

End of previous Forum article

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On the Economics of a Universal Basic Income

Universal basic income (UBI) is gaining momentum worldwide. Switzerland held a referendum on the introduction of a nationwide UBI (which it rejected) in 2016,¹ Finland

1 See Schweizerische Eidgenossenschaft: Volksinitiative für ein bedingungsloses Grundeinkommen, <https://www.admin.ch/gov/de/start/dokumentation/abstimmungen/20160605/fur-ein-bedingungsloses-Grundeinkommen.html>. 77% of the voters rejected the proposal. Most of them missed the clear indication of the level of the UBI and of clarifications of the financing. The intellectual motors of the UBI movement in Switzerland were Häni and Kovce; see D. Häni, P. Kovce: Was fehlt, wenn alles da ist? – Warum das bedingungslose Grundeinkommen die richtigen Fragen stellt, Zürich 2015, Orell Füssli Verlag.

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is currently testing it for some people, and India is considering replacing its welfare state with a UBI.² The UBI is an unconditional cash payment that flows monthly from the state budget to everybody. It is transferred from public to private accounts throughout an entire lifetime, from birth to death, without any application or preconditions to be fulfilled by the beneficiary. It is supposed to cover the socio-cultural subsistence minimum. However, the determination of this minimum level of subsistence is a political and not an economic decision.

The UBI is guaranteed to each member of society as an individual legal claim. It flows independent of employ-

2 UBI: Bonfire of the Subsidies, in: The Economist, No. 9026, 4 February 2017, p. 8.

ment, personal circumstances, relationships or attitudes. No one checks who is living with whom in what kind of relationship or whether there are good or bad reasons for granting a minimum allowance.

The UBI is a complete substitute for all other publicly financed support, and consequently, the social welfare state as we know it would be replaced by one single payment – the UBI. It would be financed by taxes, and not from wage contributions raised from workers' payrolls, as is currently common in some European countries. In its most stringent form, it would be designed as a single universal transfer combining in one single instrument all individual direct taxes and transfers or subsidies flowing from public coffers to individuals.³

The idea of a UBI is not new.⁴ The origins go back to the 19th century. Among the best-known advocates of a UBI in the 20th century were the British economist and politician Juliet Rhys-Williams as well as the US economists and Nobel laureates Milton Friedman and James Tobin. As early as 1943, Rhys-Williams proposed a social security transfer that would cover the minimum subsistence level. For Rhys-Williams, the abolition of a degrading "petition" and the distrustful control by state authorities were the decisive advantages of ensuring citizens' livelihoods without preconditions.⁵

In the 1960s, Friedman developed the concept of a negative income tax as a coupling of income tax and social transfers.⁶ James Tobin developed the "case for an income guarantee" that was based on the negative income tax.⁷ These ideas were further developed by the former Harvard economist Philippe Van Parijs, who brought for-

ward the concept of a UBI and founded the (European) Basic Income Earth Network (BIEN) in 1986.⁸

Why now?

Nowadays, one of the strongest tailwinds for a UBI comes from rapid technological change. For example, Erik Brynjolfsson and Andrew McAfee worry how human work in the "second age of the machine" could withstand robots with artificial intelligence (AI).⁹ The development of robotics and AI may result in a substitution/replacement of the human labour force. A large part of the work now done by people could be taken over by robots. Consequently, jobs will be lost and it remains uncertain how many new jobs will be created to replace them. Thus, concerns are rising about the future of employment, the viability of social welfare and the financial stability of social security systems. Furthermore, tax systems that rely on labour income might come under pressure, because robots do not pay taxes (or make contributions to social security systems). Finally, technological change may result in increased inequality within a society and a stronger polarisation between capital owners and the labour force – especially the lower-skilled workers.¹⁰

Some scholars argue for a kind of "robot tax":

...for the preservation of social cohesion and prosperity, the likelihood of levying tax on the work performed by a robot or a fee for using and maintaining a robot should be examined in the context of funding the support and retraining of unemployed workers whose jobs have been reduced or eliminated...¹¹

However, taxing robots is a misleading economic policy.¹² It would slow technological progress, retard capital intensity and thus negatively affect the competitiveness of workers. Jobs might not be lost to robots but to foreign competitors making use of robots. A "robot tax" would therefore harm the very people it claims to protect. Robots are not the enemy but rather the friend of the work force – they make labour more productive and therefore have a positive impact on wages and competitiveness.

3 See T. Straubhaar: Radikal gerecht. Wie das bedingungslose Grundeinkommen den Sozialstaat revolutioniert, Hamburg 2017, Körber-Stiftung.

4 See Y. Vanderborght, P. Van Parijs: Ein Grundeinkommen für alle? – Geschichte und Zukunft eines radikalen Vorschlags, Frankfurt/New York 2005, Campus Verlag, pp. 14-36.

5 "The State owes precisely the same benefits to all of its citizens, and should in no circumstances pay more to one than to another of the same sex and age, except in return for services rendered." See J. Rhys-Williams: Something to Look Forward to. A Suggestion for a New Social Contract, London 1943, Macdonald & Co, reprinted in: J. Cunliffe et al. (eds): The Origins of Universal Grants, London 2004, Palgrave Macmillan, p. 138.

6 M. Friedman: Capitalism and Freedom, Chicago 1962, University of Chicago Press. For Friedman, the question remained open as "to what extent" and "in what form" state support should be granted to everybody. To be fair, it must be mentioned that Friedman himself did not pursue a UBI concept, but rather a model aimed at employed persons whose own capacity was not strong enough to meet their own needs.

7 J. Tobin: The Case for an Income Guarantee, in: The Public Interest, No. 4, 1966, pp. 31-41.

8 P. Van Parijs (ed.): Arguing for Basic Income. Ethical foundations for a radical reform, London/New York 1992, Verso.

9 See E. Brynjolfsson, A. McAfee: The Second Machine Age. Work, Progress, and Prosperity in a Time of Brilliant Technologies, New York 2014, Norton & Company.

10 European Parliament, Committee on Legal Affairs: Report with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL)), 27 January 2017, p. 4.

11 Ibid.

12 The problems start by defining what a "robot" is. When is a high-tech machine or a computer-assisted automat – like a sophisticated vending machine – a "robot" (that would be taxed) and when is it just a machine or a computer (that would remain untaxed)?

New technologies have always led to a reduction in jobs in the short run but more prosperity in the long run.¹³ Therefore, taxing robots would be shooting oneself in the foot.

Many scholars, such as Nobel laureate Christopher Pissarides, believe it is important to search for more clever strategies to cope with the challenges of digitisation:

...we need to develop a new system of redistributions, new policies that will redistribute inevitably from those that the market would have rewarded in favour of those that the market would have left behind. Now, having a universal minimum income is one of those ways, in fact, it is one I am very much in favour of, as long as we know how to apply it without taking away incentive to work at the lower end of the market.¹⁴

In his last years, British economist Anthony Atkinson was also looking for

new forms of social security. Of these, perhaps the most discussed is the idea of a “citizen’s income” or a “basic income”, whereby a universal benefit is paid individually to all citizens. ... If the EU is to go down the basic income route, then a natural starting point is with an EU basic income for children.¹⁵

In his very last book, Atkinson went a step further by proposing that “there should be a capital endowment (minimum inheritance) paid to all at adulthood”.¹⁶

Finally, it is by no means a coincidence that managers of leading companies in the field of digitisation are very much in favour of an unconditional basic income. They experience daily how unmanned drones replace the postman, clever sorting machines make human hands superfluous and digitalised logistic solutions increasingly eliminate even qualified work, rendering many blue-collar as well as white-collar jobs obsolete. No wonder that Timotheus Höttges, CEO of Deutsche Telekom, said that the UBI “could be a solution – not today, not tomorrow, but in

a society that will go through the fundamental technological change of digitisation.”¹⁷

Compared to a robot tax, a UBI does not focus on the process but on the outcome of an economic activity (i.e. the value added). A UBI would allow the taxation of the total value added and not just the “robot” labour, which would lead to a (negative) distortion of relative factor prices for labour and capital. Taxing value added at the end of the production process just at the moment when value added is leaving the production site and is distributed to the production factors in the form of wages for labour, or interests (or dividends) for capital owners, or profits for the shareholders (or the owners of the robots), looks like the most promising response of the welfare state to “digitisation”. As soon as value added reaches people (i.e. workers, capital owners or shareholders), the treasury should tax the benefits of economic activities (and the outcome of a positive interaction between man and robots). The best response to the impact of robots on jobs and on the welfare state is not to tax the robots but rather to tax the owners of the robots.

Is the UBI economically efficient?

The UBI is an adequate and effective way to adjust the concept of the social market economy to the age of digitisation, globalisation and the long-term trends that go along with a demographically ageing society. It is an efficient reaction to the increasing polarisation between (human) capital owners and less qualified workers who must finance their lives with labour income stemming from low-paid jobs.¹⁸

The social market economy follows a simple principle: it wants to “dissolve a merely imaginary contradiction between liberal and social worldviews in the peaceful way of

13 D.H. Autor: Why Are There Still So Many Jobs? The History and Future of Workplace Automation, in: *Journal of Economic Perspectives*, Vol. 29, No. 3, 2015, pp. 3-30.

14 T. Yamamori: INTERNATIONAL: Christopher Pissarides, a Nobel Laureate, argues for UBI at the World Economic Forum at Davos, Basic Income Earth Network, 6 February 2016, available at <http://basicincome.org/news/2016/02/international-christopher-pissarides-a-nobel-economist-argues-for-ubi-at-a-debate-in-davos/>.

15 A.B. Atkinson: Reducing income inequality in Europe, in: *IZA Journal of European Labor Studies*, Vol. 2, No. 1, 2013.

16 A.B. Atkinson: *Inequality: What Can Be Done?*, Cambridge, MA 2015, Harvard University Press, p. 303.

17 Telekom-Chef Höttges für bedingungsloses Grundeinkommen, in: *Zeit-Online*, 29 December 2015, author’s translation, available at <http://www.zeit.de/wirtschaft/2015-12/digitale-revolution-telekom-timotheus-hoettges-interview>.

18 See T. Piketty: *Capital in the Twenty-First Century*, Cambridge, MA 2014, Harvard University Press. There is a debate as to whether inequality has risen and what might be the reasons for increasing polarisation. However, if robots are replacing workers and are increasing capital intensity and labour productivity, “the good news is that output per person rises. The bad news is that inequality worsens, for several reasons. First, robots increase the supply of total effective (workers plus robots) labor, which drives down wages in a market-driven economy. Second, because it is now profitable to invest in robots, there is a shift away from investment in traditional capital, such as buildings and conventional machinery. This further lowers the demand for those who work with that traditional capital.” A. Berg, E.F. Buffie, L.-F. Zanna: Robots, Growth, and Inequality, in: *Finance & Development*, Vol. 53, No. 3, September 2016, p. 11.

social irenics”, which means with harmonious reconciliation.¹⁹ Freedom and social justice, market efficiency and social equilibrium are not mutually exclusive – indeed, they are mutually dependent.

The simplicity of the basic idea makes the concept of the social market economy so powerful. The main focus lies in the separation of allocation and redistribution. “The fundamental meaning of the social market economy is to link the principle of freedom in the markets with the principal of social balance.”²⁰ A free market economy based on the principle of free allocation of production factors and prices that reflect supply and demand in competitive markets creates the greatest possible value added. Generating the highest value added possible is the most powerful precondition for the socially oriented redistribution from the economically strong to the economically weak.

While the extent of redistribution requires a (normative) political discussion, the (positive) economic analysis can convincingly demonstrate that a “blind” social policy is the most effective, most efficient and thus the most equitable social policy.²¹ An efficient social policy should support people, and not specific factors of production or regional or sectoral industries. Furthermore, it should refrain from paternalistic behaviour and simply flow unconditionally. The fundamental aim should be to redistribute some degree of purchasing power from people with higher incomes to those with lower incomes. Direct individual payments to economically weaker people are more targeted, less expensive and more effective than indirect measures which require the fulfilment of specific criteria, particular preconditions or certain behaviours, for example, the requirement of being employed or at least searching for employment, or the attainment of a specified age.

It is part of the tragedy of a misunderstood social policy that it attempts to reach a political goal with unsuitable means. Social-politically motivated interventions in the markets’ mechanisms are inappropriate. In many cases, they provoke outcomes that are the opposite of what should be achieved. They lead to unnecessary duplicate

structures and an expensive bureaucracy. Many people receive financial support through the current procedure via the social insurance system, only to have that support contradicted through the tax system.

The UBI completely replaces today’s social insurance systems. At first glance, this may appear to be a dismantling of social rights and claims. On closer inspection, however, it becomes clear that such a judgement is based on a fallacy.

Using Germany as an example, the country’s current social insurance schemes are neither efficient, nor do they achieve their socio-political objectives with the required precision. Redistribution is a public good and therefore a (normative) political goal that should be financed by taxes. Insurance is a mathematical calculation. It would therefore be sufficient to ensure that insurance works efficiently and to concentrate on the efficient allocation and management of risks (and not to overload the capacities of insurance with redistribution issues). Fairness and goals of justice should be approached with specific instruments for redistribution – not with insurance. The negative income tax aspect of a UBI completely fulfils this basic requirement of the social market economy concept.

Insurance payments should therefore be calculated according to purely actuarial rules and should be paid by the insured themselves. It is only after this efficiency requirement is satisfied that the social policy component begins: those who are financially unable to pay the individual insurance contribution should receive state subsidies. Inevitably, these state subsidies would have to be financed not by wage levies but by general taxes. And of course, it is a normative question that is up for political debate regarding the kinds of risks a basic insurance should cover and the degree to which public subsidies should allow poor people to pay private insurance fees to cover basic risks.

Even the concept of “equal funding” (meaning that employers and employees are both responsible for similar shares in the financing of social security payments) is misleading. As a technical matter, these payments are indeed split into separate parts – one that goes directly to the worker and another that goes to the social security system. In fact, however, it is always the employee who pays the entire amount, and it is his or her money – and not the employer’s – that flows into the social security systems. From the employer’s point of view, contributions to pension insurance are simply costs, and whether such payments are made directly to the employee in the form of higher wages or into a social security system is immate-

19 See A. Müller-Armack: Soziale Irenik, in: *Weltwirtschaftliches Archiv*, Vol. 64, 1950. Reprinted in A. Müller-Armack: *Religion und Wirtschaft. Geistesgeschichtliche Hintergründe unserer europäischen Lebensform*, 3rd ed., Bern 1981, Paul Haupt, pp. 559-578.

20 A. Müller-Armack: Soziale Marktwirtschaft, in: *Handwörterbuch der Sozialwissenschaften*, Vol. 9, 1956, reprinted in: A. Müller-Armack: *Wirtschaftsordnung und Wirtschaftspolitik*, 2nd ed., Bern 1976, Paul Haupt, pp. 243-249.

21 See M. Hüther, T. Straubhaar: *Die gefühlte Ungerechtigkeit – Warum wir Ungleichheit aushalten müssen, wenn wir Freiheit wollen*, Berlin 2009, Ullstein-Econ-Verlag.

rial. Without “equal funding”, therefore, the gross income of employees would be correspondingly higher.²²

Neither the transparency nor the inefficiency of today’s social insurance is necessary. Social policy measures can be strictly separated into redistribution and insurance instruments. A clear separation into the generation (allocation) and distribution of (market) income would be necessary. It is precisely this separation that makes the social market economy such a successful concept. It is also the core of a UBI.

The UBI follows the principle that economic efficiency and social justice are not opposites. They can be harmoniously combined and, moreover, they complement one another. “The unconditional basic income unites the social with the liberal: it is liberal because it is unconditional, and social because it is for everyone. It is equal for everyone – and at the same time allows everyone to be different.”²³

Like the social market economy, the UBI consistently separates the allocation of income and the distribution of income. It frees the labour market from social-political redistribution tasks. But it also corrects the distribution effects of the labour market. It takes something away from the better-off to give it to those who earn little or nothing.

Freedom, personal responsibility and competition should enable an efficient allocation of production factors. In a first step, a free market economy would allow the maximising of the value added. In a second step, goals of justice, fairness and the guarantee of equal opportunities provide good reasons for a complementary social policy. However, to achieve and to secure social aims is a duty for all and not just a task for the payrolls of lower-paid workers. Therefore, equity and distribution intentions ought to be financed through taxation levied on all kinds of income – i.e. stemming from all different forms of labour and capital income.

The UBI wants to create the best possible (pre-)conditions for people willing to work. If as many people as possible are working in (well-paid) jobs, there are also more

22 For Germany, the concept of “equal” or “parity”-financed social insurance has become a myth anyway. The principle of equivalence has been ignored for decades. The payoffs outweigh the payments by far. Balance is only reached thanks to an increasing inflow of additional public money stemming from taxes (and not from contributions). The tax-financed portion reaches about one-third of total payoffs. See Federal Ministry of Labour and Social Affairs (Bundesministerium für Arbeit und Soziales): Sozialbudget 2015, Berlin 2016, available at <http://www.bmas.de/DE/Service/Medien/Publikationen/a230-15-sozialbudget-2015.html>.

23 D. Häni, P. Kovce: Plädoyer für das Grundeinkommen, in: Capital, 29 September 2015, author’s translation, available at <http://www.capital.de/meinungen/plaedoyer-fuer-das-grundeinkommen.html>.

funds available for the support of the economically weak. That is why everything must be done to enable people to work and earn their own incomes. The UBI empowers people, irrespective of gender, age and preconditions. It makes it easier for people to live according to their own ideas, wishes and norms. Not everyone will take advantage of these opportunities, but at least the options are open to everybody.

The UBI would empower people to more readily take on some risks of daily life. If people are assured that a failure will not lead to a bottomless case of destitution and poverty, and that their subsistence minimum is secured, they will assess future challenges as opportunities rather than threats. This applies to all people, and not just to those who behave in accordance with social norms and traditional values or behaviours. On the contrary, nonconformists often help to see the world through different eyes and from novel perspectives. New ideas and innovative solutions can emerge from the new thinking of outsiders.

The economics of insurance behaviour can convincingly show that insured people are willing to accept more risks.²⁴ And a larger share of risk-takers within the total population correlates positively with the macroeconomic performance of a society. This empirical observation is the justification for compulsory insurance, for example motor vehicle liability insurance or health and accident insurance. However, the positive correlation between being insured and taking more risks also contains sound economic reasons for a state social policy which serves the purpose of securing the subsistence minimum for everybody.

Is the UBI socially fair?

In spite of the radical rhetoric that some proponents use, the UBI is nothing but a fundamental tax reform.²⁵ It unites as a universal payment in a single instrument all personal government transfers (or subsidies) and direct taxes. The UBI follows the concept of a negative income tax and enables a politically determined redistribution goal to be achieved much more precisely than with today’s principle of a tax system combined with a social insurance system. The UBI, in the form of a negative income tax, solves two problems with one simple and transparent instrument.

As Table 1 shows, a UBI would be accurately targeted, as the net tax burden (in euros) increases as people’s incomes rise. And as Figure 1 demonstrates, the net tax

24 See H.-W. Sinn: Risiko als Produktionsfaktor, in: Jahrbücher für Nationalökonomie und Statistik, Vol. 201, No. 6, 1986, pp. 557-571.

25 Regarding the concrete functioning of a UBI, see T. Straubhaar, op. cit.

Table 1
Gross and net income, gross and net taxes, net tax rate

in euros

| | | | | | | | | | | |
|--------------|---------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| Gross income | 0 | 24,000 | 48,000 | 72,000 | 96,000 | 120,000 | 240,000 | 360,000 | 480,000 | 600,000 |
| Gross taxes | 0 | 12,000 | 24,000 | 36,000 | 48,000 | 60,000 | 120,000 | 180,000 | 240,000 | 300,000 |
| Net taxes | -12,000 | 0 | 12,000 | 24,000 | 36,000 | 48,000 | 108,000 | 168,000 | 228,000 | 288,000 |
| Net tax rate | | 0% | 25% | 33% | 38% | 40% | 45% | 47% | 48% | 48% |
| Net income | 12,000 | 24,000 | 36,000 | 48,000 | 60,000 | 72,000 | 132,000 | 192,000 | 252,000 | 312,000 |

Note: Based on assumptions of a UBI of €12,000 per year and a gross (flat) tax rate of 50%.

Source: Author's elaboration.

rate (in per cent) also increases along with income. That means that in both absolute and relative terms, higher incomes are more heavily taxed. The UBI tax-transfer system is progressive, and progressive taxes are regarded as just taxes because the broad shoulders of the economically strong must carry more common burdens than the smaller shoulders of the weak. The UBI thus fulfils the requirements of a fair and just tax system.

The UBI replaces the activating, controlling and thus paternalistic social policy of indirect aid with unconditional direct cash payments. However, this also explains why social bureaucracy and trade unions might oppose a UBI. They would lose influence and power in this new construction of the welfare state. The minimum wage would be replaced by a state-guaranteed minimum income, and the state would no longer have to worry about job creation or unemployment. Active public labour policies would become superfluous, which would save administrative costs.

Direct aid is more economically sensible and socially just than indirect actions, which are always associated with leakage in the form of bureaucracy and false incentives. Indirect interventions in the labour, education, health, insurance or housing markets are comparatively more expensive, imprecise and unjust.

Is the UBI financially viable?

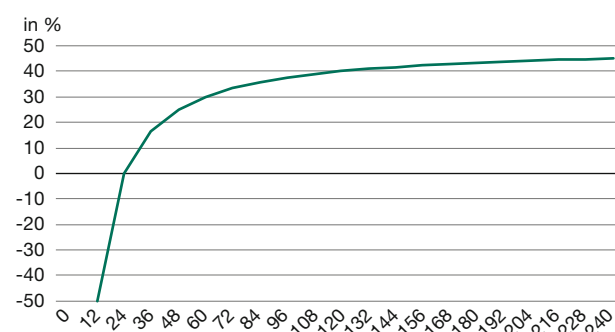
The first and most important question about the financing of a social system is not specific to the UBI, but it must be asked anyway. It is the fundamental question of what expectations a society has of its social system. Once this question is answered, various alternatives have to be examined according to their efficiency and effectiveness in achieving their intended goals. Which instruments best meet the political objectives? It is then necessary to determine via the political decision-making process which costs the population is willing to bear for what kind of wel-

fare state. Only after these questions have been answered should the debate turn to the economic consequences and financial viability of these politically desired objectives.

Determining the UBI level is necessarily a political decision. Economists can only argue that a high UBI would require high tax rates (and vice versa) in order to finance it. And high tax rates normally decrease incentives to work, because they have a negative impact on the available income.

Of course, the question of the financial level and the extent of the subsistence minimum is a controversial and politically charged issue. And it cannot be ruled out that parties could be tempted to promise (unrealistically) high UBIs prior to elections. But this is by no means different from current practices. Competition for the electorate is part of democracy. A population must decide through democratic procedures whether it wants the subsistence level to be high or low, and whether it is willing to accept the consequences of this decision – including the high (or low) tax rates required for the funding of the UBI.

Figure 1
Net tax rate and gross income (in thousand euros)



Note: Based on assumptions of a UBI of €12,000 per year and a gross (flat) tax rate of 50%.

Source: Author's elaboration.

Turning again to Germany, the federal government already presents a “report on the amount of the minimum subsistence level of adults and children to be tax-exempt”, i.e. the minimum subsistence rate, every two years.²⁶ Therefore, the political determination of the subsistence minimum in the context of a UBI would not be new but rather the continuation of long-established political procedures.

A UBI of €1,000 every month is a plausible figure for Germany. It corresponds to today’s expenditure for the social security system. The total public budget for the social state currently runs to about €900 billion.²⁷ On a per capita basis, this amounts to about €11,000 per year – money that would be available to each individual annually via a UBI.

A cross-check with the public income side reveals that €1,000 per person per month seems feasible. If a tax were levied on all German value added, a tax rate of less than, but close to, 50% would be sufficient to finance all public expenditures.²⁸

Admittedly, the €1,000 figure is not the outcome of a sophisticated scientific microsimulation with dynamic adaptation mechanisms to catch behaviour changes of people, companies and politics. Rather, it is a rough back-of-the-envelope calculation to attain a plausible estimation of

what is feasible. The goal is to launch a broad normative discussion about how much society is willing to pay for a social security system, and what risks and opportunities are associated with various alternatives.

Conclusions

The UBI is indeed a radical change of the social system. But it is both fair and liberal. It treats everyone equally. People with higher incomes pay more taxes than people with lower or no incomes – in both absolute and in relative terms. The minimum subsistence level is guaranteed to everybody, and people with no income receive net transfers. They will be supported by society without preconditions. However, assuming a moderate fixation of the subsistence level (i.e. one that corresponds to the current situation), most people would continue to pay more in taxes than they would receive from the public coffers through a UBI.

Although the UBI is neither perfect nor easy nor costless to introduce, it is more worthwhile than ever to contemplate a radical change to the system. While a UBI may still seem utopian to many opponents, sometimes the long-term risks of radical changes are lower than the risks associated with a continuation of the existing system. Holding on to obsolete concepts for too long provokes not only social and political pressures as a consequence of increasing polarisation, but it basically endangers the understanding and acceptance of the concept of solidarity, especially among the younger generation.

Like the social market economy, the UBI reconciles economic efficiency and social security. It is radical, but also just. It is liberal and contemporary. That is why it offers the best social-political prerequisite for “prosperity for all” in the 21st century.

26 See Federal Ministry of Finance (Bundesministerium der Finanzen): 11. Existenzminimumbericht. Bericht über die Höhe des steuerfrei zu stellenden Existenzminimums von Erwachsenen und Kindern für das Jahr 2018, 21 November 2016, available at <http://www.bundesfinanzministerium.de/Content/DE/Monatsberichte/2016/11/Inhalte/Kapitel-3-Analysen/3-4-existenzminimumbericht.html>.

27 Federal Ministry of Labour and Social Affairs, op. cit.

28 Total net value added in Germany was about €2.3 trillion in 2016. See Project Joint Economic Forecast (Projektgruppe Gemeinschaftsdiagnose): Gemeinschaftsdiagnose Herbst 2016, German Institute for Economic Research, 27 September 2016, p. 77.