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Macroeconomic transformation of capitalism – how to achieve politically determined growth rates?

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Abstract

An economy with a stable medium-term growth rate of zero – or any other politically determined growth rate – needs new regulations and institutions to realise this target. Such an economy would look very different compared with the existing type of capitalism we have today in the Global North. In the existing capitalist system, investment demand as well as autonomous demand elements like government demand, export demand or autonomous consumption demand drive the dynamic of GDP and the whole economic system. In a zero growth economy the different demand aggregates are determined by economic policy including heavy intervention in income and wealth distribution and the direction of technological development. Whether such an alternative system is understood as a version of highly regulated capitalism or as a new system is a question of taste.

Keywords: Transformation of capitalism, economic systems, zero growth

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1. Introduction

One potential mechanism to solve the ecological crisis is to reduce GDP growth rates, or even pursue a growth rate of zero or degrowth. For example, zero growth in the Global North may be necessary to give more room for growth in the Global South. It is obvious that reducing GDP growth can only be one element of efforts to prevent an escalating ecological crisis. Without a radical change in technology and the way to produce and consume even a zero growth economy leads to catastrophic ecological consequences. If technological advancement is ecologically-friendly, then sustainable positive growth may also be possible. Only history can show whether and to what extent this is possible.

In this contribution the theoretical question is asked whether in a capitalist system, as we know it today, a zero growth economy is possible. What does this mean for different macroeconomic markets? What kind of regulations and policies are needed to implement zero growth? This topic also touches on the question of how the present economic system can be made more stable. GDP growth in capitalism has been largely uncontrolled. For example, even the best equipped expert groups can hardly predict GDP growth in three years or five years, not to mention for longer time spans. In capitalist history GDP growth has been the outcome of a great number of economic and political factors, endogenous instability processes and external shocks. Is it possible to realise a certain politically determined GDP growth rate? What are the conditions for this?

Different versions of capitalism developed throughout history. For example, after World War II, the most regulated type of capitalism to date developed in the Global North mainly as the outcome of the Great Depression in the early 1930s and the USA's New Deal. In the 1970s/1980s this type was replaced by a more deregulated and unstable version of capitalism with a bigger role for the financial system. Other versions of capitalism are imaginable. This contribution will discuss the directions in which capitalism could be transformed, as well as the possibility of a zero growth economy or any other politically determined growth rate. Let us say that natural scientists, taking technological advances into account, tell us which growth rate must be realised for sustainable development. The question is, how this growth rate can be realised. This unavoidably includes dimensions of utopia.

John Maynard Keynes and Joseph Schumpeter in particular, the latter partly building on Karl Marx, developed visions about the future of capitalism and its fundamental transformation. In this paper these contributions are taken into account (see also Dullien et al. 2011).

In the second section macroeconomic conditions for a zero growth economy are developed. The following sections discuss how different macroeconomic variables can be regulated. In the centre stands the control of investment and consumption demand, but also the labour market, government sector and the external sector. The last section gives a conclusion.

2. Macroeconomic conditions for zero growth

Small super-multiplier model

In this section the equilibrium conditions for a politically determined growth rate of gross domestic product (GDP) will be determined. The approach is in the tradition of super-multiplier models which combine the usual multiplier with the investment accelerator, that means the reaction of investment to changes in other demand elements. The interpretation of the model, however, is not following the usual tradition. The results can be easily transferred to specific growth rates. In the centre is a GDP growth rate of zero.¹

According to national accounting, GDP is identical to real gross investment (I_G) plus real consumption (C) plus real government demand (G) plus real external demand expressed by exports minus imports (Ex-Im). All variables are real variables. We get:

$$(1) \quad \text{GDP} = I_G + C + G + \text{Ex-Im}$$

Investment is the only demand element which can change production capacities. Thus, investment is not only an important element for the level of demand, it is also important for the development of production capacities. This implies that at least in the long run a certain relationship between investment demand and the remaining demand elements must be given – otherwise excess capacities or a lack of capacities develops.

In a simple model we assume that capital goods have a life span of only one year. If we also assume that investment during a year increases capacities in the same year, then output capacities can be linked to gross investment via the capital coefficient (α) which is defined as I_G/GDP . It follows:

$$(2) \quad I_G = \frac{I_G \cdot \text{GDP}}{\text{GDP}} = \alpha \cdot \text{GDP}$$

¹ An economy with a very low growth rate, negative growth rate or an economy with zero net-investment and net-saving growing according to technological development could also be analysed.

The capital coefficient is given by the technology and is an exogenous factor in this model (Domar 1946).

To give an example. Let us assume consumption demand as €300, government demand as €100, external demand as zero and a capital coefficient of 0.2. Then we need gross investment (in our model identical with the capital stock) of €100 to produce the GDP which is $C + G + I_G = €500$. In the simple model which is presented here firms take a one-year credit from households and pay back the credit in the same year. Under this condition households have a gross income identical to GDP. A deficit of the government sector in a zero growth economy would lead to permanently increasing government debt in relation to GDP. We assume government finances to be balanced, governments have no deficit and no surplus and all expenditures are financed by household taxes.

Based on the behaviour of households a usual Keynesian consumption function can be defined which depends on the marginal propensity to consume (c), an autonomous demand element (C_{aut}) and in our case gross disposable, which is gross disposable income minus taxes. Under the assumption that government expenditures are equal to taxes, gross disposable income is also GDP minus government expenditures ($GDP - G$). We get:

$$(3) \quad C = C_{aut} + c(GDP - G)$$

When we insert equation (2) and equation (3) in equation (1) it follows:

$$(4) \quad GDP = \alpha \cdot GDP + C_{aut} + c(GDP - G) + (Ex - Im)$$

Isolating GDP, we get:

$$(5) \quad GDP = \frac{C_{aut} + (Ex - Im) + (1 - c)G}{1 - \alpha - c}$$

In a zero growth economy not only government budgets have to be balanced, we must also avoid the unsustainable permanent increase of positive or negative net asset positions between countries. The current account should also be balanced in the medium-term. Under the condition that $Ex - Im = 0$ equation (5) becomes:

$$(6) \quad GDP = \frac{C_{aut} + (1 - c)G}{1 - \alpha - c}$$

To give an example. If the capital coefficient $\alpha = 0.2$, marginal propensity to consume $c = 0.5$, autonomous demand $C_{aut} = \text{€}100$ and government demand $G = \text{€}100$, GDP becomes $\text{€}500$ with consumption demand of $\text{€}300$, government demand of $\text{€}100$ and gross investment demand of $\text{€}100$ as well.

Gross savings (S_G) are defined as $S_G = \text{GDP} - C - G$. If for C the consumption function is used it follows $S_G = \text{GDP} - [C_{aut} + c(\text{GDP} - G)] - G$. It follows

$$S_G = c \cdot G - G - C_{aut} + (1-c) \text{GDP}$$

and with $s = 1-c$ as marginal saving rate

$$(7) \quad S_G = c \cdot G - G - C_{aut} + s \cdot \text{GDP}$$

We know that in equilibrium gross saving must be equal to gross investment. Using the numerical numbers we get, not as a big surprise, that $S_G = I_G = \text{€}100$.

In Figure 1 gross investment (equation 2) and gross savings (equation 7) are shown as well as the equilibrium.

Figure 1: Gross saving and gross investment in monetary units

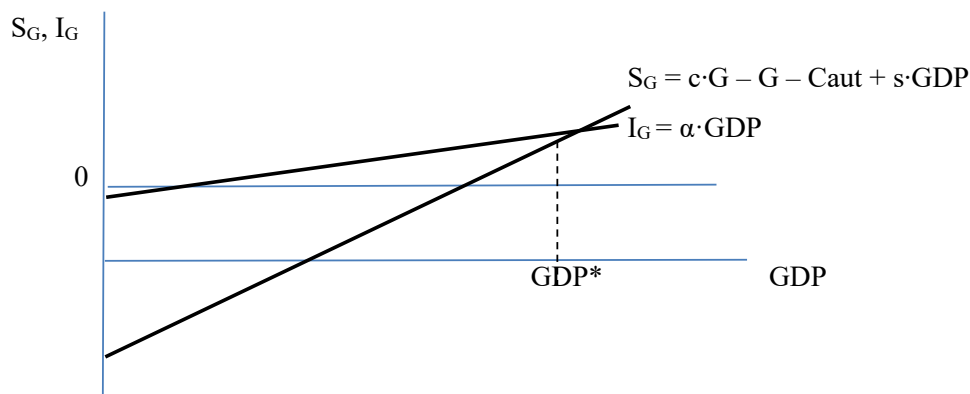


Figure 1 also shows that the system becomes unstable when the investment function and the saving function do not cut. If the value of α becomes higher than the value of s the system explodes. In this case consumption demand increases investment, but the income effect of investment increases consumption demand further and leads to even higher investment, etc. The system shrinks when s becomes lower than α . In this case low consumption demand reduces investment and the income effect of investment reduces consumption demand further, etc. What

we have here is Harrod's (1939) growth on a knife-edge and the potential enormous instability of capitalist development.

Assuming a zero growth economy, certain variations are possible. In case the capital coefficient becomes lower – less capital is needed to produce a given GDP – the marginal saving rate has to be reduced and consumption increased to realise the same GDP. In the opposite case when more capital is needed to produce a certain GDP the marginal saving rate has to be increased to keep GDP stable. Also, variations are possible between consumption and government spending. For example, government expenditure can be increased if household consumption is reduced. In a situation of zero growth the model assumes a given stock of assets held by households, including non-profit organisations, and the government sector vis-a-vis the enterprise sector. Assets can be kept as monetary wealth in financial institutions or as equity. The stock of assets remains unchanged as in a zero growth economy net saving of the economy and net investment is zero.

Consequences from the model

Equation (6) is an equilibrium condition. One interpretation is that government expenditures can control GDP as consumption demand and gross investment endogenously adjust. I think such an interpretation is not justified. First, autonomous consumption demand is not stable. It can change with credit conditions, expectations and regulations. Especially real estate investment by households, counted as investment, is unstable and can affect long-term GDP. The same is the case with changes in the marginal propensity to consume (cp. Fiebiger 2018 for the instability of private household demand in the US).

Second and more important is that equation 2 is anything but a convincing investment function. Investment in a capitalist economy is the most unstable demand element and the key driver for instability. Karl Marx (1867), Joseph Schumpeter (1911) and John Maynard Keynes (1936), three of the most important economists in history, stress the role of investment for economic dynamic in respect to GDP growth, employment and technological change. No serious investment function can be developed which is stable over longer historical periods. Investment depends on expected demand, expected costs, the interest rate, availability of credit and many other present and future variables which in a world of uncertainty are difficult to estimate and judge. Keynes (1936: 162f.) writes: "In estimating the prospects of investment, we must have regard, therefore, to the nerves and hysteria and even the digestions and reactions to the weather

of those upon whose spontaneous activity depends.... We are merely reminding ourselves that human decisions affecting the future, whether personal or political or economic, cannot depend on strict mathematical expectation, since the basis for making such calculations does not exist.”

Of course, autonomous demand elements like government demand, external demand or autonomous consumption demand are factors that can and will influence investment demand. But this does not change the basic argument that investment demand is the most unstable private demand element, which is at least one of the important factors determining the rhythm of capitalist development. The ups and downs of GDP growth rates lead to a certain long-term economic development, and statistically a certain trend can be found retrospectively. The idea that a long-term trend exists and the business cycles moves along the given trend does not reflect the fact that economic development takes place in historical time.

The most convincing argument is that investment demand *and* autonomous consumption demand, government demand and external demand influence the long term development of GDP, depending on the historical situation. Let us look at one of the econometric analyses discussing this topic. If Z stands for autonomous demand including autonomous consumption, public expenditures and exports, econometric analysis has shown: “Standard cointegration tests indicate that Z and GDP have shared a common long-run trend during the period analysed. However, the cointegrating relation between Z and output appears to have been very unstable in the early post Second World War period... Autonomous demand appears to have played a role in influencing the long-run evolution of US output growth in the last five decades” (Girardi / Pariboni 2016: 539f).² And they continue: “Empirical tests in macroeconomics are admittedly imperfect. Variables are imprecisely measured, feedback effects, though pervasive, are often ignored; the regressors of interest are not randomly distributed” (Girardi / Pariboni 2016: 540).

In Girardi and Pariboni’s analysis it is especially unsatisfactory that government demand and autonomous consumption demand are independent of investment demand. But we have to assume that investment demand influences income creation and tax revenues and in this way massively influences government expenditures and autonomous consumption demand. We conclude from this debate that we have to assume that investment plays a key role in short-term and long-term economic development along with government demand, autonomous

² For similar econometric analyses see also Fiebiger / Lavoie (2019) and Pérez-Montiel / Manera (2021).

consumption and external demand. And even if, for a moment, it is assumed that investment passively follows other demand elements in the long run, it is obvious that such a process is extremely violent and wasteful. Think of the overcapacities created in the computer industry during the dot-com bubble or in the real estate sector in many countries before the 2008 financial crisis. Should explosion of investment in boom phases, created overcapacities periods of crisis and long stagnation of investment not have long-term repercussions for GDP growth?

The whole process of capitalist development is very violent with respect to the level of economic development as well as the structural changes caused by technological development.³ Harrod (1939) and Domar (1946), basing their argument on Keynes (1936), showed the *conditions* for a stable growth process and were convinced that no market mechanism exists which would realise the necessary conditions for stable development. The conclusion of these economists was that only permanent interventions by government and stabilising institutions are able to stabilise the capitalist process. And it should be taken into account that even the realisation of growth on a knife-edge – the warranted growth rate – does not automatically follow population growth and realise full employment i.e. the natural rate of growth (Harrod 1939).

We draw the conclusion that a medium- or long-term politically controlled GDP growth rate, let us say zero growth, needs the simultaneous control of all demand elements. This implies comprehensive economic policy interventions and regulations of the capitalist system. In the next sections, we discuss what the economic policy and related regulatory institutions could look like.

3. Controlling investment

A zero growth regime – or any regime with a target growth rate of real GDP – needs to stabilise investment at a certain level – to achieve the wanted growth rate and the needed proportion between investment and other demand elements. Let us first look what former economists contributed to this topic.

³ Joseph Schumpeter (1942: 84f.), analysing business cycle and technological change argues in the tradition of Karl Marx (1867), argues that the incentive to earn extra profit “revolutionizes the economic structure *from within*, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism.” It is “a bombardment ... in comparison with forcing a door,” and “it disciplines before it attacks” (Schumpeter 1942: 84f.). Thus, investment influences structural changes and at the same time has effects on the level of income and production.

Keynes, who saw private investment demand as a major disturbing factor for instability and was sceptical whether monetary and fiscal policy could stabilise economic development, demanded: “I conceive, therefore, that a somewhat comprehensive socialisation of investment will prove the only means of securing an approximation to full employment; though this need not exclude all manner of compromises and of devices by which public authority will co-operate with private initiative” (Keynes 1936: 378).⁴

Earlier, he already made clear what he meant with the compromises between public authority and private initiative: “I believe that in many cases the ideal size for the unit of control and organisation lies somewhere between the individual and the modern State. I suggest, therefore, that progress lies in the growth and the recognition of semi-autonomous bodies within the State – bodies whose criterion of action within their own field is solely the public good as they understand it, and from whose deliberations motives of private advantage are excluded, though some place it may still be necessary to leave, until the ambit of men’s altruism grows wider, to the separate advantage of particular groups, classes, or faculties – bodies which in the ordinary course of affairs are mainly autonomous within their prescribed limitations, but are subject in the last resort to the sovereignty of democracy expressed through Parliament” (Keynes 1926: 17). Ports, railway companies or universities are mentioned as examples. Thus, Keynes recommended that all public utilities and also companies which are of key importance for infrastructure, social wellbeing and providing public goods should be state owned and not profit oriented. Depending on the company the owner can be a local community, a provincial state or federal state.

There is an even more important point according to Keynes (1926: 18): “But more interesting than these is the trend of joint stock institutions, when they have reached a certain age and size, to approximate to the status of public corporations rather than that of individual private enterprises. One of the most interesting and unnoticed developments of recent decades has been the tendency of enterprise to socialise itself. A point arrives in the growth of a big institution

⁴ The capitalist productivity machine led within a few hundred years to major developments in technologies and has been increasing production and consumption and changing social conditions to a degree unparalleled by any previous mode of production. The problem is that the capitalist productivity machine produces winners (the creative side), but also many losers (the destructive side) whereas the losers do not show any personal misconduct. Moreover, the capitalist productivity machine does not in any way protect nature and the environment. Negative external effects and the failure of the price system to sufficiently reflect nature and environment guide the capitalist productivity machine systematically in the wrong direction – to the abyss of an ecological catastrophe. To repair the market failure in the sphere of the ecology, comprehensive interventions especially in the direction of investment dynamic are needed anyway.

... at which the owners of capital, i.e. its shareholders, are almost entirely dissociated from the management.”

Schumpeter (1942) argues, following Marx (1967), that based on internal economies of scale, many companies become bigger and take the form of stock companies. An important argument is that innovations become automated in research departments of big firms and especially responsible managers of this. Owners and old type of entrepreneurs do not have much to do with these innovations. Oligopolies, he argues, could stabilise economic development in many ways such as trying to soften the destructive dimension of “creative destruction” by slowing down structural changes to minimise losses, avoid price wars and try to keep prices stable in recessions or create cartels to “plan” the development of the industry. In addition, he mentioned that with economic development the need and function of public companies increases, from the area of public health or urban development to public transport to insurance companies, etc. “National and municipal investment could thus be expected to expand, absolutely and relatively, even in a thoroughly capitalist society, just as other forms of public planning would” (Schumpeter 1942: 120).

And, along the same line of argument as Keynes: “The perfectly bureaucratized giant industrial unit not only ousts the small and medium-sized firm and ‘expropriates’ its owners, but in the end it also ousts the entrepreneur and expropriates the bourgeoisie as a class which in the process stands to lose not only its income but also what is infinitely more important, its function” (Schumpeter 1942: 134).

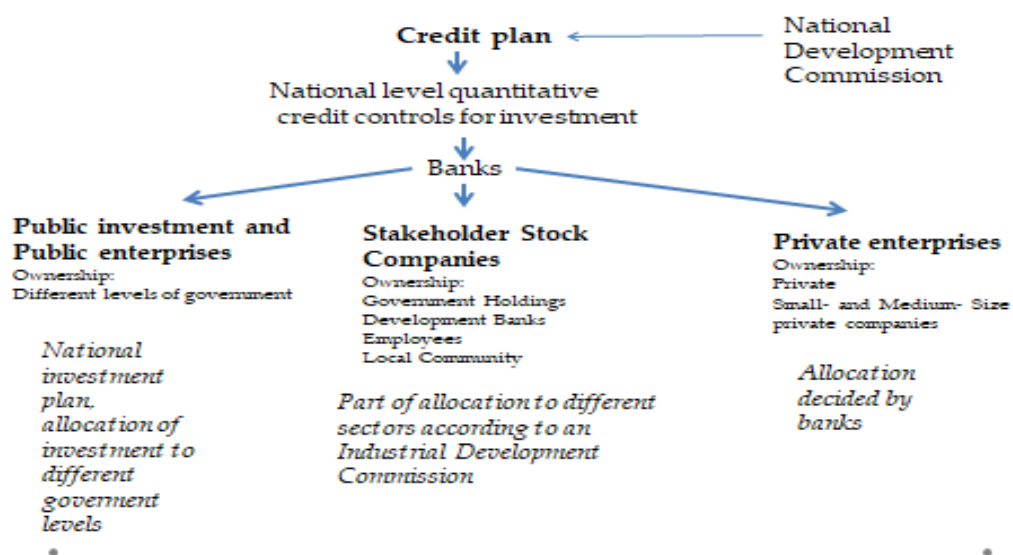
Already Karl Marx followed this idea: “Capitalist joint-stock companies as much as cooperative factories should be viewed as transition forms from the capitalist mode of production to the associated one, simply that in one case the opposition is abolished in a negative way, and in the other in a positive way” (Marx 1894: 522-23).

To sum up the argument by these economists: Public enterprises usually completely owned by state authorities can and should play an increasing role in investment and macroeconomic development. Even more importantly, owners in stock companies become unnecessary. In many cases shareholders have no idea of the business of the company they own. Shareholders become a parasitic class earning dividends and make speculative gains without any important role. And this paves the way for an alternative organisation of stock companies.

In principle these arguments especially by Keynes and Schumpeter can be followed. A counterargument is that the shareholder-value principle which was established in the 1990s positions shareholders as the masters of management via the linkage of management salaries to stock market developments. But it is highly questionable whether shareholders now have a positive effect on companies. The now dominating shareholder-value principle is speculative and short-term oriented. It more disturbs than supports long term-oriented investment behaviour of companies, while irrational exuberance and stock market crashes destabilise economic development in general. Last but not least, the exorbitantly high management salaries and bonuses suggest that management exploits shareholders more than the other way around. Managers seem to be poorly controlled and well-positioned to fill their pockets with very high incomes.

What does this debate mean for the control of investment? The investment sectors could be divided in three groups: public investment and completely state-owned public companies, stakeholder stock companies, and private enterprises (see Figure 2).

Figure 2: The Credit Plan



Source: Own figure.

A national credit plan could determine the national growth of gross investment and could accordingly influence the development of credit plans in all three investment sectors. The credit

plan should take into account financing investment out of own means of companies. Banks should implement the credit plan via the credit they provide to the different sectors.

Growth rates of *public investment and investment by public companies* from public transport to waste disposal to universities should be decided by a National Development Commission. The volume of this investment could be allocated to the federal level, to states and even counties and municipalities. The type of investment can to a large extent be decided on a regional or local level.

Stakeholder stock companies, meaning the majority of the big companies in a country, would be fundamentally restructured according to this proposal. Important for these companies is management, especially the appointment of good managers, and the control of management. This function can be taken over by a mix of owners. If enterprises reach a certain size, they have to be transformed in stakeholder stock companies. Candidates for ownership are big government-owned holding companies, local communities where companies are located, public development banks or development funds and employees.⁵ Also, big collectively-owned enterprises belong to this category. A good example of the latter group are non-profit oriented building societies that are collectively owned.

In a zero growth economy the investment growth of this group of enterprises must be fixed on a national level. An Industrial Development Commission should as part of industrial policy decide for a part of total investment volume in which sector the investment flows.⁶ The remaining part can be decided by the banking system.

Stakeholder stock companies can make profits and compete with other enterprises. They can also go bankrupt in cases of loss marking. Self-financing of investment is possible, should be privileged and taken into account in the credit plan. The same is the case for the issue of new shares and the foundation of new stakeholder stock companies.⁷ Managers who are not efficient

⁵ Public holding companies can be owned by different government levels Employee ownership can start when a person starts to work for a company and expires when the person leaves the company. Private ownership could be added, however, would not bring any advantage.

⁶ In this commission, for example, top managers, government, trade unions, experts and other stakeholders like relevant NGOs could sit.

⁷ The issue of new shares (IPOs) does not play a big role for investment. For example, in the US between 2000 and 2017 IPOs in the US were on average below 1.5% of gross capital formation (OECD 2021; StatInvestor 2021). In addition, it has to be taken into account that in the US, again taken as an example, from the mid-1980s on net

in their tasks, especially avoiding losses, will be replaced. Also, it should be possible to pay dividends. But this should only be possible in case a company makes profits. To buy own shares should be forbidden. Venture capital funds can also play a role in this model. State-owned venture capital firms play an important role in many countries even today.⁸

In addition to public and stakeholder stock companies a sector of *small- and medium-size private enterprises* including smaller collectively owned enterprises should exist. Investment dynamic for this group of companies also has to be fixed, however, the allocation of investment and credit can respectively follow purely private incentives.

The banking system plays a key role in the national credit plan . The banking system could have the same ownership structure as stakeholder stock companies. However, different ownership structures are possible. Conceivable are banks completely owned by governments again at different levels of collectively owned banks.⁹ To make the credit plan work each banking group should have a ceiling for credit expansion within a certain time period. The credit plan can be combined with lending rates of banks fixed by the central bank or the central bank only fixes the refinancing rates of banks. Overall, such a system implements politically determined credit rationing, with part of the credit allocation politically decided, and a big part of credit allocation decided by the banks themselves on a decentralised level.

This sound like a planned economy. But this idea is wrong, the system suggested is not comparable with a planned economy of the Soviet type. Credit rationing also takes place in a purely capitalist credit market. Nothing would be more wrong than to analyse credit markets in a way in which demand and supply functions for credit cut at an equilibrium interest rate

buybacks of shares are in almost all years positive, meaning that in the US more shares are bought back by companies than issued (Gruber / Kamin 2017).

⁸ Stakeholder stock companies should not have bigger equity than a given percentage of their assets, let us say 60%. The rest of their assets should be financed by credits. Up to this percentage companies can use profits for investment, while higher profits have to be distributed to owners. Such a regulation is especially important in an economy with zero growth. In a zero growth economy structural change takes place when some sectors shrink and others expand. This implies that some sectors get less credit than in the past and other sectors more. For this reason, credit relationships are important. A sector with one hundred percent of assets as equity without credit relationships would be more difficult to be forced to shrink than with credit relationships. The system is comparable to the money market where commercial banks always need to refinance themselves and via this mechanism the central bank fixes the money market interest rate.

⁹ Germany is a good example of how such a banking system could look. The “Sparkassen” in Germany are very successful, which are owned by local communities, are only allowed to give credit in their local area and preferably give credit to small- and medium-sized firms. In addition, they have an own network which allows transfers of funds and mutual help. The system of collectively owned banks, the “Volksbanken”, is also very successful. Last but not least, the third biggest German bank is a state-owned development bank, the “KfW” (Detzer et al. 2017)

implying that all credit demanders for that interest rate are satisfied. Credit plans were very common in successful Asian countries. For example, Japan after World War II implemented monetary policy via a credit plan. Within the credit plan, a certain percentage of credits were guided in certain sectors as part of industrial policy. Stiglitz and Uy (1996) report that in the 1950s, during Japan's economic miracle, around fifty percent of credits were politically allocated. For banks, including private banks, an allowed growth rate of credits was given by the central bank – for example all banks were allowed to give two percent more credit every quarter of the financial year. The banking system in Japan almost perfectly followed the credit ceiling given by the Bank of Japan. The system existed in Japan until 1991 and allowed an extremely successful economic development until the end of the 1980s (Werner 2003). Other Asian tiger countries successfully followed very similar monetary policy models (Stiglitz / Uy 1996). In China after the end of the planned economy in the late 1970s, a credit plan was established and officially existed until the end of the 1990s. Unofficially the credit plan continues to exist in form of “window guidance” (Herr 2010). In China this happened on the basis of an almost completely state-owned banking system, which remains in place today. It also should be mentioned that the price system takes over an important allocative function.

Fixing credit ceilings in the credit plan implies that insufficient investment in the system sketched above is theoretically possible. In such a situation, public enterprises can be used to increase investment as well as the usual instruments to also stimulate other investment. And there also should be room for temporary fiscal policy.

The scenario sketched above, and especially in a zero growth economy, looks like heavy intervention in the volume and structure of investment. This is correct. Volume control is needed to enforce a certain growth rate. With respect to structural interventions, it has to be acknowledged that based on ecological problems governments are anyway forced to influence technological development and production and consumption structures in a far-reaching way. Also, in the existing capitalist system, basic new technological developments are only possible when a bundle of policies works together – from the necessary infrastructure, to appropriate education and regulations.

4. Controlling consumption demand

Consumption demand is to a large extent a dependent demand element as consumption depends first of all on income. How much of income is consumed depends on the propensity to consume

which is a behavioural parameter in the consumption function (see Equation 8). The propensity to consume is a key parameter to increase or decrease consumption out of a certain income.

While many factors may influence the propensity to consume in addition to current income, for example the availability of consumption credit, the distribution of income and wealth is particularly important. From the many empirical investigations of the distribution topic, two are worth highlighting. In the first study, a research group from the Federal Reserve Bank of Boston found, using panel data from 1999 to 2013, that in the US the average propensity to consume for the median of the quintile with the lowest income is 0.974 and for the highest quintile 0.475. For wealth the values are 0.774 and 0.607 (Fisher et al. 2019). “This suggests that low-wealth households cannot smooth consumption as much as other households do, which further implies that increasing wealth inequality likely reduces aggregate consumption and limits economic growth” (Fisher et al. 2019: 1). In the second study, a research group from the Bank of Malaysia found that the marginal propensity to consume had a range from 0.81 for low income households to 0.25 to high income households (Murugasu et al. 2013). We can assume that super-rich and even rich households will spend a smaller proportion of their income for consumption than households with low income. Of course, there may be differences between countries which have to be made clear empirically. This implies, as a general rule, that redistribution of income and wealth is a key instrument for economic policy to change the propensity to consume and consumption demand.

In a low growth or even zero growth economy a high consumption demand and propensity to consume is needed to avoid net savings. In an economy with zero growth, net savings and net investment must be zero which implies that all income is consumed and only replacement investment equal to depreciations takes place. Also, rich households have to consume all their income which usually stems from wealth *and* high paid employment. Extremely rich households which have accumulated very high stocks of wealth receive a high proportion of profits and have very high incomes which are usually not consumed. Rich households which have net savings could give consumption credits to poor households, but in a zero growth economy this would quickly lead to unsustainably high indebtedness of poor households. Only temporary credits between households which are completely paid back are sustainable in a zero growth economy. This implies that an economy with zero growth can realistically only be realised when the concentration of wealth and income is radically reduced.

Fortunately, there are several policies and institutional changes available to achieve this. First, the increasing role of public enterprises reduces the sectors in the economy which earn profits. Second, stakeholder stock companies can realise profits, but profits from this sector do not flow to private households.

Third, Keynes (1936: 376) expected the “euthanasia of the rentier”. An important element of this is a real interest rate of zero. In the credit plan the refinancing rate for banks could be reduced to a level which brings the real interest down to zero. With an inflation rate of 2% and a refinancing rate by the central bank of 2%, then banks would offer deposit rates to households of around 2%. Lending rates would be slightly higher to cover their costs. Two scenarios are possible. Banks could have the right to fix their lending rates and add a risk premium to the interest rate spread. From Stiglitz and Weiss (1981) we know that interest rates would not rise too much as banks do not want to drive out good debtors. Or the central bank fixes the lending rates – in this case risky debtors would not get any credit. Real interest rates of zero are justified as “interest today rewards no genuine sacrifice, any more than does the rent of land” (Keynes 1936: 376). Interest as an incentive for saving and a substantially unequal income distribution to allow the rich to save are not needed. Even more in a zero growth economy with net saving, zero interest to stimulate saving is unnecessary.¹⁰

Fourth, if the interest rate is very low the minimum profit rate will become low as well. Interest payments are costs of firms in case of indebtedness or opportunity costs in case of equity. In a situation of intense competition normal profit mark-ups fall more or less to the level of the interest rate. In his *General Theory* Keynes (1936, Chapter 17) put forth this argument and proposed that the interest rate would determine the profit rate.¹¹ Keynes did not stress Kalecki’s argument that market power can increase profit rates much above the interest rate (Hein 2018). He did not take into account the tendency towards oligopolistic and mono- and oligopsonistic markets. Stiglitz (2019: 55) reports that the number of competitors in US markets has been

¹⁰ If saving would be needed, let us say in a low growth economy, it would “be possible for communal saving through the agency of the State to be maintained at a level which will allow the growth of capital up to the point where it ceases to be scarce” (Keynes 1936: 376).

¹¹ Keynes (1936: 374ff.) argued that interest rates and profit rates would fall to zero when there is no scarcity of capital. This argument has nothing to do with the marginal productivity theory of capital, a neoclassical concept, which argues that the physical marginal product of capital determines the profit rate and the latter the interest rate. Keynes explicitly criticised the theoretical approach of a marginal productivity of capital as basis for the remuneration of capital (Keynes 1936: 137f.). In Chapter 17 Keynes argued that the marginal non-pecuniary rate to hold liquidity – the marginal liquidity premium by wealth owners – determines the interest rate and the interest rate the profit rate. In an economy with a central bank and banks it makes much more sense to argue that the central bank determines the interest rate directly or indirectly (Hein / Herr 2021).

falling and the market share of the top two or three firms has been increasing. Between 1997 and 2012 such processes took place in 75 percent of industries, with the effect of a concentration of profits in the most powerful companies. In addition, in global value chains lead firms usually exploit not only oligopolistic, but also monopsonistic and oligopsonistic market constellations or other sources of power (Dünhaupt / Herr 2021a and 2021b). Stakeholder stock companies in many cases will have market power and can follow rent-seeking strategies. Here tax policy can play a role in reducing rents as well as anti-trust policy and other regulations to prevent rent seeking. And it has to be kept in mind that profits of these firms do flow to private households via returns to shareholders.

Last but not least, tax policy can play an important role to prevent very high differences in household incomes and wealth distribution (see also Dullien et al. 2011: 119ff.). To reduce the concentration of wealth, inheritance taxes can play an important role. Again Keynes (1936: 173f.) can be followed: “For there are certain justifications for inequality of incomes which do not apply equally to inheritances.” High inheritances fundamentally violate the principle of a meritocracy which is usually stressed by defenders of capitalism. Atkinson (2015), for example, recommends a high gift and inheritance tax. A person or institution can receive during their life a gift plus inheritance of, let us say 100 000 Euro, from another person or institution without tax; then a progressive inheritance tax has to be paid. For private firms, tax allowances in cases where the inheritor continues the business should be introduced. Also, the state can become a sleeping partner of the inherited firm for some time. For income tax he recommends a marginal tax rate of 65 percent for households’ income. This marginal tax rate is moderate in historical perspective. In the US during World War II the marginal tax rate was increased to over 90 percent and stayed there until 1964 when it was cut to 70 percent. President Reagan then cut the marginal tax rate to below 30 percent (Mitchell 2003). Also rents from real estate and speculative gains should be taxed.

Of course, a number of other institutions and policies can help to create a relatively equal income distribution. An important role here plays minimum wage policy and a high wage bargaining coverage of economic sectors. Provision of public goods by the state is important as well. A developed welfare state seems to be highly preferable for a zero growth economy. Households will only stop saving if the basic risks of life are covered by solidary institutions.

5. Government sector

The government sector does not need many elaborations. Important is that in a zero growth economy the government sector should have a balanced budget in the medium term. A budget deficit would otherwise in the long-run lead to ever increasing government debt quotas. Variations of the size of the government sector in a zero growth economy are possible. The government sector can increase when private consumption is reduced and vice versa. Fiscal policy to stabilise demand will also be needed in a zero growth economy. Shocks can happen and quick fiscal adjustment is an important instrument to cope with them. The government sector has otherwise the usual distributional and allocational functions.

6. Regulating the labour market

We also have to assume that in a zero growth economy technological progress will take place – even if it slows down with production techniques which are ecologically sustainable. This implies that less and less labour is needed to produce the same volume of output – hours of work will decrease with the same rate as labour productivity increases. If population is not shrinking, working time has to be cut to avoid unemployment. Already Keynes (1930) thought that in a few generations working time could fall to not more than 15 hours a week and humans will be faced with the problem how to use their leisure time. He assumed that in a few generations all basic needs of the population would be satisfied and only status consumption, which he saw as critical, would drive increasing demand. While his predictions regarding desired consumption demand and working time were much too optimistic, in the long term at least for the Global North this may be a realistic scenario.

Shrinking population as a long-term scenario should not be excluded. Japan seems to be a role model in this respect. Annual population growth in Japan since 1978 has been falling below 1 percent, then close to zero and from 2010 on it is negative. For the next decades the United Nations (2019) expect stagnating populations in Europe, North America and Latin America, and shrinking populations in Asia. Only Sub-Saharan Africa is expected to show substantial population growth. For the world as a whole it is expected that world population growth will decrease, reach 11 billion and finally at the end of the 21st century stop growing (United Nations 2019). Of course, stagnating and even shrinking population make a zero growth economy much more realistic.

7. Regulating the external sector

The external sector in a zero growth economy should realise a balanced current account in the medium term. Any imbalance in the current account would lead in the long run to unsustainable foreign debt for countries with current account deficits. This does not exclude that for political reasons some countries may for some time realise surpluses or deficits in the balance of trade and services. But such imbalances should be financed by transfers to keep the current account balanced.

The main point is that without strict international capital controls balanced current accounts and a zero growth economy are not possible. Capital controls are needed to implement the national credit plan and realise balanced current accounts.

The global economy could be regulated along the lines of Keynes's (1943) proposal for the international monetary system after World War II which he presented as member of the British delegation at the Bretton Woods conference in 1944 (cp. also Herr 2011). He proposed fixed exchange rates with a small band and the possibility to adjust the central rates in case of bigger current account imbalances. An international clearing union should be established to issue the supranational "bancor" currency as liquidity to central banks and to help countries in balance of payment crises. Adjustments of imbalances in current accounts should be symmetric and, not as in the case of the market mechanism, shift the burden of adjustment only to the current account deficit country. Capital controls were an integral part of his proposal: "There is no country which can, in future, safely allow the flight of funds for political reasons or to evade domestic taxation or in anticipation of the owner turning refugee. Equally, there is no country that can safely receive fugitive funds, which constitute an unwanted import of capital, yet cannot safely be used for fixed investment. For these reasons it is widely held that control of capital movements, both inward and outward, should be a permanent feature of the post-war system" (Keynes 1943: 31).

A light version of Keynes's plan was realised. In the Bretton Woods System fixed but adjustable exchange rates were introduced, and the International Monetary Fund was established as an institution to help countries with balance payment problems. Limited Special Drawing Rights were introduced in 1969 as a version of the bancor. But the US dollar remained in the centre of the system and capital controls were stepwise relaxed after World War II. The final breakdown of the system came in 1973.

It should be obvious that the present globalisation model with the key importance of international capital flows must be radically changed to establish a zero growth economy. International trade in goods and services can take place in such an economy whereas certain regulations are needed to keep the current accounts around zero and not to disturb planned sectoral adjustment in the domestic economy.¹² Also, certain foreign direct investment flows or long-term credit flows are possible. But such flows should be regulated as capital flows in general.

A country which wants to start a zero growth economy does not have to wait until the whole world economy follows such a strategy. It is possible for a bigger country or an economic block to protect itself via capital controls and, if needed, some trade regulations.

8. Conclusion

An economy with a stable medium-term growth rate of zero needs new regulations and institutions to realise this target. Such an economy would look very different compared with the existing type of capitalism we have today in the Global North. In the existing capitalist system investment demand as well as autonomous demand elements like government demand, export demand or autonomous consumption demand drive the dynamic of GDP and the whole economic system. In a zero growth economy the different demand aggregates are determined by economic policy including heavy intervention in income and wealth distribution and direction of technological development. Whether such an alternative system is called a version of highly regulated capitalism or a new system is a question of taste.

Marx, Schumpeter and Keynes all came to the conclusion that capitalism itself creates the conditions for a highly regulated economic system which goes beyond existing capitalism. The development of big stock companies has been leading to a situation in which the owners of such companies have almost no positive function any longer. The opposite is the case, the frequent turbulences in stock markets driven by speculation, irrational exuberance and short-sightedness of investors has been becoming a disturbing factor for long-term oriented economic development. The functionless investor in stock markets who pockets high dividends and

¹² There is no doubt that international trade can increase the welfare of nations. But one important policy to realise this is to internalise the external costs of transportation – for example not allow ships to use heavy fuel or allow flights to be so cheap that goods are flown around the world. Internalisation of external effects would increase transportation costs and reduce international trade for some kinds of goods.

speculative gains based on rent-seeking of their companies can be substituted by other mechanisms to control management in stock companies. Similar arguments can be applied for interest earnings as there is no justification left to reward scarifying consumption. Especially in a zero growth economy saving does not do any good. Last not least the function of the entrepreneur who is eager to change the world, implement new technologies and products, has for a long time already been taken over by innovative management and to large extent is institutionalised in research, marketing, and other company departments.

The zero growth economy sketched in this paper implies fundamental changes in ownership structures and wealth and income distribution. But it is not a planned economy of the Soviet type. A large sector of purely private companies exists as well as competition between firms that are not in private hands. Also, the price system manages allocative functions. The financial system will look different. Investment volume and credit volume is macroeconomically planned, but decisions on the micro level still play a big role. The function of the stock market is radically reduced as well as financial institutions which are based on speculation.

The vision of the mode of production and consumption as well as wealth and income distribution sketched here can only be realised when the political will exists to establish it. When we look at the historical time of the establishment of capitalism it becomes clear that elements of the feudal system with its special role for the aristocracy class survived. Even today institutional monarchy with privileges by birth still exist in a number of countries.¹³ The functionless wealth owner earning interest and dividends by violating the merit principle may also survive for a long time even there is no function left for this class. But change is possible. Even the aristocracy class is today not more than a shadow of its former self.

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¹³ The Royal Family is the richest family in the UK. In 2021 it was estimated that annual net earnings not including the Queen and her near ones was around \$90 billion. Assets of the family have remained tax-free for hundreds of years (Kabra 2021).

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