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VAKGROEP ARBEIDSECONOMIE

A GUARANTEED BASIC INCOME AS A CULTURAL POLICY*

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ABSTRACT

In this paper we investigate how a universal and unconditionally guaranteed "Basic Income", financed by a higher income tax rate, can also help to remedy the so-called Baumol Disease concerning the production of the arts, on the one hand, as well as the problems, raised in the Linder Theorem with regard to the consumption of arts and culture, on the other hand.

Using a neo-classical time allocation model, we show that a basic income system increases the output of both the formal and informal production of the arts, and promotes the consumption of arts by lowering the shadow price of time.

1. Introduction

Almost everybody agrees that the production and consumption of arts cannot be left just to the market. We expect government to subsidize arts and artists.

One of the major policy problems, however, is to decide which artist or performing arts company should receive government support. We expect government to answer questions like: what is art and what is not? Who is a valuable artist and who is not? Although there can be little doubt for a number of renowned artists and companies, the problem rises when new talents and experiments are queuing up for subsidies.

There are, without any doubt, a lot of people who would prefer to devote part of their lives to the art of writing, painting, sculpturing or whatever. However, the insecurity of an artistic career forces them to stick to their boring but well paid nine-to-five jobs. How many talented people never got a chance to produce their masterpieces this way ?

Informal contacts with individual artists in Belgium, during a research project on the labor market impact of a universal and unconditionally guaranteed basic income (see S. Késenne, 1990), revealed that also many were in favor of this idea. They strongly believed that many artists would withdraw from the labor market in order to invest more time in their artistic careers, if they were entitled to a minimum guaranteed income.

In this paper, we investigate the possible impact of the introduction of a basic income on the production and consumption of arts, using a simple consumption and labor supply model. We do not discuss the desirability of a basic income as such or its shortcomings and merits as a measure for solving other problems like poverty or unemployment. The paper is organized as follows: in section 2 we specify a general time allocation model and discuss the basic income impact. Since some of the

outcomes seem to be theoretically undetermined, we assume, in section 3, that preferences as well as consumption technology follow a simple Cobb-Douglas structure. The paper ends with a short conclusion in the final section.

2. The Basic Income Impact on Time Allocation...

The static time allocation models, as proposed by Becker (1965) and Gronau (1977), have introduced the time intensity of consumption and informal home production into the neo-classical consumption and labor supply theory. Our model is heavily based on their models, but in addition introduces the choice between market labor that offers a certain degree of job satisfaction but is paid less, on the one hand, and market labor that leaves the worker indifferent, on the other hand.

We assume that the work of an artist or the production of art can take the form of an informal activity, but also of a formal job with a lower market wage. The lower wage is caused by the difficulty of productivity increases in arts production compared with other sectors of the economy. cfr. Baumol and Bowen, (1966). The artistic work, however, offers more job satisfaction to the artist than a conventional job.

We therefore start from a well-behaved utility function for the representative consumer-employee, which attaches a positive but decreasing marginal utility to a composite of consumption goods, which can be bought on the market (q) or produced informally ($f(k)$). Also leisure time (l) and the time devoted to the more satisfying job (b) enter the utility function under the same conditions; i.e.:

$$(1) \quad u = u (q + f(k), l, b)$$

where $f(k)$ is a household or informal-production function with $f' > 0$ and $f'' < 0$.

The income and time restriction, people face in maximizing their utility, can then be written as follows:

$$(2) \quad q = wh + \mu wb + y \quad 0 < \mu < 1$$

$$(3) \quad l + k + b + h = T$$

where w is the real wage rate for conventional market labor h ; μw is the real wage rate for the production of arts; y is the non-labor income and T is the total time available to the consumer-employee. Since labor time h is not included in the utility function, meaning that the marginal utility of h is supposed to be zero, the income and time restriction can be rewritten as:

$$(4) \quad q + wl + wk + (1-\mu)wb = wT + y$$

The income-time budget that appears on the right-hand side of this constraint is the so-called full-income. One can also derive from this equation that the wage rate is the most important variable, determining the shadow-price of any alternative use of time.

We also assume that cultural activities and the consumption of arts are on average more time-intensive than other consumption activities, and that the elasticity of substitution between time and goods in cultural activities is relatively small. Linder (1970) and Baumol (1973) already showed that, under these assumptions, the rising living standard, measured by the real wage rate, will lead to a decline of the demand for cultural activities, due to the increase of the relative price of time. In this sense function (1) can be seen as a combination of preferences $u^*(a,b)$ and consumption

technology:

$$(5) \quad a = a (q + f(k), l)$$

which tells us that the consumption activity (a) can be "produced" with an input mix of goods and time.

The first-order conditions for a optimal allocation of time in this model can now be written as:

$$(6) \quad f' = w = u_l/u_q = u_b/u_q(1-\mu)$$

The first equality indicates that the amount of time, devoted to informal work, (k) depends on the wage rate and the marginal productivity of informal work; the lower the market wage rate, the more informal work will be done.

The well-known equality between the money value of the marginal utility of leisure time (l), in money terms, and the real wage is given in the second equation.

The last equation indicates that people are more willing to change jobs, if the new one offers more job satisfaction, and if the wage difference with the more financially rewarding old job is smaller.

We now define a simple basic income scheme and try to analyse how the informal (arts) production and the supply of market labor in the cultural sector will be affected.

We assume the basic income scheme to consist of an unconditional grant (G), a lump-sum transfer which is financed by an additional tax rate (t) on total income. This means that, by the introduction of a basic income, full-income in equation (4) becomes:

$$(7) \quad G + (1-t)(wT+y)$$

i.e. a decrease of the real wage rate and a most likely increase of non-labor income.

The value of the additional tax rate is crucial in order to know how full-income is affected by the basic income scheme. If the grant has to be fully financed by the tax increase, i.e. if:

$$(8) \quad t = G / (wh + \mu wb + y)$$

it is clear that full-income will come down.

On the basis of the first-order conditions (6) and the budget constraint (4), what will be the effect of a basic income on the optimal allocation of time ?

- The representative consumer-employee will devote more time to informal production. Since the real wage rate is coming down, also the marginal productivity of informal work must be lower, meaning that k has to increase. If much informal work is spent on the production of arts, cultural output will increase.

- One can also derive that the ratio between leisure time and goods (l/q) will come down, but only if utility function (1) is homogeneous. Since the marginal rate of substitution between leisure time and goods has to be lower, the time-intensity of consumption activities will increase. Under the homogeneity assumption, the income effect of a wage change will not alter this outcome. If arts consumption is more time-consuming than other consumption activities, this conclusion means that the demand for the artistic goods and services will increase. A basic income, by changing the structure of total income, reduces the relative (shadow-) price of time and reverse Linder's (1970) reallocation of time to the disadvantage of cultural and other time-consuming activities.

The impact of a basic income on the supply for market labor is theoretically undetermined, as well for the boring job as for the more attractive one. This results is not unexpected and follows from the undetermined wage effect on labor supply, although empirical research has sufficiently shown that the wage effect on market labor supply is positive.

In the following section, we therefore start from a simple specification for preferences and technology that fulfils the conditions of well-behaved utility and technology functions, and also guarantees a positive wage effect on market labor supply.

3. ...Using a Simple Model Specification

A slight modification in the model is made, in order to capture the informal production of arts in a more convenient way. Arts production happens to be an informal work activity for a number of people. This informal work can be partly paid for, e.g. by selling some of its products, but it can also save money, because people need not buy the products of their informal work on the market; e.g. people can decorate their homes with their own works of art. We therefore introduce a (shadow) income from informal work as an exogenous variable in the model. This implies a constant marginal productivity of informal work, contrary to the Gronau-approach. Also different from the Gronau model is the appearance of the informal worktime in the utility function with a positive and decreasing marginal utility, similar to the more satisfactory market labor category.

We chose a Cobb-Douglas specification for the utility function and the consumption technology, because this specification has the advantage of being simple and to fulfil at least the basic properties of a well-behaved consumption and labor supply model. This specification also

guarantees a positive wage-elasticity of labor supply, a property that already enjoys enough empirical support in the literature.

The time-allocation model in the previous section can then be rewritten as follows:

$$(9) \quad \max \quad u^o = a^\beta \quad k^\gamma \quad b^\epsilon$$

$$(10) \quad \text{sub} \quad a = q^\alpha \quad l^{1-\alpha}$$

$$q + wl + (1-\mu)wb + (w-v)k = wT + y$$

where v represents the (shadow-)wage of informal work and α , β , γ and ϵ are constant parameters with positive values between zero and one. We assume v to be smaller than the market wage; its value is not written as a fraction of w , because the (implicit) earnings of informal work are supposed to be tax-free. (cfr. *infra*)

Solving the first-order conditions for an optimal time allocation yields the following system of demand equations:

$$(11) \quad \begin{aligned} l &= (1-\alpha) \beta \quad (T+y/w) \\ k &= \gamma \quad w/(w-v) \quad (T+y/w) \\ b &= \epsilon/(1-\mu) \quad (T+y/w) \\ q &= \alpha \beta \quad w \quad (T+y/w) \end{aligned}$$

We now analyse how a basic income will affect the allocation of time in this model. It is obvious that the wage rate (w) will be lowered by the additional tax. The ratio between the unearned income and the wage rate (y/w), however, will rise after the introduction of a basic

income, i.e.:

$$(12) \quad \frac{(1-t)y + G}{(1-t)w} > y/w$$

It follows from demand system (11) that:

- a basic income will have a positive effect on the time spent on informal work production, including the informal production of arts. This could already be concluded from the more general model in section 2.

- a basic income will also increase the supply of market labor for jobs that offer more work satisfaction, even if they are paid less. It means that also the market sector of arts production, with its well-known productivity lag, will get better chances to survive under a basic income scheme. A basic income turns out to be a possible cure for the so-called Baumol's disease.

- a basic income will promote the consumption of arts through a decrease of the relative price of time, indicated by the real wage rate. According to the (modified) Linder Theorem (Baumol, 1973), this will reverse the negative effect of the rising labor productivity on the time-intensive consumption of arts and culture. From demand system (11), it can be seen that the demand for leisure (1) will increase, but also that consumption activities will generally become more time-consuming.

$$(13) \quad q/l = \alpha w/(1-\alpha)$$

Although the basic income effect on the demand for

consumption goods is not clear, this equation shows that the ratio of goods over time (q/l) will decrease. A basic income will slow down the hectic pace of life of Linder's (1970) Harried Leisure Class.

4. Conclusion

In this short paper, we have tried to show that the introduction of a basic income scheme, by changing the composition of people's income, can exercise a positive influence on the consumption as well as on the production of arts. It is clear that the universal character of a basic income also solves the problem of the subsidizing government authority that has to decide who is entitled to the financial support.

These favourable results for the arts sector do not exclude that we are aware of the possible drawbacks and emerging problems of such a basic income scheme in general; neither did we discuss other possible advantages of the system. The few thoughts in this paper offer only one element of some importance if the cultural sector has to take up a position in the European discussion on basic income.

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