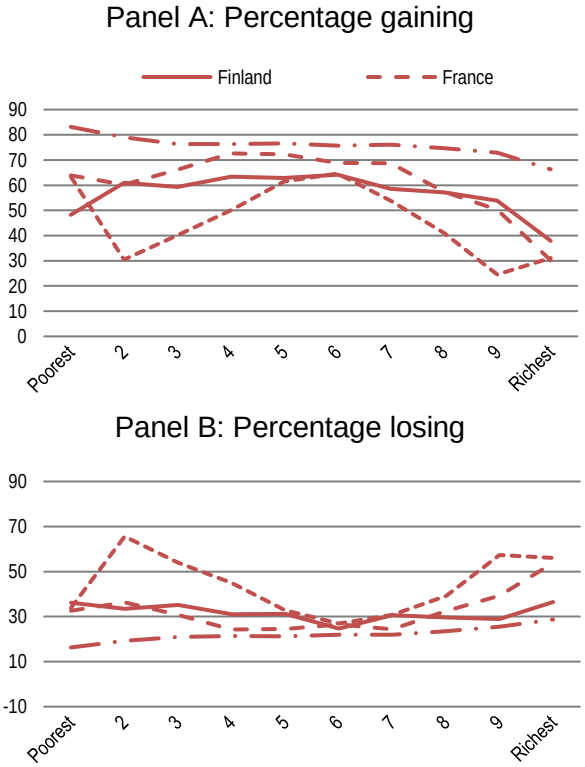
Source: Authors' calculations using EUROMOD.

Figure 4. Gainers and losers, by age



Note and Source: See Figure 3. Gains and losses each refer to income changes of 1% or more.

Figure 5. Gainers and losers, by income group



Note and Source: See Figure 3. Gains and losses each refer to income changes of 1% or more.

The fully individual nature of the BI would also create distinct patterns of gains and losses across household types. Additional results (available on request) show that for single-person households, setting the BI amount at GMI levels would leave incomes for those with very low incomes largely unchanged, as they are often already entitled to GMI under current policies.[12] In Finland and the United Kingdom, single people with higher incomes would also be broadly unaffected as the value of tax free allowances is roughly the same as the BI.[13] In France, tax allowances are worth more than the BI amount for those earning above the average wage. Single-person households with higher incomes would therefore often lose overall.

The impact of a BI reform would be far bigger for other family types. The individualised BI could not adequately replicate the levels of support that existing social protection systems provide to different family types. For example, GMI amounts for couples in most existing GMI systems are less than twice the single-person amount in reflection of the economies of scale resulting from couples living together. Many couples without children would consequently gain from a BI set at single-person GMI. Higher-income families with children would gain in situations where existing support for families with children is, in part, targeted to lower-income families. By contrast, lone parents at lower income levels would lose out, as a fully individualised BI would fail to provide the extra support to parents living without a partner that is often available in existing social protection systems.

Disentangling the effects of a comprehensive BI reform

Although the universal coverage typically receives most attention in public BI debates, the BI reform examined in this paper institutes far-reaching changes to a range of key parameters of tax-benefit policy. Each of these changes would have potentially significant fiscal and distributional consequences. Much of the country differences in the overall impact of introducing a BI can be explained by differences in the relative sizes of a number of mechanisms that might be thought of as sequential steps leading from existing policy configurations to a BI. In combination, these steps make up the total effect of replacing existing social protection systems with a comprehensive BI, namely:

1. Levelling down the benefit entitlements of those who currently receive more than the GMI;
2. Removing the income taper for existing claimants of GMI benefits;
3. Expanding coverage of this non means-tested benefit set at the GMI level to all households;
4. ‘Individualising’ the benefit, to create an entitlement whose value is independent of family circumstances;
5. Making the BI taxable, and abolishing tax-free allowances
6. Adjusting the BI amount up or down to make the reform budget-neutral.

The first three stages of the decomposition involve replacing the existing system with a ‘family-level BI’, essentially the existing GMI benefit without any income test. This has distinct effects for three different groups: existing claimants of this benefit, those

[12] Any difference would come from making the BI taxable, and from adjusting its level to make the reform budget neutral.

[13] Essentially, this is because the value of GMI benefits is approximately the same as the combined value of tax-free allowances and in-work benefits for a single person. This can be seen more fully in Browne and Immervoll (2017).

claiming other benefits, and those not claiming any benefit at all. The following stages then introduce the individual nature of the BI, introduce the tax changes necessary to pay for the BI, and ensure budget neutrality. The significance of the different mechanisms provides an indication of how far each country's existing policy configuration is from the respective features of a comprehensive BI. For instance, the 'means-testing' effect would be larger in countries where means-testing is common, the 'individualisation' effect would be more important where benefit entitlements are heavily dependent on family size and composition, etc..

Results of this decomposition exercise are in **Figure 6** and show a number of similarities across countries. First, the 'levelling down' of any existing transfer payments to the GMI benefit amount would result in losses for all income groups, with patterns mirroring the incidence of existing transfers. On average, losses would be larger relative to income at lower income levels. Further results (available on request) show that average losses from levelling existing benefits would be more sizeable for families without children.

Secondly, not tapering GMI benefits for existing claimants would increase income at lower income levels, but not for families at the very bottom, who may not be covered by existing benefits. On the whole, though, this effect would be small, perhaps surprisingly so: most families currently receiving GMI benefits claim close to the maximum amount even with income tests in place.

By contrast, expanding coverage to all families would produce sizeable average income gains. Although the absolute gain from the expansion of coverage would be smaller for lower-income households (as many of them already receive benefits under existing policies) it would still represents a larger share of income for lower income groups and would therefore reduce inequality overall.

The impact of individualising transfer payments would produce income gains overall. The impact would not vary significantly by income group, but further results (available on request) confirm that individualisation would benefit larger families but reduce the support received by lone parents. This arises because, as discussed previously, benefit schedules in most existing GMI systems presume significant economies of scale from living together and, for instance, provide less than twice the single person's amount to couples.

The tax changes introduced to limit the net cost of the BI, and to raise the additional revenue needed to pay for it, would create losses across the income spectrum. Despite the major tax changes resulting from effectively shifting down the entire tax schedule, the loss of tax allowances represents a smaller percentage income reduction for richer families. The largest relative losses would materialise for those on relatively low incomes, but not for the very poorest, as the pre-tax BI amount in our policy scenario is chosen so that it amounts to the value of existing GMI benefits after tax.

The sizes of each of these effects vary significantly between the four countries, however, reflecting differences in their current tax-benefit policies, and driving the overall distributional impact of the BI reform. For example, existing benefits are more targeted on low-income households in Finland than in France, so reducing these benefits to the GMI level would affect lower-income households more strongly in Finland than in France. Similarly, higher benefit coverage at low income levels in Finland means that extending coverage leads to smaller gains at the bottom than in France. Overall, replacing existing benefit programmes with a BI would reduce inequality in France, with a reduction in the Gini coefficient by 2%. For Finland, Figure 6 suggests a that patters of

gains and losses are distributionally approximately neutral. However, the reform would in fact increase the Gini coefficient slightly (by 1%) as it would cause substantial re-ranking across income groups, including through sizeable losses among existing benefit recipients (see also next section below).[14]

The UK has an even more targeted benefit system than Finland, and there are few benefits that provide support at levels that are higher than the GMI (indeed, the only group that lose out from the 'levelling down' of benefits to the GMI level are low-earning lone parents who can receive large in-work benefits). The highly means-tested nature of its social protection system would lead to larger gains from the universalisation of support ('expanding coverage'), and from doing away with benefit tapers. Together, this would increase benefit spending by more than in the other countries considered here. As a result, a downward-adjustment of the BI amount would be necessary to make the reform budgetary neutral, causing significant income reductions. Nevertheless, gains are still skewed to the very poorest who do not take up their full entitlement to means-tested benefits under the current system. Overall, the BI would slightly lower inequality overall, reducing the Gini coefficient by just under 1%.[15]

The level of the GMI benefit used as a reference for the BI in Italy is very low (EUR80 per month per family member). 'Levelling down' existing benefits to this level consequently would have a very large effect, while expanding coverage of this relatively small payment to all families would have a less sizeable aggregate impact than in other countries, even though a large number of households would gain from this expansion. Savings from reduced expenditure on other benefits allow for a BI amount that is much higher than the level of existing GMI benefits. But as existing non-elderly benefit spending is not targeted on the poor in Italy (recall Figure 1), the reform would clearly reduce income inequality nonetheless: as in the UK, the Gini coefficient would fall by just under 1%.[16]

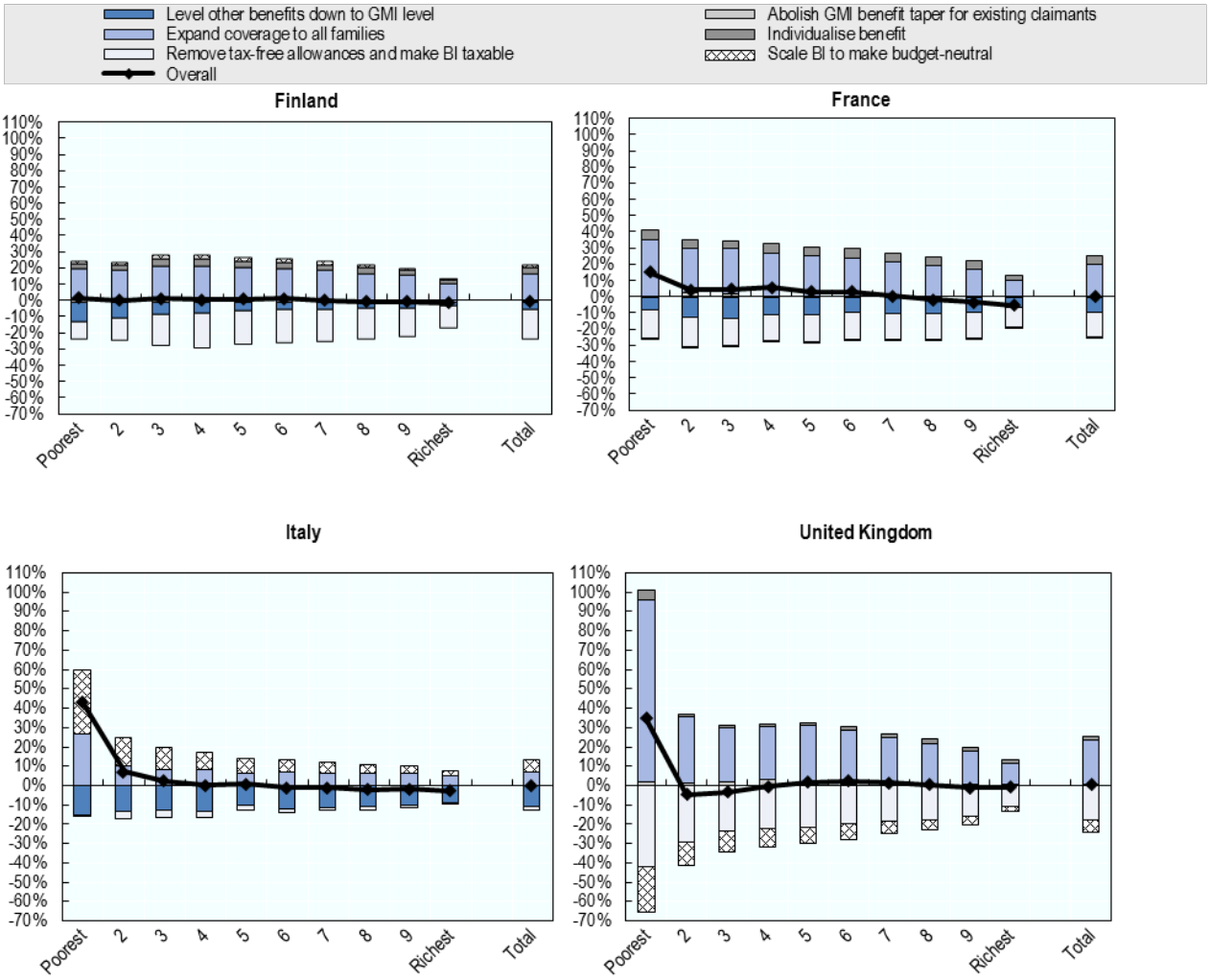
14 Results from the EUROMOD simulations show that the Gini for net household income among those in households containing at least one person below normal retirement age would increase from 28.3 to 27.8 in France, and increase from 24.1 to 24.3 in Finland.

15 The Gini coefficient would fall from 32.0 to 31.8 in the UK.

16 The Gini coefficient would fall from 32.5 to 32.2 in Italy.

Figure 6. Gains and losses by income decile from different stages of the BI reform

In % of net income



Notes and source: As in Figure 3.

Income poverty

Many poor would see income gains from a BI if they are not covered by existing social protection or only receive small amounts of means-tested benefits. But others, notably those currently in receipt of more generous support, would fall below the poverty line. As shown in Figure 1, benefit recipients do not necessarily live in the lowest-income households. But if they rely exclusively on benefits (e.g., some unemployed and early retirees), they would see very significant income reductions – and would fall into poverty when BI amounts are set below poverty thresholds (as is the case in this scenario).

The net effect of gains and losses would be large shifts in the composition of the income-poor, with some people moving above the poverty line (taken here as 50% of median household income), while others would fall below it (**Table 2**). Overall poverty rates (and gaps) can in fact increase significantly in countries that currently have tightly targeted systems of income support (**Figure 7**). The relatively good benefit coverage of income-poor households in France and Finland means that income gains from a BI would not be sufficiently widespread among low-income households to reduce poverty headcounts overall. In Italy, poverty headcounts would change little overall, as reductions in poverty among those not covered by existing benefits would be offset by the greater poverty risks resulting from the large losses of current benefit recipients.

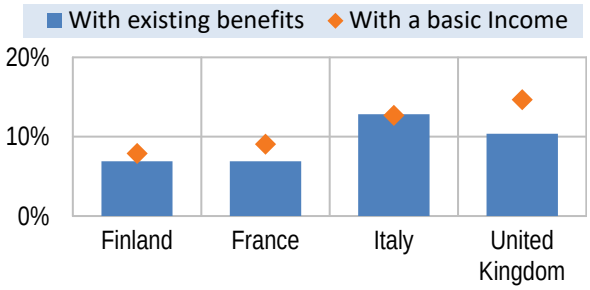
Unlike in the other countries, the budget-neutral BI amount in the United Kingdom is below GMI levels, and poverty rates would increase significantly as a result. Different reform parameters, e.g., combining higher BI levels with (further) tax increases could avoid some of the losses. But it is clear from these results that a BI is not necessarily an effective poverty-alleviation tool, even if it would provide improved support to those who are not currently covered by social benefit provisions.

Table 2. Poverty headcounts: Transition matrix

		In poverty under basic income?			
		No		Yes	
In poverty under existing system?	No	UK: 83% France: 89%	Finland: 90% Italy: 83%	UK: 7% France: 5%	Finland: 3% Italy: 4%
	Yes	UK: 2% France: 2%	Finland: 2% Italy: 4%	UK: 8% France: 4%	Finland: 5% Italy: 9%

Notes and source: See Figure 3. Poverty line is 50% of median household income adjusted for household size using square root of household size. Cells shaded in green (red) show shares of people moving out of (into) poverty following the BI reform.

Figure 7. Poverty headcounts: Before and after a BI reform



Notes and source: See Figure 3 and Table 2. Poverty rates are relative to the number of people living in working-age households.

Work incentives

As we discussed in Section 2, a prominent concern about introducing a BI is that unconditional income support would reduce the necessity for paid work and, possibly, work incentives. For some jobs and workers, a modest BI may indeed reduce the willingness to work at prevailing wage levels (and, hence, strengthen workers' bargaining position to demand better working conditions). But a revenue-neutral BI would not change incomes on average. While those gaining from it may work a little less, this might be offset by those losing from it working more and hence the net effect would be small.

Adverse incentive effects of social benefits are a prominent concern in the context of existing social protection systems, as benefits that are withdrawn when people enter work or increase their earnings can substantially weaken work incentives. A comprehensive BI completely avoids these adverse incentives. However, the additional tax burdens needed to finance a BI could weaken work incentives for households that already have significant work income, notably for second earners.

To examine the size of these impacts in practice, we use the OECD tax-benefit model to quantify the net effect of these mechanisms for selected family situations and the BI scenario as detailed above (for a description of the model see OECD, undated). The results in Table 2 show that, on the whole, incentives to be in paid work at all would be significantly stronger with a BI, especially for lower-income households, who tend to react strongly to work incentives. Participation tax rates (PTRs, the proportion of earnings that are lost to either higher taxes or withdrawn benefits when a person moves into work) in Finland, France and the UK would fall significantly for the first earner in a couple at earnings levels up to the average wage (more than 20 percentage points in some cases) but would increase for the second earner in the couple (up to 15 percentage points).[17] This is broadly in line with results for BI scenarios examined in the behavioural microsimulation literature that show that a BI would reduce labour market participation among women in couples (Colombino, 2014; Scutella, 2004). For those without a partner, changes would be less dramatic, though PTRs would fall for lone parents in the UK, who receive significant means-tested support in the current tax-benefit system. The impact in Italy, would be very different: since there is little means-tested support in the existing benefit system, the abolition of tax-free allowances would increase overall PTRs in almost all cases.

[17] An exception to this is in the United Kingdom where the PTR falls for a second earner in a couple with children, as this person would see their family's entitlement to means-tested benefits reduce when they moved into work under the existing system in the UK, whereas they would not under a BI.

Table 2. Impact of a BI policy on Participation Tax Rates, in percentage points

Panel A: Earning 67% of the average wage

	Single, no children	Single, 2 children	1-earner couple, no children	1-earner couple, 2 children	2-earner couple, no children	2-earner couple, 2 children
Finland	0	+8	-20	-26	+20	+17
France	-1	-8	-4	-10	+12	+10
Italy	+2	+15	+3	+15	0	-7
United Kingdom	-3	-8	-16	-13	+13	-12

Panel B: Earning 100% of the average wage

	Single, no children	Single, 2 children	1-earner couple, no children	1-earner couple, 2 children	2-earner couple, no children	2-earner couple, 2 children
Finland	+1	+6	-13	-19	+14	+12
France	+5	0	+1	-5	+13	+11
Italy	+1	+7	+1	+7	0	-5
United Kingdom	+1	-16	-7	-22	+12	-5

Note: Hypothetical reform where a BI would replace most existing working-age benefits, as well as the tax-free allowance. See Section 4 for details. In 2-earner couples, other partner assumed to earn 67% of the average wage in all cases.

Source: Authors' calculations using OECD tax-benefit model.

As discussed above, a BI would also impact on other aspects of work incentives, notably by severing links between benefit entitlements of job seekers and participation in job search and labour-market integration measures. For this reason, Tony Atkinson proposed a 'participation income' that would be paid only to those who were participating in society by being in paid work, looking for a job or doing other socially useful activities (Atkinson; 1996, 2015), which would alleviate some of these concerns.

6. Discussion: What role for BI in making social protection more accessible?

As shown by the simulations in this paper, converting all or most existing income supports into a flat-rate, "no questions asked" transfer at modest levels would require substantial additional tax revenues. A BI would cost more than equivalent amounts of targeted income support since it would not be means-tested. And it would cost more than equivalent amounts of social insurance benefits as everybody would be a recipient, whereas social insurance outlays are reduced by the fact that the "good risks" contribute but have a comparatively small risk of becoming a recipient. In spite of large revenue requirements, a BI may result in losses for substantial parts of the population, notably among groups who currently qualify for income support. Although the BI would redistribute from rich to poor, there would be significant re-ranking and poverty headcounts would increase overall. Increasing BI rates to levels that avoid large-scale losses would create additional financing challenges, and it would likely intensify concerns about unintended consequences of a BI, notably the possibility that some people may work significantly less. Indeed, even with a BI set at modest levels, work incentives could weaken for some groups, including those who are known to be responsive to financial incentives such as married women. Are there, then, intermediate forms of support that would adopt key aspects of a comprehensive BI but avoid some of its drawbacks?

Introducing a BI while leaving important existing benefits (such as early retirement pensions) in place would limit losses among current benefit recipients. But, at unchanged BI levels, such a reform would cost much more than the scenarios considered in this paper and require a determined effort to broaden the revenue base for financing social protection. Lowering BI amounts to levels substantially below GMI standards, while leaving larger parts of existing benefits in place, may be fiscally more realistic and would make existing social protection more universal. But the BI would then no longer provide significant income protection on its own and it would therefore not represent a complete solution to coverage problems arising with current social protection strategies. However, even if such a more modest BI would not address current or future gaps in existing income protection systems, it could nevertheless be desirable if the main aim of such a reform was to share the benefits of globalisation or technological progress more widely. A gradual move towards greater universality may, for instance, be desirable in countries where poorer population groups receive relatively small shares of overall benefit expenditures.

Another alternative would be to keep mild eligibility conditions in place (as in Atkinson's Participation Income proposal). This would lower costs by reducing recipient numbers rather than benefit amounts. But the reductions would only be substantial if eligibility conditions were quite strong, in which case the partial BI would become more difficult to distinguish from traditional forms of income support. (In his simulations, Atkinson (2015) himself did not seek to identify those who would not be eligible for a Participation Income.)

Recipient numbers could be cut more significantly if the durations of BI payments were capped, e.g., at a certain number of payments during anyone's lifetime. Such a time-limited BI, could be financed through one-time grants or recurring individual or state contributions, resembling forms of individual accounts. Compared with existing forms of income support, the ambition of a time-limited BI could be to provide individuals with greater autonomy in terms of how and when to make withdrawals from these accounts,

perhaps alongside some age-related requirement to maintain certain minimum balances on these accounts to ensure a continuity of income protection throughout the life course.

A further option for reducing BI recipient numbers, at least initially, could be to introduce it gradually to different groups. For instance, BI entitlements could be rolled out to successive future cohorts of young adults. Since these cohorts are typically not yet entitled to any other out-of-work benefits, the risk of income losses would be minimal even if the BI were to fully replace existing social protection provisions for successive cohorts.

A comprehensive BI would represent a major and, to date, largely untested departure from traditional forms of social provisions. The exercise presented here shines a spotlight on the challenges, but also on the strengths, of existing social protection systems. It is not a one-size-fits-all solution for current and future challenges facing social policy. In view of rapid changes in the labour market the ongoing discussions of BI options do, however, provide a valuable impetus for much-needed debates about the type of social protection that societies want, and for the search of reform options that are socially and politically feasible.

References

Abraham, K.G., Haltiwanger, J., Sandusky, K. and Spletzer, J.R. (2017). "Measuring the Gig Economy: Current Knowledge and Open Issues", paper presented at the IZA Labor Statistics Workshop "Changing Structure of Work", June 29, 2017.

Atkinson, A. B. (1995), Public Economics in Action: The Basic Income/Flat Tax Proposal, Oxford: Clarendon Press.

Atkinson, A. B. (1996), "The Case for a Participation Income", *The Political Quarterly*, Vol. 67(1).

Atkinson, A. B. (2015), *Inequality: What Can Be Done?*, Cambridge, MA: Harvard University Press.

Bargain, O., Immervoll, H. and Viitamäki, H. (2012), "No claim, no pain. Measuring the non-take-up of social assistance using register data", *Journal of Economic Inequality*, 10(3), pp.375-95.

Browne, J. and H. Immervoll (2017), "Basic Income as a Policy Option: Illustrating costs and distributional implications for selected countries", Technical background note, available at http://www.oecd.org/employment/future-of-work.htm.

Chareyron, S. and Domingues, P. (2016), "Take-Up of Social Assistance Benefits: The Case of the French Homeless", *Review of Income and Wealth*. doi:10.1111/roiw.12274.

Colombino, U. (2014), "Five Crossroads on the Way to Basic Income: An Italian Tour", IZA Discussion Paper 8087.

Eurostat (2017), European System of Integrated Social Protection Statistics (ESSPROS), http://ec.europa.eu/eurostat/web/social-protection/data/database.

Colombino, U. (2015), "Is unconditional basic income a viable alternative to other social welfare measures?", IZA World of Labour 2015: 128.

Hughes, J.J. (2014), "A Strategic Opening for a Basic Income Guarantee in the Global Crisis Being Created by AI, Robots, Desktop Manufacturing and BioMedicine", Journal of Evolution and Technology, 24(1), pp.45–61.

Immervoll, H., C. O'Donogue and S. Sutherland (1999), "An introduction to EUROMOD", EUROMOD Working Paper EM0/99, University of Cambridge.

Immervoll, H and S. Scarpetta (2012), "Activation and Employment Support Policies in OECD Countries. An overview of current approaches", *IZA Journal of Labour Policy*, Vol. 1(9).

Katz, L.F. and Krueger, A.B. (2017), "The Role of Unemployment in the Rise in Alternative Work Arrangements", *American Economic Review*, 107(5), pp.388-92.

OECD (2015), OECD Pensions at a Glance, OECD Publishing, Paris. http://oe.cd/pag.

OECD (2017a), OECD Family Database, http://oe.cd/fdb.

OECD (2017b), ""How technology and globalisation are transforming the labour market", OECD Employment Outlook, OECD Publishing, Paris.

OECD (2017c), OECD Benefit Recipients Database (SOCR), http://www.oecd.org/social/recipients.htm.

OECD Income Distribution Database, http://oe.cd/idd.

OECD (undated), "The OECD tax-benefit model: Methodology", http://www.oecd.org/els/soc/Methodology.pdf.

Parker, H. and H. Sutherland (1991), "Child Tax Allowances? A comparison of child benefit, child tax reliefs, and basic incomes as instruments of family policy", STICERD Occasional Paper 16.

Scutella, R. (2004), "Moves to a Basic Income-Flat Tax System in Australia: Implications for the Distribution of Income and Supply of Labour", Melbourne Institute Working Paper no.5/04.

Sutherland, H. and F Figari (2013), "EUROMOD: the European Union tax-benefit microsimulation model", *International Journal of Microsimulation* 6(1), pp. 4-26.

Widerquist, K., J.A. Noguera, Y. Vanderborght and J. de Wispelaere (eds.) (2013), *Basic Income. An Anthology of Contemporary Research*, Wiley Blackwell.