Growth imperative and money creation – a new outlook on growth dynamics

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Modern economic development is characterized by a permanent tendency towards growth. I will argue that growth depends substantially on the continuing and boundless creation of money and the resulting dynamics.

With regard to money, one should first know what money is today. Money is anything with which you can pay. Today, one can pay with paper money from the Central Bank, which is the legal tender, but also with bank deposits, which are the result of loans by the banks. These loans are credited on the liability side of the banks' balance sheets. Payment with bank deposits is either made by transfer order or by credit card. Currently, approximately 95% of all payments are made with bank deposits and only 5% with paper money (and coins). Deposits can be exchanged for paper money at banks, but these can no longer be converted into gold at the Central Bank as in the past. The obligation to convert was definitely abolished in the 1970s. Since then, the Central Bank can issue any amount of paper money, regardless of the gold reserves. Consequently, the amount of money – bank deposits and paper money – can be increased from year to year. This is correctly described as money creation. Without the golden fetter of the past, this can carry on indefinitely.

Banks produce money. They produce it by granting loans to private firms, the government, and households. It is 100% *new* money, because no equivalent amount is debited from another account. A small part of this – about 5% – will actually be redeemed in paper money. Banks must therefore have sufficient reserves to meet this obligation. They can, however, always refinance themselves through the Central Bank, i.e. obtain new paper money by selling financial assets, mainly government debts. The Central Bank can, I would like to repeat, continuously issue new paper money, because there is no obligation to exchange this for gold.

A decisive factor is the increase in the money supply which occurs through the increase in loans (credits) to private firms and leads to economic growth, because firms normally use the money for investments, i.e. to increase production capacities, which leads to an increase in goods. The newly created money is therefore converted – not into gold anymore, but into produced goods. In this way, the real gross domestic product (GDP) increases on the basis of money creation.

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Growth has developed into a perpetual dynamic process, which sustains itself in that it creates the precondition that makes continuous growth possible. How does this happen?

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Firms must pay for the labor supply provided by households and for other inputs *when* they are used, i.e. when production starts. Firms can, however, sell products only after they have been produced. Production takes time. The firms therefore require an advance – money not yet earned – to pay for labor and other inputs. This advance is the firm's capital. The capital includes borrowed capital (external funds), mainly bank loans, and equity capital (internal funds), which households make available to the firms – currently mostly by buying shares –, or which is retained profits. Without preliminary financing, i.e. without the conversion of money into capital and without money advances, there is no market, no investments, and no economic growth.

These money advances require profit. Why? Because investing capital is risky. The firms selling products in the future do not know what portion of the money spent on investment will flow back when they will have sold their products in the future. The future is always uncertain. Therefore firms expect a profit that will not only cover the interest rate to be paid on the borrowed capital, but will also leave sufficient net profit so that the equity capital can compensate for the risk.

For the functioning of the economy as a whole, the prospect of a profit should therefore always be higher than the prospect of a loss. The expected profit should hence be positive. This is only the case if the probability of profits was and remains generally higher than the probability of losses, i.e. the sum of all firms' profits should exceed the losses.

How can such a positive profit balance in the aggregate arise? Firms' profits are defined by their earnings less their expenses, or, more precisely, by the difference between their earnings and their expenses for the inputs necessary for the production of the goods from which they obtain their earnings – thus, the difference between earnings and costs. In order to make profits in the aggregate, aggregate earnings must always be larger than aggregate expenditure. How can this happen? How can all market participants earn more than they spend? It is obviously not possible if the same amount of money just goes around in circles, i.e. if the money that firms pay households for their labor supply is simply used by the households to buy products that the firms have produced with their help. Under these circumstances, firms' earnings would always be equal to their expenditure. The sum of profits and losses would then not have a positive profit balance. Therefore, a positive profit balance can, on the whole, only be achieved if there is a constant inflow of money.

But, how does money flow into the modern economy? We already know this: By firms obtaining loans from banks, which the banks can always provide through the process of money creation, i.e. by increasing the money supply through the credit channel. Firms use the borrowed money, together with their reinvested net profit, to purchase additional labor and other inputs. The incomes of households as providers of the labor supply therefore grow with the increase in GDP, while firms' profits increase with the households' growing incomes, since the households spend their income on the products that firms have produced.

The point is that households immediately spend the money which they receive for providing labor to firms. Thus, household expenses immediately become the earnings of the firms, which sell them their products. However, firms can only sell products that have already been produced previously, i.e. before they received new money created by loans from the banks and which they paid to the households in exchange for providing labor. Therefore firms’ earnings increase before the production costs of the goods they sell increase. The result is positive aggregate profits, provided the economy continues to grow. Hence, the circular flow of money becomes a growth spiral perpetuating itself. Owing to money creation, output growth is the necessary condition for profits. In turn, profits create the precondition for money to be used as capital, and these profits thus enable further growth (see Figure 1).

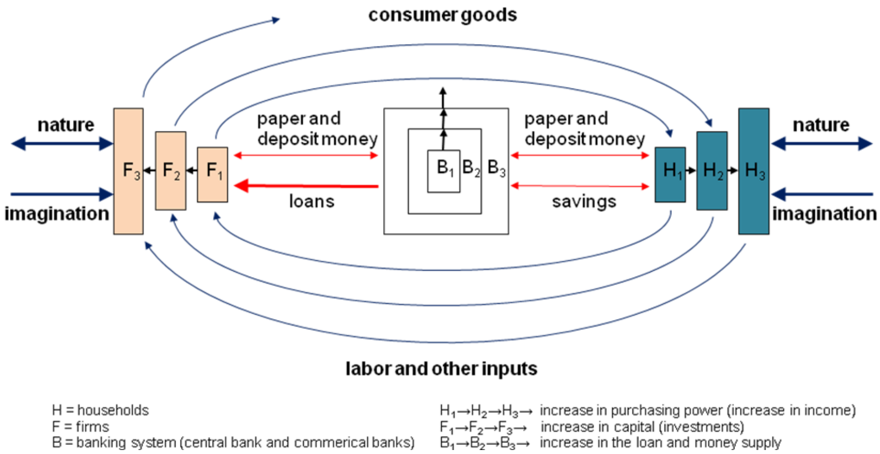

Figure 1: The growth spiral

The circular flow occurs between households and firms – firms buy households’ labor as an input factor for production, and households buy goods produced by the firms. The flow expands with each “rotation,” due to a) the firms' investments and b) the increase in the households’ income. This creates a growth spiral. The banking sector effects the payment transactions between the households and the firms and expands due to the growth of the banks' balance sheets. The expansion of the growth spiral’s scale is due to a) money creation through the credit channel, b) the extraction of natural resources (with a simultaneous release of waste and emissions into nature), and c) human imagination inventing new products and methods of production.

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The drawback, however, is that economic growth leads to a growth imperative. The growth process *must* always continue; without a continuous expansion of the money supply due to the need to finance new investments, which triggers additional demand, the subsequent increase in supply due to the preceding investment activity will fall into a void. The increase in demand is necessary to compensate for the already occurred increase in supply. If this did not happen, the effect of the production increase of the previous period’s investments would occur without being absorbed by the income effect of a new investment. The profit margin would decrease correspondingly. If the profit margin falls below the minimum level that firms or investors expect in return for their investment risk, firms will no longer provide replacement investments and will gradually stop production. Eventually, interests can then no longer be paid. An increasing number of firms will make losses and, by going bankrupt, will cease production activity. Instead of growing, the economy begins to shrink. The growth spiral inverts and becomes a shrinking spiral. This results in a growth *imperative* in the sense that under a certain benchmark of a minimum growth rate, the alternative to growing is shrinking. In other words, stability and zero growth are not possible in the modern economy. Given the conditions of our monetary system, growth is essential for the system (see Figure 2).

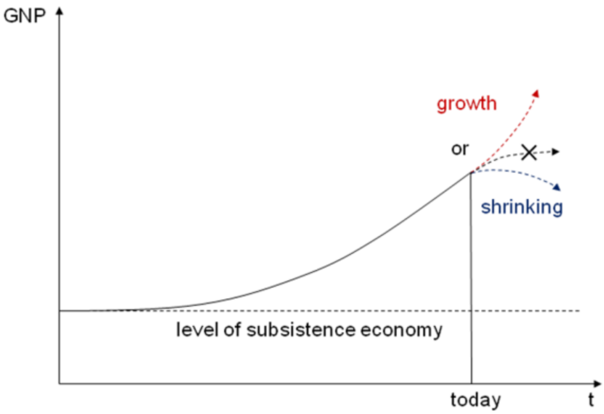

Figure 2: The growth imperative

However, this does not necessarily mean that the growth rate has to be arbitrarily high. A minimal growth rate is sufficient. Basically, this rate is determined by the credit interest rate that banks charge firms, banks' capital ratios, and the net return investors expect in order to take on the risk of investment. Based on plausible assumptions, I have calculated the minimum level of the global (!) growth rate as 1.8% in my book *Die Wachstumsspirale* [The growth spiral]. This figure could even be lower, if systemic risk is reduced.

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The prerequisite for maintaining growth is, however, that there are no stumbling blocks to hamper it. This, on the other hand, cannot be guaranteed. Growth is jeopardized by crises that become increasingly acute the more advanced the growth dynamic becomes.

The danger of financial and economic crises like the ones in 2007/08 is of prime importance. Primarily, these crises are the result of an excessive money creation which does not finance real production, but leads to speculative purchases of financial assets with the expectation of ever-increasing asset prices due to a constant money supply increase. When the expected future price increase is higher than the interest rate, loans are made to purchase assets in order to make quick profits. Such speculation is, however, not entirely risk-free, since the interest rates could at a certain point increase. This occurs if the Central Banks fear inflationary pressures due to the increasing issuing of speculative loans, which causes an inflated money supply. In order to prevent this, Central Banks increase the interest rates. Since too high interest rates reverse the leverage effect of speculative loans, a financial crisis results. This happened in 2008.

But what would happen if there were no financial crises? Would everything then be satisfactory? No, because the tendency towards economic growth can only be fed if there are sufficient available natural resources to obtain raw materials and energy, which provide the basis for increased output. Economic growth, however, is increasingly confronted with long-term environmental depletion. This does not only refer to natural resources, but also to limits to waste and emissions, because the world, i.e. nature, is finite. Its exploitation cannot be arbitrarily prolonged and extended. The foreseeable shortage, especially of energy, certain raw materials, and food, had already led to price increases before the last crisis. These rising prices are again in the spotlight, as they increase the inflation risk besides exacerbating the environmental crisis.

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The analysis of the prerequisites for economic growth indicates where reforms to control growth must primarily occur – with the *reform of the monetary system*. The idea is to generate money in a different way than through escalating and unchecked money creation by commercial banks. The starting point can be the 100% money concept of the American economist Irving Fisher, the most important American economist of the 20th century. He developed a concept after the 1929 crisis, which is now more topical than ever. According to this proposal, the Central Bank has the exclusive right to money creation; banks are obliged to cover the deposits with 100% reserves. This happens through the banks' deposits at the Central Bank, which can be always converted into bank notes. The Central Bank – and only the Central Bank – is thus autonomously and solely in charge of money creation. The Central Bank is given the possibility to proactively and not just, as at present, reactively determine the extent of money creation so that possible crises and collateral damage due to growth are prevented as far as possible. The aim is to avoid:

- inflation and deflation of commodity prices
- speculative inflation of financial assets, and
- unlimited economic growth beyond the current capacity of a finite world.

The legitimization of strengthening the role of the Central Bank and the duty to do so results from the following argument: Without state legislation, which ensures that the paper money issued by the Central Bank is the legal and definitive tender – that is, it can no longer be converted into gold –, there would only be a small fraction of the currently circulating and constantly increasing money supply.

The reform of the monetary system must be complemented by a *reform of corporate law*. Specifically, revision is required of legislation regarding joint stock firms. Owing to their legal structure, these firms are aimed at unlimited growth and cannot pursue a strategy of moderation. This is due to the share value at the stock exchange being based on the sum of an infinite series of discounted expected profits. Moreover, since expected profits are higher the higher the current investments are, the faster a firm grows. For this reason, shareholders are willing to accept smaller dividends in exchange for larger profits in the future. The smaller dividends are overcompensated by the share price increase! Since this applies to all corporations, which are clearly the economy's major players, the tendency towards unlimited growth is preprogrammed for the entire economy. What can be done?

Public firms are legal entities and, thus, a societal invention they would not exist without legislation. Consequently, shareholders' rights are dependent on legislation. It is therefore possible to change legislative content with reform to avoid crises caused by excessive growth. This could include the creation of two categories of shares as was partially done in the past: registered shares [in German: *Namensaktien*] and bearer shares [in German: *Inhaberaktien*]. Registered shares would not be traded on the stock exchange, and over-the-counter (OTC) selling would only be allowed after three years. They should keep an indefinite duration. Bearer shares might, however, be traded on stock exchanges, but would only have a duration of 20 or 30 years, with a redemption of the initial investment at the end of their validity term. Such a limitation automatically reduces the unlimited increase in share values and, at the same time, limits the scale of possible declines. This would substantially reduce the risk of repetitive financial and economic bubbles.

For long-term investments, other forms of organizations should be further promoted: e.g., foundations and cooperatives.

A foundation is oriented towards a particular goal and not only towards the realization of profits. The founders can receive a pension funded by the profits, but most of the profits will be reinvested in the foundation in line with its original goal. The foundation's assets are not traded on the stock exchange. This means that the foundation is not subject to speculation. The foundation may acquire additional autonomy through the incorporation of a limited liability firm, which performs the operational part of the business.

Another possibility is to enhance the cooperative concept. The cooperative is designed as a mutually supportive group and is thus more member-related. In principle, the profits are retained in the business. Each cooperative member has an equal share in the cooperative's registered capital and an equal voting right. A member can usually only recoup his money if he finds a new cooperative member to take his place. As in the case of the foundation, the shares of the cooperative are not traded on the stock exchange. This means that the cooperative, too, is not subject to speculation.

These reforms in the area of monetary policy and corporate law would not only significantly avert crises in the economy, but would also lessen the demand for natural resources and dampen the economic system's environmental impact. The demand and impact would not become zero, because growth – albeit on a lower level – will continue. Further measures, such as new regulations and the tightening of existing ones, are therefore required for more energy and resource efficiency. All these measures will, however, be insufficient if the global GNP growth remains on the recent high level – with the exception of the 2007/08 crisis – of 4-5%. Deceleration of growth is necessary to ensure that the increase in efficiency per product *unit* is not always offset by an increase in the *number* of products, with the ultimate aim to realize sustainable economic development.

References

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