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## Preface to the German Edition

The concept of “economic growth” became a slogan during the 1960s. It replaced the idea of “reconstruction,” which had guided economic activity since the end of the Second World War. The new slogan implied a return to the process of economic development of the nineteenth century which had been interrupted by two world wars and the Great Depression. However, before the 1960s “economic growth” had not been explicitly formulated as a concept, nor did the idea of the social product—today we talk of Gross Domestic Product (GDP)—represents statistically the annual product of goods. So far, it had never been imagined that GDP should continually increase from one year to the next by a constant percentage. This was quite new—even for an economist like myself who completed his studies at the end of the 1950s.

Until that time, the main object had been to find a way to prevent an interruption of the steady circulation of goods and money by the ups and downs of cyclical movements. But now it became a matter of extending the cyclical movements into a spiral, so that each cycle of economic activity would progressively augment production. At the time, I asked myself whether it was even possible for production to increase at a constant rate each and every year and hence exponentially. Was this not in contradiction with the first law of thermodynamics, according to which nothing in the physical world can increase, if not something else decreases? I looked for an answer in economic theory, which during the 1970s became increasingly concerned with the question of growth. But its findings left me unsatisfied, because increasing production was always attributed to “technical progress” in one form or another. But how could “technical progress” that comes from human knowledge result in quantitative economic growth? I could never get this question out of my mind, and it has remained there throughout all my years of research.

At the beginning of my academic career, I was preoccupied with policy-relevant questions. Over many years I studied issues related to European integration. I was particularly interested in studying the economic significance of a common currency as compared to multiple convertible currencies. This led me to pay greater attention to the interaction of real and monetary factors in the economic process, as shown

in my book “Markt und international Währungsordnung” (*The Market and the International Monetary Order*).

In due course, my interests shifted to questions relating to the natural environment. This led me into an intensive study of the natural foundations of economic activity, since it was obvious that the production of waste and emissions which are harmful to the environment was closely related to the input of energy and raw materials taken from natural resources and used in the economic process. This work has found its way into two publications: “Wege aus der Wohlstandsfalle” (*Ways out of the Welfare Trap*) with W. Geissberger, T. Ginsburg, and others, and “Arbeit ohne Umweltzerstörung” (*Employment Without Environmental Destruction*) with H. Frisch, H. Nutzinger, B. Schefold, G. Scherhorn, U. E. Simonis, B. Strümpel, and V. Teichert.

While working on these books, it became clear to me that both the money and the natural world played a much greater role in the economy than conventional economic theory has assumed. And so I formulated a new approach to understanding growth which, in my opinion, cannot be explained without including the contribution of monetary dynamics and of the role of natural resources in the modern economy. This led me to reconsider the general foundations of economic theory from the perspective of economic growth including money and natural resources. The result is presented in this book. It aims to provide some guidance to all those who have to make decisions concerning, in one way or another, future economic development, and who therefore have to deal with the opportunities as well as the risks of economic growth.

This book addresses both the economic specialist and the interested lay reader. It makes reference to various specific schools of thought and economic thinkers. It does not, however, assume any prior knowledge of these, since the main lines of argument and their conclusions are established without any specific recourse to such references.

My work on this book would not have been possible without the assistance of many people. First of all I would like to express my thanks to Guido Beltrani, who played a major role for the completion of this book. His dissertation “Monetäre Aspekte des Wirtschaftswachstums” (*Monetary Aspects of Economic Growth*) took up the elements of my thinking on the growth imperative that had been contained in preliminary studies for this book. His own findings have, in turn, found their way into this book. This is especially true for the chapter on “The Avoidance of Losses as the Growth Imperative” in Part III. Consequently, he is named there as co-author.

I wish to thank Joseph A. Weismahr for important references and suggestions relating to the theory of production and distribution from the perspective of an entrepreneur, and my colleague Erwin Staehelin for expert assistance in the presentation of company balance sheets.

Further special thanks are due to my colleagues Hans Nutzinger and Johannes Schmidt for their critical reading of the text and for valuable suggestions.

Important for the completion of the work on this book was the fact that I was allowed to continue working at the Institute for Economy and Environment of the University of St. Gallen, where I had worked before my retirement. For this, and for the attention given to my work, I owe special thanks to the Directors of the Institute,

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my colleagues Thomas Dyllick and Ernst Mohr. I am also greatly indebted to the Institute's secretaries, Marlise Dreier and Vreny Knöpfler Mousa, for their untiring contributions in completing the manuscript and for never losing patience after many revisions. Christian Berger was of great practical help in designing the formal layout of the final version. I am very grateful to him for his work.

I am extremely grateful to my wife for the stamina she displayed in taking care of many things that I should have done, but did not do, while being busy with writing this book.

It was also a great pleasure that I was able to discuss this book with my sons, the economists Mathias and Johannes and the mathematician Klemens. Their knowledge of recent theoretical developments was a major contribution, and their open criticism has kept me from many errors. To them I dedicate this book.

St. Gallen (Switzerland), May 2006

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<http://www.springer.com/978-3-642-31880-1>

The Growth Spiral  
Money, Energy, and Imagination in the Dynamics of the  
Market Process

Binswanger, H.C.

2013, XII, 168 p., Hardcover

ISBN: 978-3-642-31880-1