

The Worry about Wealth: Minimum Wage Rate and Unemployment Benefits to the Rescue?

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Abstract

This paper mainly serves to further develop a very simplified theoretical model of a market economy and critically discusses the strong assumptions applied there. The dynamic model takes a system perspective in terms of interdependent stocks and flows and tries to incorporate potential effects of technical change in terms of product and process innovation. Corresponding equations are applied in discrete time steps to provide potential growth paths of the economy. This paper focusses on simulations that provide downturns. It extends the referenced framework in order to incorporate unemployment benefits and a minimum wage rate. The minimum wage rate may positively affect stability in the labour market, while unemployment benefits positively affect stability at the goods market. The final effects and corresponding evolutions are illustrated for different scenarios. The discussion of these results and the way they are generated hints on the potential and limits of qualitative models. While simplification, determinism, and apparently arbitrary settings may be criticized for good reason, an approach like the applied at least serves to emphasize the importance of a micro-foundation that starts at the level of the formation of needs and expectations.

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This paper mainly serves to further develop a very simplified theoretical model of a market economy and critically discusses the strong assumptions applied there. The dynamic model takes a system perspective in terms of interdependent stocks and flows and tries to incorporate potential effects of technical change in terms of product and process innovation. Corresponding equations are applied in discrete time steps to provide potential growth paths of the economy. This paper focusses on simulations that provide downturns. It extends the referenced framework in order to incorporate unemployment benefits and a minimum wage rate. The minimum wage rate may positively affect stability in the labour market, while unemployment benefits positively affect stability at the goods market. The final effects and corresponding evolutions are illustrated for different scenarios. The discussion of these results and the way they are generated hints on the potential and limits of qualitative models. While simplification, determinism, and apparently arbitrary settings may be criticized for good reason, an approach like the one applied at least serves to emphasize the importance of a micro-foundation that starts at the level of the formation of needs and expectations.

1 Introduction

Technological progress constantly extends the portfolio of goods as well as it changes the production structures. The dynamic model of Scheuer (2016) correspondingly tries to incorporate the different effects of process and product innovations in a simplified system perspective on an economy. Process innovation, as it is defined there, increases productivity. It thereby reduces the amount of labour necessary to produce a single unit of output and implies a threat to employment. Despite any loss of employment in the model is shared equally among the society, productivity gains may not be sufficiently reflected in a corresponding increase of real wage rates. If they are not, a lack of demand may force the economy into a recession. This may be prevented by product innovation. The latter affects the economy in two ways. On the one hand, the invention of new goods may stimulate consumption. On the other hand, the anticipated sale of new goods promotes investment and thereby stimulates labour demand in the first place. Product innovation therefore may be able to trigger the reallocation of labour discharged by process innovation. It is the fruitful mixture of both types of innovations then that keeps the economy on a stable and continuous growth path.

It is plausible to incorporate technical change as the trigger for economic growth just as well as other incorporated assumptions are plausibly argued in the referenced paper. The way of incorporation and its influence on stability, though, requires a second and more detailed look. Product innovation increases expectations of corporations as well as it increases needs of households. An increase in needs at given wage rates and prices promotes an increase in labour supply. Therefore, in order to prevent the economy from an excess supply of labour an increase in labour demand has to equalize or excel the sum of labour discharged due to productivity gains and any additional growth in labour supply. That preventing unemployment is that crucial for stability is implied by another crucial and partly uncommon assumption of the model. Labour supply increases with a decrease in the wage rate. A decrease in the wage rate in turn is implied in case of an excess supply of labour. The labour market, as it is modelled, therefore exhibits a lack of stability.

This paper further develops this approach in order to critically discuss it while investigating the influence of two types of social policies. A minimum wage rate directly prevents the wage rate from falling beneath a certain level. It thereby implies an implicit barrier to the potential loop downwards. Unemployment benefits in turn do not directly affect labour market outcomes. Instead they just prevent a tremendous fall in income and demand for consumption goods. Both is argued as well as illustrated later in this paper.

This paper is organized as follows: First, the next section summarizes the model and argues slight adaptations made in comparison to the reference. The third section applies the model in a simulation of discrete time steps and discusses the results generated. Finally, some conclusions are drawn. A conclusion the reader should keep in mind already now, is that the model abstracts from important details of reality and applies very strong assumptions.

2 The model

The model tries to connect elementary assumptions of economic theory in favour of a simplified but coherent system perspective. While a detailed argumentation of the model can be found in Scheuer (2016), this section gives a short overview on the dependencies incorporated and the circular flow generated thereby. In addition and in favour of consistency all equations and a register of variables are specified in the appendix (see tab. 1). The model applied in this paper captures just two minor practical improvements, while the key considerations still completely correspond to the reference.

2.1 Verbal sketch

One main idea is that economic activity is motivated by needs and serves their satisfaction. Needs are captured in real terms. They define the amount of a representative consumption good desired by households. Whether needs and final demand coincide depends on the funds available to the households and the actual price of the representative good. Households finally demand not more than they can afford and not more than they need. The minimum of demand and supply of goods determines consumption. Consumption together with actual prices determine sales of corporations. The excess of sales over costs determines profits. Profits determine dividends as one source of income received by households. Dividends, the supply of goods and the demand for labour all also depend on the expectations of corporations. Expectations are captured as a rate of change. It is determined by past consumption growth on the one hand and by product innovations on the other hand. The influence of product innovations can be interpreted as a measure for optimistically awaited consumption growth. Positive expectations therefore imply additional investment, which at large parts are financed by loans granted on basis of a proportional growth in the monetary base. The rate of change representing expectations therefore does not necessarily have to coincide with the growth in labour demand. Just like households also corporations demand not more than they can afford and not more than they need. The amount of labour needed in order to produce the pursued level of output also depends on productivity. Productivity in turn may increase due to process innovation, which implies a decrease in labour demand per unit

produced. At the same time the amount of labour affordable does not only depend on funds available to the corporation but also on the actual wage rate. Like the price for goods also the wage rate changes according to the ratio of supply and demand. Both prices increase due to an excess in demand and decrease due to an excess supply. Labour supply in turn depends on needs in the first place. Needs and prices determine the desirable level of the income received by households. What is not provided by dividends has to be earned in the form of wages. Dividing this residual by the wage rate implies the amount of labour offered to the market. The minimum of labour supply and demand determines employment. Employment together with wage rates then determine labour costs complementing the income received by households. Total income then represents the only inflow to the funds of households which can be interpreted as the budget constraint for the initially mentioned final demand as the only incorporated opportunity for satisfaction of their needs. Needs, finally, may grow due to product innovation as long as labour supply does not occupy all the time available to households and thereby does not leave time for further satisfaction in the first place.

The model applied here slightly differs from the cited reference in two points (cf. Scheuer, 2016, p. 10). First, the growth rate of the monetary base is determined symmetric to the formation of expectations. The main reason for adaptation is that the results should not depend on barriers implied by an insufficiently incorporated financial sector. Secondly, the formation of needs now follows a linear function instead of an exponential one. This may not only be helpful for a more analytical discussion of the model in corresponding proceedings. Already for numerical simulations and a corresponding application of the set of equations it seems to be a very useful reduction of complexity.

2.2 Timeline of events

Applying the equations in discrete time steps means that after a first exogenous setup the development of the economy is endogenously determined by a fixed order of procedures:

- technological change occurs, labour productivity may increase (see eq. 1) as well as needs and expectations may grow (see eq. 2, 3)
- the price of the consumption good adapts (see eq. 4) as well as the wage rate adapts (see eq. 5), optionally held above a minimum (see eq. 6, 7)
- dividends are paid (see eq. 8), monetary base grows (see eq. 9), loans are granted or repaid (see , 10, 11), corporate funds adapt (see eq. 12)

- labour demand, labour supply and employment are determined (see eq. 13, 14, 15)
- output is determined and increases inventory (see eq. 16, 17)
- labour costs and income are determined (see eq. 18, 19), optionally including benefits (see eq. 20, 21, 22), funds of households as well as corporations adapt (see eq. 12, 23)
- goods demand and supply are determined (see eq. 24, 25)
- consumption is determined and decreases inventory (see eq. 26, 17)
- sales are determined and funds of corporations as well as households adapt (see eq. 27, 23, 12)
- profits are determined (see eq. 28)
- savings are determined and increase deposits as well as decrease household funds (see eq. 29, 30, 23)

3 Dynamic examination of the modelled system

The simulations always start from an exogenously set steady or even stationary state. The corresponding starting values can be found in the appendix (see tab. 2). Starting in an apparent equilibrium of stocks and flows does not automatically imply that the rest of the parameters promote a stationary or at least steady state in future periods. In Scheuer (2016, pp. 11-13) there is a more detailed discussion on steady states and correspondingly necessary conditions. In the following this paper focusses on settings that did not generate economically desirable steady states in the long run.

3.1 Lack of optimism

In the first case analysed the apparently inexorable downturn mainly originates in the low value set for rigidity. Rigidity as it is incorporated in the model not only prevents prices for goods and labour from big adaptations within one and the same time step. The parameter called rigidity is also applied for the formation of expectations (see eq. 3). The variable of expectations is incorporated as a rate of change. It captures the expected change in consumption. For corporations, consumption determines what may be sold and therefore what is worth to be produced. Rigidity as a parameter hereby weights the prospects about growth implied by product innovation against the prospects implied by consumption growth observed in the past. Rigidity therefore somehow describes the optimism of corporations about whether their product innovations are able to correspondingly trigger the needs of households. The determination of needs, though, does not consider rigidity as a parameter (see eq. 2). A low rigidity therefore may cause expectations

about consumption growth to lag behind the growth of needs. While expectations determine labour demand of corporations, needs determine labour supply of households (see eq. 13, 14). A lack of optimism therefore may induce the initially mentioned vicious circle on the labour market: excess labour supply provokes a fall in the wage rate which in turn provokes an increase in labour supply again and so on and so forth.

The simulation of a corresponding scenario is already illustrated in the course of the reference (cf. Scheuer, 2016, 14, fig. 2). An application of the actual version of the model provides the same main results. The vicious circle on the labour market instantly affects the goods market. Low wage rates induce a fall in labour income. Despite an increase in needs then consumption decreases and provokes even lower expectations.

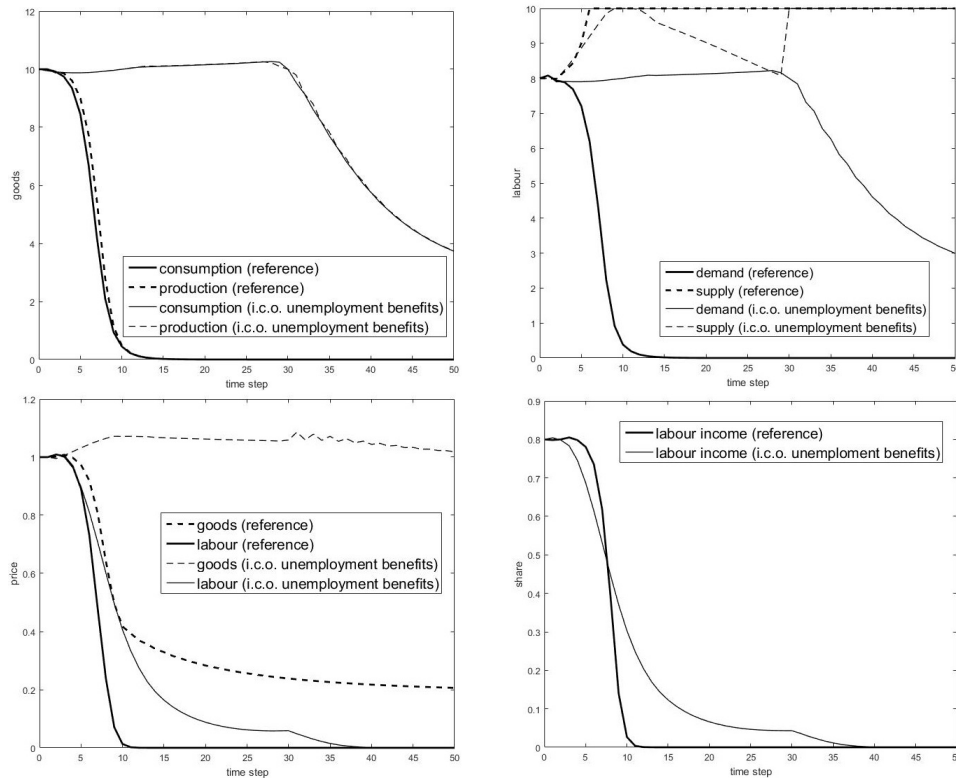


Figure 1: Effects of unemployed benefits in case of a lack of optimism (see tab. 3)

Unemployment benefits are not able to totally prevent such a vicious circle (see fig. 1). They are able to delay the downturn at the goods market as they partly prevent a lack of demand due to dispensed labour income. They cannot prevent the wage rate from falling, though. In addition, unemployment benefits decrease together with the wage rate as they are determined as a proportion of the latter (see eq. 21). The model considers households

as an entity that forms and satisfies its needs on aggregate level. The fall in labour income and unemployment benefits then may be compensated by an increase in dividends. Dividends are paid according to profits and past consumption growth (see eq. 8). To this effect, the observable decrease in labour income share implies that the income of households depends even more on the stability of the growth path. One challenging period therefore may suffice to finally induce the expected downturn. In case of a lack in optimism unemployment benefits therefore do not provide a long-term solution. They may temporarily serve to fight symptoms, but do not address the origin of the problem.

In addition, it has to be remarked that the model treats unemployment benefits like an extra income unconsidered in decisions other than those about demand for consumption goods (see eq. 22). It is generated just by the will of the public sector in order to prevent the deflationary downturn at the goods market. It somehow may be interpreted as extra money printed by the government and directly transferred to the unemployed. The considerable role of this new source of income is implicitly reflected in the even earlier decrease of the labour income share.

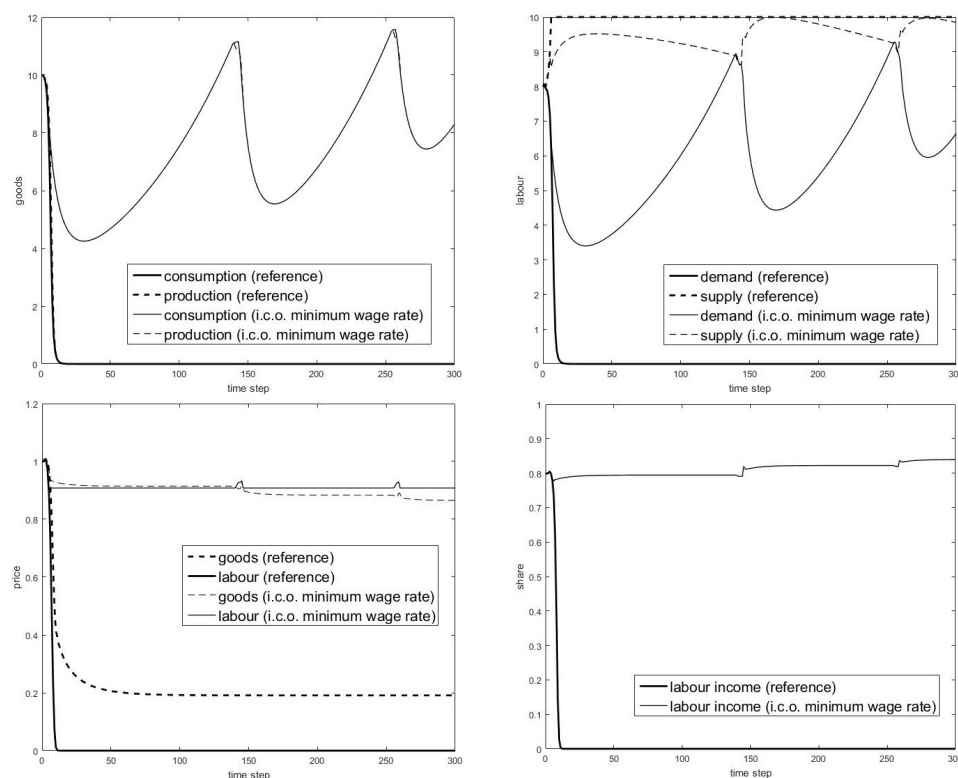


Figure 2: Effects of a minimum wage rate in case of a lack of optimism (see tab. 3)

The incorporation of a minimum wage rate in contrast is able to prevent the labour income share from an ongoing fall (see fig. 2). It directly puts a lower limit to the wage rate and therefore may stop the induced downturn at the labour market. At the same time it is not able to prevent the lack of demand implied by the loss of income in the beginning of the recession. Instead the minimum wage rate just prevents some extent of damage and allows the economy to recover.

The economy thereby asymptotically approaches the maximum level of production and consumption determined by the exogenously set maximum of labour supply and constant productivity (see eq. 14). The growth path, though, cannot be called a fruitful one. The recessions are long, deep and repeated.

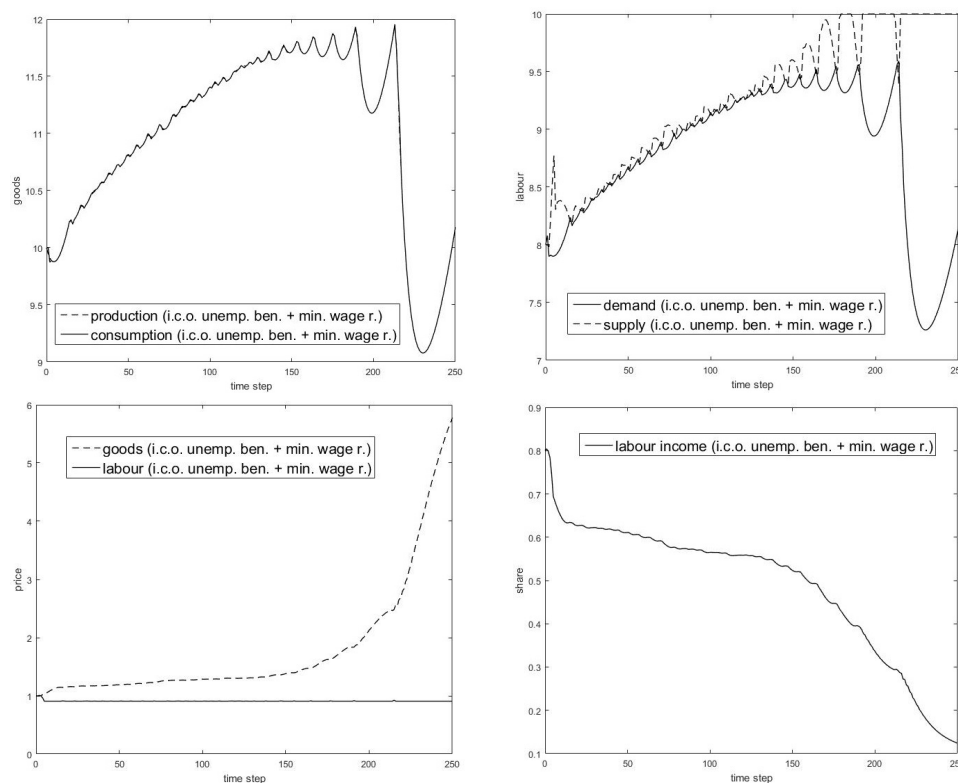


Figure 3: Effects of a minimum wage rate and unemployment combined in case of a lack of optimism (see tab. 3)

Applying a minimum wage rate and the previous concept of unemployment benefits together indeed seems to prevent the economy from an overall downturn for a remarkably long time (see fig. 3). The minimum wage rate to some extent helps to stabilize the labour market while unemployment benefits help to stabilize the goods market.

However, in the very long run instability and a cyclical downturn oc-

cur. It is announced by a remarkable increase of inflation and a fall in labour income share. Both may be the effect of an increase in the total of unemployment benefits. As unemployment benefits are determined as a proportion of the wage rate, the minimum wage rate prevents them from decreasing in level. This deposits in the stock of extra money which may be interpreted as public debt. Illustrating the evolution of public debt relative to nominal production therefore implicitly shows the evolution of public expenditures for the unemployed (see fig. 4). These expenditures increase in the end, when instability reoccurs, as well as in the very beginning, before the minimum wage rate promotes stability at the labour market in the first place.

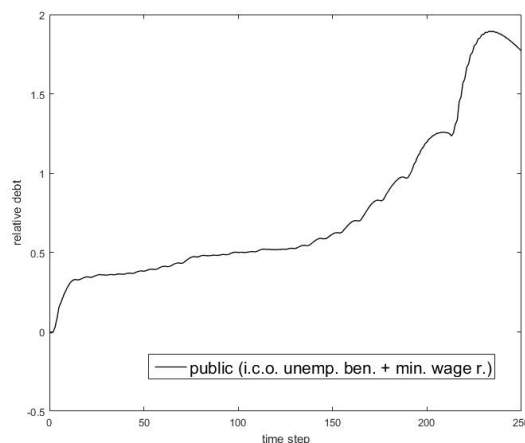


Figure 4: Effects of a minimum wage rate and unemployment benefits combined in case of a lack of optimism (see tab. 3)

The recession in the very beginning hints on a further detail of the issue special to the actual version of the model. As mentioned before the potential for instability origins in the assumption that labour supply increases with decreasing wage rates, while wage rates decrease with an increase in labour supply. The implied instability does not occur as long as there is no excess supply of labour. In the scenario above the economy is not able to do so and a short disruption triggers the vicious circle. So far the low set parameter of rigidity seems to be the problem. The low set parameter of rigidity implies that expectations strongly depend on past consumption growth. A short disruption therefore suffices to provoke corporations to form pessimistic expectations and stick to them. The question now, though, is: what is the cause for the short disruption in the first place. It is not implied by a low set parameter of rigidity alone. In the selected starting point, rigidity does not affect the formation of expectations at all – past consumption growth is assumed to coincide with the awaited increase in consumption implied by product innovation (see tab. 2). Therefore, at least

in the very beginning it rather is the formation of needs that provokes the disruption and thereby the downturn of the economy. The relatively low ratio between labour supply and totally available time implies that product innovation increases needs more than expectations (see eq. 2). In the end it remains just a numerical simulation of very simplified equations argued by very strong assumptions.

3.2 Lack of requisition

In the second case analysed the apparently inexorable downturn mainly originates in the mixture of innovations. Process innovation increases productivity step by step, while there is no product innovation to stimulate needs and expectations (see eq. 1, 2, 3). This means that needs remain constant and thereby do not favour consumption growth. Past consumption growth in turn is the second incorporated determinant of expectations besides the absent product innovation. Without any expectation of growth and facing an increase in productivity labour demand is condemned to fall (see eq. 13). The scenario therefore describes the case where the requisition for labour continually declines. The excess supply of labour then causes a fall in the wage rate. By assumption households try to compensate the fall in the wage rate by an increase in labour supply (see eq. 14). As the wage rate further declines with an increase in labour supply the labour market finally finds itself in the loop downwards already discussed in the previous sections.

The simulation of a corresponding scenario is already illustrated in the course of the reference (cf. Scheuer, 2016, 15, fig. 3). An application of the actual version of the model provides the same main results. The vicious circle on the labour market instantly affects the goods market. Low wage rates induce a fall in labour income. Despite constancy in needs then consumption decreases and provokes even lower and finally negative expectations. Labour demand therefore declines even more than the increase in productivity alone would imply.

In this case not even a highly set minimum wage rate is able to stop the downturn (see fig. 5). A minimum wage rate is able to limit the induced increase of labour supply as it prevents the wage rate to fall beneath the exogenously set minimum. This measure in favour of stability at the labour market affects the income and thereby the outcome at the goods market. However, it just dampens the fall of production and consumption, but is not able to stop it. In absence of product innovation expectations are driven by past consumption growth solely (see eq. 3). Therefore, the modelled economy has to prevent a situation where consumption growth becomes negative in the first place. This means that the economy has to prevent the demand for consumption goods to fall.

Unemployment benefits are the tested measure that directly affect the demand for consumption goods. The decrease in production and consump-

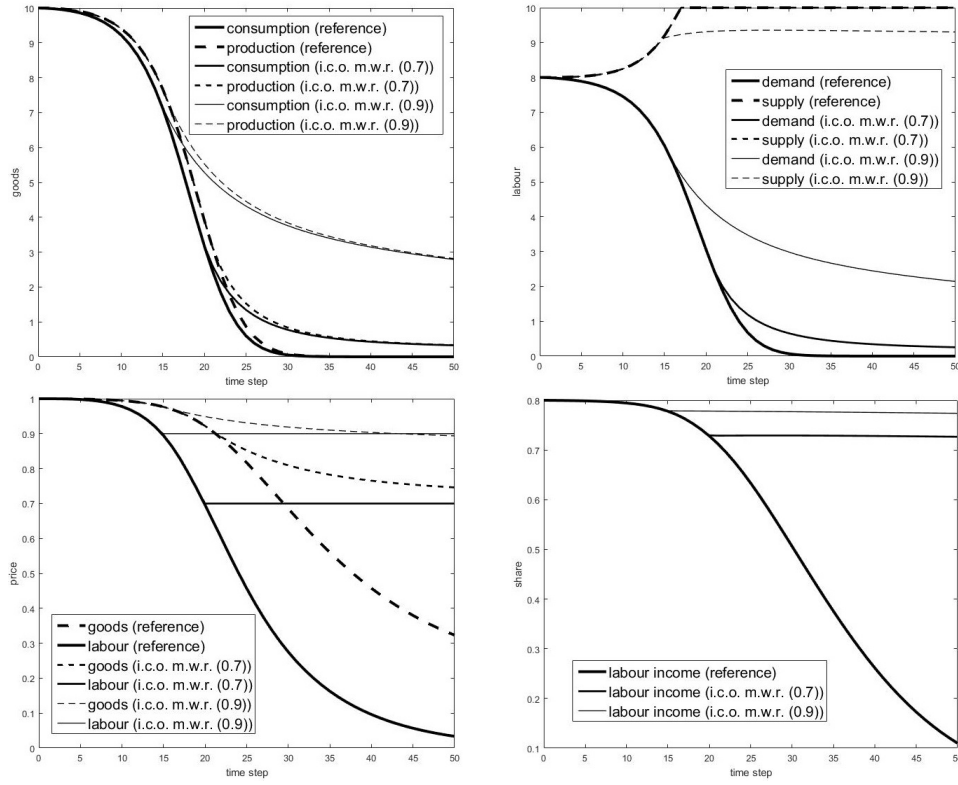


Figure 5: Effects of a minimum wage rate in case of a lack of requisition (see tab. 4)

tion in the very beginning of a corresponding simulation is very small and the decrease negatively depends on the level of unemployment benefits. The latter in addition are able to prevent production and consumption from the tremendous fall within the simulated time span (see fig. 6). It does not prevent the economy from an excess supply of labour and a correspondingly continuous decrease in the wage rate. This, apparently, does not threaten the modelled economy as long as increased dividends are used for consumption to the same extent as labour income would be. This is the case as the model does treat all sources of income the same and considers households as an aggregate entity that forms and satisfies its needs also on this aggregate level (see eq. 22). Just like under the assumption of homogeneous households the continuous decrease in the labour income share does not have to bother the economy that much. It then rather is just a signal for technical change and its contribution in order to release humanity from the burden of labour.

The thereby implied excess supply of labour still has to bother the economy. Although stability at the goods market helps to keep unemployment within manageable limits, the stability does not come for free. Assuming that unemployment benefits are financed by public debt only, this debt con-

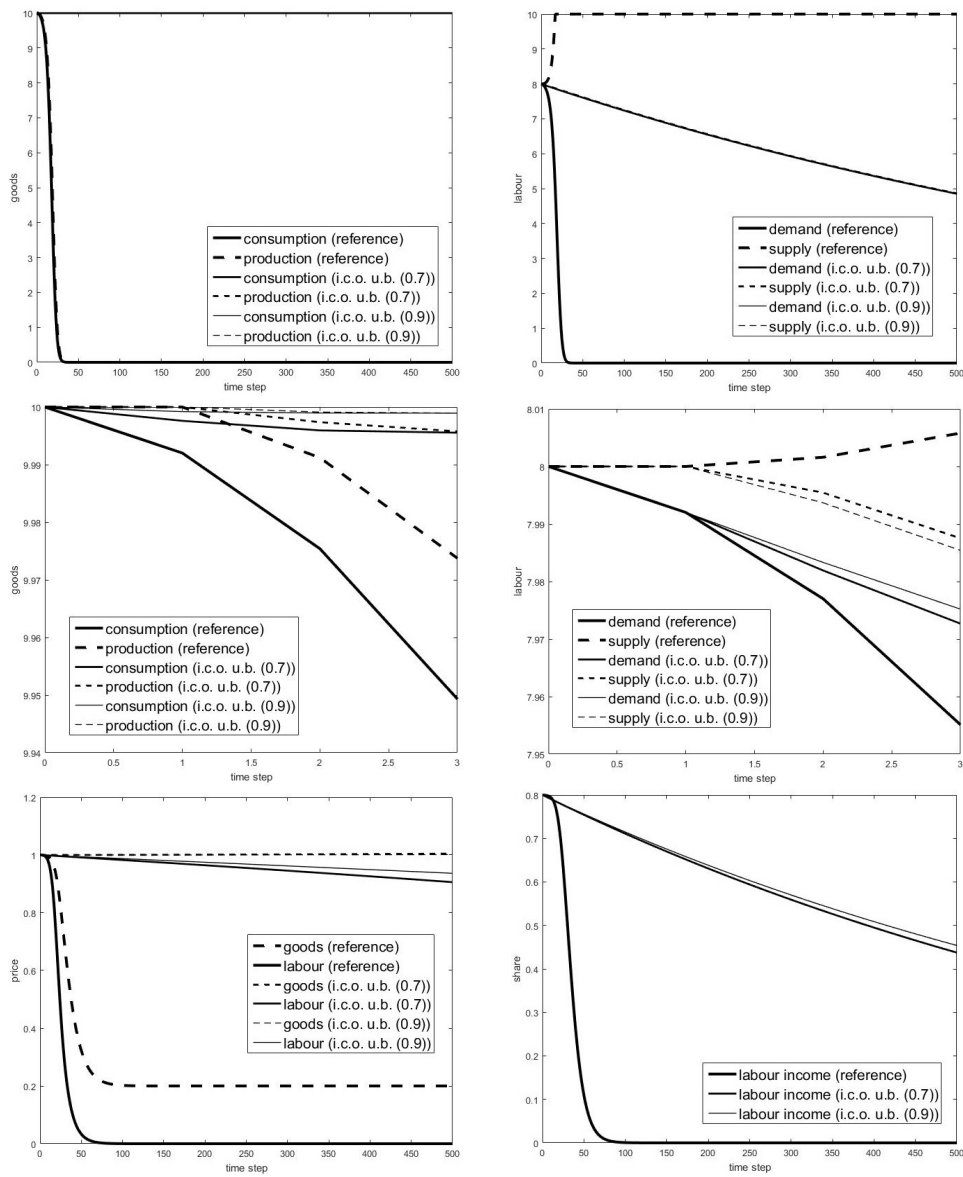


Figure 6: Effects of unemployment benefits in case of a lack of requisition (see tab. 4)

tinually increases even as a ratio to the stagnating output of the economy (see fig. 7). Remarkable, though, is that unemployment benefits set higher in terms of closer to the actual wage rate in long run cause less costs because of the stronger stabilizing effects.

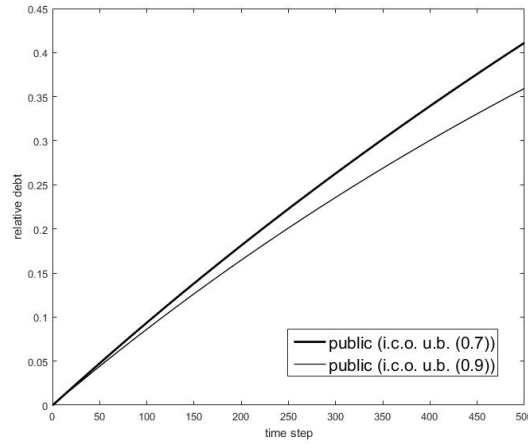


Figure 7: Effects of unemployment benefits in case of a lack of requisition (see tab. 4)

4 Conclusion

What a central planner may celebrate as the increase of welfare in terms of leisure may be discussed as a threat to employment in a decentralized market economy of privatized production structures. This is what in Scheuer (2016, p. 19) has been done already. The applied model, however, does not address the issue a complete way. In reality, households are heterogeneous in needs and income as well as employment and unemployment is not shared equally among them. However, the lack of heterogeneity may be discussed with regard to several aspects of aggregate models. With regard to this model the quasi ignorance of financial markets is another major point on the list of shortcomings since the first draft of the reference. Now the inconsistent incorporation of governmental measures complements this list. However, clearly identified shortcomings also may enrich the discussion and this is what a discussion paper at least partly pursues.

Being aware of the shortcomings, the simplifications and the determinism applied, still some interesting points are made in an illustrative way. First, it is shown how crucial assumptions about the stability of markets really are and how critically they therefore have to be seen – especially with regard to the labour market. Secondly, the discussion illustrates in which way the two tested measures directly affect the economy – while the minimum wage rate tries to prevent the labour market from an unstable path, unemployment benefits act in favour of a stabilization of the goods market. Thirdly, the importance of stabilizing the demand side is captured in very simple pictures – even that more public expenditures in the short run may help saving costs in the long run. Finally and maybe most important, all the results crucially depend on the assumptions about the formation of needs and expectations

as well as their translation into economic decisions. To this effect, everyone is invited to falsify any explicit or implicit assumption in this paper as long as he or she cares about a more plausible and evident one in a truly microfounded way.

References

Scheuer, Timon (2016). “Why to Worry about the Wealth of Nations: Technological Unemployment, Unequal Distribution and Secular Stagnation”. Young Economists Conference Paper. Graz Schumpeter Centre, University of Graz.

Appendix

$$\psi_t^{lx} = (1 + \tau_t^l)\psi_{t-1}^{lx} \quad (1)$$

$$\eta_t^x = \left(1 + \tau_t^x \left(1 - \frac{\sigma_t^l}{\phi}\right)\right)\eta_{t-1} \quad (2)$$

$$\xi_t = \Xi\tau_t^x + (1 - \Xi)g_{t-1}^\theta \quad (3)$$

$$\rho_{t+1}^x = \Xi\rho_t^x + (1 - \Xi)\rho_t^x \frac{\delta_t^x}{\sigma_t^x} \quad (4)$$

$$\rho_{t+1}^l = \Xi\rho_t^l + (1 - \Xi)\rho_t^l \frac{\delta_t^l}{\sigma_t^l} \quad (5)$$

$$OPT. : \rho_{t+1}^l = \max \left\{ \underline{\rho}_t^l, \Xi\rho_t^l + (1 - \Xi)\rho_t^l \frac{\delta_t^l}{\sigma_t^l} \right\} \quad (6)$$

$$OPT. : \underline{\rho}_t^l = \max \left\{ \underline{\rho}_{t-1}^l, \omega\rho_t^l \right\} \quad (7)$$

$$\iota_t = \pi_{t-1}(1 + g_{t-1}^\theta) \quad (8)$$

$$m_t = (1 + \xi_t)m_{t-1} \quad (9)$$

$$v_t = \min\{(1 + \xi_t)\gamma_{t-1}, (1 - \nu)d_{t-1}^\alpha - d_{t-1}^\nu + \xi_t m_{t-1}\} - \kappa_{t-1} - \zeta_{t-1} + \gamma_{t-1} + \iota_t \quad (10)$$

$$d_t^\nu = \sum_{t=0}^t v_t \quad (11)$$

$$\kappa_t = \kappa_{t-1} + \zeta_{t-1} - \gamma_{t-1} - \iota_t + \nu_t \quad (12)$$

$$\delta_t^l = \min \left\{ \frac{\kappa_t}{\rho_t^l}, (1 + \xi_t) \frac{\theta_{t-1}}{\psi_t^{lx}} \right\} \quad (13)$$

$$\sigma_t^l = \min \left\{ \frac{\eta_t^x \rho_t^x - \iota_t}{\rho_t^l}, \phi \right\} \quad (14)$$

$$\epsilon_t^l = \min\{\delta_t^l, \sigma_t^l\} \quad (15)$$

$$o_t = \epsilon_t^l \psi_t^{lx} \quad (16)$$

$$\chi_t = \chi_{t-1} + o_t - \theta_{t-1} \quad (17)$$

$$\gamma_t = \epsilon_t^l \rho_t^l \quad (18)$$

$$\mu_t = \iota_t + \gamma_t \quad (19)$$

$$OPT. : \bar{\rho}_t^l = \bar{\omega} * \rho_t^l \quad (20)$$

$$OPT. : \omega_t = \max\{0, \bar{\rho}_t^l (\delta_t^l - \sigma_t^l)\} \quad (21)$$

$$OPT. : \mu_t = \iota_t + \gamma_t + \omega_t \quad (22)$$

$$\beta_t = \beta_{t-1} + \mu_t - \zeta_{t-1} - \alpha_{t-1} \quad (23)$$

$$\delta_t^x = \min \left\{ \frac{\beta_t}{\rho_t^x}, \eta_t^x \right\} \quad (24)$$

$$\sigma_t^x = \min\{\chi_t, (1 + \xi_t)\theta_{t-1}\} \quad (25)$$

$$\theta_t^x = \min\{\delta_t^x, \sigma_t^x\} \quad (26)$$

$$\zeta_t = \rho_t^x \theta_t^x \quad (27)$$

$$\pi_t = \zeta_t - \gamma_t \quad (28)$$

$$\alpha_t = (\beta_{t-1} - \zeta_t)(1 - \lambda) \quad (29)$$

$$d_t^\alpha = \sum_{t=0}^t (\alpha_t) \quad (30)$$

α	savings	β	household funds
γ	costs	g^θ	consumption growth rate
δ^x	demand for goods	δ^l	demand for labour
ϵ^l	employment	ζ	sales
η^x	needs	θ^x	consumption
ι	dividends	κ	corporate funds
λ	liquidity preference	μ	income
ν	reserve ratio	ξ	expectations
o	production output	π	profits
ρ^x	price of goods	m	money base
σ^x	supply of goods	σ^l	supply of labour
τ^x	product innovation	τ^l	process innovation
v	loans	χ	inventory of goods
ϕ	maximum working time	ψ	productivity
ρ^l	wage rate	Ξ	rigidity
$\underline{\rho}^l$	minimum wage rate	$\underline{\omega}$	proportion for min. wage rate
ω	unemployment benefits	$\bar{\omega}$	proportion for unemployment ben.
d^α	deposits	d^v	debt

Table 1: Variables used in the model

expectations	0	productivity	1.25
moneybase	10	corporate funds	10
sales	10	costs	8
profits	2	dividends	2
demand for labour	8	supply of labour	8
employment	8	production output	10
supply of goods	10	demand for goods	10
consumption	10	inventory	0
needs	10	income	10
wage rate	1	price of goods	1
savings	0	loans	0
deposits	0	debt	0
household funds	0	consumption growth rate	τ^x

Table 2: Starting values for all scenarios

product innovation	0.01	process innovation	0.0
liquidity preference	0.0	reserve ratio	0.0
rigidity	0.1	maximum working time	10
proportion for unemployment benefits (i.c.o.)	0.9	proportion for minimum wage rate (i.c.o.)	0.9

Table 3: Parameter setting for the scenario of a lack of optimism

product innovation	0.0	process innovation	0.001
liquidity preference	0.0	reserve ratio	0.0
rigidity	0.1	maximum working time	10
proportion for unemployment benefits (i.c.o.)	0.7	proportion for minimum wage rate (i.c.o.)	0.7
	0.9		0.9

Table 4: Parameter setting for the scenario of a lack of requisition