Flexicurity Capitalism, Skill Formation and the Equal Opportunity Principle

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Abstract

The paper starts from the finding that Goodwin's (1967) growth cycle, modeling the Marxian reserve army mechanism, does not represent a process of social reproduction which can be considered an adequate socio-economic foundation for a democratic society in the long-run. The paper then derives a basic macrodynamic framework where this distinct form of cyclical growth and social reproduction is overcome by an employer of 'first' resort (providing employment security, but not job security), added to an economic reproduction process that is highly competitive (flexible) and thus not of the type of past Eastern socialism. There is high labor and capital mobility, where fluctuations of employment in the private sector are made socially acceptable through a second labor market where all remaining workers get meaningful occupation and sufficient income. The resulting socio-economic system is related to the flexicurity model that has been developed for Denmark in particular. We show that this economy exhibits a balanced growth path that is globally attracting. Moreover, pension-fund financed investment, Keynesian effective demand problems and Schumpeterian competition can be added to this model without disturbing the prevailing situation of stable full capacity growth.

A second topic of the paper is the disaggregation of the labor market into skilled and high-skilled labor as baseline framework for the treatment of heterogeneous labor and wage differentials in the industrial sector. We show how the propositions of the original case with only homogeneous labor can be generalized to this extended situation and consider some complications that can arise in this new case. The focus of this extension is however on its implications for the educational sector, since we now have to distinguish between the general (comprehensive) schooling system of the considered social structure and higher education (at 'universities'). The question which is investigated here is how skill formation and wage differentials can be made compatible with the principle of equal opportunity holding for all students within the schooling system. The paper also considers the issues of tertiary education and lifelong learning.

We have to stress here however that this baseline model of flexicurity capitalism with heterogeneous labor and its educational system does not yet treat in detail issues concerning capability differences between pupils at schools, but only considers the 'idealized' situation where access to universities (as skill generating institutions) is limited (by the long-run demand for high-skilled workers) so that methods (like two final school grades and / or university entry exams) have to be established by which access to university as institutions that impart high skill formation among other education is admitted on the background of the principle of 'equal opportunity' assumed to hold in the general schooling system.

Keywords: Employer of first resort, stable balanced growth, skills, education, equal opportunities.

JEL classifications: E32, E64, H11.

1 From Marx's General Law of Accumulation to Schumpeter's Competitive Socialism and beyond

This paper starts from the hypothesis that Goodwin's (1967) Classical Growth Cycle, modeling the Marxian Reserve Army Mechanism, does not represent a process of social reproduction that can be considered as adequate and sustainable in a social and democratic society in the long-run. The paper derives on this background a basic macrodynamic framework where this form of cyclical growth and economic reproduction of capitalism is overcome by an employer of 'first' resort, added to an economic reproduction process that is highly competitive and flexible and thus not of the type of the past Eastern socialism. Instead, there is high capital and labor mobility (concerning 'hiring' and 'firing' in particular), and thus flexibility, where fluctuations of employment in this first labor market of the economy (the private sector) are made socially acceptable through the security aspect of the flexicurity concept. i.e., by a second labor market where all remaining workers (and even pensioners) find meaningful occupation. The resulting model of flexicurity capitalism with its detailed transfer payment schemes is in its essence comparable to the flexicurity models developed for the Nordic welfare states and Denmark in particular.

We show that this economy exhibits a balanced growth path that is globally attracting. We also show that credit financed investment, and thus more flexible investment behavior, can be easily added without disturbing the prevailing situation of stable full capacity growth. We do not yet get however demand- but only supply-driven business fluctuations in such an environment with both factors of production always fully employed. This combines flexible factor adjustments in the private sector with high employment security for the labor force and shows that the flexicurity variety of a capitalist economy, protected by the government, can work in a fairly balanced manner.

A similar framework for the modelling of flexicurity capitalism is also investigated in Flaschel, Greiner, Luchtenberg and Nell (2008). We here go beyond this modelling by the consideration of two types of workers in the first (and the public) labor market: skilled and high-skilled ones (as baseline representation of a full set of skill differentials). This makes the model comparable to the discussion of unskilled vs. skilled labor under contemporaneous capitalism and is intended to show that there is no systematic need for unskilled labor in a model of flexicurity growth. We do not deny however that there may also exist an employer of last resort (in addition to the employer of first resort) in such a framework, since there may always exist some people that are unwilling or incapable for providing work within the schemes set up in this model. Yet, the primary task of the schooling system is to provide equal opportunities for all school students in primary and secondary education and to minimize thereby the number of people who by one reason or another do not contribute to labor markets of the flexicurity model though illness or refusal may occur after school. The paper here only considers the situation of where everybody passes successfully through the schooling system (as investigated in its components and environment in a later section of the paper) and thus leaves the consideration of an employer of last resort to future research. It however adds a tertiary education sector to the model where access is limited and that is responsible for the education of high-skilled workers of the model.

Solow's (1956) famous growth model is to a certain degree also of the flexicurity type,

since competitive firms are always operating there on their profit-maximizing activity level and since the labor market is assumed to always guarantee full employment. We thus have employment flexibility again coupled with wage income 'security', through the assumed behavior of firms and through the assumption of perfectly flexible money wages (which may give rise to wage income fluctuations). The monetarist critique of Keynesianism and recent work by Blanchard and Katz (1999) and others suggest however a wage Phillips curve which, when for example coupled with the assumption of myopic perfect foresight regarding the price inflation rate, implies a real wage Phillips curve where the growth rate of real wages depends positively on the employment rate and negatively on the level of the real wage rate. Adding such empirically supported real wage rigidity to the Solow model then gives rise to two laws of motion, now for labor intensity and the real wage, a dynamical system which approaches the situation of the overshooting Goodwin growth cycle mechanism if factor substitution in production is sufficiently inelastic and if the Blanchard and Katz (1999) real wage error correction term in the Phillips curve is sufficiently weak. Solow's growth model thus becomes thereby a variant of the Classical distributive growth cycle and its overshooting reserve army mechanism, the adequacy of which for a democratic society is questioned in this paper. An empirical example of what is meant by this latter statement is provided by figure 1.

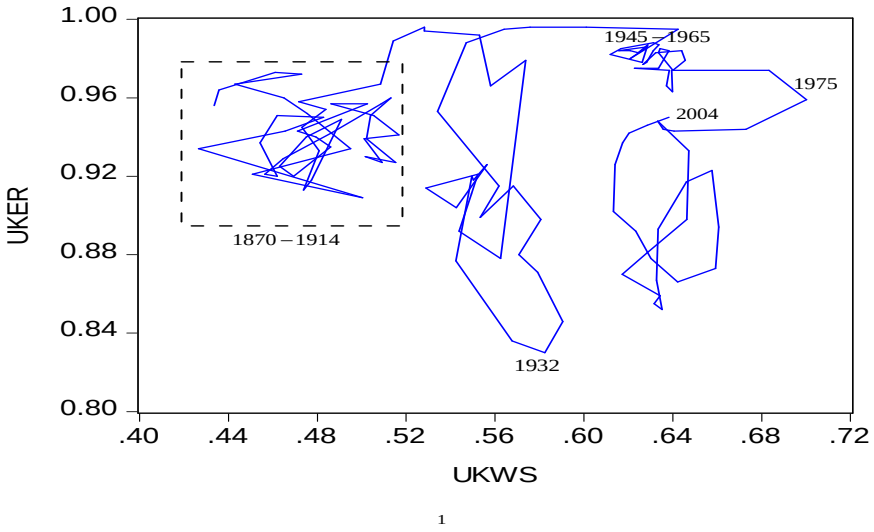

Figure 1: UK Distributive Cycles 1870–2004: WS=wage share, ER=employment rate

The important insight that can be obtained from figure 1 for the UK 1855 – 1965 is that the Goodwin cycle must have been significantly shorter before 1914 (with larger fluctuations in employment during each business cycle), and that there has been a major change in it after 1945. This may be explained by significant changes in the adjustment processes of market economies for these two periods: primarily price adjustment before 1914 and primarily quantity adjustments after 1945. Based on data until 1965 one could have expected that the growth cycle had become obsolete (and maybe also the business cycle as it was claimed in the late 1960's). Yet, extended by the data shown in figure 1, taken from Groth and Madsen (2007), it is now obvious that nothing of this sort took place in the UK economy. In fact, we see in figure 1 two periods of excessive

over-employment (in the language of the theory of the NAIRU) which were followed by periods of dramatic underemployment, both started by periods of the more or less pronounced occurrence of stagflation.
Generating order and economic viability in market economies by large swings in the unemployment rate (mass unemployment with human degradation of part of the families that form the society), as shown above and as described and analyzed in detail in Marx (1954, ch.23), is one way to make capitalism work, but it must surely be critically reflected with respect to its social consequences (social segmentation or even social class clashes). Such a reproduction mechanism is not compatible with an educated and democratic society in the long-run, as we shall describe it in this paper, which is supposed to provide equal opportunities to all of its citizens.
This situation must therefore be contrasted with an alternative social structure of accumulation that allows to combine the situation of a highly competitive market economy with a human rights bill that includes the right (and the obligation) to work, and to get income from this work that at the least supports basic needs and basic happiness.
Criticizing the at his time existing Eastern state socialism from the viewpoint of immaturity, Schumpeter (1942) developed a concept of socialism for countries in the state of maturity that can be characterized as competitive socialism built on foundations erected unconsciously through the big enterprizes created by the Rockefeller, the Vanderbilts and other famous dynasties in the Western industrialized countries. In part II of his book, Schumpeter discusses the question of whether this type of socialism can work, how the corresponding socialist blueprints should look like and to what extent they are superior to the capitalist mark II blueprints that Schumpeter conceived as having made obsolescent the entrepreneurial functioning of the capitalism mark I, the dynamic entrepreneur and the process of creative destruction conducted by this leading form of an economic agent.
Monopolistic practices, vanishing investment opportunities and growing hostility in the social structure of capitalism where part of the reasons that characterized the decomposition of capitalism in his analysis of capitalism, socialism and democracy as he investigated it in 1942. Against this scenery he described the superiority of the socialist blueprint of Western competitive type, the transition to this form of social structure of accumulation and the comparative efficiency of such economies. In a separate chapter he discusses the human element in this type of economy, the problem of work organization and the integration of bourgeois forms of management under capitalism into this type of socialism and the incentive problems this creates for the behavior of these economic agents.
The central message of Schumpeter's (1942) work on 'Capitalism, Socialism and Democracy' is that Socialism is created out of Western capitalist economies, and not on the basis of (the now past) Eastern type of socialism (which he characterized as 'the case of premature adoption of the principle of socialism', p.223). Instead, socialism had to be competitively organized through large production units and their efficient – though bureaucratic – management, a form of management that is developed out of the principles used under capitalism in the efficient conduct of large (internationally oriented) enterprizes. Schumpeter viewed his type of socialism as culturally indeterminate, but then discusses extensively the possibility of democracy under socialism, organized as dynamic competition for political leadership under majority voting, leading to specific rules for a strong government. It is one of the great contributions of Schumpeter's (1942) book

to not only have initiated a new concept of socialism, but also of having established a new type of democracy theory and its principles under a socialist type of accumulation structure.

After World War II the discussion of how to incorporate welfare principles in the conduct of existing capitalist economies has however become more or less the focus of interest, formulated as 'social market economy' by Ludwig Erhard in Germany in particular. The rise of the welfare state was thus the central topic, at least in European market economies, by which they responded to the strengthened influence of the Eastern socialist economies on world politics and on the evolution of socialism in various parts of the world. Types of welfare states were for example discussed in detail in Esping-Anderson's (1990) 'The Three Worlds of Welfare Capitalism' among others. But Kalecki (1943) already pointed to limitations in the evolution of the welfare state and its full employment concept in his essay on the 'Political aspects of full employment'. Deregulation principles and the fall of the welfare indeed took place in Western market economies after the stagflationary period of the 1970's in a more or less intensive way, with the gradual fall of the welfare state often being associated with an insufficient recovery from the inflationary episodes and their implication for unemployment after World War II.

Yet, labor market deregulation theories and policy proposals have meanwhile also created a situation where questions are raised concerning the social consequences of such policies when they are conducted a 'cold turkey' strategies as they are often suggested by neoclassical mainstream economists. Social degradation, social segmentation processes and the progressive evolution of social conflicts based on them may indeed be incompatible with the proper conduct of democracy in the Western type of economies where labor market deregulation processes and the cutback of the welfare state occurred to a significant degree – at least in the longer-run. 'Workfare' has therefore become one of the keywords that attempts to combine efficient labor market performance with welfare principles, see for example Vis (2007) on 'States of welfare or states of workfare? Welfare state restructuring in 16 capitalist democracies, 1985-2002'.

In this paper we will however favor another concept that attempts to overcome the deficiencies of the purely economically oriented process of labor market deregulations, the concept of flexicurity capitalism (in place of the Schumpeterian concept of competitive socialism, to which it is in fact not related in the literature and in the current numerous political discussions of flexicurity principles), see for example the discussion 'Towards Common Principles of Flexicurity - Council Conclusions' conducted by the Council (Employment, Social Policy, Health and Consumer Affaires) of the European Union.

The Danish flexicurity discussion may provide a typical example on the way to such an alternative, see for example the newsletter: 'Future Watch, October 2006: Flexicurity Denmark-Style' of the Center for Strategic and International Studies (CSIS). However, the discussion led so far lacks rigorous and formal model building of the principles, the economic structure and the dynamics of flexicurity capitalism. To build a model of the reproduction schemes of this future type of an economy needs a presentation of its system of national accounts and the behavior of economic agents within such a system. Moreover, the adjustment processes on the market for labor and for goods as well as the functioning of financial markets in such an economy needs detailed investigations. Analysis of this type is surely at best in its state of infancy. The present paper intends to contribute to such an analysis and does so on the background of the models of capitalism

we have developed in Flaschel (2008), in particular concerning Marx's general law of capitalist accumulation. In modelling our future in this way we hope to show that there is a variety of capitalism that not only pays respect to the Human Rights, in particular their article 23,[1] but that is compatible with the evolution of democracy in the long-run. By contrast, a laissez-faire capitalistic society that ruins family structures to a considerable degree (through alienated work, degrading unemployment and education- and value-decomposing visual media) cannot be made compatible with a democratic society in the long-run, since it produces conflicts that may range from social segmentation to class conflicts, racial clashes and more. We argue in this paper that stable balanced reproduction is possible under a socially regime of flexicurity capitalism that is in addition backed by reflected educational principles concerning skill formation, equal opportunities and citizenship education in a democratic society.

The abstract vision of a new reproduction scheme of capitalism as it is formulated in this paper can be compared – as already indicated in part – with work of Quesnay, Marx, Schumpeter and Keynes. It may be considered as radical and fundamental (but also as infeasible) as Quesnay's design of the Tableau Économique for the French economy, an ideal system where the productive sector was at the center of interest and all taxes where paid out of rent (by the landlords). It may be compared with Marx's reproduction schemes, in Capital Volume II, for a capitalist economy of his times (not considered feasible under capitalism by him). It may also be compared to Schumpeter's vision in his work on Capitalism, Socialism and Democracy, where he claimed that socialism would be the consequence of Western type capitalism (as created by the Rockefeller and other industrial dynasties) and not the result of the Eastern socialism that existed at his times. It may finally also be compared with the Social Philosophy of Keynes' General Theory and his discussion of the means by which the trade cycle of conventional Western capitalism might be tamed. All these aspects may play a role in the understanding and the appraisal of the model of flexicurity capitalism that is designed in this paper.

In the next section 2 we consider the accounts of such an economy with particular emphasis on the distinction of skilled and high-skilled workers both in the private and the public sector of the economy. Section 3 considers the stability of such an economy, where wages dynamic is determined by high skilled workers according to a Blanchard and Katz type Phillips curve and where labor intensity growth is determined by realized profits. Section 4 considers stylized presentations of the schooling system for Finland as an existing example as well as our hypothetical flexicurity model. In section 5 such systems are considered in more detail and from the perspective of the equal opportunity principle and the life-long learning hypothesis. In section 6 we discuss the fundamentals of the role of real credits in such an economy. This discussion is extended to a treatment of nominal financial assets and the resulting Keynesian demand problems and macroeconomic business cycle fluctuations in section 7, whereby the economic and social importance of a system of flexicurity capitalism is enhanced. Section 8 reconsiders the Schumpeterian dynamic entrepreneur in the framework of flexicurity capitalism and also other forms of firm behavior. Section 9 concludes the paper.

[1] see United Nations (1998, article 23): Universal Declaration of Human Rights, 1948 (http://www.un.org/Overview/rights.html)

2 Flexicurity Capitalism: Reproduction Schemes

We now design as an alternative to the Goodwin growth cycle a model of economic growth that rests in place of overaccumulation (in the prosperity phase) and mass unemployment (in the stagnant phase) on a second labor market which through its institutional setup guarantees full employment in its interaction with the first labor market, the employment in the industrial sector of the economy, which is modeled as highly flexible and competitive. This model of flexicurity capitalism extends the approach of Flaschel et al. (2008) towards a treatment of heterogeneous skills and the skill formation processes this requires in an advanced macroeconomy. In the basic framework we are considering an economy where the workforce (and all of its components) are growing with a given natural rate n.
We first reconsider the sector of firms in such an economy which is indexed by 1:

Firms

Production and Income Account:

Uses	Resources
δK	δK
$\omega_{1a} L^d_{1a}, \quad L^d_{1a} = Y^p/z, \ \hat{z} = \bar{m}$	$C_1 + C_2 + C_r$
$\omega_{1b} L^d_{1b}, \quad L^d_{1b} = Y^p/z, \ \omega_{1b} = \alpha_{1b}\omega_{1a}$	G
$\Pi \qquad (= Y^f)$	$I \qquad (= Y^f)$
$\delta_1 R + \dot{R}$	S_1
Y^p	Y^p

This account is still a simple one. Firms use their capital stock (at full capacity utilization Y^p as we shall show later on) to employ the amount of high-skilled labor (in hours, indexed by a): $L^d_{1a} = Y^p/z_a$, at the real wage ω_{1a}, the law of motion of which is to be determined later on from a model of the wage-price interaction in the manufacturing sector. They in addition employ normal (skilled) labor force (in hours, indexed by b): $L^d_{1b} = Y^p/z_b$ at the wage ω_{1b}, which is a constant fraction α_{1b} of the market wage in the high-skill labor market. Both skilled and high-skilled workers are working overtime or undertime depending on the size of the capital stock in comparison to the size of skilled and high-skilled workers currently employed by firms. The rate $u^w_x = L^d_{1x}/L^w_{1x}, x = a, b$ is the utilization rate of the workforce L^w_{1x} in the primary labor markets, the industrial workers of the economy (all other employment originates from the work of households occupied in the second labor market by the government). We assume that there is exogenous technical progress of Harrod-neutral type at the rate $\bar{m} = \hat{z} = \dot{z}/z$ with respect to the output employment ratios of both types of workers and a given output capital ratio $y^p = Y^p/K$.
Besides primary labor markets (in the privately organized industrial sector) we have a second labor market for both skilled and high-skilled workers (that is organized by government agencies and indexed by 2) and indirectly also a third labor market (where the government acts as employer of first resort, indexed by 3). These third labor markets are however operated under the same remuneration and workload conditions as the second

labor markets (which gives the reason why we do not consider here the government as being an employer of last resort).
Firms produce full capacity output[2] $Y^p + \delta_1 R = C_1 + C_2 + C_r + I + \delta K + G$, that is sold to three types of worker households, the industrial workers who have to pay all taxes and government transfer out of their salaries, the workers in the public sector and the retired households, to the investing firms and to the government. The demand side of the model is formulated in a way such that this full capacity output can indeed be sold. Deducting from this output Y^p of firms their real wage payments to skilled and high-skilled workers (and depreciation)[3] we get the profits of firms which are here assumed to be fully invested into capital stock growth $\dot{K} = I = \Pi$. We thus have Classical (direct) investment habits in this model with an employer of first resort.
We have assumed a fixed proportions technology with $y^p = Y^p/K$ the potential output – capital ratio and with $z = Y^p/L^d_{1x}$, $x = a, b$ the output - labor time ratios (which determine the employment L^d_{1x} of the workforce L^w_x of firms and which grows at a uniform given rate $\bar{m}$).
We next consider the skilled and high-skilled household sectors which are composed of two types of workers one working in the private sector and the remaining part in the public sector of the economy. The total number of high skilled workers is $L^w_a = \alpha_s t_a L_o$ and that of skilled workers is given by: $L^w_b = (1 - \alpha_s) t_b L_o$. We are assuming here a given population L with constant deterministic age structure $L = tL_o$, where T is the given lifetime of an individual household and where L_o denotes the number of people of a certain year of age. This number is assumed as constant for all vintages between 0 and T.[4] We moreover assume here that the work life of skilled workers is t_b years and that of high-skilled ones $t_a (< t_b)$ years. We finally have assumed here that there is a given ratio α_s of students[5] having just finished their (comprehensive and all day) schooling years who are (by exit or entry exams) qualified to enter the phase of higher education (leading to high-skilled degrees at 'universities' and other tertiary education institutions). Given the constant vintage structure within the population we thus have a workforce $L^w_b = (1 - \alpha_s) t_b L_o$ of skilled workers in the economy (who start their working life directly after (primary and secondary) schooling, while $L^w_a = \alpha_s t_a L_o$ is the number of high-skilled workers of the considered model economy. Year-in year-out the economy has therefore a given amount of school students L_s, university students L_u, high-skilled workers L^w_a, skilled workers L^w_b and retired workers L_r (contributing work according to their willingness and capability) for which it must organize education and work in the primary and the secondary labor markets (including the government activities as an employer of first resort).

[2] augmented by company pension payments $\delta_1 R$.

[3] the term S_1 is equal to $\delta_1 R + \dot{R}$.

[4] Note here that we also assume here that all persons after schooling and before retirement are working in this economy, both women and men (with child-raising obligations here left in the background of the model.)

[5] the determination of which will be discussed later on.

Households I: high-skilled (a) and skilled (b) workers in primary labor markets

Income Account (Households A,B):

Uses	Resources
$C_1 = c_1(1-\tau_1)(\omega_{1a}L^d_{1a} + \omega_{1b}L^d_{1b})$	
$T = \tau_1(\omega_{1a}L^d_{1a} + \omega_{1b}L^d_{1b})$	
$\omega_{2a}L^w_{3a},\ L^w_{3a} = L^w_a - (L^w_{1a} + L^w_{2a})$	
$\omega_{2b}L^w_{3b},\ L^w_{3b} = L^w_b - (L^w_{1b} + L^w_{2b})$	
$\omega_{2b}L_r, L_r = t_r L_o$	
S_1	$\omega_{1a}L^d_{1a} + \omega_{1b}L^d_{1b}$
$Y^w_1 = \omega_{1a}L^d_{1a} + \omega_{1b}L^d_{1b}$	Y^w_1

Households II: Secondary high-skilled (a) and skilled (b) workers

Income Account (Households A,B):

Uses	Resources
C_{2a}	$\omega_{2a}(L^w_{2a} + L^w_{3a}) = Y^w_{2a},\ \omega_{2a} = \alpha_{2a}\omega_{1a}$
C_{2b}	$\omega_{2b}(L^w_{2b} + L^w_{3b}) = Y^w_{2b},\ \omega_{2b} = \alpha_{2b}\omega_{1b}$
$Y^w_2 = Y^w_{2a} + Y^w_{2b}$	$Y^w_2 = Y^w_{2a} + Y^w_{2b}$

Both households of type I are taxed at the same tax rate τ_1 and consume with the same marginal propensity to consume c_1 goods of amount C_1. They pay (all) income taxes T and they pay in addition – via further transfers – all workers' income in the labor markets that is not coming from firms and from government tax revenues (which is equivalent to an unemployment insurance and therefore indexed with an index 3.) Moreover, they pay the pensions of the retired households ($\omega_{2b}L_r$) and accumulate their remaining income S_1 in the form of company pensions into a fund R that is administrated by firms (with inflow S_1, see the sector of households and with outflow $\delta_1 R$). Wage rates are determined by wage-negotiations of high-skilled workers in the industrial sector, while all other real wages are constant fractions of these negotiated wages and are uniform for all skilled workers in the government sector and for retired persons (who however receive extra company pension payments according to their accumulated contributions to the work, their occupation time in the primary sector).
The transfers $\omega_{2a}(L^w_a - (L^w_{1a} + L^w_{2a}))$ and $\omega_{2b}(L^w_b - (L^w_{1b} + L^w_{2b}))$ can be considered as solidarity payments, since workers from the primary labor markets who lose their job will automatically be employed in the second labor market where full employment is guaranteed by the government (as employer of first resort). We consider this employment as skill preserving, since it can be viewed as ordinary office or handicraft work (subject only to learning by doing when such workers return to the first labor market).
The secondary sector of households is here modeled in the simplest way that is available: Households employed in the secondary labor markets, i.e, $L^w_{2a} + L^w_{3a}, L^w_{2b} + L^w_{3b}$ pay no taxes and totally consume their income. We have thus Classical saving habits in this household sector, while households of type I may have positive or negative savings S_1 as

residual from their income and expenditures. We assume as law of motion for pension funds R:

$$\dot{R} = S_1 - \delta_1 R$$

where δ_1 is the rate by which these funds are depreciated through company pension payments to the 'officially retired' workers L_r assumed to be a constant fraction of the 'active' workforce L^w. These worker households are added here as not really inactive, but offer work according to their still existing capabilities and willingness that can be considered as an addition to the supply of work already organized by the government $L^w_{2a}+L^w_{3a}+L^w_{2b}+L^w_{3b}$, i.e., the working potential of the officially retired persons remains an active and valuable contribution to the working hours that are supplied by the members of the society. It is obvious that the proper allocation of the work hours under the control of the government needs thorough reflection from the microeconomic and the social point of view, which however cannot be a topic in a paper on the macroeconomics of such an economy.
The income account of the retired households, shown below, shows that they receive pension payments as if they would work in the secondary skilled segment of the economy and they get in addition individual transfer income (company pensions) from the accumulated funds R in proportion to the time (and type as which) they have been active in the first labor market as portion of $\delta_1 R$ by which the pension funds R are reduced in each period.

Income Account (Retired Households):

Uses	Resources
C_r	$\omega_{2b}L_r + \delta_1 R, L_r = t_r L_o$
Y^r	Y^r

There is finally the government sector which is also formulated in a very simple way:

The Government

Income Account: Fiscal Authority / Employer of First Resort

Uses	Resources
$G = \alpha_g T$	$T = \tau_1(\omega_{1a}L^d_{1a} + \omega_{1b}L^d_{1b})$
$\omega_{2a}L^w_{2a} = \alpha_a T$	
$\omega_{2b}L^w_{2b} = ((1-\alpha_g)-\alpha_a)T$	
$\omega_{2a}L^w_{3a}, L^w_{3a} = L^w_a - (L^w_{1a} + L^w_{2a})$	$\omega_{2a}L^w_{3a}$
$\omega_{2b}L^w_{3b}, L^w_{3b} = L^w_b - (L^w_{1b} + L^w_{2b})$	$\omega_{2a}L^w_{3a}$
$\omega_{2b}L^w_r$	$\omega_{2b}L^w_r$
Y^g	Y^g

The government receives income taxes, the solidarity payments (employment benefits) for the secondary labor markets paid by workers in the primary labor markets and old-age pension payments. It uses the taxes to finance government goods demand G and the surplus of taxes over these government expenditure to actively employ both skilled and high-skilled workers in the government sector. In addition it employs the workers

receiving 'unemployment benefits' and it in fact also employs the 'retired' persons to the extent they can still contribute to the various employment activities. We therefore have that the total labor force in the secondary labor markets is employed through the government which is organized by government in the way it does this in the administration of the state in all modern market economies.
We assume that real wages in the public sector are limited by the following conditions

$$\omega_{2a} \geq \bar{\omega}_{2a}, \quad \omega_{2b} \geq \bar{\omega}_{2b},$$

where $\bar{\omega}_{2a}, \bar{\omega}_{2b}$ are the levels of real wages where the expressions L^w_{3a}, L^w_{3b} are zero, i.e., where the planned employment in the private and the public sector are just sufficient to clear the labor market. This condition therefore provides lower bound for public real wages which prevent that there are supply constraints from the side of the labor market in this model of flexicurity capitalism.
In sum we get that workers are employed either in the primary labor market and if not there then by the government sector concerning public administration, infrastructure services, educational services or other public services (in addition there is potential labor supply L_r from the retired households, which due to the long-life expectancy in modern societies can remain effective suppliers of specific work over a considerable span of time). In this way the whole workforce is always fully employed in this model of social growth (and the retired persons according to their capabilities and willingness) and thus does not suffer from human degradation in particular. Of course, there are a variety of issues concerning state organized work that point to problems in the organization of such work, but all such problems also exist in all actual industrialized market economies in one way or another. We thus have a Classical growth model where full employment is not assumed, but actively constructed and where – due to the assumed expenditure structure – Say's law holds true, i.e., the capital stock of firms is also always fully utilized, since all savings are additions to the pension fund in terms of commodities and since all profits are invested. For the inclusion of debt financed investment (which is excluded here) see Flaschel et al. (2008).

3 Dynamics: Stable balanced reproduction

Based on Flaschel et al. (2008) we have in this model type a real wage Phillips curve as it was described here in the introductory section which can be represented in stylized form as follows ($G^1(1) = 0, G^2(0) = 0$):[6]

$$\hat{v}_{1a} \;=\; G^1(\frac{v_{1a}}{v^o_{1a}}) + G^2(\frac{y^p}{l^w_{1a}} - \bar{u}_w) = \tilde{G}^1(v_{1a}) + \tilde{G}^2(l^w_{1a}), \quad \tilde{G}^{1\prime}, \tilde{G}^{2\prime} < 0, \; v_{1a} = \frac{\omega_{1a}}{z} \quad (1)$$

The first term on the right hand side represents the Blanchard and Katz (1999) real wage error correction term, while the second one derives from the utilization rate $u_w = L^d_{1a}/L^w_{1a} = l^d_{1a}/l^w_{1a}$ of the workforce employed by firms expressed in per unit of capital form, see the next law of motion) where l^d_{1a} is here assumed a given magnitude due

[6]See Flaschel et al. (2008) for the details of the derivation of this real wage (or better wage share) Phillips curve and note that this equation implicitly assumes that v^o_{1a} describes the situation where capital stock growth is equal to natural growth n.

to fixed proportions in production and due to full capacity growth. The assumption $\tilde{G}^{2'} < 0$ thus simply states that real wage dynamics depends positively on the utilization rate of the high-skilled workers employed by firms. We stress again that all other types of work exhibit fixed wage differentials with respect to the high-skilled workers of the primary labor market. This allows to consider only their real wage in the dynamical investigations that follow below – in place of the full array of real wages represented by: $0 < \omega_{2b} < \omega_{2a} < \omega_{1b} < \omega_{1a} < z$. The growth rate of the high-skilled workforce of firms (the recruitment of new high-skilled workers), $\hat{L}^w_{1a}$ also depends positively on the rate of capacity utilization $u_w = l^d/l^w_1$, more precisely: the above shown utilization gap, as suggested by Okun's law, and thus also negatively on its own level. Moreover, since the second state variable of the model l^w_1 is to be defined by zL^w_{1a}/K we get a negative effect from the rate of profit on the growth rate of this state variable (through the investment behavior of firms) and thus a positive effect of real wages in the second law of notion of the economy which in general terms therefore reads:

$$\hat{l}^w_1 = -\hat{K} + \hat{z} + \hat{L}^w_{1a} = H^1(v_{1a}) + H^2(l^w_1), \quad H^{1'} > 0, H^{2'} < 0 \; l^w_{1a} = zL^w_{1a}/K \tag{2}$$

We assume that the steady state value of v^o_{1a} is given (by social compromise) in such a way that we get for the rate of profit of firms in the steady state the equation:

$$\hat{K} = \rho^o = y^p - \delta - v^o_{1a}l^{wo}_{1a} - v^o_{1b}l^{wo}_{1b} = y^p - \delta - v^o_{1a}l^{wo}_{1a} - \alpha_{1b}v^o_{1a}l^{wo}_{1b} = \hat{z} = \bar{m}$$

with $l^{wo}_{1a} = l^{wo}_{1b} = y^p/\bar{u}^w$. Under this assumption we indeed have that the laws of motion (1), (2) indeed exhibit the values v^o_{1a}, l^{wo}_{1a} as their in general unique interior steady state position. Moreover, all ratios of the type zL/K are then constant in the steady state, since all possible $l-$values that can be considered here are constant in time.[7]
The 2D dynamics (1), (2) allow for the application of the following Liapunov function to be used in the stability proof that follows:

$$V(v_{1a}, l^w_{1a}) = \int_{v^o_{1a}}^{v_{1a}} H^1(\tilde{v}_{1a})/\tilde{v}_{1a}d\tilde{v}_{1a} + \int_{l^{wo}_{1a}}^{l^w_{1a}} -\tilde{G}^2(\tilde{l}^w_{1a})/\tilde{l}^w_{1a}d\tilde{l}^w_{1a}$$

This function describes by its graph a 3D sink with the steady state of the economy as its lowest point, since the above integrates two functions that are negative to the left of the steady state values and positive to their right. For the first derivative of the Liapunov function along the trajectories of the considered dynamical system we moreover get:

$$\begin{aligned}
\dot{V} &= dV(v_{1a}(t), l^w_{1a})/dt = \left(H^1(v_{1a})/v_{1a}\right)\dot{v}_{1a} - \left(\tilde{G}^2(l^w_{1a})/l^w_{1a}\right)\dot{l}^w_{1a} \\
&= H^1(v_{1a})\hat{v}_{1a} - \tilde{G}^2(l^w_{1a})\hat{l}^w_{1a} \\
&= H^1(v_{1a})(\tilde{G}^1(v_{1a}) + \tilde{G}^2(l^w_{1a})) - \tilde{G}^2(l^w_{1a})(H^1(v_{1a}) + H^2(l^w_{1a})) \\
&= H^1(v_{1a})\tilde{G}^1(v_{1a}) - \tilde{G}^2(l^w_{1a})H^2(l^w_{1a}) \\
&= -H^1(v_{1a})(-\tilde{G}^1(v_{1a})) - (-\tilde{G}^2(l^w_{1a}))(-H^2(l^w_{1a})) \\
&\leq 0 \qquad [= 0 \quad \text{if and only if} \quad v_{1a} = v^o_{1a}, l^w_{1a} = l^{wo}_1]
\end{aligned}$$

[7]The reader is referred to Flaschel et al. (2008) for details.

since the multiplied functions have the same sign to the right and to the left of their steady state values and thus lead to positive products with a minus sign in front of them (up to the situation where the economy is already sitting in the steady state). We thus have proved that there holds:

Proposition 1

The interior steady state of the dynamics (1), (2) is a global sink of the function V, defined on the positive orthant of the phase space, and is attracting in this domain, since the function V is strictly decreasing along the trajectories of the dynamics in the positive orthant of the phase space, i.e., its economic part.

There is a further law of motion in the background of the model that needs to be considered in order to provide a complete statement on the viability of the considered model of flexicurity capitalism. This law of motion describes the evolution of the pension fund per unit of the capital stock $\eta = \frac{R}{K}$ and is obtained from the defining equation $\dot{R} = S_1 - \delta_1 R$ as follows:

$$\begin{aligned} \hat{\eta} &= \hat{R} - \hat{K} = \frac{\dot{R}}{K}\frac{K}{R} - \rho = \frac{S_1 - \delta_1 R}{K}/\eta - \rho, \quad i.e.: \\ \dot{\eta} &= \frac{S_1}{K} - (\delta_1 + \rho)\eta = s_1 - (\delta_1 + \rho)\eta \end{aligned}$$

with savings of households of type I and profits of firms per unit of capital being given by:[8]

$$\begin{aligned} s_1 &= (1-c_1)(1-\tau_1)(v_{1a}+v_{1b})y^p - v_{2b}l_r \\ &- [v_{2a}l_a^w - (v_{1a}+v_{2a}\alpha_a\tau_1(v_{1a}+v_{1b}))y^p] \\ &- [v_{2b}l_b^w - (v_{1b}+v_{2b}((1-\alpha_g)-\alpha_a)\tau_1(v_{1a}+v_{1b}))y^p] \\ \rho &= y^p[1-(v_{1a}+v_{2a})] - \delta \end{aligned}$$

For the ratio of savings to GDP $\theta_1 = S_1/Y^p = s_1/y^p$ we therefrom get in the steady state of the economy the expression:

$$\begin{aligned} \theta_1^o &= (1-c_1)(1-\tau_1)(v_{1a}^o+v_{1b}^o) - v_{2b}^o y_r^o \\ &- [v_{2a}^o y_a^{wo} - (v_{1a}^o + v_{2a}^o\alpha_a\tau_1(v_{1a}^o+v_{1b}^o))] \\ &- [v_{2b}^o y_b^{wo} - (v_{1b}^o + v_{2b}^o((1-\alpha_g)-\alpha_a)\tau_1(v_{1a}^o+v_{1b}^o))] \end{aligned}$$

with $y_r = l_r/y^p = zL^r/Y^p, y_a^w = zL^w/Y^p, y_b^w = zL_b^w/Y^p$. For $v_{2a}^o = \bar{v}_{2a}, v_{2b}^o = \bar{v}_{2b}$, i.e., the case where wages in the government sector are clearing the labor market without any need for employment of first resort, this gives:

$$\boxed{\theta_1^o = (1-c_1)(1-\tau_1)(v_{1a}^o+v_{1b}^o) - \bar{v}_{2b}l_r^o, \quad i.e.,}$$

[8] $l_a^w = zL_a^w/K, l_r = zL_r/K, s_1 = S_1/K.$

this ratio is positive if $L_r/(Y^p/z) = L_r/L^d_{1a}$ is sufficiently small. We therefore need a condition that limits the ratio $L_r/L = t_r L_o/L = t_r/t$ from above in combination with conditions that limit (from above) the real wages $\omega^o_{2a} \geq \bar{\omega}_{2a}, \omega^o_{2b} \geq \bar{\omega}_{2b}$ paid in the government sector in order to get a positive ratio θ^o_1. This shows that such upper limits on wages in the public labor markets as well as in base pension payments are needed and provide sufficient conditions for positive savings ratio with respect to GDP Y^p. If this is given, we will have a positive steady state value for company pension funds per unit of capital $\eta^o = s^o_1/(\delta_1 + \bar{m})$ and also a positive value for the percentage of company pension payments as a fraction of base pension payments γ^o_1, which is given by:

$$\gamma^o_1 \;=\; \theta^o_1/\sigma_r \leq (1-c_1)(1-\tau_1)\frac{v^o_{1a}+v^o_{1b}}{v^o_{2b}}\frac{y^p}{y_r} - 1$$

where $\sigma_r = \omega^o_{2b} L_r/Y^p$ is the share of base pension payments in GDP. The establishment of a desired ratio between company pension payments and base pension payments therefore demands (besides a viable ratio t_r concerning the age structure of the economy) for the choice of appropriate real wages in the public sector and it is in any case limited from above by the expression on the right hand side in the above equation.

4 Educational systems: Basic structures and implications

In this section we extend the flexicurity model towards the integration of an educational sector. We assume as in the preceding sections that there are only two types of workers, skilled (b) and high-skilled (a) ones. We stress that we assume a stationary population $L = tL_o$ in this and the next section, where L_o is the stationary number of people of age $\tau, \tau = 1, \cdots, t$, with t denoting the given lifespan of each individual agent of the economy. There are $L_r = t_r L_o$ retired people in each given year, $L_s = t_s L_o$ students on the primary and secondary education level, $L_u = \alpha_g t_u L_o$ students on the tertiary education level, $L_b = t_b L_o$ skilled workers and $L_a = t_a L_o$ high-skilled workers (and $L_c = t_c L_o$ children in the background of the model). The natural rate of the preceding sections is thus set equal to 0 here for reasons of simplicity. The t_x-coefficients express the number of years an agent will be part of this population group.[9] Finally, it is assumed that the current system allows a fraction α_s of $t_s L_o$ to go to University to become high skilled workers, while the remainder enters the workforce as a member of L^w_b after having finished school with a final certificate. To keep the model simple, we abstain from vocational schools, apprenticeships or dual systems.

Before we come to a graphical representation and analysis of such a stylized educational system, we provide in figure 2 a brief representation of an existing example: the Finnish educational structure as it is provided by the National Board of Education in Finland. Distinguishing marks of this school systems are: 1) A comprehensive compulsory - school for all students with no differentiation between good learners and those with learning

[9] with respect to concrete numbers one therefore could for example assume $t_c = 6, t_s = 12, t_u = 5, t_b = 47, t_a = 42, t_r = 15$. We stress here that the considered age structure is still a very stylized one in view of what is shown in figure 2.

difficulties, 2) two ways to finish secondary school which both can lead to a higher qualification (to enter universities or polytechnics), 3) further details which are not to be seen in this figure such as the renouncement of grading until the last two years of basic education.
For our purposes we however use the following simpler structure of an educational system underlying the considered type of flexicurity capitalism:

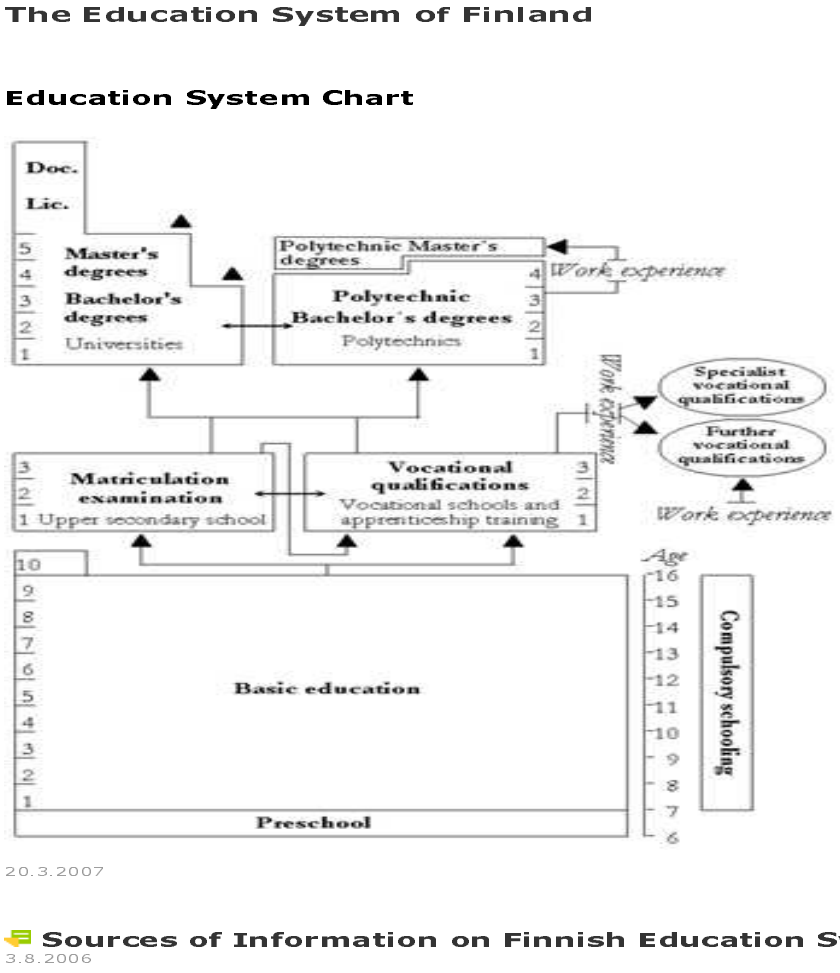

Figure 2: The Education System of Finland: Stylized Representation[10]

With respect to our model of flexicurity capitalism we stylize figure 2 even further and obtain the structure shown in figure 3. Note with respect to this table that workers of type b can only be in one of two situations as far as their salary group is concerned, since employment of first resort is remunerated at the same level as workers of type b actively employed in the government sector. For workers of type a this however implies that they can be in one of three states concerning their salaries, since they are paid higher wages when actively employed in the public sector. Note that we will consider only a steady state situation in the following and thus investigate the implications of balanced reproduction in this type of capitalism (shown to be an attractor of situations of unbalanced growth in an earlier section).

[10]Source: http://www.edu.fi/english/SubPage.asp?path=500,4699

Education in the Flexicurity Model: Baseline Case of a Stationary Population

<table>
<tr><td colspan="5">Retired People t_rL_o (base pensions and company pensions)
(labor market contribution acc. to willingness and capability)</td></tr>
<tr><td rowspan="2">Occup 1b: active</td><td rowspan="2">Occup 2b (part EFR)</td><td>Occup 2b (EFR)</td><td>Occup 2a</td><td>Occup 1a</td></tr>
<tr><td colspan="3">Tertiary Education (at ‘Universities’)</td></tr>
<tr><td colspan="5">Secondary School Education: t_sL_o (aggregated)</td></tr>
<tr><td colspan="5">Primary School Education: t_sL_o (aggregated)</td></tr>
<tr><td colspan="2">Pre-School</td><td colspan="3">(not modelled)</td></tr>
</table>

With respect to the above stationary subdivision of the population of the economy let us consider now the situation where this workforce reproduction scheme allows for the case where there is no employment of first resort needed for the workforce of type a. If $\alpha_s L_o$ is the number of students that go from primary and secondary education to tertiary education after finishing school we get for the parameter α_s in the considered situation on the one hand the definitional relationship:

$$L_a^w = \alpha_s t_a L_o, \quad L_b^w = (1-\alpha_s) t_b L_o$$

On the other hand we have as active employment rules for workers of type a:

$$L_{1a}^w = Y^p/z, \quad L_{2a}^w = \alpha_h T/\omega_{2a} = \alpha_h \tau_h (\frac{\omega_{1a}}{\omega_{2a}} L_{1a}^w + \frac{\omega_{1b}}{\omega_{2a}} L_{1b}^w)$$

The equilibrium condition $L_a^w = L_{1a}^w + L_{2a}^w$ then implies

$$\alpha_s t_a L_o = Y^p/z(1 + \alpha_h \tau_h (\frac{\omega_{1a}}{\omega_{2a}} + \frac{\omega_{1b}}{\omega_{2a}})$$

which in turn gives:[11]

$$\alpha_s = (1 + \alpha_h \tau_h (\frac{\omega_{1a}}{\omega_{2a}} + \frac{\omega_{1b}}{\omega_{2a}}) \frac{L_{1a}^d}{t_a L_o}$$

This ratio must be applied for the access to Universities if the reproduction of high skilled workers is such that no first resort employment is necessary for them. A numerical example may help to understand this condition in more detail. Since workers employed

[11] The ratio $\frac{L_{1a}^d}{t_a L_o}$ compares employment in the first sector (of high skilled workers) with the common core employment of all workers.

in the industrial sector pay all taxes we may assume the following crude estimates for the expressions that determine the equilibrium α_s :

$$\alpha_h = 1/3, \tau_h = 0.5, \frac{\omega_{1a}}{\omega_{2a}} = 4, \frac{\omega_{1b}}{\omega_{2a}} = 2, \quad \frac{L^d_{1a}}{t_a L_o} = 0.5$$

This gives for α_s the value $\alpha_s = 0.5$, a value that coincides with what is suggested by studies of the OECD. The above formula for the university access ratio α_s clearly shows the possibilities by which this ratio- may be increased (if desirable).
Even though we divide the working population into two groups - skilled and high skilled workers - it should be taken into consideration that skilled workers have finished their schooltime on the same level as high skilled ones, only with lesser results in their final examinations which are equal to 'Abitur' in Germany, 'Baccalaureate' in France or 'A-Levels' in Great Britain. Thus it is guaranteed that the workforce as a whole is well educated and trained far above basic skills. To gain such high qualifications might be regarded as an exaggerated aim, but examples, especially from the Scandinavian countries, show that a strict concept of 'demand and support' will be able to get such results in the school population.

5 Education, equal opportunities and life-long learning

In this section, we will first discuss the conditions of a suitable educational system (preschool and school, yet with an emphasis on school education). To gain the described results demands a strict support of the rules of 'equal opportunities' in order to eliminate all hindrances for children to participate in an education that fits their abilities and allows them to meet the requirements of the schools. Furthermore we will discuss the competitive way in which students in their final exams gain University access or not. This concludes the relationship of equal opportunities and competition in a more general aspect.
Secondly, we will deal with the demand of life long learning assuming that part of all the peoples' leisure time is used for keeping their skills up to date as well as accepting skills enhancements offered by their employers. A generally accepted necessity of lifelong learning will allow for a continuous high skill level in all sectors where skilled or high skilled workers are doing their job, but it holds true in a similar way for all pensioners who still feel fit to take an active part in the workforce.
We will finally deepen our reflections on education by discussing the role of equal opportunities in its close relationship to Human Rights which are strongly related to democracy. This leads to the discussion of democracy and citizenship education as well as Human Rights education. It should be clarified that we can here only outline these questions which will be discussed in more detail in future work.

The school system
To become - and be - a member of the workforce demands great engagement even if employment is guaranteed, although the industrial sector is free to hire and fire, since the employer of first resort will take over the fired workers, both skilled and high

skilled persons. All workers owe their education and welfare expenses to the tax payers, the industrial workers in this model type. Thus, the system is extremely supportive by giving work to all, but it is also highly demanding by expecting full commitment by everyone due to the fact that it depends on the mutual giving and taking in this society. This demands a high consensus within the society with regard to the necessity of work and the working conditions. It is the task of education to provide students in (pre)schools not only with the necessary skills to become adequate workers in their later professions and jobs but also to help them to understand this system and to integrate themselves into it. This kind of integration is not to be misunderstood as a simple adaption but it concludes - as does socialization - the development of an independent, mature and responsible personality which is part of the aim of education as described in this paper. A positive view on work is a necessity in a society where all persons are assumed to find work, but are also obliged to engage in their work, even after their retirement. A contradicting attitude towards work in the public and media discourse where consumption and leisure time are often more favored than work, is not compatible with the demands of our model. Based on these underlying assumptions, skills are here understood in a broad sense which transcends intellectual or technical competencies, but include work attitudes, teamwork etc.

As we have made clear above, all students will be led to leave school on the level of 'Abitur'. This demands a good education from the very beginning. Therefore, in our society 'school' starts in an early stage, also due to the fact that the mother will normally return to work two years after the birth of the child. Our educational system - named school system for reasons of simplicity - begins for children at the age of 2 though nursery schools may be available for younger kids if parents prefer so. All forms of schooling are thought to be all-day institutions though families may have a choice of lesser schooling until the child is 3 years old. In nursery schools children are cared for by trained personnel. Even if there is no formal training, they already learn first - mainly social - skills which include first behavior rules in a community such as how to share toys, how to behave during meals in an age-adequate way etc.

Further skills that are learnt in this age are linguistic and communicative ones. This happens in families, too, but in an educational setting as in a nursery school more support will be given by guiding the children. As in kindergarten, children also learn at the age of 2 to use materials and thus train their fine motor skills. They are also trained to use their bodies and exercise their movements. This demands caretakers with a good training on a University level. This holds as well true for the following kindergarten period which should last for three years. Skills which are already trained in a first approach in the nursery schools will now be deepened in a more and more systematic way though, of course, the stages of development of a child have to be kept in mind as well as the necessity of formal and especially informal play. When the last kindergarten year is either transferred to primary schools or organized together with them, it is possible to allow for a gradual transition into school.

Following the Scandinavian role Model of schooling, all children will be together in a general school at least until grade 8 or 9 when they are about 15 or 16 years old (cf., e.g. Ministry of Education and Science of Sweden, 2004). Any earlier division into different school types would lead to a selection before all main abilities will be developed so that young people would be bereaved of the chance to evolve into the skilled person that they are. A longer time of learning together will furthermore help them to develop social

skills. Finally, a selection before or just when they have reached puberty would probably intensify the general problems to that time. When students have to opt for different types of secondary or high school thereafter they can be aware that all types will lead them to a matriculation certificate though with different focuses (either more academic or more technical) and a different length of schooling (between 2 and 4 years depending on the preferences of a student) so that they are able to plan their secondary school time with the help of their teachers, following their individual abilities, and interests.
This school system needs to bring to light all abilities and interests a child may have, since otherwise the ambitious aim of a final certificate for all cannot be reached. This means that the school education works in a way such that educational support for the differently talented students obeys the principle of equal opportunities. We have a double task resulting from the principles of equal opportunities where each child will be given the optimal support. The one task is to eliminate social or structural hindrances such as family income, level of education of the parents, social stratum, migration background etc. In our system, these forms of disadvantages should become less important when all - or at least most - parents will be skilled or high skilled persons with an adequate income. Yet, disadvantages - which are often connected with discrimination - may remain due, e.g., to the social, regional or political background of a family. Here, it is an important task of all forms of schooling to overcome these disadvantages by giving the necessary support.
While this is also a task to be fulfilled by the state and the society, it is the domain of schools and education to find the special abilities of a child and support them as the second task. Education has to improve its didactic and methods, so that each child can be supported in its special competencies, and furthermore that each child can be supported individually so that he/she will be able to pass a successful school career. This strong focus on individual support in relationship with the common aim of reaching the final certificate demands not only a well equipped school with regard to teaching personnel, further personnel such as social workers, psychologists, librarians, medical helpers and close relationships with professionals from outside such as sport trainers, artists etc., but it also demands a well equipped school with attractive rooms and interior. Special support will be given for students with disabilities within integrative classes (cf. Report 2006). Equal opportunities are thus an aim in the school system but also the way in which the ambitious aim of a final certificate for all can be reached.
It has to be asked how the competitive end of school, when only those with the best results will be allowed to go to University, fits into this approach, even if this could be about 50 percent. This is surely a more general question of whether equal opportunities are compatible and if so, in which way, with competition. Competition is part of school life and in most cases it is a planned part of education, e.g. in those sports where naturally a winner will be declared at the end, such as sprinting or high jumping, where students are not equally quick. In schools where individual abilities are detected and supported, competition in this sense will do no harm since students learn that they have different abilities which makes them winners in different disciplines, yet education has to make sure that there are no obvious losers.
This attitude is supported when students are not ranked within their class but measured by their individual progress. Then there will be a winner after the 100m sprinting, but each child will learn about his or her individual successes or be supported to further improve itself, since all children will take part in sports even if their main abilities are,

e.g., in music. The competition at the end of the school time is of a different character, since it is a competition due to the fact that there are not enough University places and subsequent job opportunities for all - following the idea that the society needs only a certain amount of high skilled persons with University degrees.

Tertiary education, lifelong learning and equal opportunities

This is not the place to discuss the question whether a society and workforce can be imagined where all persons may go to University mainly to complete their personal education, though the division into skilled and high skilled positions will not be abandoned. The graded high school where students attend different types of either mainly academic or mainly technical education will already lead to a kind of preliminary decision between those who want to go to University and those who will enter only the skilled workforce after receiving their certificate. It will certainly be a task of school education to prepare students to such situations of competition and the possibility of not gaining the wanted position. This has to be compensated by developing individual abilities and skills some of which may be more valid for leisure time, e.g. playing an instrument without reaching the top level for orchestra music.

The selection for University will be based on school results in the final certificate, though entry exams are also an option. According to recent results by OECD, there exist realistic expectations of about 50% of students going to University (cf. OECD 2007). About half of the students with the final certificate can thus be supposed to become high skilled workers in our model. This is not the place to go into the details of University education and the distribution of students to different studies, but concluding this discussion of the school system we want to stress the necessity of an education that allows for individual development and support under the principles of equal opportunities.

Students who finish school with the final certificate and enter the workforce as well as those who do so after having finished University are already well trained in organizing their learning processes, since one of the principles of teaching will be to teach students how to adopt learning competencies, i.e, how to learn to organize a learning program, how to work together with others and to learn how to find out about special skills as well as about weak points. The aim is to lead students to an independent learning style that fits best for the individual learner. Learning portfolios may be a recommendable way to keep records of this learning process. It can be assumed that young adults will be able to continue with this procedure as well as to continue documenting it.

The European Union had already declared the year 1996 as the European year of lifelong learning and passed a resolution on 'Lifelong Learning' in 2002 (Council 2002). It is here stressed that learning starts in the pre-school age and lasts until post-retirement. Furthermore, it is relevant here that the resolution refers not only to all kinds of learning, including the entire spectrum of formal, non-formal and informal learning, and that the aim of learning is not restricted to skills and competencies with regard to later employment. Instead it is regarded as important within a personal, civic or social perspective as well. While school education and thus learning in schools follows a common curriculum where the highest possible grade of individualization and interest-dependence is guaranteed though a general curriculum remains to be followed, lifelong learning after school and University is far more guided by individual interests and the needs of a person, though there will also be on-the-job training in most professions, since skills and knowledge have to be updated on a regular basis.

The idea of lifelong learning adds to the concept of equal opportunities, since the personal access to knowledge and competencies is increased by the possibilities of learning independently of age or position. Therefore it is necessary that the educational system offers a variety of learning procedures after school and University, such as adult education centers but also the possibility of access to arts, museums, nature and its learning opportunities. Mobility will add to lifelong learning of languages and cultures, but also of professional skills. Lifelong learning includes all forms of social learning and is also highly important for political learning.
Political learning plays an important role in education, especially in a model where the state has a major role as employer and provider of social services. Political learning, which is often referred to as citizenship education, is of high relevance in a system that depends on the individual skills and knowledge of its workforce but at the same time demands a high amount of social commitment and acceptance of different work places though no unemployment. Furthermore, the principles of equal opportunities on which we have commented above, are integrated in political concepts such as Human Rights so that the necessity of political learning is again underlined. Political learning will be part of school education as well as of lifelong learning. Human Rights education provides all necessary contents and skills to cope with in a democratic society, especially since Human Rights and democracy are inseparably interconnected. Thus, democracy as the underlying state model as well as equal opportunities as the adequate principle for social justice can be deduced from Human Rights. Democracy education, citizenship education and human rights education are well-established and partly overlapping forms of education which provide not only an introduction into the necessary knowledge of political structures, but prepare furthermore for different kinds of participation in democratic procedures. Additionally they intend to increase media competence to allow students as well as adult learners to understand actual political decision making processes.

6 Pension funds and credit

In this section we will investigate the implications of the situation where existing pension funds are used for real capital formation (instead of remaining idle except of being used for company pension payments of amount δR at each point in time). The productive use of part of the existing pension fund R is here assumed to be rewarded at the constant interest rate r applied to the debt level D accumulated by the firms in the private sector of the economy. In order to simplify the presentation we assume that tertiary education is provided to all members of the workforce (during their education). The generalization to the case of two types of workers in the industrial as well as in the government sector is straightforward, but makes the presentation of the model more complex (since we have to distinguish then again between workers of type a and b and their income and consumption patterns).

6.1 Accounting relationships

Pension funds here act as quasi commercial banks who give credit to firms out of their funds and thus allow firms to invest in good times much beyond their retained earnings, i.e., profits net of interest payments on loans.

Firms

Production and Income Account:

Uses	Resources
δK	δK
$\omega_1 L_1^d = \omega_1 Y^p/z$	$C_1 + C_2 + C_r$
rD	$\tilde{G}$
Π	$I = (i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a})K$
Y^p	Y^p

The behavior and financing of gross investment is shown in the next account.

Investment and Credit:

Uses	Resources
δK	δK
$I = (i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a})K$	Π
	$\dot{D} = I - \Pi$
I^g	I^g

We assume as investment behavior of firms the functional relationship:

$$I/K = i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}.$$

This investment schedule states that investment plans depend positively on the deviation of the profit rate from its steady state level and negatively on the deviation of the debt to capital ratio from its steady state value. The exogenous trend term in investment is $\bar{a}$ and it is again assumed that it represents the influence of investing firms 'animal spirits' on their investment activities.

Firms Net Worth:

Assets	Liabilities
K	D
	Real Net Worth
K	K

In the management of pension funds we assume that a portion sR of them is held as minimum reserves and that a larger portion of them has been given as credit D to firms. The remaining amount are idle reserves D^s, not yet allocated to any interest bearing activity.

Pension Funds

Pension Funds and Credit (stocks):

Assets	Liabilities
R	sR
	D
	X excess reserves
R	R

Pension funds receive the Savings of households of type 1 (the other households do not save) and they receiver the interest payments of firms. They allocate this into required reserve increases, payments to pensioners, new credit demands of firms and the rest as an addition or substraction to their idle reserves.

Pension Funds and Credit (flows):

Resources	Uses
S_1	$s\dot{R}$
rD	$\delta R + rD$
	$\dot{D} = I - \Pi$
	$\dot{X}$
$S_1 + rD$	$S_1 + rD$

The above representation of the flows of funds in the pension funds system implies for the time derivative of accumulated funds R the relationship

$$\dot{R} = S_1 - \delta R - (I - \Pi) = S_1 + \Pi - \delta R - I, \quad i.e.,$$

it is given by the excess of savings of households of type I over current company pension funds payments to retired households and the new credit that is given to firms to finance the excess of investment over retained profits.

Households I and II (primary and secondary labor market)

Income Account (Households I):

Uses	Resources
$C_1 = c_{h1}(1 - \tau_h)Y_1^w$	
$\omega_2 L_{2h}^w = c_{h2}(1 - \tau_h)Y_1^w$	
$T = \tau_h Y_1^w$	
$\omega_2(L - (L_1^w + L_{2h}^w + L_{2g}^w))$	
$\omega_2 L^r$	
S_1	$\omega_1 L_1^d$
Y_1^w	Y_1^w

Households in the first labor market consume with a constant marginal propensity out of the income after primary taxes and they employ households services in constant proportions to the consumption habits. They pay the wages of the workers in the second labor market that are not employed by firms, by them and the government as a quasi unemployment benefit insurance (a generational solidarity contribution) and they pay the common base rent of all pensioners (as intergenerational contribution). The remainder represents their contribution to the pension scheme of the economy, from which they will receive $\delta R + rD$ when retired. We consider this as a possible scheme of funding the excess employment and the pensioners, not necessarily the only one however.

Income Account Households II

Uses	Resources
C_2	$\omega_2 L_2^w$
Y_2^w	Y_2^w

Income Account (Retired Households):

Uses	Resources
C_r	$\omega_2 L^r + \delta R + rD$
Y^r	Y^r

The Government

Income Account – Fiscal Authority / Employer of First Resort:

Uses	Resources
$G = \alpha_g \tau_h Y_1^w$	$T = \tau_h Y_1^w$
$\omega_2 L_{2g}^w = (1 - \alpha_g)\tau_h Y_1^w$	
$\omega_2 L_x^w$	$\omega_2 (L - (L_1^w + L_{2h}^w + L_{2g}^w))$
$\omega_2 L^r$	$\omega_2 L^r$
Y^g	Y^g

Government gets primary taxes and spends them on goods as well as services in the government sector (which are here determined residually). It administrates the common base rent payments as well as the payments of those not yet employed in the sectors of the economy. Its workforce consists of all workers that are not employed by firms of households of type 1 and also of all pensioners that are still capable to work. The model therefore assumes not only that there is a work guarantee for all, but also a work obligation for all members in the workforce, with the addition of those that are retired but still able and willing to work.

6.2 Investment and credit dynamics in flexicurity growth

For simplicity we assume again that the steady state value of the real wage is fixed at a level that implies $n = \hat{K}$ in the steady state, as was already assumed in the investigation of the stability of the basic reproduction schemes.[12] We thus do determine the steady state value of the real wage ω_1 from the law of motion for $l = L/K$, and supply it here from the outside through a given $\omega_1^o = \bar{\omega}_1$. We can ignore the fluctuations of the state variable l outside the steady state, since they do not feed back into the rest of the dynamics.[13] This however no longer also provides us with the steady state value of the rate of profit, since profits are now to be determined net of interest payments: $\rho = y^p[1 - (1 + \alpha_\omega \alpha_f)\bar{\omega}_1/z] - \delta - rd$, where $d = D/K$ denotes the indebtedness of firms per unit of capital. We assume again as trend term in Okun's law the growth rate of the capital stock (i.e., this part of the new hiring is just determined by the installation of new machines or whole plants (under the assumption of fixed proportions in production).

[12]Moreover, any fluctuations away from the steady state ratio $l_o = \bar{l}$ are here also ignored in the remainder of this paper which allows to save one law of motion in the subsequent stability analyses, see Flaschel et al. (2008) for a motivation of this situation. We stress however the need to treat this issue explicitly in the case where skill formation and heterogeneous skills are considered.

[13]Moreover we ignore now the originally considered $-\hat{K}$ in the following first law of motion without loss of generality).

The normal level of the rate of employment of the workforce employed by firms is again set equal to '1' for simplicity.
On the basis of these assumptions we get from what was formulated in the preceding subsection (where investment was already assumed to be given by $I/K = i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}$):

$$\begin{aligned}
\hat{l}_1^w &= H(l_1^w), \quad H' < 0 \\
\hat{\omega}_1 &= G^1(\frac{\omega_1}{\bar{\omega}_1}) + G^2(\frac{y^p}{l_1^w} - \bar{u}_w), \quad G^{1'}, G^{2'} < 0 \\
\dot{d} &= [i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}](1 - d) - \rho \\
\hat{\eta} &= s_1 + \rho - (\delta\eta + (1 + \eta)[i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}]) \\
&= (1 - c_{h1}(1 - \tau_h) - \alpha_g\tau_h)\omega_1 y^p/z - ((1 + \alpha_r)\bar{l} - (l_1^w + \alpha_f y^p/z))\alpha_\omega\omega_1 \\
&+ [y^p[1 - (1 + \alpha_\omega\alpha_f)\bar{\omega}_1/z] - \delta - rd] - (\delta\eta + (1 + \eta)[i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}])
\end{aligned}$$

The introduction of debt financing of firms thus makes the model considerably more advanced in its economic structure, but not so much from the mathematical point of view, due to the recursive structure that characterizes the dynamical system at this level of generality. We note that there is not yet an interest rate policy rule involved in these dynamics, but the assumption of an interest rate peg: $r = const.$
We make use in the following of the following abbreviations:

$$s_1^o = (1 - c_{h1}(1 - \tau_h) - \alpha_g\tau_h)\bar{\omega}_1 y^p/z - ((1 + \alpha_r)\bar{l} - y^p/z(1 + \alpha_f))\alpha_\omega\bar{\omega}_1$$

and

$$\rho_{max} = y^p[1 - (1 + \alpha_\omega\alpha_f)\bar{\omega}_1/z] - \delta.$$

On the basis of such expressions we then have:

Proposition 2

The interior steady state of the considered dynamics is given by:

$$l_1^{wo} = \frac{y^p}{z}/\bar{u}_w, \ \omega_1^o = \bar{\omega}_1, \ \eta_o = \frac{s_1^o + \rho_o - \bar{a}}{\delta + \bar{a}},$$

where d_o, ρ_o have to be determined by solving the two equations

$$\rho_o = \rho_{max} - rd_o, \quad \rho_o = \bar{a}(1 - d_o)$$

which gives for the steady state values of d, ρ, η the expressions:

$$d_o = \frac{\bar{a} - \rho_{max}}{\bar{a} - r}, \quad \rho_o = \bar{a}\frac{\rho_{max} - r}{\bar{a} - r}, \quad \eta_o = \frac{s_1^o + \bar{a}\frac{\rho_{max} - r}{\bar{a} - r}}{\delta + \bar{a}} = \frac{s_1^o(\bar{a} - r) - \bar{a}(\bar{a} - \rho_{max})}{(\delta + \bar{a})(\bar{a} - r)}.$$

We assume that both the numerator and the denominator of the fraction that defines d_o are positive, i.e., the trend term in investment is sufficiently strong (larger than the rate of profit before interest rate payments ρ_{max} and larger than the rate of interest r). Moreover, it is also assumed that $\rho_{max} > r$ holds so that all fractions shown above are

in fact positive. In the case where $\bar{a} = \rho_{max} = y^p[1 - (1 + \alpha_\omega \alpha_f)\bar{\omega}_1/z] - \delta$ holds we have $d_o = 0$ and $\rho_o = \bar{a}$ in which case the value of η_o is the same as in the sections on investment without debt financing. Nevertheless the dynamics around the steady state remain debt financed and are therefore different from the one of the preceding section. We thus can have a 'balanced budget' of firms in the steady state while investment remains driven by $I/K = i_\rho(\rho - \rho_o) - i_d(d - d_o) + \bar{a}$ outside the steady state position.
For the fraction of company pension funds divided by base pension payments we now get as relationship in the steady state

$$\alpha_c = \frac{\delta \eta_o + r d_o}{\alpha_\omega \alpha_r \bar{\omega}_1 \bar{l}}$$

an expression that in general does not give rise to unambiguous results concerning comparative dynamics. In the special case $d_o = 0$ we however can state that this fraction depends positively on s_o^1 (also in general) and negatively on $\bar{a}, \delta, \bar{l}$.
The Jacobian at the interior steady state of the here considered 4D dynamics reads

$$J^o = \begin{pmatrix} - & 0 & 0 & 0 \\ ? & - & 0 & 0 \\ ? & ? & -(i_\rho + i_d)(1 - d_o)) - (\bar{a} - r) & 0 \\ ? & ? & ? & -\bar{a}(1 + \delta) \end{pmatrix}$$

This lower triangular form of the Jacobian immediately implies that the elements on the diagonal of the matrix J^o are just equal to the 4 eigenvalues of this matrix which are therefore all real and negative. This gives:

Proposition 3

> *The interior steady state of the considered dynamics is locally asymptotically stable and is characterized by a strict hierarchy in the state variables of the dynamics.*

Due to the specific form of the considered laws of motion we conjecture that the steady state is also a global attractor in the economically relevant part of the 4D phase space. We then would get again monotonically convergent trajectories from any starting point of this part of the phase space and thus fairly simple adjustment processes also in the case where investment is jointly financed by profits (retained earnings) and credit.
The stability of the steady state is increased (i.e., the eigenvalues of its Jacobian matrix become more negative) if the speed parameter characterizing hiring and firing is increased, if Blanchard and Katz type error correction becomes more pronounced and if the parameters $i_\rho, i_d, \bar{a}$ in the investment function are increased.
Summing up, we thus can state that the adjustment processes and their stability properties remain very supportive for the working of our model of flexicurity type which is generally monotonically convergent with full capacity utilization of both capital and labor to a steady state position with a sustainable distribution of income between firms, our three types of households and the government. We conclude that flexicurity capitalism may be a workable alternative to current forms of capitalism and can avoid in particular severe social deformations and human degradations caused by the reserve army mechanism and the mass unemployment it implies for certain stages in a long-phase

distributive and welfare state cycle, in the US and the UK more of as a neoclassical cold turkey type and in Germany and in France more gradualistic in nature.[14]

7 Flexicurity and the Keynesian trade cycle

So far the economy was a purely supply driven, with growth of the capital stock driven by net profits and credit from pension funds such that Say's law remained true, i.e., aggregate demand has always been equal to potential output due to the expenditure behavior of households, the government and the firms. In this section we now briefly sketch a situation where capacity utilization problems as well as stability problems may arise within the flexicurity variant of a capitalistic economy. We modify the baseline credit model of the preceding section in a minimal way in order to obtain such results. In place of its pension funds as well as the credits they give to firms we now consider the situation where firms finance their investment plans through their profits and through the issuing of corporate paper bonds. We assume these bonds to be of the fixprice variety and we also keep the rate of interest that is paid on these bonds fixed for simplicity.
Despite this simple change we will now get the situation that actual goods market equilibrium will now depart from potential output (here reinterpreted by a normal rate of capacity utilization of potential output) and may now fluctuate around the assumed normal capacity output. We therefore have the first real problem – here on the macrolevel – the flexicurity society has to cope with, namely the possibility of severe recessions or even depressions when aggregate demand is behaving accordingly, but also the possible situation of an overheated economy. Clearly, there is now need for economic policy, i.e., fiscal, monetary or even income distribution policy in order to avoid large swings in economic activity and thus large imbalances between the industrial and the public labor markets. this section will however only provide the basics for such an analysis and leaves policy consideration for future research.
The amount of corporate bonds that firms are now assumed to have issued in the past is denoted by B and their price is 1 in nominal units. Firms thus have to pay rB as interest at the current point in time and they intend to use their real profits net of interest rate payments and in addition the issue $\dot{B}^s/p$ to finance their rate of investment $I/K = i_\rho(\rho - \rho_o) - i_b(\frac{B}{pK} - (\frac{B}{pK})_o) + \bar{a}$. This rate of investment is assumed to depend positively on excess profitability compared to the steady state rate of profit and negatively the deviation of their debt from its steady state level.

[14]We refer the reader back to what is shown in figure 3 where the postwar period up into the 1960's seemed to suggest that the working of the reserve army mechanism had been overcome, a suggestion that was disproved in the subsequent years in a striking way.

Firms

Production and Income Account:

Uses	Resources
δK	δK
$\omega_1 L_1^d, L_1^d = Y/z$	$C_1 + C_2 + C_r$
	G
rB/p	$I = i_\rho(\rho - \rho_o)K - i_b(\frac{B}{p} - (\frac{B}{p})_o) + \bar{a}K$
$\Pi(= Y^f)$	$[I = \Pi + \dot{B}^s/p]$
Y	Y

Households of type I behave as was assumed so far, but now attempt to channel their real savings into corporate bond holdings as shown below. They will be able to exactly satisfy their demand for new bonds when there is goods market equilibrium prevailing ($I = S$), since only firms and these households act on this market, while all other economic units just spend what they get (with balanced transfer payments organized by the government). The real return from savings in corporate bonds rB/p, at each moment in time, will be added below to the base rent payments of retired households, who receive these benefits in proportion to the bonds they have allocated during their worklife in the private sector of the economy. The bonds allocated in this way thus only generate a return when their holders are retired and then – as in the pension fund scheme of section 2 – at the then prevailing market rate of interest (which is here a given rate still). The pension fund model is therefore here only reformulated in terms of nominal paper holdings (coupons) and thus no longer based on the storage of physical magnitudes. Hence, corporate bonds are here not only of a fix-price variety, but also provide their return only after retirement. This is shown in the income account of retired persons below. The income account of the workers in the second labor market is unchanged and therefore not shown here again.

Households I (primary labor market) and Retired Households

Income Account (Households I):

Uses	Resources
$C_1 = c_{h1}(1 - \tau_h)\omega_1 L_1^d$	
$\omega_2 L_{2h}^w = c_{h2}(1 - \tau_h)\omega_1 L_1^d$	
$T = \tau_h \omega_1 L_1^d$	
$\omega_2(L - (L_1^w + L_{2h}^w + L_{2g}^w))$	
$\omega_2 L^r, L^r = \alpha_r L$	
$S_1[= \dot{B}^d/p]$	$\omega_1 L_1^d$
$Y_1^w = \omega_1 L_1^d$	$Y_1^w = \omega_1 L_1^d$

Income Account (Retired Households):

Uses	Resources
C_r	$\omega_2 L^r + rB/p, L^r = \alpha_r L$
Y^r	Y^r

The government income account (not shown) is also kept unchanged and in particular balanced in the way used in the preceding model types. The modifications of the model of section 2 are therefore of a minimal kind, largely concerning a different type of investment behavior of firms and a new type of organizing the formerly assumed company pension funds. However, the assumed flexicurity system becomes now of real importance, since we here will get demand determined (Keynesian) business cycle fluctuations in the dynamics implied by the model, whereas firms did not face capacity under- or over-utilization problems in the earlier model types. Keynesian IS-equilibrium determination has to be considered now and gives rise to the following equation for the effective output per unit of capital (characterizing goods market equilibrium):[15]

$$\begin{aligned} Y/K = y &= C_1/K + C_2/K + C_r/K + \delta + I/K + G/K \\ &= c_h(1-\tau_h)\omega_1 \frac{y}{z} + \alpha_\omega \omega_1 (\bar{l} - l_1^w) + \alpha_\omega \alpha_r \omega_1 \bar{l} + rb \\ &\quad +\delta + i_\rho(\rho - \rho_o) - i_b(b - b_o) + \bar{a} + \alpha_g \tau_h \omega_1 y/z \\ \rho &= y - (1+\alpha_f\alpha_\omega)\omega_1 y/z - \delta - rb, \qquad b = B/(pK) \\ &\quad \text{which taken together gives:} \\ y &= \frac{\alpha_\omega \omega_1 (\bar{l} - l_1^w) + \alpha_\omega \alpha_r \omega_1 \bar{l} + (rb+\delta)(1-i_\rho) - i_\rho \rho_o - i_b(b-b_o) + \bar{a}}{1 - [c_h(1-\tau_h) + \alpha_g \tau_h - i_\rho(1+\alpha_f\alpha_\omega)]\omega_1/z - i_\rho} \\ &= y(l_1^w, \omega_1, b, \dots) \end{aligned}$$

Note that we have modified the investment function in this section to $i(\cdot) = i_\rho(\rho - \rho_o) - i_b(b - b_o) + \bar{a}$. Note also that we have again assumed that natural growth n is always adjusted to the growth rate of the capital stock $\hat{K}$. We also assume that the denominator in the above fraction is positive and now get the important result that output per unit of capital is no longer equal to its potential value, but now depending on the marginal propensity to spend as well as on other parameters of the model. This is due to the new situation that firms use corporate bonds to finance their excess investment (exceeding their profits) or buy back such bonds in the opposite case and that households of type I buy such bonds from their savings (and thus do not buy goods in this amount anymore to increase the pension fund). We thus have independent real investment and real savings decisions which – when coordinated by the achievement of goods market equilibrium as shown above – lead to a supply of new corporate bonds that is exactly equal to the demand for such bonds at this level of output and income. This simply follows from the fact that only firms and households of type I are saving, while all other budgets are balanced. Households of type I thus just have to accept the amount of the fixed price bonds offered by firms and are thereby accumulating these bonds (whose interest rate payments are paid out to retired people according to the percentage they have achieved when retiring).

[15] Standard Keynesian assumptions will again ensure that $y^o > 0$ holds true.

Assuming the accumulation of corporate bonds in the place of real commodities and an investment function that is independent from these savings conditions thus implies that the economy is subject to Keynesian demand rationing processes (at least close to its steady state). These demand problems are here derived on the assumption of IS-equilibrium and thus represented in static terms in place of a dynamic multiplier approach that can also be augmented further by means of Metzlerian inventory adjustment processes. We stress once again that the possibility for full capacity output is here prevented through the Keynesian type of underconsumption assumed as characterizing the household type I sector and the fact that there is then only one income level that allows savings in bonds to become equal to bond financed investment in this simple credit market that is characterizing this modification of the flexicurity model, due to the now existing effective demand schedule $y(l_1^w, \omega_1, b, \dots)$. We assume that the parameters are chosen such that we get for the partial derivatives of the effective demand function y :

$$y_{l_1^w}(l_1^w, \omega_1, b, \dots) < 0, \quad y_{\omega_1}(l_1^w, \omega_1, b, \dots) > 0, \quad y_b(l_1^w, \omega_1, b, \dots) < 0$$

holds true. This is fulfilled for example if the expression in the denominator of the effective demand function is negative and if the parameter i_b is chosen sufficiently large. Effective demand is then wage led and flexible wages therefore dangerous for the considered economy.
As now significantly interacting laws of motion we have in the consider case:

$$\begin{aligned}
\hat{l}_1^w &= H(\frac{y}{z l_1^w} - \bar{u}_w), \quad H' > 0 \\
\hat{\omega}_1 &= G^1(\frac{\omega_1}{\bar{\omega}_1}) + G^2(\frac{y}{l_1^w} - \bar{u}_w), \quad G^{1'}, G^{2'} < 0 \\
\dot{b} &= (1-b)(i_\rho(\rho - \rho_o) - i_b(b - b_o) + \bar{a}) - \rho - \hat{p} b \\
& \quad \hat{p} = \kappa[\beta_{py}(\frac{y}{y^p} - \bar{u}_c) + \beta_{p\omega} \ln(\frac{\omega_1}{\omega_1^o} + \kappa_p(\beta_{wu}(\frac{y}{z l_1^w} - 1) - \beta_{w\omega} \ln(\frac{\omega_1}{\omega_1^o})] + \pi^c
\end{aligned}$$

where $\hat{p}$ has to be inserted into the other equation (where necessary) in order to arrive at an autonomous system of 4 ordinary differential equations. This particular formulation of the debt financing of firms thus makes the model considerably more advanced from the mathematical as well as from an economic point of view. We note that there is not yet an interest rate policy rule involved in these dynamics, but that the assumption of an interest rate peg is maintained still: $r = const.$
Since the model is formulated partly in nominal terms we have to consider now the price inflation rate explicitly. We do this on the basis of a wage-price spiral mechanism as it has been formulated in Flaschel et al. (2008) with respect to the industrial sector of the economy:

$$\begin{aligned}
\hat{w} &= \beta_{wu}(\frac{y}{z l_1^w} - \bar{u}_w) - \beta_{w\omega} \ln(\frac{\omega}{\omega^o}) + \kappa_w \hat{p} + (1 - \kappa_w)\pi^c \\
\hat{p} &= \beta_{py}(\frac{y}{y^p} - \bar{u}_c) + \beta_{p\omega} \ln(\frac{\omega}{\omega^o}) + \kappa_p \hat{w} + (1 - \kappa_p)\pi^c
\end{aligned}$$

In these equations, $\hat{w}$, $\hat{p}$ denote the growth rates of nominal wages w and the price level p (their inflation rates) and π^c a medium-term inflation-climate expression which

however is of no relevance in the following due to our neglect of real interest rate effects on the demand side of the model (and thus set equal to zero). We denote again by $\bar{u}_w$ the normal ratio of utilization of the workforce within firms and now by $\bar{u}_c$ the corresponding concerning the utilization of the capital stock. Deviations from these normal ratios measure the demand pressure on the labor and the goods market respectively. In the wage Phillips curve C as well as the price Phillips curve we in addition employ a real wage error correction term $\ln(\omega/\omega_0)$ as in Blanchard and Katz (1999), see Flaschel and Krolzig (2006) for details, and as cost pressure term a weighted average of short-term (perfectly anticipated) wage of price inflation $\hat{w}, \hat{p}$, respectively and the medium-term inflation climate π^c in which the economy is operating.
The above structural equations of a wage-price spiral read in reduced form as follows:

$$\hat{w} = \kappa[\beta_{wu}(\frac{y}{zl_1^w} - \bar{u}_w) - \beta_{w\omega}\ln(\frac{\omega_1}{\omega_1^o}) + \kappa_w(\beta_{py}(\frac{y}{y^p} - \bar{u}_c) + \beta_{p\omega}\ln(\frac{\omega_1}{\omega_1^o}))] + \pi^c$$
$$\hat{p} = \kappa[\beta_{py}(\frac{y}{y^p} - \bar{u}_c) + \beta_{p\omega}\ln(\frac{\omega_1}{\omega_1^o}) + \kappa_p(\beta_{wu}(\frac{y}{zl_1^w} - \bar{u}_w) - \beta_{w\omega}\ln(\frac{\omega_1}{\omega_1^o}))] + \pi^c$$

which give the above equation for the price inflation rate and also the above real dynamics when the price equation is deducted from the wage equation.
Note that our model only considers the utilization rate of insiders (within firms) in the wage dynamics, since the markets for labor are always cleared in flexicurity capitalism. We thus now use the output-capital ratio $y = Y/K$ to measure the output gap in the price inflation PC and the deviation of the real wage $\omega = w/p$ from the steady state real wage ω^o as error correction expression also in the price PC. Cost pressure in this price PC is formulated as a weighted average of short-term (perfectly anticipated) wage inflation and our concept of an inflationary climate π^c, , see Flaschel and Krolzig (2006) for details. In this price Phillips curve we have three elements of cost pressure interacting with each other, a medium term one (the inflationary climate) and two short term ones, basically the level of real unit-wage labor costs (a Blanchard and Katz (1999) error correction term) and the current rate of wage inflation, which taken by itself would represent a constant markup pricing rule. This basic rule is however modified by these other cost-pressure terms and in particular also made dependent on the state of the business cycle by way of the demand pressure term $y/y^p - \bar{u}_c$ in the market for goods.
The laws of motion describe again (in this order) our formulation of Okun's law, the real wage dynamics as it applies in a Keynesian environment (see section 3), the debt dynamics of firms and a simple regressive expectations scheme concerning the inflationary climate surrounding the wage-price spiral where it is assumed (and in fact also taking place) that inflation converges back to a constant price level. There is therefore not yet an inflation accelerator present in the formulation of the dynamics of the four state variables of the model. Nevertheless, price level inflation is now explicitly taken account of, indeed for the first time in this paper.
Steady state and stability analysis is no longer straightforward in this Keynesian variant of flexicurity capitalism. With respect to steady state positions we have to solve now a simultaneous equation system in the variables ω_1, ρ, b. Due to the structure of the effective demand function we have moreover no longer zero entries in the Jacobian of the dynamics at the steady state of the first three state variables (the last law of motion is a completely trivial one). As economic mechanism we can identify a real wage channel as in the Kaleckian dynamics of Flaschel et al. (2008) (working here in a wage led

environment by assumption). There is furthermore the dynamic of the debt to capital ratio of firms. These feedback channels can be tamed through appropriate assumptions, but are even then working in an environment that gives no straightforward economically plausible stability assertions, due to the strong interactions present in the dynamics. We therefore have to leave the stability analysis here for future research.
The conclusion of this section therefore is that effective demand problems can make flexicurity capitalism significantly more difficult to analyze (and to handle) and therefore demand a treatment of much more depth – including inflation and interest rate policy rules, government deficits and fiscal policy rules, etc. – than was possible in this short section. Moreover, credit relationships may be looked for that can avoid the increase in complexity of the dynamics of this section.

8 Schumpeterian creative destruction in flexicurity capitalism

After having considered the macroeconomic problems a flexicurity economy might face we now come to a brief discussion of the microeconomic problems it has been constructed for as a solution, namely the socially acceptable handling of exit and entry problems with respect to the real capital stock as well as labor supply. The most remarkable feature of existing capitalism is definitely its property to revolutionize the technological foundations and the product frame of such market economies. The first in depth treatment of this fundamental tendency was given in Marx's (1954) Capital, Vol. I based on what he called the law of value. Schumpeter knew Marx's work very well, but developed his own vision of the microdynamics of capitalism which in place of some questionable monotonic tendencies asserted by Marx, with the exception of the secular law of increasing labor productivity, led him to the consideration of long waves in his work on business cycles (see Schumpeter, 1939). Marx, of course, had not lived long enough to become aware of long phased cyclical changes in the economic and social structure of capitalist economies, but was nevertheless able, on the basis of his value theory, to discuss the secular tendencies of the concentration and centralization of capital and this even on a globalized scale.
Schumpeter's (1912) 'Theory of Economic Development' started from a quite different theoretical apparatus as compared to the classical theory of labor values and production prices, namely from the Walrasian concept of a perfectly competitive market economy which for him described the circular flow of economic life in given circumstances. To this he then added economic development and credit and most fundamentally the dynamic character of the entrepreneur who is initiating spontaneous and discontinuous changes which forever alter and displace the previously existing equilibrium state.

> These spontaneous and discontinuous changes in the channel of the circular flow and these disturbances in the centre of equilibrium appear in the sphere of industrial and commercial life, not in the sphere of the wants of the consumer of final products (Schumpeter, 1912, p.65).

Concerning today's Walrasian theory of general equilibrium where production is but an appendix to consumption theory, this is a totally different perspective and this may also give one reason why Schumpeter (1942) later on used the theory of monopolistic

competition as the starting point of his analysis of the dynamics of capitalism. Defining development as driven by the spontaneous action of the dynamic entrepreneur Schumpeter (1912, p.66) then classifies the possibilities for such actions as follows:

> Development in our sense is then defined by the carrying out of new combinations. This concept covers the following five cases: (1) The introduction of a new good that is one with which consumers are not yet familiar or of a new quality of a good. (2) The introduction of a new method of production, that is one not yet tested by experience in the branch of manufacture concerned, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially. (3) The opening of a new market, that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before. (4) The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created. (5) The carrying out of the new organization of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position.

To realize these various activities the role of credit is essential, since it allows to start such projects with a degree of innovation, often created by new ideas of new entrants in certain markets. Credit helps to redirect labor and capital from old combinations to definitely new ones through process or product innovation and more, see the above list given by Schumpeter. It is therefore not just the use of idle resources of the economy, but the redirection of the employed resources towards new projects and the extra profits they can generate in comparison to their competitors. A typical example here is the railroadization discussed at length in Schumpeter (1939).

The innovative character of the Schumpeterian entrepreneurs thus alters the way the economy has been functioning so far and this the more rapidly the larger the scale on which such entrepreneurs enter the scene. Of course there are subsequent processes of the diffusion of the newly created technology or products which in the course of time reduce extra profits and these new projects have become a routinized economic activity. Yet processes of innovation and diffusion may cluster in historical time and may thus lead to the long phased evolution of social structures of accumulation as they are described historically in Schumpeter (1939) as three Kondratieff waves (superimposed by shorter cycles in addition).

It is not our intention here to go into the details of Schumpeter's analysis of the forces that drive the evolution of capitalist economies. We refer the reader instead to the paper by Swedberg (1991) on Schumpeter's work and biography and to a voluminous edition on Schumpeter and Neo-Schumpeterian Economics edited by Hanusch and Pyka (2007). Our interest instead is to go on from Schumpeter's analysis of capitalism to his analysis of competitive socialism and the implications it may have for the model of flexicurity capitalism that is the subject of this paper.

Questioning the viability of (at his time) existing Eastern state socialism from the viewpoint of immaturity, Schumpeter (1942) developed a concept of socialism for Western countries in the state of maturity characterized as a type of competitive socialism built

on foundations erected unconsciously through the big enterprizes created by the Rockefellers, the Vanderbilts and other famous dynasties in the Western industrialized countries. Schumpeter discusses the question of whether this type of socialism can work, how the corresponding socialist blueprints should look like and to what extent they are superior to the capitalist mark II blueprints (of the mega-corporations) that Schumpeter conceived as having made obsolescent the entrepreneurial functioning of his view of capitalism mark I, the dynamic entrepreneur and the process of creative destruction which is conducted by this leading form of an economic agent.
Monopolistic practices, vanishing investment opportunities and growing hostility in the social structure of capitalism where part of the reasons that in Schumpeter's view characterized the decomposition of capitalism as he investigated it in 1942. Against this scenery he described the superiority of the socialist blueprint of Western competitive type, the transition to this form of social structure of accumulation and the comparative efficiency of such economies. In a separate chapter he discusses the human element in this type of economy, the problem of work organization and the integration of bourgeois forms of management under capitalism into this type of socialism including the incentive problems concerning the behavior of these economic agents.
A typical statement with respect to the latter situation is:

> It is not difficult however to insert the stock of bourgeois extraction into its proper place within that machine and to reshape its habits of work. ⋯ Rational treatments of the ex-bourgeois elements with a view to securing a maximum performance from them will then not require anything that is not just as necessary in the case of managerial personnel of any other extraction Schumpeter (1942, p.65).

It may appear from today's perspective that his focused and provocative discussion of these points in section III of the chapter 'The Human Element' can be questioned to a certain degree. However, the managerial element in existing Western capitalism has become more and more the focus of public debate ranging from the salaries to the ethics the (top) managerial personal should receive and adopt, respectively. Actual discussions on the behavior of industrial management therefore are already preparing the ground for a situation where these persons may be attributed an appropriate level of exclusiveness, that may completely suffice to motivate their efforts to a sufficient degree with a problem-adequate perspective. We do not however claim here that such short characterizations suffice as considerations of the issue. On the contrary, detailed microeconomic and other investigations are absolutely necessary here to deal with such issues, yet, these issues have to be dealt with in actual capitalist management problems anyway. The important point in Schumpeter's arguments is that Western capitalism may transform itself automatically into some kind of competitive socialism on the basis of Western management principles. Such a statement can also be applied to the the evolution of the Nordic European countries which may be en-route on a progress path towards a kind of social structure of accumulation we have modelled as flexicurity capitalism in this paper.
With respect to the workforce of firms – in capitalism as well as in his type of socialism Schumpeter (1942, p. 213) states:

> Second, closely allied to the necessity of incessant training of the normal is the necessity of dealing with the subnormal performer. This term does

> not refer to isolated pathological cases, but to a broad fringe of perhaps 25 % of the population. So far as subnormal performance is due to moral or volitional defects, it is perfectly unrealistic to expect that it will vanish with capitalism. The great problem and the great enemy of humanity, the subnormal, will be as much with us as he is now. He can hardly be dealt with by *unaided* group discipline alone - although of course the machinery of authoritarian discipline can be so constructed as to work, partly at least, through the group of which the subnormal is an element.

In view of our discussion of the working of Marx's general law of accumulation under today's conditions in Western type economies we would however point here to the fact that capitalism itself is in part responsible for the existence of the subnormal element as characterized in the above quote from Schumpeter's work. Mass unemployment, and its consequences for family life much beyond the current status on the labor market, alienation from human types of work organization, degradation of part of the workforce as the unskilled element in an otherwise flourishing economy, the rise and the fall of the welfare state and the latter's consequences for basic income needs, sufficient health care, sufficient care for the children and the elderly and adequate schooling systems are just some of the reasons why the 'subnormal' element in the population is a persistent fact of life. In this respect, we would claim that the social acceptance of a system of flexicurity and its educational substructure – as we have sketched it in this paper – would be one way to eliminate the 'subnormal' segment from the population gradually, but maybe not totally.

We therefore assert here that a system of flexicurity capitalism – based on the principles we have modelled in this paper – would progressively tend towards social acceptance and social learning processes that put it on a progress path towards viable economic reproduction, sufficient income and care for everybody and – if security is well developed to cope with flexibility of a Schumpeterian kind (creative destruction) – that leads it into a situation where it can easily compete with societies that are subject to the Marxian reserve army mechanism and the ruthless capitalism that derives from it.

The central message of Schumpeter's (1942) work on 'Capitalism, Socialism and Democracy' – that socialism is created out of Western capitalist economies, and not on the basis of (the now past) Eastern type of socialism – thus can be carried over to the current debate on the possibility of flexicurity capitalism. Also this form of socio-economic reproduction may be organized through large production units and their efficient – though bureaucratic – management, a form of management that is developed out of the principles used under capitalism in the efficient conduct of large (internationally oriented) enterprizes. Equally well, as we currently experience this in the service sector (both for industrial production as well as for private consumption), there may be sufficient room for the dynamic entrepreneur of Schumpeterian type, in particular through the flexible entry and exit conditions the flexicurity variant of capitalism may allow for.

It is certainly true that contemporaneous capitalism (often of the ruthless type, but in certain countries also of a socially acceptable kind) is not likely to be forced into a defensive position, at least from its performance on the goods and on the labor markets (though the current operation of financial markets may produce extremely undesirable results). Yet, the consciousness that ruthless, unrestricted capitalism is producing significant negative external social and environmental effects is increasing throughout the

world economy and this gives the hope that an alternative form of capitalism – based on flexicurity principles – may be superior in its socio-economic performance, at least when approached in the state of maturity as it was already considered a necessity in Schumpeter's vision of a democratic society based on competitive socialism.
To a certain degree this alternative variety of capitalism also is of a ruthless type, if Schumpeterian creative destruction processes are allowed for, but as in any democratic society there are of course more or less close limits to the choice of techniques (for example in bio-genetics) and the choice of products (for example in war-games), limits that are to be set by the elected political leadership of each country.
Marx viewed the general law of accumulation and its perpetual reserve army mechanism as the element that not only allowed, but was also needed for the reproduction of capitalism. Schumpeter considered changes towards a competitive socialism as a possible alternative to the form of capitalism of his times. We think that there is a chance for an alternative to current forms of ruthless capitalism that not only adopts some welfare principles, but that is founded on a coherently based socio-economic structure that is socially accepted, but that is flexible enough to quickly adjust to the changing world market conditions. The foundations are social acceptance in an educated democratic society. The problems are given by the mastering of Keynesian types of business fluctuations and Schumpeterian types of creative process and product revolutions and – of course – of the control of financial markets such that the real activities of an economy do not just become the side-product of a casino as it was already observed in Keynes's (1936) General Theory.

9 Conclusions and outlook

Starting from the problematic features and the social consequences of the reserve army dynamics characterizing the evolution of the labor markets of many contemporaneous developed capitalist economies, this paper tried to demonstrate that a combination of ideas of Marx, Keynes and Schumpeter on the future of capitalism can provide an alternative to the ruthless form of competition that is currently ruling the world (in developed as well as developing countries). In place of the multilayered degradation of a significant proportion of the population also of democratically governed societies we designed economic reproduction schemes (including education and skill formation) of a competitive form of capitalism that combines flexicurity of a very high degree with security of income as well as employment for the workforce. Schumpeter's investigation of the workability of a competitive type of socialism is thereby carried one step further towards a social vision which preserves to a greater extent the advantages of the existing capitalist forms of production and circulation, but which nevertheless creates a social structure of accumulation which in its essence is liberated from the human degradation we can even observe in leading industrialized countries in the world economy.
The essential ingredients along the progress path towards such a social structure are not only a basic income guarantee of the workfare type (which includes the obligation to work), but also a reorganization of the labor market towards an employer of first (not last) resort who organizes in a decentralized way the work for all people not employed within privately run industries, but also the work of officially retired person who are still willing to offer their human capital on the labor markets of the economy. The workability

of the designed reproduction scheme of flexicurity type of course depends – in the same way as many other actual organizational problems – on detailed microeconomic analyses of the labor relations within large, medium-sized and small business firms as well as in the public sector. Yet, economic incentives need to be coupled with an educational system that not only creates the basis for skill formation, but also provides the proper foundations for citizenship education in a democratic society, where citizens essentially approve the high degree of flexibility in the industrial part of the economy (and not only there) on the basis of the security aspects of the flexicurity concept and the equal opportunity principles during primary and secondary education.

There are of course many micro problems to be solved on the way towards a proper design of working of the Schumpeterian process of creative destruction in the flexicurity economy, problems that where only touched upon in our presentations of the barebones of flexicurity capitalism. There are also many macro problems to be solved on this way, since Keynesian effective demand constraints may lead to unwanted fluctuations in the industrial sector of the economy, caused by malfunctions in the financial sector of the economy in particular. It is far from clear at the present stage of our investigation whether these micro and macro problems can indeed all be coped with on the way to a well-educated democratic society which provides income and employment guarantees (and therewith interrelated obligations), but no job guarantees, but maybe significant job discontinuities coupled with a process of life-long learning.

The main support for the need of an evolution towards such a flexicurity society in our view comes from the fact that the currently existing alternative reproduction schemes of capitalism do not provide a social structure of accumulation that is compatible with an educated and democratic society in the longer run, since their reoccurring situations of mass unemployment undermine social cohesion in many ways in such societies (if this cohesion did exist in them at all), leading to social segmentation, social class clashes and more.

The evolution in the Nordic states of the European Union provide examples how such a development towards socially accepted flexicurity based on a modern schooling system may be approached. We close the paper however with the observation that it does not yet say much on how the modeled situation can in fact be reached in actual economies, at current primarily in the Nordic countries. We here simply assume that the individual experience with progress in educational systems (towards equal opportunities in particular), with the need for flexibility as well as security during the working life and with democratic institutions on all levels of the society will implement ratchet effects in individual and social choice mechanisms which prevent return to the Marxian reserve army mechanism as it has been and continues to be investigated in the many contributions to the original Goodwin Growth Cycle model in view of what happens in actual capitalist economies.

References

Blanchard, O.J.; Katz, L. (1999): Wage dynamics: Reconciling theory and evidence. *American Economic Review. Papers and Proceedings*, 89, 69 – 74.

COUNCIL (2002): Council resolution of 27 June 2002 on lifelong learning. In: Official Journal of the European Communities C 163/1 (*http* : *//europa.eu/eur* − *lex/pri/en/oj/dat/*2002/*c*_163/*c*_16320020709*en*00010003.*pdf* (read 11-18-2007).

Esping-Anderson, G. (1990): The Three Worlds of Welfare Capitalism. Cambridge, U.K.: Cambridge University Press.

Flaschel, P. (2008): *Macrodynamics. Elements for a Synthesis of Marx, Keynes and Schumpeter.* Heidelberg, Springer.

Flaschel, P.; Krolzig, H.-M. (2006): Wage-price Phillips curves and macroeconomic stability: Basic structural form, estimation and analysis. In: C. Chiarella, P. Flaschel, R. Franke and W. Semmler (eds.): *Quantitative and Empirical Analysis of Nonlinear Dynamic Macromodels.* Contributions to Economic Analysis (Series Editors: B. Baltagi, E. Sadka and D. Wildasin). Elsevier, Amsterdam.

Flaschel, P.; Greiner, A.; Luchtenberg, S.; Nell, E. (2008): Varieties of capitalism. The flexicurity model; in: Flaschel, P.; Landesmann, M. (eds.): *Mathematical Economics and the Dynamics of Capitalism*, London, Routledge, forthcoming.

Goodwin, R. (1967): A growth cycle; in: Feinstein, C.H. (ed.): *Socialism, Capitalism and Economic Growth,* Cambridge, Cambridge University Press, 54 – 58.

Groth, C.; Madsen, J. B. (2007): Medium-term fluctuations and the "Great Ratios" of economic growth, Working Paper, University of Copenhagen.

Hanusch, H.; Pyka, A. (2007): *The Elgar Companion to Neo-Schumpeterian Economics.* Aldershot: Edward Elgar.

Kalecki, M. (1943): Political aspects of full employment. Reprinted in M. Kalecki, *Selected Essays on the Dynamics of the Capitalist Economy*, Cambridge: Cambridge University Press, 1971.

Keynes, J.M. (1936): *The General Theory of Employment, Interest and Money.* New York: Macmillan.

Marx, K. (1954): *Capital, Volume I.* London: Lawrence and Wishart.

Ministry of Education and Science of Sweden (2004): Equity in education. Thematic review. Country analytical report. Sweden. *http* : *//www.oecd.org/dataoecd/*30/22/38697408.*pdf* (read 11-18-2007).

OECD (2007): Education at a Glance 2007. *http* : *//www.oecd.org/document/*30 */*0, 3343, *en*_2649_39263294_39251550_1_1_1_1, 00.*html* (read 11-18-2007).

Report of the special rapporteur on education, Vernor Muñoz, on his mission to Germany (13-21 February 2006) *http* : *//www.netzwerk − bildungsfreiheit.de/pdf/Munoz_Mission_on_Germany.pdf* (read 11-18-2007).

Schumpeter, J. (1912): *The Theory of Economic Development.* London: Oxford University Press.

Schumpeter, J. (1939): *Business Cycles, Vol. I,II.* Philadelphia: Porcupine Press.

Schumpeter, J. (1942): *Capitalism, Socialism and Democracy.* New York: Harper & Row.

Solow, R. (1956): A contribution to the theory of economic growth, *Quarterly Journal of Economics*, 70, 65-94.

Swedberg, R. (1991): *Schumpeter. A Biography.* Princeton: Princeton University Press.

Vis, B. (2007): States of welfare or states of workfare? Welfare state restructuring in 16 capitalist democracies, 1985-2002. *Policy & Politics*, 35, 105-122.