

# Why an Unconditional Basic Income is Highly Problematic – General Considerations and Quantitative Implications for the Case of Germany

Research Article

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Received August 02, 2021; Accepted November 11, 2021

**Abstract:** The concept of an unconditional basic income is not new, but it is still the subject of much controversy. This paper looks at the quantitative effects of introducing an unconditional basic income, using Germany as an example. It examines the financial implications and other major problems of an unconditional livable income measure. The analysis shows that an unconditional basic income at the level generally called for by its proponents would require massive tax increases and thus a substantial redistribution of income from the middle and upper ends of the income scale downward.

**Keywords:** *Distribution • Incomes Policy • Taxation*

**JEL Classification:** D31, E64, H2

## 1. Introduction

The concept of an unconditional basic income – also referred to as universal basic income<sup>1</sup> – has been around for 200 years, and it is becoming popular every now and then in policy debates and in academia. It is one of a variety of social assistance schemes and, as Torry (2019b) explains, there is no unique definition. For simplicity, this paper assumes that an unconditional basic income is a living cash payment to every citizen of a country, regardless of her or his income and wealth situation and regardless of any participation in the market for paid work. The concept of an unconditional basic income is one of the most controversially discussed ideas. By 2020, more than 120 books had been published on this concept, about

75 percent of them between 2010 and 2020 (Gentilini et al. 2020b).<sup>2</sup>

Universal basic income is also a frequent topic of election programs and campaigns. One of the countries in which this concept is repeatedly debated is Germany. It is indeed amazing that it might be possible to provide every citizen of a country with an income high enough to allow them to live a decent life. It is therefore not surprising that this concept is a recurring theme in election campaigns. There is even a small political party in Germany whose sole aim is to introduce an unconditional basic income (Bündnis Grundeinkommen 2021).<sup>3</sup> Although the topic has not made it into the official election program of one of the major parties in Germany, significant portions of the Greens (“Bündnis 90/Die Grünen”) and The Left (“Die Linke”) support the

1 Sometimes these expressions are not used as synonymous. In this case, “universal” refers to being for everyone within a country and “unconditional” to not having to go through a particular test (Torry 2019b). In this paper, both expressions are used synonymously.

2 Two of the most comprehensive publications on unconditional basic income are Torry (2019a) and Gentilini et al. (2020a).

3 The one-topic party is called „Bündnis Grundeinkommen”, meaning ‘Alliance Basic Income’.

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idea and have recently hoped for its inclusion in their party's election program. At the level of the European Union, there is a Basic Income Network, an association founded in 2004 with somewhat over 5,000 members, including several organizations established in different European countries. It demands that the European Commission should introduce an unconditional basic income in the EU (Netzwerk Grundeinkommen 2021).

The idea of an unconditional basic income is based on the positive effects that its proponents expect it to have. Although the proponents of this idea generally have different goals, arguments in this context include the elimination of poverty, a more humane treatment of those in need, a lower crime rate, better physical and mental health, more freedom to engage in risky activities such as starting a business, a response to the expected loss of jobs due to artificial intelligence and robots, and a generally higher level of satisfaction among people. From the supposed positive effects, proponents of an unconditional basic income conclude that a nationwide introduction of this policy measure should be pursued (Van Parijs 2004; Standing 2008; Straubhaar 2008).

This paper examines the quantitative effects of introducing an unconditional basic income, using Germany as an example, and points out the financial and other major problems of this policy measure. It is argued that an unconditional basic income at the level generally envisaged by its proponents in Germany would require a substantial redistribution of income and would probably have negative effects on labor and capital markets. The paper does not address the historical background of the proposal for an unconditional basic income or the details of its rationale.<sup>4</sup>

The rest of the paper is structured as follows. Section 2 shows some examples of countries that have introduced an unconditional basic income for some time. Section 3 provides an estimate of payments if an unconditional basic income were introduced in Germany. It also describes various scenarios for savings in government spending that could then be considered. Section 4 explains alternative revenue measures for financing an unconditional basic income in Germany. Section 5 discusses the labor and capital market effects that could result from the introduction of an unconditional basic income. Section 6 briefly highlights some other economic effects. Section 7 provides some conclusions.

## 2. Examples of an Unconditional Basic Income

Several countries have tried out an unconditional basic income. Table 1 lists all universal implementations, some local implementations, and some pilot projects.<sup>5</sup> So far, only two countries have introduced an unconditional basic income nationwide. One of them is Mongolia, where the government introduced a system in 2010 to distribute a portion of mining revenues (especially from coal, copper, and gold) to all citizens. Due to fluctuating revenues from mining, the system was abolished in 2012. The other country that has introduced an unconditional basic income is Iran. However, its introduction was intended to compensate citizens for the elimination of previous energy and food subsidies. Due to inflation, its real value eroded quickly, and the payments soon ceased to be a significant pillar of income (Karshenas and Tabatabai 2019; Vizoso 2020).

Several countries have explored unconditional basic income in certain parts of the country or for certain groups in society. In Alaska, all citizens receive annual payments from oil and gas production revenues. A similar situation exists in Macau, where all residents receive a payment from gambling revenues. Neither in Alaska nor in Macau can the level of payments be considered a livable income. The other cases listed in Table 1 as basic unconditional income are not related to resource revenues. In the U.S., the Cherokee nation has received unconditional income for its history in North America. In India, unconditional basic income has become popular in some areas to address extreme poverty. All other listed cases, where unconditional income was tried in some regions, were discontinued after some time.

Some countries have conducted experiments with unconditional basic income in some of their areas or limited groups of society to examine the impact on individuals' behavior, especially in the labor market. Finland conducted the most comprehensive experiment of European countries. It provided 2,000 unemployed citizens with €560 per month for two years (2016–2018). Section 5 reviews the results in some more detail.

Overall, in most cases, where unconditional basic income was introduced, it was stopped after a short time. This happened for financial reasons, due to political changes, or because the systems were intended as an experiment from the outset.

4 For the historical background and a comprehensive justification of the proposal, see, for example, Blaschke et al. (2010).

5 For a more comprehensive list of local and pilot cases, see Gentilini et al. (2020a) or Torry (2019a).

| Country, Year  | Scope                              | Amount per Person  | Population Coverage               |
|--|------------------------------------|--|-----------------------------------|
| <b>Universal</b>   |                                    |  |                                   |
| Iran, 2011-present   | National replacing price subsidies | About US\$40 per month initially; paid to household heads; in 2021 less than US\$2 | Initially > 90% of the population |
| Mongolia, 2010-12  | National                           | US\$7 per month in 2010; in 2012 US\$17 per month                                  | 3 million                         |
| <b>Local or Special Societal Groups</b>                                |                                    |  |                                   |
| USA, Alaska (from oil revenue), 1982-present                           | State                              | US\$331 – US\$2,072 per year   | 615,000                           |
| U.S. Eastern Bank of the Cherokee Nation, 1996-present                 | Tribe                              | US\$4,000-6,000 per year   | 16,000                            |
| Kuwait (Amiri grant), 2011   | National                           | US\$3,600 one-off  | 1.1 million                       |
| China (Macau SAR), 2014-present  | Region                             | US\$1,250 per year (from gaming revenue)   | 707,000                           |
| India (Telangana), 2017-present  | State (land-holding farmers)       | US\$67 biannually  | 5.8 million                       |
| <b>Some Pilots</b>   |                                    |  |                                   |
| Canada (Ontario), 2017-19  | Individuals                        | Variable guarantee levels and marginal tax rates                                   | 4,000                             |
| Finland, 2016-18   | Unemployed                         | US\$560 per month  | 2,000                             |
| Hong Kong SAR, China, 2011-12  | Individuals                        | US\$772 per year   | 4 million                         |
| Kenya (GiveDirectly), 2011 for 2 or for 12 years                       | Villages                           | US\$23 per month to individuals  | 21,000                            |
| Namibia (Otjivero-Omotora), 2008-09                                    | Individuals                        | US\$100 per month  | 930                               |
| USA 1970s (Indiana, Iowa, New Jersey, North Carolina, Seattle, Denver) | Households                         | Variable guarantee levels and marginal tax rates                                   | 9,924                             |

Sources: Gentilini et al. (2020b), Karshenas and Tabatabai (2019), State of Alaska (2021), and own calculations.

**Table 1: Unconditional Basic Income Systems, Selected Countries**

### 3. Magnitude of Total Payments for Unconditional Basic Income in Germany and Potential Expenditure Savings

A crucial question in assessing the financial impact of introducing an unconditional basic income is how much unconditional transfers to residents should be and which government spending items can be eliminated by this policy. To illustrate the magnitude of the costs and potential savings in government spending, this paper considers the case of Germany. Neither in Germany nor in other countries is there a consensus on how high an unconditional basic income should be<sup>6</sup>. Regarding the amount of the unconditional basic income, most proposals seem to revolve around €1,200 per month for each adult and half of that for children and teenagers under 18 years. For example, Blaschke (2019), representing the Basic Income Network, states that the amount of such an income should be between €1,150 and €1,400 per month after taxes. Assuming a monthly payment of €1,200 per adult and €600 for children and teenagers (under 18 years), Table 2 shows that this implies total payments to individuals (i.e., excluding administrative costs) of € 1,109 billion per year.

The total payments for the unconditional basic income outlined above are substantial. In relation to GDP and national income, they correspond to 33 percent and 44 percent, respectively. To illustrate the magnitude of the payments for the unconditional basic income, these payments can also be compared to total government spending and revenue (each including social security), which in this case are 51 percent and 65 percent, respectively.<sup>7</sup>

The question therefore arises as to how an unconditional basic income can be financed. In this section, expenditure-reducing measures are discussed. In the next session, revenue-increasing measures will be examined. We base our calculations on the unconditional basic income payments as shown in Table 2. Of course, the financing requirements would be lower if lower payments were proposed as unconditional income as for example in Osterkamp (2015). The disadvantage of calculations based on much lower unconditional income amounts is that payment to a person is then less what is usually considered a livable income. For the following calculations of the financing options, we therefore use the level of an unconditional basic income, as it is demanded on average by proponents of the concept.

<sup>6</sup> See, for example, Ward (2021).

<sup>7</sup> Data for Germany are from DESTATIS (2021), Statista (2021) and Ifo (2021).

| Population                            |            | Payment per Individual per Month | Total Payments per Year |
|---------------------------------------|------------|----------------------------------|-------------------------|
| Adults                                | 70 million | €1,200                           | €1,008 billion          |
| Children and teenagers under 18 years | 14 million | €600                             | €101 billion            |
| Total                                 | 84 million | -                                | €1,109 billion          |

Memorandum items for Germany (2020): GDP: €3,336 billion; National Income: €2,501 billion; total government revenue (including social security) €1,563 billion; total government expenditure (including social security) €1,712 billion.

Source of data: DESTATIS (2021), Statista (2021), ifo (2021) and own calculations.

**Table 2: Annual Payments to Individuals Related to an Unconditional Basic Income**

|               |  | Additional Savings/<br>Revenue | Total Savings/<br>Revenue Effect | Remaining Financing<br>Requirement |
|---------------|--|--------------------------------|----------------------------------|------------------------------------|
| Scenario I:   | Elimination of several social budget items (e.g., child benefits and payments to long-term unemployed) | €217 billion                   | €217 billion                     | €892 billion                       |
| Scenario II:  | Scenario I plus abolition of the basic personal income tax allowance                                   | €100 billion                   | €317 billion                     | €792 billion                       |
| Scenario III: | Scenario II plus discontinuation of all pension payments   | €396 billion                   | €713 billion                     | €396 billion                       |

Notes: The first number column shows the savings or corresponding revenue effect of the measures included in Scenario I and the additional savings or revenue effect of Scenarios II and III. The second number column shows the total savings or corresponding revenue effect of all measures included in each scenario. The third column shows the difference between €1,109 billion (as shown in Table 2) and the amounts shown in the second number column.

Source of data: Federal Ministry of Labor and Social Affairs (2021), DESTATIS (2021), and own calculations. Data on social budget are 2019 data.

**Table 3: Estimates for Possible Compensation Measures to Finance the Introduction of an Unconditional Basic Income**

However, the calculations deliberately give only a rough idea of the magnitude of the financial impact.

Since the introduction of an unconditional basic income partly replaces other social benefits, the total payments do not fully lead to additional costs for the state. Even among supporters of an unconditional basic income, there is no consensus on which existing systems should be abolished with the introduction of an unconditional basic income. We will therefore distinguish three scenarios.

In the first scenario considered here (Scenario I in Table 3), the social payment systems that can be abolished with the introduction of an unconditional basic income include child benefits, payments to the long-term unemployed, and payments to students for living expenses. Nevertheless, not all government social expenditures can be replaced by the unconditional basic income. Examples include spending on statutory health, long-term care, and accident insurance, as well as spending on skills training programs and youth development programs, which are all part of the state social budget. Some of them, such as the budget for statutory health insurance, are financed by separate contribution systems. On this basis, social spending that could be replaced by unconditional basic income is estimated at €217 billion.<sup>8</sup> This implies that, in this case, the total amount for the provision of the unconditional income exceeds the outlined spending cuts by €892 billion.

<sup>8</sup> Specifically, this amount combines spending of the unemployment insurance (except for skill training programs), continued remuneration, child benefits, childcare allowance, housing benefits, and social care.

In Scenario II, it is assumed that, in addition to the savings measures of Scenario I, the basic allowance of the income tax is also abolished. In a system without an unconditional basic income, this allowance is justified by the argument that income required to finance a minimum standard of living should remain untaxed. However, since an unconditional basic income already aims at this goal, the basic allowance is no longer justified. Abolishing the basic allowance in Germany would result in an additional income tax revenue of around €100 billion (Table 3).

In an even more far-reaching Scenario III, it is assumed that the proposal of an unconditional basic income also includes the abolishment of all pension payments and their replacement by the unconditional basic income. This means the same payment to every retiree and thus a massive redistribution of income. It would lead to a complete equalization of pensions and thus to significantly lower payments to those with currently higher pensions. The total state pension system in Germany – including civil servants' pensions – amounted to €396 billion in 2020. However, this scenario only leads to savings for the state of this magnitude if the existing contribution systems are not abolished but integrated into other payment systems to the state to help finance the unconditional basic income. This is assumed in Scenario III in Table 3. Even if this financing strategy was pursued, a financing requirement of just under €400 billion would remain.

All in all, Table 3 shows that the estimated financing requirement after possible savings measures is between €396 billion and €892 billion. This shows that an unconditional basic income in the amount outlined

above cannot be financed solely by merging the existing benefit systems. On the contrary, even with drastic redistribution measures in the existing pension system, there remains a substantial need for financing from other sources, especially through revenue-side measures.

The derived financing requirement is also significant in comparison to other government revenue. Total tax revenue in Germany amounted to €771 billion in 2020. This means that the financing requirement derived for Scenarios I and II is higher than Germany's total tax revenues and, in Scenario III with even more drastic savings measures, amounts to more than half of Germany's total tax revenues.<sup>9</sup>

## 4. Alternative Revenue Measures to Finance an Unconditional Basic Income in Germany

There are several ways in which an unconditional basic income can be financed through revenue-side measures (Ter-Minassian 2020). Possible expenditure measures have already been discussed in the previous section. In this section, alternative revenue measures are examined using Germany as an example. Essentially, there are six types of taxes that have been proposed to fund an unconditional basic income, either as a single source or in combination:

- income tax
- consumption tax
- wealth tax
- resource tax
- financial transaction tax
- environmental taxes

In the following, these funding sources are addressed and examined for their usefulness in financing the costs of an unconditional basic income in Germany. The indirect effects of using these sources of financing will not be addressed in these sections, as these will be dealt with in subsequent sections.

### a. Income Tax

Financing the unconditional basic income via income tax is the most prominent proposal for financing a basic income. A distinction can be made between a gross

concept and a net concept. In the gross concept, the unconditional basic income is paid to everyone independently of tax liability, and tax returns are treated separately. In the net concept, the unconditional basic income is offset against the individual's tax liability, and only the difference is actually paid out or collected. Whether a gross or a net concept is applied, however, has no influence on the total burden of an unconditional basic income on citizens.

The oldest form of an unconditional basic income in the form of a net concept is the negative income tax. With GI denoting gross income and NP the net payments to the state, net income (NI) can be expressed as

$$NI = GI - NP. \quad (1)$$

Net payments to the state are the difference between income taxes T to be paid and the unconditional basic income UBI. Income tax obligations T can be expressed as the product of the average tax rate t of an individual and his or her gross income, i.e.,  $T = t \cdot GI$ . In the following, we assume that the income tax is progressive, i.e., the tax rate t is a positive function of gross income. Then, the (gross) tax obligation is

$$T = t(GI) \cdot GI; \quad dt/dGI > 0.$$

Taking into account the unconditional basic income, the payments of an individual to the state are therefore

$$NP = t(GI) \cdot GI - UBI. \quad (2)$$

The NP function represents the negative income tax system. Using equation (2) in (1) yields the following expression for net income:

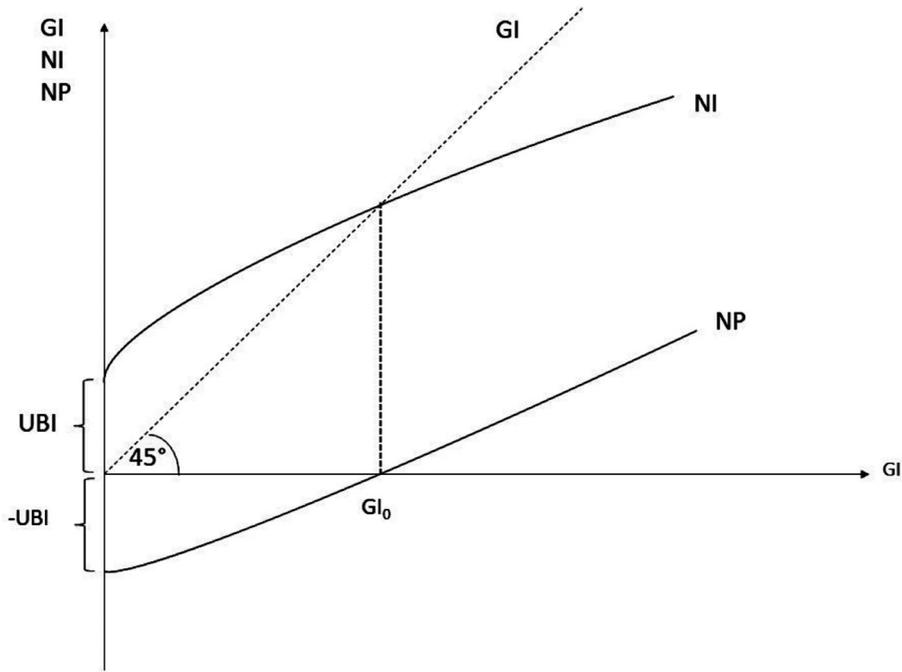
$$NI = UBI + [1 - t(GI)] \cdot GI. \quad (3)$$

Figure 1 shows the graphs of equations (2) and (3). With no income, i.e., when  $GI=0$ , an individual receives the full unconditional basic income level UBI from the state. Thus, in this case, his or her net income is equal to the unconditional basic income. For  $0 < GI < GI_0$ , an individual is still a net recipient of payments from the government because his or her tax obligations associated with his income are less than the unconditional basic income. However, the payments he or she receives are less than the unconditional basic income. As income increases, tax obligations T increase and they are equal to the unconditional basic income at  $GI_0$ , so net payment to the government is zero. Gross income, for which net payments are zero, can be derived from equation (2) as

$$GI_0 = [1/t(GI)] \cdot UBI.$$

Hence,  $GI_0$  is the higher, the higher is the level of the unconditional basic income, and the lower is the tax rate. If gross income is above  $GI_0$ , an individual pays to

<sup>9</sup> The estimates abstract from changes in administrative cost associated with the changes in the tax and welfare systems, as these are difficult to estimate. Hence, the estimates implicitly assume that there are no changes in administrative cost.



Notes: GI = gross income; NI = net income; NP = net payment to the government; T = tax; UBI = unconditional basic income

**Figure 1.** Negative Income Tax Rate with a Progressive Tax Rate

the government on a net basis. As tax rates increase, the NI curve becomes flatter and the NP curve steeper as gross income increases. As long as the marginal tax rate is below 100 percent, the NP curve is flatter than the 45° line, and consequently, the NI curve is still upward sloping. In the extreme case of a marginal tax rate of 100 percent, the NP curve is parallel to the GI curve and the NI curve is horizontal.

In the case of Germany, it is difficult to imagine that an unconditional basic income at the level outlined in section 2 can be financed solely by a negative income tax system as described above. The marginal income tax rate in Germany ranges from 14 percent (for income beyond the basic personal allowance) to 45 percent (excluding the “Solidarity Surcharge”). The tax rate of an average earner in Germany is around 20 percent. Total income tax revenue (individual and corporate) in Germany amounted to around €350 billion in 2020. Putting the financing requirements of the various scenarios of Table 3 in relation to total income tax revenue in Germany shows that doubling income taxation in Germany would not be enough to generate the required revenue in Scenario III with the most drastic savings measures. Hence, even in this case, it would mean an average income tax rate well over 50 percent, even for relatively low income levels in addition to still paying in some form the current contributions to the public pension system. This even applies in the case when

the personal basic tax allowance as well as pensions are abolished, and existing contributions are continued.

A significant increase in income tax revenue, which would be necessary to finance an unconditional basic income, would require a very high tax rate. To illustrate this for Scenario III, in which the financing requirement is the lowest, but still amounts to €396 billion, we assume for simplicity that the 2020 income tax obligations are increased proportionally. With an income tax revenue of €350 billion in Germany in 2020, this means that income tax revenue must be 2.13 times today’s revenues. On this basis, it is possible to calculate the level of gross income at which tax liability corresponds to the unconditional basic income (which is  $GI_0$  in Figure 1). This income is €25,574, and the tax rate is 56 percent.<sup>10</sup> However, an individual with this income is still better off during his or her working life in this scenario than in the current (2020) income tax system without unconditional basic income, in

<sup>10</sup> Under these simplifying assumptions, this income level can be calculated as follows: as the annual unconditional basic income is assumed to amount to €14,400 and overall income tax revenue has to rise to 2.13 times the existing level, the gross income can be determined from the income tax table for which the tax obligation is €14,400/2.13; subsequently the respective gross income has to be reduced by the basic income tax allowance of €9,408. This yields the annual income of €25,574 and a tax rate of €14,440/€25,574, i.e., 56 percent.

which the income tax at this level is not zero, but €3,878.<sup>11</sup> Beyond  $GI_0$ , marginal tax rates increase rapidly. Using the same simple approach as before, the net payment to the state in Scenario III is lower than in the current system up to an income of about €34,500, but beyond this level an individual is significantly worse off with an unconditional basic income. Scenario III also means that – as explained above – everyone receives the same pension, which is equal to the unconditional basic income. If less drastic measures in tax and social policies are introduced than in Scenario III, the financing requirements are higher (see Scenario I and II in Table 3).

The numerical representation shows that redistribution would not only take place from the top income earners to the bottom of the income scale. Rather, financing the unconditional basic income would require a significant increase in the tax burden on middle-income earners. In addition, all pension amounts exceeding the level of the unconditional basic income would have to be waived. The estimates show the enormous extent of income redistribution that would be necessary to finance an unconditional basic income through income tax. Consequently, this would not be without impact on the incentive system in the labor market, which is discussed in section 5.

## b. Consumption Tax

Werner (2007) proposes to use using the value added tax to finance the unconditional basic income. He even suggests to use the value added tax in addition to replace other taxes. However, this extension is excluded from the present analysis in order to focus on the additional resources needed to finance the introduction of the unconditional basic income.

Value added tax revenue amounted to €254 billion in 2020.<sup>12</sup> Although there are products for which a lower tax rate is charged, the current value added tax rate in Germany is 19 percent for most products. If the remaining financing requirements are to be covered by revenues from the value added tax alone, doubling revenues from the value added tax alone would not be sufficient. The required increase in the tax rate depends on the scope of the compensation measures, which are reflected in the Scenarios I to III in Table 3. The increase would range from 30 percentage points (Scenario III) to 67 percentage points (Scenario I).<sup>13</sup> If this is fully reflected

11 However, as a retiree, every individual would get €1,200 per month, which is the unconditional basic income.

12 Most goods and services are subject to a value added tax rate of 19 percent; some are subject to a reduced rate of 7 percent.

13 For simplicity, the estimates refer to the regular tax rate of 19 percent.

in higher prices, this in turn leads to a price increase of 25 % to 56 %.<sup>14</sup> This would significantly reduce the real income of all income earners in the economy. As a result, the real value of the monthly unconditional basic income of €1,200 would also fall accordingly. This would run counter to the goal of enabling a decent life with the amount of the unconditional basic income.

## c. Wealth Tax

A wealth tax is a tax on net assets. For individuals, the tax base is usually the difference between the sum of the value of a person's financial and tangible assets and liabilities. There are many issues associated with this tax and therefore it is a very controversial tax.<sup>15</sup> On the one hand, it is argued that it could help to eliminate inequalities and that it could generate significant revenue for the state. On the other hand, wealth is relatively difficult to measure because it involves private companies or family businesses whose shares are not traded on the stock market. Therefore, a wealth tax involves high administrative costs and can be considered an expensive tax. For such companies, it could also mean that paying the wealth tax requires the regular sale of parts of the company. In addition, wealth is usually based on income that has already been taxed or on unrealized profits, which makes taxation problematic. A wealth tax also creates disincentives for investment when implemented by a country. The number of countries in Europe that have introduced a wealth tax has declined over the last three decades. Wealth tax rates in European countries that have such a tax average one percent, and there are relatively high allowances.

There is no wealth tax in Germany. The financial assets of natural persons in Germany amount to around €7 trillion and tangible assets to around €9 trillion. According to Capgemini's World Wealth Report (2021), there are around 1.5 million individuals in Germany with assets of more than one million US dollars. If they owned a similar share of total assets as worldwide, their total wealth would amount to €5.6 trillion. This means that the introduction of a one percent wealth tax in Germany - apart from the administrative costs of collecting the tax, which can be high for this type of tax

14 For simplicity, it is assumed that any increase in the value added tax will be translated one to one into a price increase. While this assumption is unrealistic in case of a specific tax, it may not be as unrealistic in the case of the value added tax, which is levied on all goods so that substitution possibilities are unlikely.

15 General problems of a wealth tax are emphasized by Ter-Minassian (2020). Chamberlain (2021) discusses the question of what should be taxed with a wealth tax and Evans et al. (2017) review the problems of disclosure of assets and their valuation.

– would result in tax revenue of around €56 billion and would thus be far from sufficient to finance the introduction of the unconditional basic income as described in Table 1. Specifically, it would cover only 6 percent of the financing requirements of Scenario I in Table 3 and only 14 percent of the financing requirements of Scenario III. Therefore, financing the unconditional basic income solely through a wealth tax would require very high wealth tax rates. In this case, however, substantial adverse effects can be expected on the economies. This indicates that a wealth tax is hardly suitable for financing an unconditional basic income, regardless of its problems.

#### d. Resource Tax

In countries with significant exports of natural resources, another way to finance the additional expenses associated with an unconditional basic income is to levy a specific tax on these resources or to use the profits to establish a fund. The proceeds of such a fund could then be used to make payments to residents. Alaska is often cited as an example of such funding (see Table 1). The Alaska Permanent Fund, established in 1976, aims to pay a certain share of oil revenues into the fund so that future generations can benefit from the earnings of the fund later. It is, therefore, a kind of governmental wealth fund. It has paid out an average annual amount of \$1,600 to each Alaskan resident. Mongolia (see Table 1) paid an unconditional basic income from mining revenues between 2010 and 2012. The payments were a direct distribution of revenue, not based on a fund system.<sup>16</sup>

A resource tax and a fund do not lead to a redistribution of income between individuals of the same generation, but it is an intertemporal redistribution justified by the fact that resources can only be sold once, as they will not be available in the future. The amount that can be paid out to an inhabitant depends on the size of the fund and the return on its assets.

Since Germany is not rich in natural resources, this source is not available to finance an unconditional basic income. Even for resource-rich countries, the sovereign wealth fund that could generate the volume of returns needed to pay out an unconditional basic income would have to be enormous, as described above.

<sup>16</sup> For details on the Alaska Permanent Fund Dividend Program see Anderson (2002). Information on dividend developments can be found at State of Alaska (2021). For the experience with universal unconditional basic income in Mongolia see Gentilini et al. (2020b) and Namkhajantsan and Mihalyi (2020).

#### e. Financial Transaction Tax

A financial transaction tax is levied on each over-the-counter financial transaction or non-cash transaction. It works like a sales tax on each of these payments and levies a small tax on each financial transaction. The introduction of a financial transaction tax has been discussed in Europe for some time. Originally, such a tax was intended to curb speculative financial flows by making all payments more expensive. Later, the tax was proposed in the context of finding sources of funding for various purposes such as additional development aid and combating climate change.

There is an extensive debate on the pros and cons of a financial transaction tax (Schäfer et al. 2012). Proponents emphasize the stabilizing effect of such a tax on the financial market, with the consequence of reducing high-frequency trading, which is seen as a major cause of instability in the financial markets. In the context of the global financial crisis of 2007/2008, the tax should also serve to make the financial industry share in the costs incurred by governments in connection with various rescue programs (Kindler 2015). Arguments against a financial transaction tax emphasize the possibility of circumventing the tax by relocating financial institutions and thus financial transactions to countries without such a tax. Opponents of the tax therefore argue that only a global introduction of such a tax would make sense, but this is unlikely to happen. Moreover, the tax is seen as punishing small investors who are making provisions for their old age. There seems to be a consensus that a tax on all financial transactions only makes sense if it is introduced in most, if not all, countries of the EU or at least in the countries of the Eurozone. So far, however, no general transaction tax has been introduced in Europe. Therefore, the focus has shifted to the introduction of a tax on trading in shares and equity derivatives.

An estimate by the German Bundestag (2019) puts international transactions in Germany at €319 trillion. If a financial transaction tax of 0.01 percent were introduced and assumed to have no impact on transaction volumes, this would result in tax revenues of €32 billion. If such a tax is to finance the unconditional basic income, it would therefore have to be 10 to more than 20 times this tax rate. Since the current political discussion envisages a financial transaction tax only on equities and equity derivatives, the expected revenue will be significantly lower.

#### f. Environmental Taxes

In more advanced economies like Germany, environmental taxes - sometimes referred to as “green taxes”

- could help finance an unconditional basic income. In Germany, energy taxes amount to about €40 billion per year. Although energy taxes have the advantage of being efficient because they target environmental externalities, they raise relatively little revenue compared to the amount needed to fund an unconditional basic income. Therefore, such taxes can only help little to fund an unconditional basic income. Another problem associated with environmental taxes is their negative distributional effect (Ter-Minassian 2020).

Germany introduced a levy on CO<sub>2</sub> emissions in 2021. However, this levy is not intended to generate revenue that the government uses for purposes other than investing in climate protection measures and relieving the burden on citizens and companies through higher energy prices, especially electricity prices.

## 5. Labor and Capital Market Effects

The estimates in the previous sections are based on a *ceteris paribus* assumption, i.e., they assume that the introduction of an unconditional basic income will not lead to a change in the behavior of market participants, especially not in the labor market. However, the level of unconditional basic income described is likely to affect economic incentives and may thus lead to indirect adverse effects.

The introduction of an unconditional basic income may have different effects on labor markets, some of which may be ambiguous and not identical for all income levels of the labor market. Bastagli (2020) presents a comprehensive survey of labor market effects. One effect usually highlighted by proponents of an unconditional basic income is that people who do not have to worry about financing their basic needs may become interested in other types of work that they enjoy more. They might turn to new activities and possibly become entrepreneurs. However, the argument that there will be more self-employments may not necessarily be convincing, as the tax increases aimed at financing the unconditional basic income may include the elimination of several tax incentives, including loss carry-forward, which increases entrepreneurial risk and reduces the willingness to start a business. Moreover, since this effect is highlighted primarily for the lower income groups because only for them is there greater certainty, the question arises as to whether the effects on entrepreneurial behavior of this income group are felt in the economy. Furthermore, one may ask whether the unconditional basic income produces better entrepreneurs and drives the economy forward.

Economic theory suggests that the high taxation required to finance an unconditional basic income at

the level described above may lead to a decline in the supply of labor in the economy, as some workers may choose to receive the unconditional basic income and reduce their time for paid work or even stop working. In this case, wages and prices could rise, and output could fall. If this has a significant negative impact on the tax base tax revenues will decline, which in turn may require additional tax adjustments. However, the opposite effect may also occur at lower income levels. If the introduction of unconditional basic income leads individuals to perform unpaid care work, they may be able to pay for it and take up paid work so that labor supply increases (Bastagli 2020). The financing structure of an unconditional basic income can play an important role in this context. Gilroy et al. (2012) argue that, in Germany, basic social security (Hartz IV) provides very little incentive to work, but the unconditional basic income combined with the abolition of the basic social security can be designed in such way that it leaves workers with more net income from the start of earned income. However, the authors concede that this only works if low incomes are effectively excluded from the financing of the unconditional basic income.

Labor market effects may differ for unskilled and skilled workers. Skilled workers could demand significantly higher wages because the higher tax burden reduces their real income. Demand for skilled labor may be less wage elastic, causing wages for skilled workers to rise more, calling into question the distributional impact. The drastic increase in taxes required to finance unconditional basic income may also have a negative impact on innovation and economic growth in the longer term. In response to higher taxes, skilled workers could migrate to lower-tax countries if they cannot pass on the higher tax burden to higher wages. A shift of real capital to production locations abroad, i.e., an increase in outflows of foreign direct investment and a decrease in inflows of foreign direct investment, can also be expected due to a higher tax burden on capital. Finally, tax increases could also reduce incentives for education and capital accumulation.

Many empirical studies and experiments on the effects of unconditional basic income focus on labor supply behavior. A number of these studies refer to the country examples listed in Table 1. An empirical study in the U.S. from the 1970s shows rather unfavorable labor market effects and a smaller decline in poverty than expected (Kehrer 1977; Munnell 1986). In Finland, an experiment was conducted between late 2016 and late 2018. Finnish unemployed people received an amount of €560 per month, and the question was whether this protection created incentives to work. The result of the experiment was that the participating unemployed were

more satisfied, but the extra work per year amounted to an average of only six days per person. None of them had to contribute to the cost of the system with their income from paid work (De Wispelaere 2018; Kangas et al. 2019; Gentilini et al. 2020b). Another experiment was conducted in Kenya, where villages were paid US\$23 per month for each of their residents for two or twelve years. However, this experiment was limited to 120 small villages in rural areas and was more of a welfare program (Gentilini et al. 2020b). In an experiment in Canada in 2018, 4,000 citizens aged 18 to 64 with annual incomes up to Can\$34,000 (individual) received up to Can\$17,000 per year. The experiment was planned for three years and budgeted at Can\$150 million. After a change in government, the program was discontinued for financial reasons (Mendelson 2019; Torry 2019a; Gentilini et al. 2020b). In Namibia, around 1,000 inhabitants below the age of 60 in Otjivero-Omitara, a poor village about 100 km east of Namibia's capital Windhoek, received N\$100 (approximately US\$7) per month in 2008 and 2009. The project called "Basic Income Grant" (BIG) was financed through a mix of public and private money from abroad. The empirical results indicate that average income slightly dropped but mainly due to migration towards the village; controlled for migration, income rose indicating that there was no negative effect on labor supply; however, the empirical studies are contested because data could not be independently collected because external parties were not allowed to participate in the data collection and were not given access to the data (Haarmann et al. 2019; Osterkamp 2013; Gentilini et al. 2020a).

The impression that emerges from the various studies is that people want to earn additional income despite receiving an unconditional basic income. The results suggest that most households will not give up their employment in response to receiving the unconditional basic income but may adjust it downward in some cases and upward in others. Overall, the impact does not appear to be large among those surveyed in the studies (Bastagli et al. 2016).

However, all existing empirical studies on the impact of unconditional basic income have the drawback that no country has yet implemented an unconditional basic income at a level that could serve as the main income pillar for working-age individuals (Bastagli 2020). Empirical evidence is therefore limited to local systems, to specific groups of recipients, and to small transfers. Empirical studies thus invariably focus on a limited group of individuals or households in a society and do not include broad implementation. As a result, none of the studies examines the impact of higher taxation, particularly on middle- or higher-income individuals, to finance income

transfers. However, these are crucial for evaluating the concept of an unconditional basic income, as higher taxes can have significant distortionary effects. When income taxes are sharply increased, there are incentives to work outside the formal market or to leave the country. Similarly, a large increase in the value added tax rate creates incentives for tax evasion. The effects on individual behavior in specific income groups and on the macroeconomy are thus left out of the analyses. The partial-analytical nature of existing empirical studies with their *ceteris paribus* assumption therefore does not allow conclusions to be drawn about the macroeconomic impact.

## 6. Other Economic Effects

One argument in favor of an unconditional basic income is that it would save administrative costs, since there would be no complex means tests as in the current welfare systems. These checks can indeed be very personnel intensive. However, while one person in the current system requires a more extensive check, many more people would need to be tracked and their data maintained throughout their lives in an unconditional basic income system. For each resident, this administrative work would involve ongoing processing and verification of a range of data, including residence, bank account information, death data, and tax payments. Additional complications would arise from time delays in issuing tax notices. Most likely, the latter system will have to be cross-checked with data from tax offices. The data of each resident, including his or her address and bank details, would have to be recorded and maintained on an ongoing basis. It may be doubted that this would be less costly administratively than the current system.

Several other problems arise in connection with the budget and the financing of the unconditional basic income. One of them is the question of how to deal with an aging population. Since payments related to this policy must be financed from income, a shrinking labor force poses a challenge to the sustainability of the unconditional basic income. Another problem is the question of who should pay for health and long-term care insurance for people with no income. If such payments are made in addition to the unconditional basic income, the system becomes even more expensive and requires additional funding. Another problem is that the unconditional basic income aims to provide every adult resident with an income that allows them to live in dignity. In all discussions, this income is expressed in nominal terms. However, the cost of living in different regions of a country can differ significantly due to differences in housing costs. This is particularly true when

comparing large cities and rural areas. As a result, the same nominal income can easily translate into considerably different real income levels. It could be argued that this could have the effect of making rural areas more attractive and reducing pressure on the housing market in urban areas. However, such migration to rural areas can only be expected if workers find employment there or if they leave the labor market, thus reducing labor supply.

In a country that is embedded in the European Union like Germany, the question of who is eligible for an unconditional basic income also arises. In principle, the focus of eligibility is residence, but within the EU, citizens can choose their country of residence. An unconditional basic income at the level proposed by its proponents could create significant incentives for immigration (Löffler 2021). This raises the question of how a country can or should deal with this problem.<sup>17</sup> It suggests that either an EU-wide policy will be implemented, which is unrealistic, or that other conditions besides residence must be met to be eligible for the unconditional basic income.

If an unconditional basic income is introduced, it is unlikely that the government will be able to offer additional social programs later. Therefore, it could be argued that the unconditional basic income is implicitly seen as sufficient to solve all social problems that the state should take care of.

Is an unconditional basic income the appropriate response to technological advances such as robots and artificial intelligence? The argument that this technological progress destroys jobs, makes work redundant, and reduces the demand for labor is very popular. Therefore, it is argued that unconditional basic income is inevitable. The question, however, is whether paid labor will really be made redundant by artificial intelligence, automation, and robotics. In a milder version of the concerns described above, proponents of an unconditional basic income assume that the loss of jobs due to technological progress is higher than the creation of new jobs. This argument will only be briefly addressed here. There is hardly any valid argument in economics that says that technology leads to permanent unemployment. Technical progress has been around for centuries, and there has never been permanent unemployment. Rather, economic development has always been accompanied by the loss of certain jobs (sometimes entire industries), but this has never led to permanent unemployment. The story of economic progress is one of improving technology and education. However, as technology advances, temporary unemployment can occur. This structural

unemployment can last for a while. Governments can help by providing financial assistance during the period of unemployment and through programs aimed at improving the skills of the unemployed, thereby shortening the duration of unemployment. Hence, the problem is not unemployment, but the duration of unemployment, and it is a challenge to find the right training for the unemployed.

## 7. Conclusions

The introduction of an unconditional basic income in Germany of €1,200 per month for adults and half this amount for children is very costly. The respective payments would be equivalent to one third of GDP. They could not be financed by savings from merging existing social programs but would require massive tax increases. Ultimately, this means a substantial redistribution of income from the middle and upper ends of the income scale downward. Even in an extreme scenario that assumes drastic cuts of other benefits, the remaining financing need would still be higher than the revenue of any of the currently existing taxes in Germany. A financing through the income tax alone would require a massive tax increase with average tax rate well above 50% already for middle-income earners. This could easily create incentives for a black market for labor. If financed through a consumption tax (i.e., value added tax), the massive increase in the value added tax rate would be accompanied by an enormous jump in prices, which would lower the real value of the unconditional basic income toward the current welfare level. Even if the income tax and the value added tax were combined to mitigate the required increase in the tax rate of a single tax, the tax increases would have to be massive. In a scenario that leaves the current pension system untouched, even a tax increase that leads to a doubling of the tax revenue from income and consumption taxes would not be sufficient to finance the demanded unconditional basic income. Financing the unconditional basic income by taxing resources is not an option in Germany because of the lack of funds. Financing the unconditional basic income through wealth or financial transaction taxes would not generate sufficient funds for the state or would involve very high economic distortions. Finally, combining an increase in income and consumption tax with the introduction of a wealth tax and a transaction tax would reduce the burden of each of these taxes to cover the financing needs associated with the introduction of unconditional basic income, but not the overall increase in the substantial tax burden necessary. In sum, this analysis suggests that the price to be paid for the expected positive effects of an unconditional basic

<sup>17</sup> For a discussion of this issue, especially in the context of labor automation, also see Fischer (2020).

income seems to be very high and most likely too high for the benefits it can achieve. This would make the concept an inefficient policy.

What are the alternatives? One alternative would be a lower level of unconditional basic income. However, this would call into question whether it enables a dignified life, as called for by the concept's proponents. Nevertheless, it would be easier to finance it, as previous model calculations for much smaller amounts have shown. The inefficiency argument against the concept would prevail in this case as well. Another alternative would be not to provide universal transfers, but to

develop more targeted poverty reduction programs. In this case, transaction costs and tax distortions are much lower. This means, of course, that such transfers would be conditional, but they would also be more economically efficient and more likely to be politically accepted and perceived as fair. Another alternative that would be preferable from an economic point of view would be cash transfers for the poorest in combination with government spending on education, infrastructure, and health. This would promote economic growth and would be a more market-oriented way to raise the living standards of the poor.

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