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Welfare and Basic Income: Theoretical Implication in The Slemrod / Work-Leisure Model, Graphical Interpretation

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Abstract

The present study addresses the problem of basic income (BI), in its two varieties, as universal BI (UnBI) and as unconditional BI (UBI), with a view to the effect on individuals' well-being. For this purpose, Slemrod's general model was adapted and a graphical interpretation based on the standard leisure-time model was made. The use of the specific toolkit of ordinal utility theory makes it possible to identify an unexpected "externalities" - the emergence of a personal and social dilemma that generates crowding out-effect, which is able to eliminate the beneficial effects on the well-being of the introduction of BI into any of its forms, whether universal or unconditional. In this context, a proposal has been made (de lege ferenda), on the adaptation of the structure of the tax system that must incorporate the taxation of robotic labor: to successfully implement the BI conception.

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INTRODUCTION

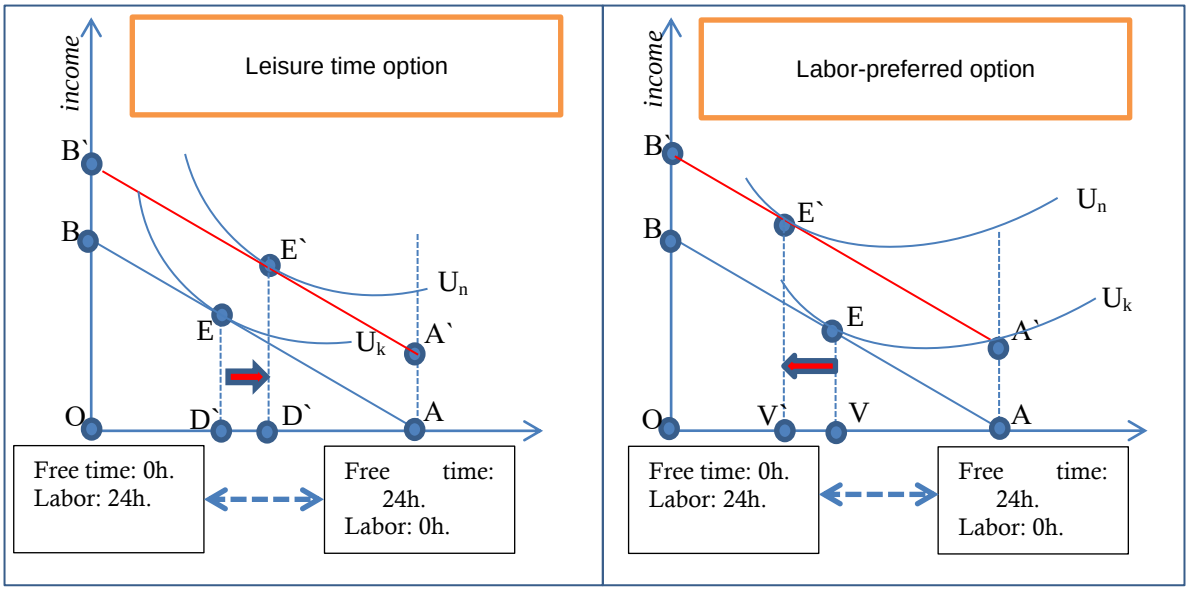
The research is organized as follows: first, the issue of the terminological meaning of the concepts of universal basic income and unconditional basic income is solved. This is necessary since many authors and almost all policy makers do not distinguish between these two forms of basic income, and this is necessary since they have very different meanings, respectively. and impact; and an input mechanism. An extension to the Slemrod model was then made to identify the effect of basic income on individuals' behavior and on their incentives to work based on the conclusions of the study of the choice determined by the introduction of tax through the analytical model. The direction and mode of impact is established, but the question of its effect on well-being remains open. This problem is solved by analyzing based on a graphical interpretation of the standard "leisure-time" model, with a theoretical implication with the introduction of basic income. Thus, the transition from the quantitative to the qualitative method makes it possible to identify not only the effect on well-being, but also to identify the externality that lies in the formation of a social and personal dilemma. The study concludes with the relevant conclusions of the analysis.

First, a terminological clarification. Universal Basic Income (UnBI) is often synonymous with Unconditional Basic Income (UBI). This synonymizing is legitimate insofar as both UnBI and UBI are payments intended to form a level of income defined as 'basic' and (1) equal and (2) for all - whether they are paid work. In this sense, "basic income" is "unconditional" and "universal" (equal). We believe that a difference must be made according to which UBI is a payment regardless of the amount of remuneration. The UBI doctrine is defined as "… the income paid by the government to every full member of society, (1) even if he does not want to work, (2) whether he is rich or poor, (3) with whom he lives and (4) regardless of which part of the country he lives "(Van Parijs, P. (1995) - cited by Sabotinova, 2015). The definition here implies that "… basic income is the income paid by the political community to all its members on an individual basis, without an income test or job requirements" (ibid.). To put it another way, UBI is "revenue neutral". While UnBI is a payment that has a "universalizing" nature, i.e. it is a payment that generates a universal (equal) level of income, defined as 'basic', considering the received transfer payments or other forms of income. Understood in this way, in the case of employees, UBI can be realized through a negative income tax (as suggested by Nobel laureates Milton Friedman, James Tobin, etc.), but it applies only to a certain portion of employees - for those , whose income "covers" the income threshold, defined as "baseline." In other cases, employees (low-income, below a certain base level) or non-working people need to be supplemented with a direct cash payment (from the budget). Because of these significant differences between UnBI and UBI, some researchers view UnBI as a "commons dividend" (Standing, 2019), while others continue to identify it (Haagh, 2018; Bendel, 2019; etc.). In this case, the lack of a unified doctrinal interpretation is not a weakness of theory but is indicative of the multidimensionality and complexity of the phenomenon, as well as its relative novelty (or rather: new reading) and significance.

Second, theoretical accumulations. The idea of basic income - as modern as it sounds, is not new - it is new to read! Thus, according to many researchers, it was erected as far back as 1797 by Thomas Payne, others pushed the border even further back in 1217, referring to some of the productions indicating such an idea in The Charter of the Forest (1217), which, along with Magna Carta, proclaimed on the same day, they constitute the "core" of the British Constitution. The latter clearly indicates that, conceptually, the subject matter of UBI (resp. UnBI) is an integral part of the research for the "common good" as a constitutionally declared value (Beev, 2017): "the first obligation of the state is to make every a child born on its territory to have a good place to live, clothes, food and education until she reaches adulthood" (John Ruskin, 1872), and in 1906 Winston Churchill calls for" a level of income below which we cannot to allow people to live and work"(Sabotinova, 1995). In practical terms, the first to campaign (from 1918 to 1922) for the introduction of basic income was Dennis Miller - in connection with the discussion of the new Poverty Law (ibid., 1995). The following are conceptual proposals by William Beveridge (1942) and Rhys-Williams (1943), which are embedded in the political concepts of British political parties and represent options for integrating personal taxation with the social security system. At the same time, in the United States, the idea of basic income became, as a research problem, the work of Milton Friedman (1943), who considered the possibility of its practical implementation through the technique of negative income tax. In his concept, elements of income-life theory (see above in the statement) are intertwined, which states that Friedman proposes "… the poor pay taxes in years when their incomes reach and exceed tax levels, and in years. when their income is below tax levels, they will be paid the appropriate amounts until they reach a certain minimum level of income '(Sabotinova, 1995). The debate was initiated by George Stigler (1946), Galbraith (1958), James Tobin (1967), Friedrich von Hayek (1979), and many others, also finding political answers - in the face of tax reforms carried out by Presidents Nixon and Kennedy, but the debate on this - and its implications (for example: health care, education, etc.), continues today. Contemporary economic theory in its various schools prioritizes endogenous explanation of business cycle fluctuations. (Nozharov, 2016). Introducing UBI and UnBI is related to income and wealth distribution but it impacts on entrepreneurship, economic growth, respectively. Stressing on determinants of wealth and income distribution is thus highly important (Peshev et al., 2019).

As we enter this debate, we add another argument: the advent of new technologies, and in particular, the ongoing technological revolution, understood as a change in the social nature of production based on robotic labor and artificial intelligence resulting in the release of "living labor". Obviously, this leads to a reduction in income (in all three forms) for workers, for others - it generates unemployment, the risk of poverty and social exclusion, and ultimately affects well-being. This brings up the "agenda" of the question: how will society respond to this challenge? The lack of a clear and timely response - the first on a theoretical and reflective level at a practical level, would lead to "... a collapse in democracy and public relations" (Acemoglu, 2019). In turn, "democracy" as an ingredient of the "common good" (Beev, 2017), defines the importance of this problem - remarkable in this case is that it is not theory but practice that places it on the "agenda" of society. Thus, some of the most wealthy entrepreneurs, such as Mark Zuckerberg (Facebook), Lion Musk (SpaceEx), Richard Branson (Virgin Group), Werner Goetz (DM), etc., recognize the concept of UnBI as a possible answer to the challenges of the technological revolution based on of digitalization and transformation of artificial intelligence-based production. At the same time, public authorities, aware of the importance of the issue, do not remain indifferent to this possibility and conduct controlled experiments with the UnBI (currently limited to a number of governments or municipalities) whose results (at present) are controversial. The reason for this is that the so-called. "Controlled DBM experiments" are conducted in the unreformed public sector and, the unreformed fiscal system. Considered in this perspective, the problem is too trivial: UnBI is the answer to automation, but its funding remains based on classic income taxation and individuals' wealth. The discrepancy is obvious: so, if the need for the introduction of UnBI comes from automation, then the financing mechanism must be tied to it. In other words, fiscal reform is needed to tax robotic labor. This aspect of theory has been elaborated in recent years (Abbott and Bogenschneider, 2018; Bendel, 2019; et al.), But it is "part of the puzzle": the introduction of tax-funded robbery-based UnBI puts a number of social and personal dilemmas. Related to the issues in this chapter, it poses the challenge to interpret how the presence of BASIC INCOME would affect the behavior of businesses and consumers. Put another way: how does the introduction of UnBI change work incentives? The reformulated question points to the possibility of interpreting the answer to the primary problem as a modification of the orthodox "leisure-time" model, with income and leisure time corresponding to the axes (Figure 1 et seq.). We will look at the impact of basic income on labor supply in its two options: as UBI and as UnBI.It has already been stated that UBI is an unconditional payment to everyone, which does not have the character of a community dividend supplement. This means that, regardless of the amount of current income determined by the level of labor supply, the income of each individual increases by a fixed amount. In the graph (Figure 1), this increase in income is reduced to shifting the original budgetary restraint AB in parallel upwards to position A`B`, i.e. the introduction of UBI has (as a first and immediate graphically represented effect) a parallel shift in income (just as with the introduction of a negative specific income tax) - figure 1.

Figure 1. Leisure - Work Model: Introducing UBI



Source: Own Analysis

Thus, the condition of the non-work individuals, respectively. and receive no income is repositioned from A. to A`.; while the condition of those who theoretically receive the highest possible income, using all the available labor time, is repositioned from tb to tb. There is a parallel shift of the

budgetary restriction from B to B` (Figure 1). When analyzing the effect of BBD introduction, it is essential to consider the nature of individual preferences. Thus, if an individual 'values' leisure time higher (i.e. leisure and work income are not perfect substitutes), this implies a 'turning' of individual indifference curves to their preferred good (i.e. leisure) - figure 1, left image. In this case, with the introduction of UBI, it will reduce labor supply - from the OD level to the OD` level, which is determined by the corresponding optimal levels of labor / income distribution - E, resp. E`. Conversely - if labor preferences are surprising, the individual is stimulated to work harder - figure 1, right image (graphical analysis can be done independently), respectively, from AV at level AV`.

Conclusion: The effect of the introduction of UBI on labor supply is critically dependent on the elasticity of the indifference curves. In addition, the graphical model has additional informativeness: the introduction of UBI will increase community well-being - in both options, the new equilibrium is on higher indifference curves, which means that with the introduction of UBI, the Community well-being is necessarily increasing. To this must be added an important behaviorist phenomenon - the increase in labor supply, as an effect of the introduction of UBI, is an effect that is explained by the higher satisfaction with the work performed.

We also test the result through an analytical model, modifying Slemrod's general model (Slemrod, 1998), which examines the behavior of individuals when introducing a tax on labor income. The pioneers in this direction are Allingham and Sandmo (1972), who offer a model of analysis that has become popular as the "AS model", which looks at the comparative statistics of the original model of individual behavior, with the decision to hide Taxes are analogous to the choice of portfolio and its extensions to include socially conscious behavior, taking into account the participation of individuals in the black labor market and tax evasion by companies. Subsequently, Slemrod (1998) adapts the model to a leisure-time model that extends the utility function by incorporating an expense "C" to realize an "A" (avoidance) income reduction. Thus, the maximization problem is:

$$\max_{\{qL;A\}} U[Y; qL] \quad (1)$$

under the condition of income:

$$I = (1\text{-}tx)*w*q_L + tx*A - C + M \quad (2)$$

As shown in (1), the expression for income (2) is supplemented by "tx * A" relative to the expression for income in standard models:

$$I = (1\text{-}tx)*w*qL + Tp \quad (3)$$

In expression (2), the value "tx * A" denotes the "saved" tax; it is reduced by the cost of tax avoidance "C"; and "M" denotes an observable characteristic which, in addition to "Tr" (transfer payments), includes other income whose source is not labor (inheritances, rents, etc.). Thus, on the basis of margin analysis, Slemrod concludes that if marginal tax avoidance costs are less than the additional tax burden that arises as a result of rising income - in turn: due to increased labor time; to compensate for the reduced income, the individual would be inclined to offer more work. In the Slemrod model (as seen in the constructed maximization problem - Expression 1), the elasticity of substitution is crucial, but unlike the standard "work-leisure" model, the actual "behavioral response" (due to tax changes) depends and tax avoidance technology.

In Slemrod's original model, the tax avoidance expense "C" is a function of the amount of labor, the tax rate, and the magnitude of the "desired" tax reduction of the "A" income. Obviously, the latter (A) is an unobservable characteristic, while 'M' is an unobservable characteristic, but limited only to sources of income not obtained because of labor supply. But "M" may also include earnings that are not formally compensated for work - they are different types of "incentives" (such as: vouchers for purchases, discount coupons at certain outlets, sports cards, various types of insurance etc.). After all, the "M" component of the maximization function can include not only the income and "incentives" that are observable, but also various other observable characteristics that are not relevant to income such as gender, educational qualifications, etc.

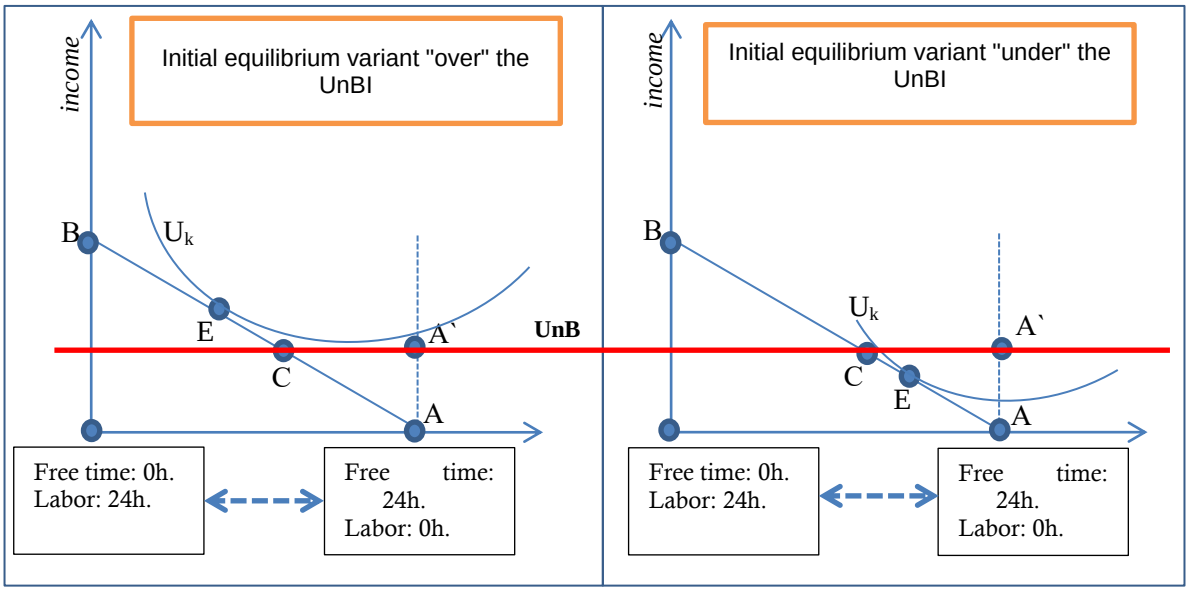
In the current study, we modify the original Slemrod model, with the magnitude of the "desired" tax reduction of income (A) being an unobservable characteristic and (M) an observable characteristic describing other non-labor income; by turning on UBI. In the constructed interpretive model (M), let it consist of only Unconditional Basic Income:

$$I = (1\text{-}tx)*w*qL + tx*A - C + UBI \quad (4)$$

Where "UBI" is income from non-work activities, such as UBI, i.e. this is income where you do not have to make a choice between spending "free time" and "other" goods (for the acquisition, respectively, the consumption of which you must invest some time in labor effort), but at the expense of this affects labor supply. In this statement of modification of the general Slemrod model, the solution to the optimization problem follows the same algorithm, but more importantly: it reaffirms the conclusions made regarding labor supply. In view of the current analysis, however, the more significant conclusion is that BBB is "tax neutral"! Is this also true for UnBI? Let us check this by building appropriate interpretative models that consider the specific difference between UBI and UnBI (see above). The introduction of Universal Basic

Income (UnBI) requires an income test and has the character of a "community dividend". This means that, unlike in the case of UBI, the budget constraint will not be shifted in parallel upwards but will be a combination of the original AB and UnBI budget constraint. Thus, the UnBI as a fixed amount of basic income is represented by a straight line parallel to the axis measuring the amount of labor (Figure 2), which is why the original budget equilibrium AB is modified - the new UBI offset budget constraint is represented by a broken line BCA`- figure 2:

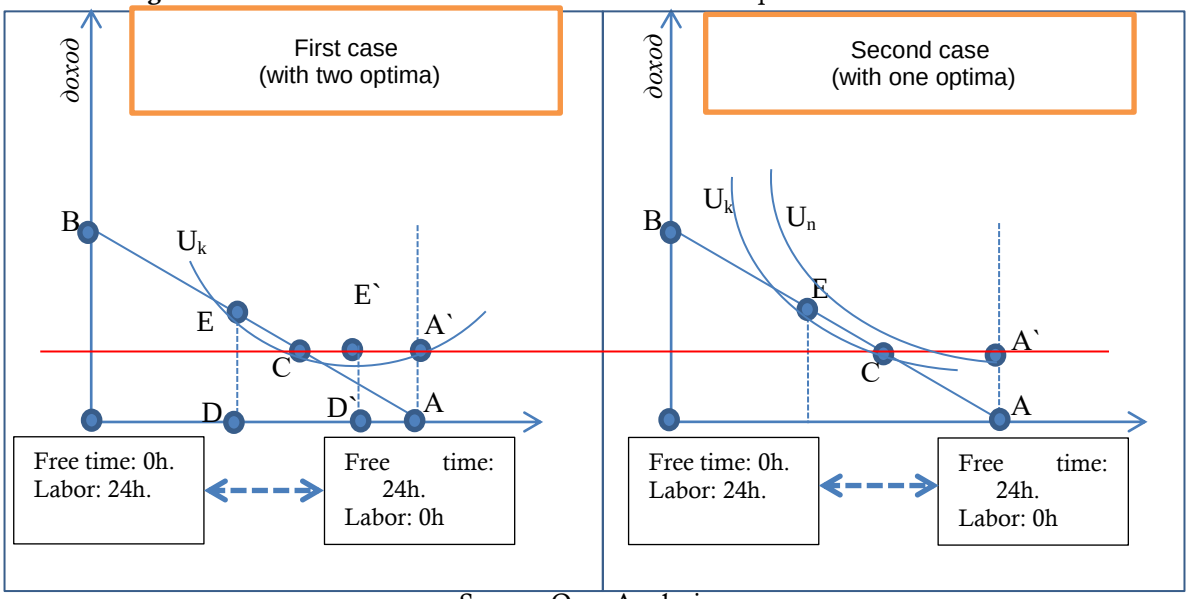
Figure 2. Model „Free time – Labor" – introducing UnBI



Source: Own Analysis

As can be seen from the presented in Figure 2 the new budget restriction is BCA`, where the CA part is offset by UnBI of the original budget restriction, which falls below the level of the basic income generated - this is the CA part. We distinguish between two variants of initial equilibrium - the first variant in which the initial equilibrium is "above" the UnBI and the second variant, in which the initial equilibrium is "below" the UnBI - respectively, the left and right images of Figure 3.

Figure 3. Leisure - work model: variant with an initial equilibrium of "over" UnBI



Source: Own Analysis

In the first embodiment, depending on the nature of the preferences, respectively. the degree of substitution between "work" and "leisure", two cases are possible:

- the first case where the indifference curve Uk touches, except for the original budgetary restriction, and the offset compensated by the UnBI (left image in Figure 3);
- the second case where the indifference curve Uk does not touch the offset of the new budget constraint

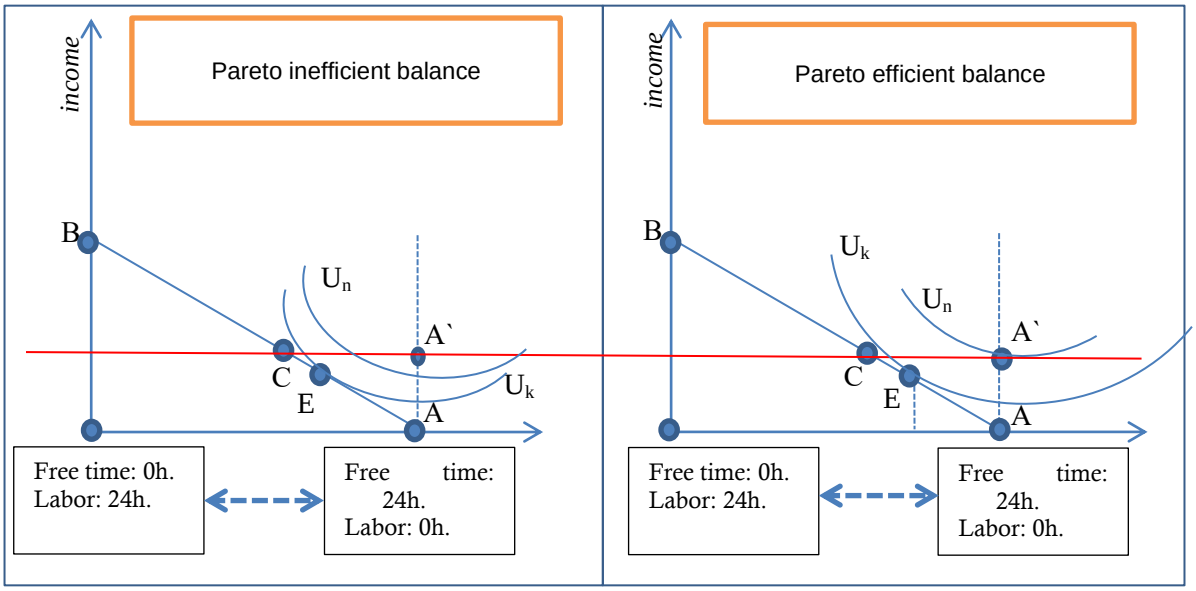
(Figure 3, right image).

In the first case (of Option 1 - with an initial optimum above the UnBI), there are two labor supply optimums simultaneously, illustrated graphically with E and E` respectively (left image in Figure 3). Since these optimates lie on the same indifference curve, the effect of introducing a UnBI is uncertain: an individual can continue to "work for more money" and offer a quantity of work in AD volume (choice determined by E) or prefer to substitute for the difference between UnBI and higher income with more free time, and to offer work in volume AD` (choice determined by E`). The value of this analysis is that it successfully demonstrates one of the aspects of social and personal dilemmas (see above) that the individual faces, proving that, in many cases, the introduction of UnBI Socially imposed behavioral models and community-based behavioral models will be essential for the labor supply! It should be noted that in this case there will be no increase in community well-being since there is no movement to a higher indifference curve.

In the second case (Option 1 - with an initial optimum above UnBI), the individual preference curves are positioned so that the second equilibrium necessarily lies on a higher indifference curve (graphical analysis can be done independently) and is determined by touching (optimal choice) or intersection (not optimal choice) of indifference curves with the offset (by UnBI) part of the budget constraint. In this case, a personal dilemma does not arise: the new point of contact (or intersection) will appear preferred. However, this will mean that the introduction of UnBI has discouraged labor supply! The analysis made shows that the introduction of UnBI has an undefined effect on well-being: in the first case, there is a reduction in the amount of labor offered, giving rise to a personal (and social) dilemma, with no positive impact on well-being; and in the second case, well-being is increasing, labor supply is decreasing, and the new choice may be Pareto-optimal (in the presence of tangent to CA`) or not, but in both varieties, personal (and social dilemma) does not breed.

In the second embodiment, where the initial equilibrium is below the level of the UnBI, two situations establishing the new equilibrium are also possible.

Figure 4. Model "Free time – Labor": variant with initial equilibrium "below" UnBI



Source: Own Analysis

In the first, the new equilibrium is determined by the intersection of a higher indifference curve with the portion of the UnBI offset budget restriction CA` - left image of Figure 4; and in the second case, there is a situation where the new equilibrium is determined by a higher indifference curve that touches the offset portion of the budget constraint CA '(you can do the graphical analysis independently using the models in Figure 4). It is clear that in this situation, in the first case, there is a choice that is not Pareto-effective, and in the second, it is Pareto-effective; but the effects of the introduction of UnBI on labor supply and welfare are identical: in both cases labor supply is being discouraged and welfare is increasing. But it does mean - in both cases, that a social dilemma arises: should society "tolerate" this kind of "optimistic" behavior?

In conclusion: the introduction of UBI in all cases increases community well-being and does not raise social and personal dilemmas, which cannot be said for sure about UnBI. Thus, while looking socially fairer and relatively easier to implement through a negative income tax, UnBI is the less favorable choice for introducing basic income. The analysis underlined the importance of the problem of 'basic income', making it clear why this concept is still in the 'experimental phase'.

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