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„*Macroeconomics Without Growth: Sustainable Economies in Neoclassical, Keynesian and Marxian Theories*“

Dissertation Universität Hamburg 2017

### **Summary**

This study investigates conditions for sustainable economies without growth, i.e., economies that are characterized by zero growth, environmental sustainability, low economic inequalities and economic stability. The central motivations to organize economies without growth are that economic growth is environmentally unsustainable and does not contribute to high social welfare in early industrialized countries. As a result, a significant amount of literature on concepts for economies without growth has developed, referring to the terms *steady state economies*, *degrowth*, *Postwachstum* and *prosperity/managing without growth*. This literature has generated a diverse set of conditions for sustainable economies without growth.

However, there is a research gap regarding analyses of such conditions from macroeconomic perspectives. Several contributions investigate specific issues of zero growth economies or conduct their research by using specific models. Still missing are investigations that make use of well-established, comprehensive macroeconomic theories. Accordingly, the theme of this dissertation is to provide a substantiated macroeconomic analysis for conditions of sustainable economies without growth. A plural set of macroeconomic theories is applied in order to facilitate a comprehensive understanding. Overall, 29 single theories from the neoclassical, Keynesian and Marxian schools of economic thought are applied to the question, which macroeconomic conditions lead to sustainable economies without growth.

The analysis of neoclassical theories entails fundamental neoclassical theories (e.g., the Solow Model), endogenous growth theories and theories that include environmental aspects. All theories allow for stable zero growth under certain conditions. The central result from neoclassical theories is that aggregate supply has to stay constant over time. Therefore, any change of either a level of supply or of a productivity of one production factor (i.e., labour, capital and natural resources) needs to be balanced out by a proportional and opposite change of a level of supply or of a productivity of another production factor. Additionally, three scenarios are developed based on the neoclassical theories. They lead to zero growth by combining (1) labour-augmenting technological change and reductions in average working hours, (2) labour-augmenting technological change and decreasing supply of natural resources and (3) resource-augmenting technological change and decreasing use of natural resources.

Keynesian theories comprise fundamental contributions (e.g., by Keynes and Kalecki), monetary theories and theories that include environmental aspects. Again, all theories are compatible with conditions for stable economies without growth, albeit some theorists argue the contrary. In Keynesian theories, the central condition is that both aggregate supply and aggregate demand have to stay constant over time. Subsequently, the level of investments has to equal capital depreciation. This requires constant demand from households and the government, so that firms have no incentive to expand production. When technological change increases labour productivity, reductions in average

working hours need to take place in order to keep wages, incomes and private consumption constant. Net savings equal net investments and are therefore zero as well. In order to prevent instabilities, groups of economic actors (firms, households, banks and the government) need to have balanced accounts. Four scenarios are developed for the Keynesian theories. They all lead to zero growth and no unemployment due to (1) increasing labour productivity and reductions in working hours, (2) a redirection of technological change based on altered relative input prices, (3) sectoral change from dirty towards clean products and (4) a combination of redirected technological change and sectoral change.

Three types of Marxian theories are examined: Marx's theory, the Theory of Monopoly Capitalism and theories that include environmental aspects. Marxian authors themselves argue that zero growth is incompatible with capitalism. On the contrary, this present study develops conditions for zero growth economies for all three types of theories. However, these economies would then no longer be capitalistic necessarily. The central conditions in Marxian theories are that firms are collectivized, diseconomies of scale replace economies of scale, the sales effort is prevented and the availability of cheap energy (based on fossil fuels) is limited. Marxian theories additionally entail an analysis of the political economy, i.e., the power relations in society. These contradict the implementation of the necessary conditions for sustainable economies without growth. Two scenarios are developed for the Marxian approaches, which emphasize partially different conditions: (1) In competitive capitalism, the diseconomies of scale are central to prevent the coercion to invest due to price competition (2) In monopoly capitalism, the prevention of the sales effort is essential as the sales effort is the major reason for increasing effective demand. Both scenarios emphasize the conditions of collective firm ownership and limiting the supply of cheap energy.

After having analysed the conditions for each school of economic thought, these conditions are compared and integrated. This is done for seven areas: (1) environmental regulation, (2) investments and capital depreciation, (3) business types, (4) consumption and government spending, (5) employment, (6) distribution and (7) monetary system and savings. As most conditions are complementary rather than contradicting, they are integrated into a unified set of conditions.

The synthesis culminates in the development of a novel model of sustainable economies without growth. It entails the major conditions from the investigation. In this model, aggregate supply and aggregate demand stay constant over time. On the supply side, the supply of natural resources, energy and labour decrease -- including a reduction of average working hours. Technological change is redirected so that it primarily decreases the resource coefficient. On the demand side, investments, private consumption and government spending stay constant. Net investments are zero. This is achieved by a collectivisation of firm ownership, diseconomies of scale and the expectation that aggregate demand stays constant. Private consumption does not increase because income stays constant (increases in labour productivity are used for reductions in average working hours rather than higher wages). Government spending stays constant due to political decisions. Additionally, the type of demand changes from dirty towards clean products so that a sectoral change takes place. Finally, net savings equal net investments and are therefore zero. In order to guarantee economic stability, income is redistributed so that no group of economic actors continuously accumulates assets or debts. Whether such conditions can be implemented depends on social power relations. While strong social actors have interests to oppose these conditions, alliances between social movements may facilitate them.