

# Development Blocks and Industrial Transformation

*The Dahménian Approach to  
Economic Development*



The Industrial Institute  
for Economic and Social Research

# **Development Blocks and Industrial Transformation**



*Erik Dahmén at 75, September 14, 1991*  
*Professor Emeritus, Stockholm School of Economics*

The Industrial Institute for Economic and Social Research

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The Dahménian Approach to  
Economic Development

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## Foreword

This volume is a tribute to Erik Dahmén on the occasion of his 75th birthday. Professor Dahmén's innovative and influential contributions to the study of economic development began more than 50 years ago. His 1950 dissertation on interwar Swedish industrial development remains unparalleled in both scope and vision, particularly in merging together economic and historical method. Dahmén's approach has greatly influenced much research both in Swedish economic history and in economic policy. The present study shows that the Dahménian approach provides a point of departure also for new theoretical work. His Transformation cum Development Block theory has been particularly useful in the analysis of Industrial Dynamics problems.

This volume has been designed to make Erik Dahmén's contribution to economic science more readily available to an international audience. The main editorial burden has been carried by Rolf G.H. Henriksson, economic historian at Stockholm University, assisted by Bo Carlsson, professor of Industrial Economics at Case Western Reserve University. The editorial work has been centered at the IUI – the natural place for the international marketing of Erik Dahmén's contribution to economic and economic-historical research.

IUI is proud to recognize Dahmén as a longstanding member of its inner circles. He was a key member of the pioneering group of young researchers who in the 1940s turned IUI into one of Sweden's leading economic research institutes. His renowned dissertation was written at the IUI and has been a major factor in shaping the IUI tradition in economic research. Though the academic theoretical fashions have shifted, Erik Dahmén has maintained an upright intellectual position on what is relevant economics, a position based on facts from the real world. Erik Dahmén has also served as director of IUI and has remained a co-worker ever since, having returned many times for extended research sojourns.

The publication of this volume has been made possible by a generous grant from the Marianne and Marcus Wallenberg Foundation. We would also like to acknowledge our indebtedness to Gert Nylander at Arkiv och Forskning at the Skandinaviska Enskilda Banken who helped to promote this publication.

Stockholm in August 1991

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## Editorial Preface

In the course of more than five decades, Erik Dahmén has made a significant contribution to economic science. Applying an approach uniquely his own, Dahmén's work ranges from fundamental theoretical insights, based firmly on empirical observation through historical exploration on a grand scale concerning the processes of industrial transformation and economic development in Sweden, to numerous essays on a variety of economic policy issues in what he calls "the mixed economy".

In addition to making an important scientific contribution which has influenced economic and economic-historical research in Sweden, Dahmén has earned a reputation as an insightful critic of economic policy and as an unusually successful analyst of present trends and predictor of coming ones. Often swimming against the mainstream of conventional professional views on what is actually going on in the economy, he holds an enviable record of being able to say: I told you so.

Dahmén's outstanding performance as an empirical analyst is in large measure due to the analytical tools he has developed and applied. The focus of the present volume is on presenting the indisputably most important item in the Dahménian toolbox, referred to as the Transformation cum Development Block, or the Dahménian, approach. In our view, this represents the essence of Dahmén's scientific contribution. The purpose of the present volume, therefore, is to provide an overview of that contribution. This is done by presenting a selection of what in our view constitutes Dahmén's most important writings, along with both contemporary and editorial comments.

The very extent and variety of Dahmén's research make the selection of items both necessary and difficult. In the course of reviewing material for this volume, we found ourselves surprised at discovering, despite our familiarity with Dahmén's work, features of which we were not previously aware. We came to realize that it is only when viewed in its entirety as the gradual unfolding of a great vision, carefully and persistently pursued over a lifetime of research dating back to the 1930s, that the profoundly original and path-breaking nature of Erik Dahmén's contribution can be fully comprehended – and that what we now feel compelled to label "The Dahménian approach" emerges.

In addition to the discovery that The Dahménian approach had never been identified as such, either by Dahmén himself or by others, two features are particularly noteworthy. The first and major one relates to the importance of Dahmén's ideas for present as well as future theoretical and empirical work. We found not only that he may be viewed as a precursor of the now emerging field of Industrial Dynamics but also that the Dahménian approach provides



a number of substantive hypotheses that relate to the core issues of that field and therefore helps to define its central research agenda.

The second finding is that although Dahmén's research has built upon the work of others, notably that of his two most important mentors, Johan Åkerman and Joseph Schumpeter, and although Dahmén has always regarded himself as a Schumpeterian, his own work goes considerably beyond that of his predecessors. In particular, the notion of Transformation cum Development Block transcends the positions of his mentors and represents a conceptual breakthrough to which Dahmén can legitimately lay claim. Yet he has consistently chosen to present his work primarily as empirical rather than theoretical.

This is one of the reasons why we feel this book is important. It represents an attempt to distill the essence, as it were, from the variety of Dahmén's writings, and to provide the reader an in-depth exposition of his main scientific contribution. This contribution has two chief components, a theoretical one and a methodological one. It is our conviction that neither of these has received the recognition it deserves.

It is our hope, that this volume will make Erik Dahmén's insights and vision not only better known to Swedish readers but also more accessible to a wider international audience. Some of the material presented here has not been published before and important parts appear here for the first time in English.

A bibliography of Dahmén's writings would no doubt have contributed important information. However, the existing record of Dahmén's publications and writings exceeds the 500 mark. Since only a few of these are available in English and only a very small part of his production relates directly to the content of the present volume, we chose not to include a bibliography. Dahmén's writings pertinent to the theme of the present book are included among the general references at the end.

To the uninitiated reader, a brief preview of some of the basic features of the Dahménian approach that is explored more fully in the chapters that follow may seem in order. As will be abundantly clear in the material presented in this volume, the concept of Development Block lies at the heart of Dahmén's theoretical work: the notion that investments are interrelated (come in "blocks"), and that investment in a new venture creates pressure ("tension") for complementary investments. Without such complementary investments, the potential of the original venture may never be fulfilled; the Development Block remains incomplete. At the other extreme, when the Development Block has been completed, it no longer provides the development potential which earlier contributed to the industrial transformation process.

Closely connected with the idea of Development Block is the notion of Malinvestment which played an important role in Dahmén's conceptual scheme when he first launched his Development Block concept. At that time

the notion was particularly important as a tool for analyzing the interplay between “cyclical” and “structural” components of economic change. Together with the notion of Development Block it also defines his key notion of Transformation which captures the process of “qualitative” change in an economic system experiencing what Schumpeter referred to as “the primary wave” of the diffusion/absorption of innovations. Dahmén should be placed on record for inventing both the terms Development Block and Transformation, although typical for Dahmén, he seems to view his introduction of the notion of innovation into the Swedish language as a more important achievement of his.

An important aspect of the Dahménian approach is the distinction between the *content* of industrial transformation as distinct from its *result*, i.e. disaggregated vs. aggregated analysis. This is an element in Dahmén’s methodological stance. Another element of this stance is his painstaking and persistent effort to join economic historical research and the power of systematic application of analytical economic tools. In emphasizing causality rather than mere correlation among observed phenomena, Dahmén holds that industrial transformation cannot be separated from historical circumstances. Guided by the conceptual scheme of basic economic theory, the economist should scan the historical record in order to identify empirical regularities or irregularities.

This method of “historical reconstruction” should not focus narrowly on economic phenomena but should place them in the broader context of social, political, institutional, psychological, ideological, and other dimensions in which they occur. This calls for observations by other disciplines as well. However, Dahmén’s call for interdisciplinary work also includes the subdisciplines within economics; hence his emphasis on the need for integrating business economics (“företagsekonomi”) and political economy (“nationalekonomi”). In his view, there is no need to separate the Theory of the Firm from the Theory of Firms. When such separation occurs, it diminishes the insight potentially gained.

This volume is organized as follows. Erik Dahmén’s writings are presented chronologically in four main sections. Each section contains a selection of his writings, set forth with an introduction which provides background information to the texts. Section I contains a summary of the results Dahmén reached in his licentiate thesis of 1942. This summary, now made available for the first time in English translation, provides the key to Dahmén’s later work. It is of course particularly important for understanding his doctoral dissertation but is also basic for an understanding of his more recent revisions and restatements of his approach. The introductory comments to this section report on research regarding the background and emergence of the Dahménian approach high-lighting Dahmén’s transcendence of his two mentors, Åkerman and Schumpeter.

The second section focuses on Dahmén’s renowned doctoral dissertation,

published in Swedish in 1950 and in English translation in 1970 (Dahmén 1950, 1970). The selection offered here is the English summary of the 1950 original Swedish edition which was not reproduced in the 1970 edition, as well as a few additional writings from that period.

The third section records how Dahmén's doctoral dissertation was received by his contemporaries. It includes a translation into English of the minutes of a meeting in early 1951 of the Political Economy Club when Dahmén's dissertation was presented to the Heckscher group of economic historians in Stockholm. The section also contains reviews by Erik Lundberg, Brinley Thomas and Alexander Gerschenkron.

The fourth section constitutes a selection of writings by Erik Dahmén from the 1980's presenting the most advanced versions of the bequest Dahmén offers to the profession. These present-day restatements of his theoretical views serve to illuminate how Dahmén's position today is still basically the same as the Dahménian approach in the dissertation but also how he in some important respects has transcended that view. The introductory editorial comments to this section which have been worked out as somewhat of an epilogue also attempt to make clear the relevance and importance of the Dahménian approach for the emergent new field of Industrial Dynamics.

The editorial and other work that went with the preparation for printing of the present volume was shared by the editors. The initial surveying work was done primarily by Rolf Henriksson, with the support of Gunnar Eliasson, who made the resources of IUI available for the project. Rolf Henriksson made the translation of original materials into English, assisted by Bo Carlsson who also took part in the general editing of the volume. The editors are indebted to Klas Eklund for an update of his paper "Springtime for Dahmén" (Eklund 1986).

The editors would like to thank Erik Dahmén's secretary for 30 years, Kerstin Folcker, and the admirable IUI staff for their invaluable help in putting together the manuscript.

B.C.  
R.H.

## **SECTION I**

### **Dahmén's Licentiate Thesis of 1942 and Its Background**

## **Editorial Introduction**

The first paper by Dahmén (1942b) in this volume is based on his licentiate thesis which he presented in the spring of 1942 (Dahmén 1942a). That thesis was a synthesis of a five-year period of research initially guided by Åkerman's precepts, but in its final phase strongly influenced also by Schumpeter. As a succinct report of the thesis, the paper unfortunately cuts the background of the Dahménian approach too short, leaving unexplained how Dahmén's conceptual breakthroughs were derived from his two mentors. Thus, back-tracking into the emergence of the Transformation cum Development Block approach – a rather fascinating story in itself – is required for a clearer understanding. It would, of course, be interesting to take a deep look at the ancestry of Dahmén's ideas, but the ambition here is not to present Dahmén's work in a history of thought perspective. The task of a further staking out of Dahmén's undisputable claims to an entry into the annals of economic science is left for future research.

### **The Emergence of the Notions of Transformation cum Development Block**

#### **Exploring the dynamics of malinvestment**

The story of the unfolding of Dahmén's thinking leading up to the Transformation cum Development Block approach may be said to have begun in October 1936 when as an undergraduate Dahmén passed his first oral examination for Åkerman.<sup>1</sup> The latter, at that time quite influenced by Hayek, had picked up the malinvestment idea as part of his stance against the aggregate demand approaches of Keynes and the Stockholm School. Åkerman on that occasion suggested that Dahmén should focus on the malinvestment concept as the subject for his continued higher level degree work.

The first published record testifying to Dahmén's obeying Åkerman's advice is dated June 1937 (Dahmén 1937). Dahmén at that time appeared in Helsinki at the second Nordic conference for young economists challenging the by then still fairly new Keynesian view about the accommodating role of savings which implied that the level of savings would in unemployment times adjust itself to the level of investment. An obvious reaction to this was, of course, that such a Keynesian tack reduced the phenomenon of malinvestment to overinvestments that would be truncated by the constraints of the full employment level of savings. However, although Dahmén's view of malin-

<sup>1</sup>This information as well as other facts about Dahmén's work and career related in the following are based on a series of interviews carried out during 1989–1991. However, much information has also been obtained from material in the IUI archives.

vestment was a more structural one, his was not simply the Åkerman “disproportionality view”, nor a reiteration of what Schumpeter called the Hayek effect. Dahmén argued that investments may be held back due to a deficiency of savings, yet the shortfall would exhibit a certain pattern. It would be scattered according to a specific pattern of savings creating a correspondingly scattered pattern of specific savings deficiencies. Thus Dahmén’s structural premise implied that the capital market was imperfect and segmented. Malinvestment was for him simply a matter of deficient matching between specific investments and specific savings.

Dahmén’s argument at the Helsinki conference revealed a methodological view which was to become perhaps the major alienating factor in the unfolding separation between him and the Keynesians. His conception was anchored on the micro level, and he was strongly averse to reasoning about savings and investments on the aggregated level of the Stockholm School and Keynes. He, like Åkerman, viewed the aggregates of that sort as simply statistical registration categories about which “causal” propositions could not be made.

In a seminar paper of 1939 which was presented to the third Nordic meeting of young economists in Copenhagen in May that year, Dahmén showed impressive progress in his work with the malinvestment concept (Dahmén 1939a). The definition of the concept was sharpened by putting it in a sequence analytical perspective. By making distinctions between notions such as “new” investments and “maintained old” investments, he was able to schematize the process during which an investment might emerge as a potential malinvestment and perhaps eventually end up as a realized one.

The concept of savings was also differentiated for the same purpose, although this was somewhat overshadowed by the introduction of the concept of credit as a key analytical category. Focusing on the credit factor made it possible to shunt the savings deficiency problem somewhat aside, thus seemingly easing the investment-saving matching problem. Credit in its mediating function between the demand side and the supply side of the capital market was now seen as playing a major role in the investment process. This function was performed not only through the transfer of purchasing power to investors, but also through the creation of purchasing power to sustain them over periods of impending malinvestment outcomes.

The sequence approach may be said to reveal an influence from the Stockholm School approach which also brought notions such as *ex ante* and *ex post* into Dahmén’s thinking. However, the basic strategic advance in the 1939 paper was due to a further conceptual borrowing from Åkerman. Dahmén now availed himself of the so-called “sight span” concept (perception field), in Swedish “blickfält”. He related it to the malinvestment concept by conducting a sequence analysis of the business cycle. The crucial step in that analysis was the systematic exploration of the consequences of the shortening of the sight spans that eventually took place during the upswing phase of the cycle.

This was seen as the decisive factor behind the crisis that turned potential malinvestments into realized ones.

The above accomplishment was an important preparation for Dahmén's later conceptual breakthrough, the notion of the Development Block as the dynamic mechanism of the Transformation process. His elaborations of the malinvestment process gave him an important grasp of the financial dimensions. He could in this analysis point, in particular, to the crucial role of deficient coordination of the sightspans of investors and the sightspans of bankers. Credit eased one type of matching problem but created another one. Combined, the notion of sight span incompatibilities and the notion of a differentiated availability of credit, pierced deeply into the complexities of the investment process, making possible a more thorough understanding of the malinvestment problem.

Dahmén had, by this analysis, made clear the promise in pursuing the dynamics of the business cycle along the malinvestment line. However, crucial to his later thinking, the 1939 paper led him beyond the problems of short-term dynamics into the issues of long-run dynamics. He now posed the problem of the interaction between the short-term business cycle and the secular waves in the history of industrial expansion. The decisive step in that venture meant treating malinvestments as a phenomenon that might be "stocked" over a number of cycles. Malinvestment that failed to be liquidated and "evicted" during crises periods could thus accumulate and create pent-up downward pressures in the system. Having survived their first or later crises, some of them might, however, experience restored profitability and thus resume the normal position of investments as expansionary factors.

### **The reaction to Schumpeter's Business Cycles**

Although it is quite probable that Dahmén had had an early exposure to the ideas of Schumpeter, it is apparent that he had not yet come under the spell of the wizard.<sup>2</sup> The possibility of marrying the Schumpeterian conception of economic development as an innovation diffusion/absorption process with the malinvestment approach did not occur to him until he, about a year later, in the fall of 1940, began reading Schumpeter's new two-volume work, *Business Cycles* (1939).

Dahmén reported on his reactions in a seminar paper completed at Christ-

<sup>2</sup> Although Schumpeter's 1911 (1912) "*Theorie der wirtschaftlichen Entwicklung*" was on the reading list in the course work Dahmén was required to do before the Oct. 36 oral examination, Åkerman did not push him in that direction. Thus Dahmén's 1939 extension of his analysis to include also the long run may have been due mainly to the continued influence of Åkerman, who in his own research had been much preoccupied with the problem of the interaction of cycles of different lengths (Åkerman 1928).

mas time, 1940. It was presented in the spring of 1941 and was later that year published as a book review in an abbreviated, but also somewhat amended version<sup>3</sup> (Dahmén 1941a, b).

These reviews reveal that Dahmén's encounter and absorption of Schumpeter's revised statement of his theory of economic development had a profound influence on him. Accepting the core idea of innovations as the driving force in the process of economic development and the crucial role of the entrepreneur in that process, he recognized that Schumpeter had here found the key to the problem of economic development. However, his reactions contained elements of important criticism. Dahmén faulted Schumpeter for not grasping fully the implications of his vision. Schumpeter was, according to Dahmén, too tied to the static equilibrium concept. The stationary state remained even in Schumpeter's new work the starting point for the analysis of the development process and was furthermore still retained also as the end state. Dahmén noted that the setting out and absorption of an innovation, mainly as a process of transition from one equilibrium position to another, created difficulties for Schumpeter and that in trying to solve them Schumpeter was prevented from seeing the paradigmatically new in his approach. Failing to explore the mechanisms and consequences of the elimination of the old "factor combinations", Schumpeter did not fully comprehend the need for a negative counterpart to his conceptualization of the idea of innovation diffusion and absorption. The reason Dahmén could see this missing part of Schumpeter's "primary wave" analysis so clearly was, of course, that he had himself given so much attention to the malinvestment problem.<sup>4</sup>

It was in elaborating on the deficiencies of Schumpeter's approach that Dahmén laid the groundwork for his own. He came to a position that actually transcended Schumpeter's. Maintaining that Schumpeter himself had not adequately recognized the dual nature of the innovation process Dahmén on

<sup>3</sup>Dahmén seems to have delved into that task with great determination, fired by a notable enthusiasm which the encounter with Schumpeter's new treatise evidently aroused in him. There are few other reviews of Schumpeter's *Business Cycles* that cut so deeply into it and contained so much understanding and sympathy as the one Dahmén wrote. Unfortunately, the brief published version of his review shows this only very inadequately. Major reviews by other economists were those of Kuznets (1940), Marschak (1942) and Rothbarth (1942).

<sup>4</sup>Such a theory should deal explicitly with what in Swedish is called "avveckling". There is no good English word corresponding to that Swedish term, which refers not only to the dismantling of physical structures but also to closures of firms and discontinuation of activities. Perhaps terms such as 'deconstruction' or 'decomposition' might do.



the contrary emphasized this “Janus face feature” of change, and coined the term Transformation.<sup>5</sup>

Although as yet only existing in embryonic form, Dahmén’s adoption of the Transformation view included from the start the extended 1939 version of Schumpeter’s primary wave. Schumpeter’s new version differed from the original one in that the absorption of innovations was seen as stepwise processes. Thereby the onward thrust of the innovation wave was only gradually consummated. This was an opening to Dahmén’s Development Block notion, referring e.g. to the completion of a railway network, which was pushed on by the inherent imbalance of not having exhausted the full potential of extending its trunk lines between major cities, or perhaps of not having built all the feeder lines it possibly could. Although Dahmén did not in the review paper itself respond to the need to coin a name for such gradual

<sup>5</sup>In referring more explicitly to his dual vision of the Schumpeterian primary wave, Dahmén frequently used the term Transformation, sometimes combined with the term structural, but the words ‘economic’ or ‘industrial’ were also sometimes used as attributes. The term should be recorded as Dahmén’s particular terminological coinage for a conception which should, of course, despite the inadequate statement in *Business Cycles*, be attributed also to Schumpeter. A close reading of Dahmén’s texts reveals that he considers himself to have a definite claim to share in the priority of this notion together with Schumpeter. Dahmén conceived of the notion of economic transformation as the response to the task “of finding a theoretical foundation of what might be called the process of accommodating the new combinations into the surrounding world”. The quote reveals that Dahmén did not really accept Schumpeter’s theory as a fully satisfactory foundation and it reveals further what was to be his own objective in his continued research on this problem. In that perspective one may note that he did not drive his claim of scientific priority for the term, and his conception behind it, completely home. He courteously granted Schumpeter his full due by stating that he merely wanted to offer a “complement” to Schumpeter’s theory of development. One should note, however, that he considered it “an important and fundamental” one.

It should be recognized that Schumpeter at that time might have seen the implications of his primary wave in about the same way as Dahmén. The conception of “creative destruction”, as set out in his *Capitalism, Socialism and Democracy* (Schumpeter 1942) must, of course, have been on Schumpeter’s drawing table before that year of publication. However, although Schumpeter completely divested the process of “industrial mutation” from all the shackles and tie-downs of equilibrium theory and now talked about “the perennial gale of creative destruction”, he seemed unprepared to present it as a theoretical conception, and simply referred to it as “the essential fact about capitalism”.

Although Schumpeter never used the term transformation he was very close to that concept as soon as he had let the equilibrium premises go. But now Marx proved irresistible. In general alluding to Marx as the forerunner of his own view “that in dealing with capitalism we are dealing with an evolutionary process” he also seems to have accepted Marx as the originator of the conception of a transformation process.

We cannot, of course, rule out that Dahmén too had read Marx. Yet there is no evidence that such a reading influenced his conceptual breakthrough.

processes, the expression reportedly sprang full blown to his mind upon the presentation of the paper in the spring of 1941.<sup>6</sup>

Elaborating on “the malinvestment backside” of the innovation diffusion process, the crucial observation was that there is no *a priori* reason why the innovation absorption process should be synchronized with the malinvestment “stocking” process. The stepwise absorption of the innovations and the cumulative additions and depletions of the stock of potential malinvestments need not match each other over time in a balanced way. The most likely sequence would be one of recurrent imbalances. Although Dahmén’s views on these matters were still embryonic, his insights into this dynamic problem made it possible for him to make the point with forceful implications for the interpretation of recent business cycle experience. He made the striking observation that the depression of the early 1930s may have been particularly severe for those economies which were burdened by a large stock of accumulated and thus not yet liquidated and evicted malinvestments and which at the same time were at lull points as regards their innovation diffusion processes.

In elaborating on his basic criticism of Schumpeter, Dahmén made several interesting additional points. One was that, because of the equilibrium confinements of his analysis, Schumpeter got tangled up in a number of methodological intricacies. A central difficulty was how to explain the process of economic development as an endogenous feature of the system, while at the same time wanting such processes to be initiated in, and also end up in, stationary states. As pointed out by Dahmén, this problem had a particular bearing on Schumpeter’s treatment of the position of entrepreneurship in his system. Schumpeter wanted to make this factor the key endogenous element in the development process, but in trying to solve this task he ended up giving it a “Deus ex machina” position. Schumpeter’s view of the development process as essentially a transition between stationary states had forced him to posit entrepreneurship, if not as a “perennial gale” in the system, at least as a persistent grasping for opportunities even in those stationary states where by definition no opportunities existed. But by postulating the existence of such an ever present latent “creative response”, Schumpeter in the main left it unexplained. Dahmén instead wanted to explain entrepreneurial activity by uncovering the preconditions for it. He here opened up for questions he was later to explore, particularly in his 1950 dissertation.

<sup>6</sup>Dahmén has in an interview recounted how he conceived of the term in early spring 1941 after having for a while actively been in search for an adequate linguistic phrase. He inserted the term in the licentiate thesis which he was preparing at that time, but as the thesis was not presented until in the spring of 1942 and the notion appeared in print only later that year, 1942 should perhaps be recorded as its birth year in the economists’ Guinness book of records. Furthermore, these 1942 presentations provide the first full statement of the concept and its integration into his total research program.

## The Demonstration of the Dahménian Approach

With his review of Schumpeter's *Business Cycles*, Dahmén had conquered a beachhead for continued work in launching his own approach. The result of this work was fully set forth in the licentiate thesis presented in manuscript in the spring of 1942.<sup>7</sup> This thesis offered a full statement of his methodological tenets and provided clear demonstration of the wider content of the various agendas constituting his substantive research program. As these particular features of the thesis are summed up in the brief paper Dahmén published in the fall (translated and printed as the paper that now follows in this volume) only a few comments seem called for.

The key part of the study, which dealt with Dahmén's substantive core research program, is the lengthy Chapter four. The beginning of that chapter may, by offering a translation of the title of the chapter, be recorded as follows: *Systematic Structural Theory. Some Problems of Economic Change and Economic Development Illuminated from a Structural Theoretical Point of View Using the Notion of Malinvestment as the Central Analytical Instrument.*

It might be noted that this chapter title refers neither to Development Blocks nor to the Transformation view. However, the summary of the chapter 75 pages later reveals that Dahmén has now arrived at a full statement of his core theory. That "omega" of the passage has the following subtitle: *Summary of the Hypothesis of Structural Tensions and of the Two Components of the Transformation of the Structure of Production.*

The term structural tension is here the somewhat diffuse phrase used for the dynamics which was his earliest explorative object in the 1939 paper. However, the reason for using this term is also that the development block mechanism is not the only mechanism at work in the process of transformation. The malinvestment aspect should also be taken into account. These forces work together and constitute the interacting element between what he referred to as the *positive* and *negative* sides of the transformation process. The term structural tension may be said to cover what should actually be called the *Malinvestment cum Development Block* mechanism.

In elaborating this conceptual scheme Dahmén distinguished between "*original*" and *strategic* malinvestment. The term "*original*" malinvestment referred to those investments which in retrospect may be recorded as belonging to the negative side of the transformation. Strategic malinvestments were those which in retrospect could be seen as belonging to the positive side. They were malinvestments mainly in a short-term perspective, being sometimes undertaken prematurely or without the necessary precalculations about the need for finance and other prerequisites for success.

<sup>7</sup> *Ekonomisk strukturanalys, begreppet felinvestering som konjunkturteoretiskt instrument* (Economic-Structural Analysis. The Notion of Malinvestment as a Business Cycle Theoretical Instrument); Dahmén (1942a).

This was a key analytical advance over his earlier position. The distinction between “original” and strategic malinvestment permitted a contrasting of the short-term features of the interaction between the positive and negative sides of the transformation process with their long-term interdependence. This deeper penetration into the mechanisms of transformation brought in the business cycle as an endogenous feature of the Transformation process. This was decisive for Dahmén’s further exposition in the licentiate thesis. As the business cycle could now be derived from the transformation process, a study of it also offered opportunities for empirical demonstration of the transformation mechanisms involved. Because of this he was able to set up his theory as an attempt to explain the business cycle. Hence a major part of the thesis is devoted to demonstrating the mechanism of the turning points of the business cycle in terms of the interaction between original and strategic malinvestments and their bearing on the transformation process and the development block mechanism.

### **Concluding Note**

In the following paper summing up his thesis Dahmén opted to leave out the part of the conceptual scheme that focused on the role of malinvestment and replaced it with the more operational notion of unprofitability. One reason for doing that seems to have been that he felt compelled to make a radical cut in the length of the exposition. In cramming the content of a 160 pages thesis into a 10 page summary he had to leave out, as he says, “the empirical material”. This, in fact, meant leaving out most of the business cycle framing of the exposition of his theoretical and methodological approach. With the cycle no longer in focus, the malinvestment mechanism seems to have lost its former key position. While Dahmén’s exposition definitely gained much in clarity in elucidating mainly the long-term features of economic development, there was some loss in the account of its short-term features. What was termed above the *Malinvestment cum Development Block* mechanism of economic transformation had been lost sight of. Only the Development Block mechanism remained.

R.H.

# Economic-Structural Analysis

## Reflections on the Problem of Economic Development and Business Cycle Fluctuations<sup>1</sup>

Erik Dahmén

### 1 The Thesis

The development of business cycle research is characterized by a differentiation of the concepts and the questions. However, despite significant progress there often remains a decisive gulf between the theoretical and empirical questions due to the properties of the conceptual tools of analysis. This cleavage between theoretical and empirical research is mainly revealed by the inability of the empirical material to give a definite “yes” or “no” answer to the hypotheses of the theory. It derives primarily from the fact that business cycle theory uses concepts denoting aggregates i.e. sums or averages such as “total savings”, “total investments”, “total purchasing power”, “average productivity of real capital” etc. *In my opinion such aggregate notions are always inadequate, often useless and directly misleading in a causal analysis.* It is inappropriate to use the terms cause and effect among aggregates because aggregates do not represent homogeneous phenomena in real life but stand for a great variety of diverse subjects, activities and norms. Hence, all statistical verification of hypotheses relating to aggregates must be uncertain and superficial.<sup>2</sup> The causal chains of real life connect *in specific ways*, i.e. between the components of the aggregates. The ex post values of the various subjects and activities may be summed up or averaged, but these sums and averages are not themselves the primary agents. This is the reason an explan-

<sup>1</sup>The present paper is a summary of the main lines of thought in a licentiate thesis. Space considerations have constrained me to an account of the problem formulation and the results of the analysis omitting specific references to the empirical material. [The paper together with a postscript has been translated into English by Rolf Henriksson with the assistance of Bo Carlsson. The original Swedish paper appeared in *Ekonomisk Tidskrift*, Vol. 44, 1942:3, pp. 177–194. The Swedish title is “Ekonomisk strukturanalys: några synpunkter på den ekonomiska utvecklingens och konjunkturvåxlingarnas problem”. The postscript was worked out for a seminar presentation a couple of months after the paper itself was written. It contained a brief text and a large number of additional footnotes. The postscript text is here appended (pp. 40–41), and the footnotes have been inserted in the original paper as Postscript notes. See further note 41.]

<sup>2</sup>An illuminating example is the attempt by Jan Tinbergen to verify the conventional Business cycle theories (Jan Tinbergen, *A Statistical Testing of Business Cycle Theories*, 1939). To the extent that the verification attempts succeed, they concern the most differentiated questions. As soon as the problems concern aggregates, which is the case with most systematic business cycle theories (cf. below), the result becomes negative and the verification attempts are not convincing.

atory theory based on aggregates must lead into dead ends. The best example is the controversy concerning the “underconsumption theory” versus the “lack of savings” theory in all its variants. The futility of all the questions derived from these theories is clear from the following example, which gives a flashlight view of the meaning of my main methodological thesis: The theory, in this case the underconsumption theory, says: general wage increases lead to increased purchasing power; thereby business men become compensated for increased wage costs. Reality says: a business-man experiencing increased wage costs, cannot – and does not – count on such compensation. He does not expect *his* goods in particular to be the beneficiary of the increased purchasing power – one of the most obtuse aggregates of business cycle theory. The result of a general wage increase then is not, *ceteris paribus*, that logically expected from the theory. This will be the outcome regardless of the time interval between the wage increase and the compensating effect of the increase in purchasing power, although the time interval must play a role which at least a dynamic theory might *conceivably* take into account.<sup>3</sup>

Instead of using aggregates, one should use *the method of specific analysis*. This approach, in contrast to the aggregated approach, *requires* attention to the specific causal connections between the components of the aggregates, to the various agents, individuals, enterprises and groups.<sup>4</sup>

Not only business cycle theory but also the analysis of economic time series have been misled by the use of aggregate concepts. The term “business cycle” as well as the term “secular wave”, in particular, have in fact led to an unrealistic notion of the causal mechanism of business cycles.<sup>5</sup> Business cycles are viewed as a quantitative variation of homogeneous aggregates within a given structural framework while the “structural” changes are, at best, taken into account in cross section analyses. And, what is worse, the causal explanation

<sup>3</sup>Note that critics are not saying categorically that wage increases cannot lead to business cycle expansion or continued boom in a given case. Rather, the criticism concerns the way the theory posed the question.

<sup>4</sup>This methodological thesis is valid also for *ex ante* analysis of aggregates. This has been elaborated more thoroughly in my lecture on the concept of malinvestment as an instrument of business cycle theory (“Begreppet felinvestering som konjunkturteoretiskt instrument”) at the third Nordic meeting for younger social economists in Copenhagen, 1939. In order to prevent misunderstanding it has to be underlined that the differences between specific analysis and the analysis using aggregates is not identical with the difference between partial and aggregated analysis. The method of specific analysis is a method of aggregated analysis.

<sup>5</sup>*Postscript note:* The treatment given to “the secular waves” provides perhaps the best example that an analysis in aggregates of the conventional type leads away from the necessary coordination of the questions of economic history and economic theory. The explanation of these poses a number of hitherto unnoticed as well as unexplained problems.

has become tied to a deficient agreement between these aggregates, i.e., general “underconsumption”, general “lack of savings” etc.<sup>6</sup> However, an analysis dealing with the real world shows that by putting the technical-economic – “the qualitative” – *transformation process* at the centre, one may arrive at new fruitful ways of posing the questions when reconstructing business cycles.

The task is systematically to push beyond the aggregate categories.<sup>7</sup> An explanation of the business cycle phenomenon should not be in terms of a lack of compatibility between aggregates but rather in terms of a structural transformation process.<sup>8</sup> A discussion of the way the theory poses the question and its concepts – as well as a discussion of the principal significance of the economic time series – leads to a demand for economic structural analysis. Using the method of specific analysis necessitates a fusion of the problems of economic development and business cycle fluctuations.

## 2 The Economic Structure

First of all it is necessary to distinguish between various types of economic structure. There is an *economic-political structure* denoting the importance and norms of government intervention in economic life and the corresponding roles of individuals and groups. There is further a *social structure* related to the degree of competition and monopoly. *Monetary structure* refers to the organization and workings of the credit and banking sectors, the variety of means of payment etc. Finally, one should note *production structure* by which is meant the composition of production and consumption. Technical-economic development finds its direct expression in the transformation of production.<sup>9</sup> Through the analysis of the aforementioned structures and their

<sup>6</sup>It should be noted in this context that the structural theoretical questions can take into account what received business cycle theory can take into account but that this business cycle theory cannot systematically observe what the structural theory can illuminate.

<sup>7</sup>There is a particularly important difference between numerically describing business cycle fluctuations in certain aggregates and providing a *causal explanation* of these variations. Of course, it may be said that business cycle fluctuations constitute variations in aggregates, in total investment, saving etc., but this statement must be carefully distinguished from any statement that says that business cycle fluctuations are “caused” by these variations.

<sup>8</sup>It should be noted that there is an interesting interdependence between the use of aggregates and the talk of typical “business cycles” and “secular waves”.

<sup>9</sup>It is important to underline that the notion of structural change used in business cycle theory (as in Clark’s *Strategic Factors in Business Cycles*, 1935) refers to systematically recurring changes in the production of capital goods in relation to consumer goods. Of course, this does not correspond to my notion of structural change. I am not referring to systematic changes during an expansion which will retract during the downswing.

changes, structural analysis turns into cycle analysis. The theoretical reconstructions become business cycle theory, but in a sense different from conventional theory.<sup>10</sup>

In the following I will focus on some problems of production structure and the result that can be obtained in an analysis of changes in production structure. Social and monetary structural changes cannot be analyzed here but will be dealt with only in so far as they relate to changes in production structure. I will end by drawing some conclusions regarding changes in the economic-political structure.<sup>11</sup>

### 3 The Positive Side of Economic Development

Economic development may be said to have two sides: a positive side consisting of the initiation of production of some new commodity, and a negative side consisting of the shutting down of older production. I will first discuss the positive side.

The weakest point of business cycle theory is undoubtedly the explanation of the beginning of a business cycle expansion. To the extent that an explanation has been attempted beyond the mere assumption of “new investment”, it refers, without much discussion, to the emergence of new investment oppor-

<sup>10</sup>By “received” business cycle theory I mean the monetary business cycle theory of Hawtrey, the overcapitalization theory (Hayek), the lack of savings theory (Cassel 1904) and the underconsumption theory. The most recent example here is Keynes’ *General Theory* which is a translation of old underconsumptionist thinking into equilibrium form. Real integration of the problems of economic development and the problems of the business cycle into a structural analysis is still lacking.

With Joseph Schumpeter there is, however, already in *Theorie der Wirtschaftlichen Entwicklung* (1912) and in *Business Cycles* (1939) an approach distinctly contrary to that of received business cycle theory. His idea about “new combinations of factors of production” is the primary tool in every specific analysis. However, even Schumpeter is in some respects too tied to traditional methods to arrive at a structural theory. Nevertheless, his contribution is fundamental for a realistic development of business cycle theory. (Cf. my review of Schumpeter’s *Business Cycles* in *Statsvetenskaplig Tidskrift* 1941:2).

<sup>11</sup>The necessity of viewing the structural analysis as the general formulation of a theory of change has been demonstrated by Johan Åkerman in the 1930’s. He has also proposed alternative ways of differentiating the concept of structure. (See *Ekonomisk Tidskrift* 1942, p. 5, note.)

*Postscript note:* As an example of the importance of making the theory structurally determined I would like to take the opportunity of referring to Alvin Hansen’s most recent work *Fiscal Policies and Business Cycles* (1941). A discussion of this book seems appropriate at a future seminar, especially since the problems of the postwar period considered in it are occupying a prominent place in the discussion in the USA and the UK.

[Dahmén reviewed Hansen’s work in *Ekonomisk Tidskrift* 1942, Vol. 44, No. 4, pp. 273–276.]



tunities created by technical inventions, discoveries etc.<sup>12</sup> However, it is evident that this is where an analysis has the best chance of achieving a real synthesis of the problem of economic development and business cycles.<sup>13</sup> The depression is marked by a widespread absolute or relative unprofitability; and instead of referring to “the general deflation”, it is important to investigate its underlying causes in specific instances.<sup>14</sup> Then it turns out that by distinguishing between different causes of unprofitability, one may explain not only a current depression but also the ensuing expansion.

It should first of all be noted that new investments are made in specific branches and enterprises. Thus it is not primarily a matter of utilizing existing capacity. By investigating these branches and enterprises further and their relation to other branches and enterprises with falling profitability and/or excess capacity, one discovers that there is often a connection between the existing lack of profitability on the one hand and the specific new investments on the other.<sup>15</sup> *One may say that there is a lack of structural balance. There are tensions in the production structure during depressions* because certain enterprises and branches exhibit a lack of profitability due to the lack of other specific investments. This lack of balance in the structure of production serves as an expansionary force; a structural gap is filled in if certain specific new

<sup>12</sup> Here, even Schumpeter, despite his fruitful conceptions of “new combinations of factors of production” and his basic vision of the business cycle phenomenon, is prevented from deepening the analysis because he uses a position of equilibrium – an “equilibrium neighborhood” – as a point of departure. This, in turn, is due to his working hypothesis of three different “cyclical waves”. (Cf. my review of Schumpeter, *ibid.*)

<sup>13</sup> Viewing the business cycle as a self-regenerating process – i.e., if each expansion is seen as a necessary consequence of a preceding contraction, or if every contraction is seen as a sufficient cause of the subsequent expansion – makes such synthesis more difficult.

<sup>14</sup> *Postscript note:* There is reason to stress the statement in the paper that the lower turning point is being used as a point of departure. It means that the causal reconstructions begin with a comparative reconstruction of different lower turning points. Thus it does not mean that I am constructing a model starting with an assumption of initial conditions of one type or another. This is evident directly from the thesis but should perhaps be underlined in order to prevent misunderstandings which may arise due to the compressed form of the present paper.

<sup>15</sup> *Postscript note:* Through a thorough analysis of the production structure one may reach certain, in my view important differentiations with respect to various kinds of unprofitability. So far there has been too lax a use of term such as “dismantling of malinvestments” as well as a too superficial talk of deflation above all due to the insufficient attention to the production-structural situation. By building the analysis from an assumed point of equilibrium, an important element in the nature of the development process has been lost.

investments are made. Thereby preconditions for eliminating unprofitability are created.<sup>16</sup>

A few examples may be given here. During the epoch of railway building several railways were quite unprofitable until the railway network had been extended to a certain minimal level of “completion”. A trunk line did not yield any return until sidelines had been built, and so forth. Many railways which had been constructed for a specific purpose, e.g. to facilitate transport of forest products, turned out to have too large fixed costs. Until they obtained other transport tasks, e.g. as a result of the industrialization of the railway hinterland, no profits were earned. In order for electrification of a railway to be profitable, the whole railway network had to be electrified. Obviously, in such a case, insufficient profitability is evidence of a lacking structural balance; this generates certain specific new investments in various sidings, industrial enterprises and electricity plants. Structural tension may also be displayed when various production levels in a production chain, e.g. for technical reasons, are unable to keep pace with development. In such a case, new inventions are induced, which make possible new investments.

In order to clarify the meaning of such structural tensions in the development process, one may speak of “*development blocks*”.<sup>17</sup> The construction of a railway network may be seen as a typical development block, and so might the electrification of a railway network as well as the exploitation of geographic areas with respect to industry, agriculture and communications. Such development blocks cannot be completed “in one step”, but as long as they are not completed there remains a certain structural tension. Looking back on the epoch of industrialization, one may without difficulty discern a great variety of development blocks. When a crisis has prevented the completion of the blocks, the subsequent depression has been marked by a structural imbalance. This *lack of equilibrium* has been a driving force during the transition from depression to expansion.

It is an important task to explore various development blocks. In that way a synthesis between economic history, economic geography and economic theory may be achieved. In this context, economic-historical research ought to provide material that can be fitted into the theory, while at the same time this research should also benefit from studying development blocks. Economic geography – particularly location theory – has its business cycle theoretical aspect; not only should one explain geographic location of various

<sup>16</sup>It has to be underlined that we are concerned here with specific new investments. Such investments imply something quite different from a general increase in purchasing power derived from any kind of new investments.

<sup>17</sup>One should distinguish between different types of structural tensions. However, it is important to realize that this is a repetitive phenomenon: In principle, this is the same type of tensions, only appearing in different garb. They are in all cases due to a lack of balance in production.

units of economic life but one must also explain *the timing* of location i.e. a time-spatial “Standortstheorie” is required.<sup>18</sup>

Finally it should be noted that the existence of development blocks and structural tensions emanating from them create a strong tendency towards centralized capitalism and formation of trusts.<sup>19</sup> The spheres of interest of capitalists and entrepreneurs expand when their companies display low profitability due to structural tension. Profitability may be achieved through the undertaking of specific new investments.<sup>20</sup> Many examples of this may be found in the history of both railway-building and industrialization. It is evident that here we have an explanation of why rapid economic development has been combined with the rise of big capitalism and centralization tendencies within economic life in general.

#### 4 The Negative Side of Economic Development

The specific analysis of the negative side of economic development takes the following working hypothesis as a point of departure: business cycles are basically a phenomenon due to the lack of congruence in time between the positive and the negative sides of economic development.<sup>21</sup> They appear as write-offs on capital values, depreciations, shut-downs (in the following referred to as unprofitability actualization) and the dismantling of older investments and enterprises (in the following referred to as “dismissals”) and occurring in certain quite limited intermittent investment periods despite the fact that the lack of profitability appears more continuously over time.<sup>22</sup>

<sup>18</sup> *Postscript note:* I have always thought it strange that location theory (Standortstheorie) and business cycle theory have not been systematically integrated.

<sup>19</sup> I have so far only talked about the positive side of economic development. Later I will try to show that the idea of development block is of interest also when analyzing the negative side.

<sup>20</sup> This is often carried out by capitalists buying unprofitable enterprises in order to undertake “complementary investments”, thus reducing unprofitability. This way out is seldom available for the former owners of unprofitable enterprises.

*Postscript note:* In the light of the development block thesis one can conceive of there being simultaneously two different values of one and the same asset. These two values may be equally “normal”, “rational” or whatever one may want to call it. The difference may be due to the difference in the ability of persons “to seize on” development blocks. This ability is not solely due to the subjective predispositions – entrepreneurial skill, etc. – but also to the opportunities of obtaining capital and credit.

<sup>21</sup> This is not to say that this is all there is to the business cycle phenomenon, but rather that this is a suitable working hypothesis.

<sup>22</sup> Behind this hypothesis lies Schumpeter’s working hypothesis about “new combinations of factors of production”. However, Schumpeter does not view the negative side of development as a separate problem. An analysis of this side may, however, deepen Schumpeter’s approach.

I will in the following briefly try to clarify how this approach may serve as a point of departure for the reconstruction of economic development. I will also point out some results of such an analysis.<sup>23</sup>

The analysis of a certain crisis and depression may start by noting the firms and branches first exhibiting depression signs. One should then follow these firms and branches backwards in time, explore their historical development and make comparisons with other branches and firms. This should not be limited to the immediately preceding business cycle and boom. It is necessary to carry out an *intercyclical* analysis.<sup>24</sup> Only then is it possible to distinguish between advancing and declining branches and firms. Note should be taken of the rate of growth of production in various firms and branches, of the price-quantity combinations during a sequence of years, of the dividends to shareholders and, if possible, of net profits. The picture thus obtained of the changes provides the most important preconditions for understanding the crisis or depression prevailing. This is because it creates the possibility to distinguish between “*original*” and “*strategic*” causes of unprofitability. In other words – a distinction is made between the case when unprofitability is due to technical-economic factors, lasting changes in demand, etc. and the cases when “mistakes” – “malinvestments” – have been made when making new investments.

No realistic business cycle theory can disregard the original determining factors, but the strategic factors have so far, nevertheless, dominated the business cycle analysis too much.<sup>25</sup> Strategic “mistakes” due to the technical “acceleration principle”, to “overcapitalization” or to exaggerated optimism, etc., have been particularly noted. Other strategic “mistakes” have been less noted, e.g. those commonly made when making new investments in rapidly declining enterprises to prevent unprofitability or counter it when it has

<sup>23</sup> *Postscript note*: The thesis about the insufficient synchronization between the positive and the negative sides of economic development is possibly an appropriate working hypothesis. It may be useful because it calls for a concrete analysis of the changes of economic life. Parenthetically it might be added that what I call the negative side of economic development is as much evidence of economic development as is the positive side.

<sup>24</sup> It seems promising for the future that researchers recently have begun to take an interest in such systematic empirical investigations. An example of an intercyclical investigation is provided by E E Mead & I Gradinsky in their *The Ebb and Flow of Investment Values* (1939), essentially a study in business economics. See my review of this work in *Ekonomisk Tidskrift* 1941:3 and Johan Åkerman, “Konjunkturrella relationer mellan pris och kvantitet i Sveriges utrikeshandel 1920–1937” (“Cyclical relations between price and quantity in Sweden’s foreign trade 1920–1937”), *Ekonomisk Tidskrift* 1940:2.

<sup>25</sup> I will try in what follows to show how certain problems which have so far been treated as strategic mistakes and cumulative deflationary processes may be better dealt with as production structural relationships and original determinants.

arisen. After these differentiating steps have been taken, one may note that unprofitability appears much more continuously than is generally believed. In other words, unprofitability is not perfectly negatively correlated with the business cycle. A certain *inertia* exists on the negative side of development and must be subjected to systematic analysis.

The empirical analysis along these lines will, of course, meet with difficulties in distinguishing between advancing and declining branches and enterprises. However, these difficulties are not fundamental as shown to be the case when dealing with aggregate categories, and they should not be exaggerated.<sup>26</sup> Drawing conclusions from annual reports of profits and dividends certainly would not be worthwhile if only a few years or the nearest boom were observed. However, more secure results may be obtained through an inter-cyclical analysis.

With respect to the inert factors, it is possible here only briefly to give a few examples. The important thing is to clarify the questions. Generally, business men avoid writing off on capital values as long as they can – such a step is always considered making a bad impression – and defer plant closings and the dismissals of factors of production. Thus, even though businessmen know that a company is running at a loss – they may not always know, since there may be hidden capital depletions – unprofitability may still not be “actualized”. Hence, factor dismissal is also deterred. The reason is that certain minimal *fields of perception*<sup>27</sup> sustain the value of capital equipment. If a curtailment of the field of perception occurs such that future anticipated possible improvement in the situation does not influence the judgement in the present case, then unprofitability would be quickly actualized and factor dismissal occur. Obviously a curtailment of the fields of perception of credit suppliers and/or a reduction of the supply of credit may impose such a curtailment of fields of perception on the part of businessmen. This is precisely what occurs during the crisis. Without entering into the relationship between monetary structure and the changes in the means of production, I can only note them. They belong to the relationship with which conventional business cycle theory is

<sup>26</sup> Every reconstruction of actual processes meets with two main problems which must be kept apart. There is first of all the difficulty of achieving compatibility between reality and concept. This is one of the difficulties that a total analysis cannot generally cope with. Secondly, there is the difficulty of obtaining empirical material. This difficulty is of an entirely different nature and is ultimately due to institutional factors, the reliability and unreliability of the evidence, etc. The great difference between these difficulties is that the latter difficulty may always be conceived to be overcome.

<sup>27</sup> Fields of perception become the common denominator for all inert factors. Fields of perception in time are forward-looking (in terms of calendar time) visions of the future. This is Johan Åkerman's definition. The concept is a necessary complement to the notion of anticipations because in many cases not only their quality is at issue but also their time span.

able to deal quite satisfactorily. However, one thing is made clear by the production structure analysis: the supply of credit with large fields of perception may be a retarding factor, but this is no guarantee for a continued boom. In the final analysis it is always a matter of specificity of credit in time and space.<sup>28</sup> There is an analogous case with purchasing power increases obtained by measures based on underconsumption ideas.<sup>29</sup>

It should be noted that ample availability of credit as a retarding factor often leads to capital depletion. This is brought about through new investment made to counter declining business and unprofitability; an unprofitable company may try to extend its markets at the expense of its competitors, by increasing its fixed capital equipment and rationalizing, by lowering prices, and by attempting to increase turnover by conquering markets from competitors. However, as an eventual decline may not for long be avoided – this seldom happens – it turns out that “good money has been thrown after bad money”, i.e. a strategic malinvestment has been made.<sup>30</sup> Capital depletion often takes place in such a way that operating capital is supplied to the firm in order to keep its production running, i.e. to avoid unprofitability actualization. When it comes to noting this retarding factor and understanding its effects, good use can be made of the distinction between advancing and declining sectors and firms. The “recovery” within a firm or a branch, possibly brought about by the new investments just referred to, would often dominate the results unless an inter-cyclical investigation had been undertaken.

Other retarding factors are all kinds of trusts and cartels and increased size of firms. This is partly because the credit problem is more easily solved by big business units rather than by small units and partly because larger fixed costs involve longer sight spans for credit evaluations.

Social and political factors often play an important role for inertia because social and political considerations tend to dominate the evaluations.<sup>31</sup> Agricultural conditions provide good examples of this. The introduction of protective

<sup>28</sup> *Postscript note*: I would like to add that I have a strong impression that as a general indicator of inertia factors, the actual opportunities of obtaining capital and credit have often played a larger role for the inertia on the negative side of economic development than the subjective anticipations. These are often too vague to be decisive as long as the money is available.

<sup>29</sup> It is important to keep this in mind. Economic-political measures are of course influenced by this insight.

<sup>30</sup> The Mead & Gradinsky study just cited shows this very clearly. In J.R.C. Epstein's *Industrial profits in USA* (1934) one may find support for what is said about these strategic malinvestments. Epstein's work is empirical – his theoretical reflexions are unsystematic – and suffers from encompassing too short a period. Nevertheless, it is a very interesting piece of work.

<sup>31</sup> These retarding factors often prevent dismissal. For example Government planning involves longer sight spans in time as well as wider “sight spans in space”. The latter is due to the state's primary attention to the social consequences of dismissal.

tariffs in Sweden in 1888 meant a retarding factor of this kind. The extensive agricultural support program after 1931 is basically of the same kind and illustrates the possibility that the retarding effect may become absolute. Another retarding factor, preventing dismissal after depreciations and actualizations of unprofitability have already occurred, is financial reorganization. This often means merely a writing off of losses without affecting the original factors.

As suggested above, some retarding factors may be found to be so strong as not only to delay the actualization of unprofitability but also to counter one that has already begun.<sup>32</sup> Thus, some original determinants will assert themselves slowly, with the consequence that a final dismissal will occur only after one or more actualizations and alleviations of unprofitability. However, eventual unprofitability will then appear very strongly. Many deep changes in production structure have taken place only in certain crises and depressions which thereby have become more malignant than the intervening ones. Thus, intervening crises and depressions have been characterized almost exclusively by the dismissal of strategic malinvestment. These intervening crises and depressions<sup>33</sup> have meant no great dismissal, caused by “original” unprofitability. Instead, an adjustment has taken place, e.g. through financial reorganization, mergers, government intervention, etc. Above all, the two peace crises of 1921 and 1929–31 were characterized by registered deep changes in production structure, while the crises of 1900, 1903 and 1907 were typical “intermediate crises”.<sup>34</sup> In addition, the crisis of 1929–31 was a structural crisis in other senses as well.<sup>35</sup>

<sup>32</sup> It should be noted that we are dealing with retarding factors, not with allaying unprofitability by filling in structural gaps. This has been dealt with in another context above.

<sup>33</sup> It is clear from this that the conceptualization suggested may very well include the realistic ideas in received business cycle theory. However, it is evident that this received business cycle theory cannot systematically deal with deep production structural changes which lie behind certain crises and depressions.

*Postscript note:* I want to particularly underline this. I do not want to push aside other explanatory elements of business cycle theory. (My strong criticism only concerns analyses based on undifferentiated aggregates.) Of course, business cycle theory has made considerable progress but there are certain areas where generally new questions and solutions are required.

It is interesting to note how business cycle theory has evolved over the decades. Focusing on the business cycle wave rather than on the mere crisis was an important step forward. The crisis itself was once viewed mainly as a disturbance. Now the necessary step forward implies focusing on structural changes. Constraining the attention to the business cycle wave has to a certain extent led to a one-sided and superficial way of looking at the matter (cf footnote 4 above; on p 26.).

<sup>34</sup> The actualization of unprofitability within Swedish agriculture which took place after the crisis of 1929 meant the actualization of an unprofitability with roots in original determinants which had been at work for a long time.

<sup>35</sup> The above framing should reduce the *circulus vitiosus* element in the depressions.

Unless the unsatisfactory choice is made to regard the so-called Kitchin crises as “disturbances”, received business cycle theory must be considered either incomplete or unrealistic; incomplete in the sense that it can only explain the so-called Juglar crises;<sup>36</sup> and unrealistic as an explanation of the Kitchin crises because *the same* explanation, e.g. a general lack of purchasing power or a general lack of savings, cannot be valid for *both* phenomena.<sup>37</sup> A specific analysis shows that the Kitchin crises are considerably more specifically localized than the Juglar crises. Some branches show clear depression tendencies, while other branches show little notable decline. In the Juglar crises, on the other hand, most branches are hit by depressions. The following hypotheses may then turn out to be realistic: the Kitchin crises mean a curtailment of fields of perception hitting certain specific branches or enterprises with the result that unprofitability actualizations take place while the inert factors active on the remainder of the negative side of the development process may still be strong enough to hold back a more general curtailment of sight spans. As every business cycle expansion is supported by new investments in one or a few branches, Kitchin crises will appear, above all, when specific unprofitability actualizations occur *before* these new investments have been completed. After that has taken place, a specific actualization may lead to a general actualization. The so called pre-crises, i.e. unprofitability actualizations occurring *immediately before* a more general crisis, may be similarly explained.

Again placing the idea of development block at the centre of the analysis, the following important conclusions emerge: The relative or absolute unprofitability, which obtains as long as a development block remains uncompleted, must under certain circumstances *exert depressive tendencies*. This occurs as soon as the sight spans related to the investments within the frame of uncompleted development blocks are shortened so much that they do not include the time for further extensions. As an intermittently “concentrated” unprofitability actualization brings with it a general tendency towards curtailment of fields of perceptions, large parts of industry will become unprofitable because development blocks are interrupted. The faster the progression, the more extensive becomes this “secondary” unprofitability. It should also be noted that any reason to curtail the fields of perception may bring about such a situation, thus not only the “concentrated” unprofitability actualizations. Sometimes other factors, e.g. political ones, play a decisive role. The importance of develop-

<sup>36</sup> By Juglar crises are meant those crises which have occurred during the industrialization epoch with 7–11 year intervals. The term seems to be the accepted one after Juglar had demonstrated that regularity. By Kitchin crises are meant crises with 3.5 year intervals which have been shown to exist above all in the U.S. After the Kitchin paper in the *Review of Economic Statistics*, 1923, this term, too, seems to have become generally accepted.

<sup>37</sup> *Postscript note*: I would be very interested in hearing a reply to this.



ment blocks in this respect, as well as the importance of the conditions dealt with in a preceding section, serve to reduce the influence of a general deflationary process in the depressions.

Paying attention to the development blocks may be of direct practical-political interest. Obviously, development blocks may be identified in any current situation even if the lack of historical perspective makes secure judgments difficult.<sup>38</sup>

The main purpose of the preceding presentation has been to demonstrate the connection between economic progress and economic crises. I have tried to deepen the content of the general proposition that crises, given the economic-political structure, must be more numerous and/or more difficult when progress is fast rather than slow. The meaning of this proposition, so far, has been that one must expect more “mistakes” with more new investments. Thus, this proposition does not cover the whole truth.

## 5 Changes in the Economic-Political Structure

A differentiation between various kinds of economic-political measures and norms yields the following division: 1) General means and general norms, e.g. changes in the discount rate, sales and purchases of bonds in the open market, decrees about general wage increases intended to increase purchasing power, as well as norms such as “the constancy of the general price level”. 2) Discretionary measures in specific areas of the economy. Both general and specific norms may be tied to this. By general or specific norms, or rather value judgments, we mean that a measure is justified by the calculated effects particularly within the area where the action is taken, without regard to changes in the general price level for example. 3) Specific interventions dealing with the whole economy. Here one may, however, distinguish between an absolute planned economy and cases leaving the consumption choice free. The specific value judgements are in this case supreme.

Looking back on the interwar period, it is clear that attempts were made in the U.S. to pursue an active business cycle policy in the sense that attempts were made to control the business cycle, i.e., not merely meeting the requirements generated by the maintenance of the gold standard.<sup>39</sup> The 1929 crisis demonstrated the failure of this policy. General means were used and after

<sup>38</sup> We have at the present time a good example in Sweden. Northern Sweden may be said to present several development blocks. Many of the “problems of the North” are rooted in this.

<sup>39</sup> In other countries economic-political thinking was dominated by the wish to return to prewar conditions. Thus the norms were not fixed more clearly than what was consistent with the requirement of maintaining the gold standard. This meant that a more passive policy was pursued.

1925 the general norm was to preserve the stability of the general price level.<sup>40</sup> The idea of controlling the business cycle by general means and norms in order to avoid crises seems nowadays almost naive. Impressed by the changes in the monetary sphere during World War I, the theoretical as well as the economic-political discussion about the business cycle was dominated by the purely monetary approach. This business cycle theory used aggregate categories to a very large extent. Considering the insight obtainable from a structural theory concerning the production-structural relations, it is not surprising that this view prevailed, nor that the policy failed.

Theoretical analysis and practical experience lead to the same conclusions: general means are based on highly unsatisfactory indicators of the production-structural transformation. The general means must be inefficient, both in influencing the general indicators according to some general norm and in bringing about a production-structural transformation that evens out the business-cycle.

After the crisis of 1929, attempts were made in most countries to prevent the crisis from deepening. It is not difficult to understand why this failed, too.

The next phase in the evolution of Economic Policy was the “recovery policy”, i.e., a typically active business cycle policy. This time a start was again made with general means. Since the means used so far had proven inefficient, general measures of increasing purchasing power were resorted to. However, it was soon realized that general measures were not at all adequate. More limited specific measures were needed. It turned out that interventions in areas where they were most needed had a strong tendency to spread to ever more branches of the economy. This may well be explained by the fact that a very specific measure has to benefit certain social groups with the result that other groups may soon raise their demands. Furthermore, it is necessary to take into consideration the fact that such measures cannot be as limited as they are meant to be, *at least not if they are systematically coordinated from the beginning*. They disrupt other branches of the economy in a way which was not at all or only partly anticipated.

Considering what a policy of unconstrained measures would mean for the production structural context and first of all examining the case of free consumption choice, it is obvious that many forces will make themselves felt in the direction of further extensions of the specific measures. Free consumption choice would often look irrational and changes in the pattern of consumption appear unnecessary. The result would be that the economic-political structure must be moved further in the direction of a completely planned economy. It

<sup>40</sup> It is interesting to note that initially the intention was to use *general* means *without posing a general norm*. However, the difficulties created by this led to the adoption of a general norm. Thus no deliberate choice was made to resort to specific means. Time was not ripe for that.

is interesting, however, that a planned economy, implying complete control of production as well as consumption, is hardly even conceivable. The unsurpassable practical difficulties need not be mentioned here.

The conclusion is the following: if an active business cycle policy is initiated, one is soon forced to resort to specific measures, and if these are not systematically coordinated from the beginning, a gradual process towards central planning takes place. On the other hand, there ought to be a tendency in the opposite direction. *The result is that no economic-political structural equilibrium is reached.* Rather there exists a permanent latent instability in the economic-political area. Such an unstable situation was characteristic of the 1930s, e.g. in the U.S., England and Sweden. A momentary lack of confidence founded on uncertainty about the economic-political structure in the future must have a restrictive influence on the process of economic change. One may even assert that this lack of economic-political equilibrium during the 1930s has had effects extending into the war period and retarded the adjustment of the production structure to the needs of the war. Obviously, it is important that private enterprise, if at all permitted, be unhampered by uncertainty regarding the extent of future government regulations.<sup>41</sup>

The most important conclusion of the above reasoning is that *a profound reappraisal of the policy of specific measures is required.* This is because the latent instability derives from the fact that the specific measures are not coordinated from the beginning but rather have been “resorted to” wherever and whenever the need has arisen. This observation is not the sign of posterior [*ex post*] wisdom. No real coordination seems to have been possible in the early 1930s during the acute depression. However, it is important to understand what is required now. There is hardly any doubt that the postwar period will place the problem of economic-political structure and thereby the problem concerning the relationship between general and specific measures in the foreground.

<sup>41</sup> *Postscript note:* Of course I do not deny that a theoretical and systematic analysis can yield results beyond those of a purely economic-historical analysis. I may venture the view that the conclusions from my analysis of the changes in the economic-political structure speak in favor of this.

I believe that the conclusions of the analysis pointing to the lack of economic-political equilibrium is the best explanation of stagnation and “chronic” unemployment. Put briefly, it surpasses other explanations of the below-normal utilization of production capacity, such as the explanation emphasizing a would-be decisive deterioration of investment opportunities of recent years. The opinion polls in the U.S. reported on by Alva Myrdal (1942), in a paper in *Tiden* (1942:7) provide evidence that seems clear enough. The fact that everybody expects a completely planned economy while no one wants it is surely an indication that economic-political instability is hampering private enterprise. Certainly this – in addition to the failure of government efforts to find solid operative solutions – should be recognized as at least a rather potent explanation of “the stagnation”.

### Postscript<sup>42</sup>

The thesis that is concisely summarized in *Ekonomisk Tidskrift* is an attempt at a theoretical reconstruction of a certain aspect of the economic development process and actual business cycle sequences. Its purpose is “causal-analytical“ and implies no model building. This must be stressed in order to prevent misunderstandings which might arise because the present paper has not provided anything beyond the main questions and only a few results. Thus all references to empirical material have been omitted. I would be pleased if my efforts were not interpreted as an attempt to add an additional business cycle theory to those already existing. The possibilities of providing a business cycle theory that explains all conceivable business cycle fluctuations are in my view nonexistent. Only questions suitable as frames for causal analysis may be attempted. Hence, the present paper seeks to offer examples of such questions. Of course, I do not in principle reject the construction of models. They are indispensable tools above all in an economic-political analysis but yield at present fairly strong decreasing marginal utility.

Causal-analytical research must in these modern times be pushed further and deeper before we continue work with more specified models. The fact that the thesis attempts to reconstruct actual sequences of events does not mean that it is economic-historical in the ordinary sense. Causal analysis is more than the usual economic-historical research because it is directed at finding repetitive phenomena and posing empirical laws – but of course not laws that are valid forever. There is no need to define the difference between economic theory, economic history and economic causal analysis, since one of my main theses is that drawing definite lines of demarcation between these fields is an evil.

The discussion that took place when Torsten Gårdlund defended his dissertation prompts me to state that my purpose is to erect something approaching the systematic causal analysis called for by the first as well as the second discussant.<sup>43</sup> Attempting first to give some aspects of the development in

<sup>42</sup>[Dahmén submitted this postscript for discussion when he presented the present paper, which had then already been published, to the licentiate seminar in the Institute of Social Science at Stockholm University on December 2, 1942. This postscript has never been published but is appended here in order to provide some further background to Dahmén’s early work.]

<sup>43</sup>[Gårdlund’s dissertation *Industrialismens samhälle* (The Society of Industrialism), Stockholm 1942, was a pioneering study of the early phases of the industrialization in Sweden written in an English narrative style of economic-historical craftsmanship. It was criticised by Karin Kock for failing to apply economic theory in a more systematic and explicit manner. Kock published her criticism in *Ekonomisk Tidskrift* 1942:4, Vol. 44, pp. 286–296. An exchange between Gårdlund and Kock followed in the next issue. See *Ekonomisk Tidskrift* 1943, Vol. 45, pp. 58–70.]

Sweden before World War I, I will then try to give a more complete picture of the development process during the interwar period. Quite naturally I expect to benefit from Gårdlund's work as regards my first intention. However, as regards the approach to the problems of economic development and business cycles, I intend to apply the manner of posing the questions which I have found useful in the somewhat preliminary analysis of my thesis.<sup>44</sup>

<sup>44</sup>[The remainder of the postscript is a number of notes referring to particular places in the paper. They have been inserted among the original footnotes as "postscript notes".]

## **SECTION II**

### **Documentations on Dahmén's Dissertation of 1950**

## Editorial Introduction

### Dissertation Plans Delayed

Erik Dahmén's licentiate thesis attracted attention in many quarters. Not only Åkerman thought highly of it but also Erik Lindahl who at that time held a chair at the University of Lund. The latter's appreciation of the thesis was decisive for Dahmén's subsequent career. It was Lindahl who recommended him to Ingvar Svennilson who at that time had recently been appointed director of IUI. As such he was in the process of staffing the institute with additional researchers. Svennilson, who also read the thesis, recognized the promise in the Dahménian approach and was particularly interested in its application in the study of industrial development which was the target area of research at IUI. He therefore offered Dahmén a position at the institute, thereby granting him an opportunity to continue his research towards a doctoral dissertation.

As Dahmén came to IUI in the fall of 1942 he had just published the paper in *Ekonomisk Tidskrift* where he restated his approach in the licentiate thesis. As documented in the postscript to the translation of that paper (p. 40 ff. in this volume) he arrived at the institute with definite plans for continued empirical work on the main lines of the thesis. He was particularly interested in further empirical explorations of the Development Block concept. However, it turned out that many other commitments were now to intrude on his time and his resumption of research along the lines of his thesis seems to have been postponed for a considerable period of time.<sup>1</sup>

One of the things that seems to have distracted him was a number of "extra-curricular" engagements. IUI, being located in Stockholm, was in close proximity to the central political and other types of important decision making in Sweden. Such an environment, of course, offered important additions to his "knowledge capital" as an applied economist but it also offered many opportunities to exploit it. Being part of the networks around IUI, Dahmén became engaged as a lecturer and writer in various forums. This was the beginning of the role as a public commentator and analyst of current trends and economic policies which was to become a significant part of his profile as an economist.<sup>2</sup>

The most important factor delaying his dissertation work was, no doubt, the

<sup>1</sup> For some additional background and information on Dahmén's early years at IUI see Henriksson (1990).

<sup>2</sup> One example which also illuminates Dahmén's extraordinary perseverance in intellectual pursuits is the series of annual surveys of the state of the economy he has contributed to the periodical *Nordisk Tidskrift*. Beginning during World War II these annual surveys are still kept up. Soon reaching the 50 year mark, that achievement is hard to beat even for institutionalized agencies watching current trends with staffs continuously renewed.

IUI engagement itself. It preoccupied him with other lines of research where the war situation, of course, claimed priority for many years. However, because his dissertation plans were set on undertaking empirical research, his work at IUI may be seen as important preparation for his dissertation research. Being assigned to conduct investment surveys as well as to follow the evolving business cycle, Dahmén was in a position to test a fair number of the ideas from his licentiate work. It also enabled him to familiarize himself thoroughly with the various types of statistical source material of relevance for his own dissertation work.

With both his time and interest tied up in so many other things, it is possible that Dahmén may have been “derailed” a bit from his original plans and lines of thinking, but of course his coming dissertation work was also to benefit from the continued intellectual growth that went with its delay. As documented by a fair number of book reviews published in the *Ekonomisk Tidskrift* (Dahmén 1943 a,b, 1944 a, 1945, a,b,c) he used this period in abeyance, before he renewed his own research along the Transformation cum Development Block line, penetrating into the professional literature on issues concerning the long-run changes of economic systems. Forced by the war to pay attention to noneconomic determinants of the process of economic development, he must have found the prospects of the coming peace intellectually challenging. As noted above, Dahmén was a diligent observer and interpreter of current developments, and issues of the coming postwar period were his “particular cup of tea” as they called for a long-run perspective, where his historical method urged him to take a deeper look at past trends. This, too, was an important preparation for his dissertation.

### **The Influence of Svenilsson and Others**

It was not until after the end of the war that Dahmén set out on systematic dissertation research. His research plans had been worked out by the spring of 1946. The project he now set out on was, however, somewhat different from that which he had conceived of in the preceding years. He had previously had his mind set on carrying out empirical explorations, focusing on Development Blocks, with the Transformation perspective mainly as a prerequisite framework. As the war drew to a close he also actually worked out a concrete proposal for that research. His plan seems to have been to conduct this study with the assistance of another researcher as a project in international and comparative economic history where the U.S. experience was to be juxtaposed to the Swedish one and possibly to that of other countries as well.

What made him change his plans was, as he himself has told in an interview, the result of an intervention by Svenilsson, who thought that the planned study was a too risky international venture and instead suggested that the study be confined to Sweden. Svenilsson undoubtedly was a bit skeptical also



about the possibilities of tracing Development Blocks. It probably appeared to him a safer route to undertake a more general type of empirical mapping, placing the transformations in various industries in the center and simply, as a byproduct, record whatever Development Block mechanism that could be ascertained.<sup>3</sup> Probably with a particular view to the needs of the IUI, he advised that the study be confined only to the experience of a select number of sectors of Swedish industry. In addition, he encouraged Dahmén to focus on the exit and entry of firms as a key feature of the entrepreneurial response in the various industries.

Of course, Svernilson also had a personal stake in his suggestions. He had himself for several years conducted research on the process of industrial expansion and had made pioneering contributions in uncovering phenomena later referred to as Verdoorn's Law.<sup>4</sup> Svernilson probably had in mind that Dahmén in his project would reach results that would test the proposition of that law which said that the productivity growth in an industry was a result of the size and rate of growth of the industry. Such a test would fit easily into a study of the pattern of industrial transformation conducted in terms of advancing and retreating firms and industries as suggested already in the licentiate thesis of Dahmén. The suggested exit and entry of firms approach would, of course, also easily fit into that framework. What made such an approach particularly attractive was, furthermore, the possibility of testing Schumpeter's idea that the innovations in an industry generally took place via the entry of new firms rather than in old firms.

### **The Design and Execution of the Dissertation Project**

Thus influenced by Svernilson, Dahmén designed as his dissertation project a study of the transformation process in Swedish industry. However, the scope of the study became much larger than that suggested by Svernilson. In order to provide as broad a comparative basis as possible, the study was extended to cover the entire Swedish industry, barring the raw material extracting sectors such as mining and forestry. The focus was on the interwar period, but this picture was backed up by extensive explorations of the antecedent developments reaching back to the beginning of the Swedish industrialization period in the middle of the 19th century. Dahmén also wanted to place the picture in the wider frame of the development of the total economy and pitch it against an international background. What was planned was nothing less than a comprehensive economic-historical treatise of Sweden's modern indus-

<sup>3</sup>As Svernilson's own later research reveals, he quite accepted the Transformation view of Dahmén as a suitable framework for his own work. See footnote 2 in the introduction to Section III, p. 73.

<sup>4</sup>Further information on Svernilson's research in this vein is given in Henriksson (1990), p. 165 ff.

trial history although from a very special point of view.

The dissertation, *Svensk industriell företagarverksamhet*, appeared in 1950 in two volumes. Volume two being a statistical appendix volume is only available in Swedish, while Volume one, being the text volume, has later been translated into English (see Dahmén 1970). Some idea of the scope and content of the volumes is provided in the following English summary of the Swedish edition. A further overview may be gained from the detailed table of contents reproduced as an appendix (see pp. 67–70). The study involved the mapping and explorations of more than 60 main branches and more than 200 sub-branches carrying the investigations down to the level of individual firms and establishments. A total population of more than 10 000 firms was researched.<sup>5</sup>

The empirical work that went into the study beginning in 1946 involved the digging up and collecting of data on a scale that could not have been undertaken by Dahmén alone. Soon the major part of the IUI staff was involved in his project. The task consisted not only in the gathering and processing of various types of published as well as unpublished, more or less official, statistics. It also included an impressive number of interviews and a huge questionnaire investigation. Considering the scope of the project, it is amazing that it could be completed within four years.

One reason for the success of this research was, of course, its long period of preparation, if by preparation we mean the theoretical exploration Dahmén carried out already for the licentiate degree. Further, the early years of research at IUI were, as noted, no doubt also important. Between 1942 and 1946 he made himself intimately familiar not only with the various types of source material but also with the various features and problems of almost the whole Swedish industry. Dahmén in that period developed an in-depth understanding of the dynamics of the pattern that had evolved. In that sense he had reached that *ex post* benchmark which Åkerman prescribed for “causal” research as a method of gaining knowledge of the empirical regularities generated by the forces of economic development. By 1946, Dahmén had explored the outcome of the historical process he was to investigate and the “method of historical reconstruction” could thus be applied as a study of the antecedents of something known.

B.C.

R.H.

<sup>5</sup> A considerable part of the empirical material presented in tabular form in the second volume was never fully analyzed and the results were not systematically incorporated into the account given in the first volume. However, while these tables were presented without any detailed explicit analysis they were generally laid out in a form that permits easy reading complementing the analysis presented in Volume one. Yet, even today there have been no major attempts to exploit this data set and follow up the intentions of Dahmén.

## The English Summary of Dahmén's Dissertation of 1950<sup>1</sup>

This work is based on two theses, one critical and one constructive. The critical thesis is the opinion that the study of economic development has become somewhat one-sided in emphasis during the dominance of business cycle theory and empirical business cycle research in economics. This one-sidedness at least so far has not been overcome by econometrics in spite of the great progress of that science. The cyclical aspects of economic development, notably the cumulative processes of expansion and contraction within the frame of the business cycle and certain self-regenerating wavelike movements in economic life, have been elucidated in detail and with notable success by means of the traditional paraphernalia, especially the aggregative concepts of the general theories of money, value and capital. What may be called the industrial *transformation* in the sense of the origination of new commodities, new methods of production and distribution, new forms of organization, new institutions of all kinds, and their struggle with what once used to be new has, however, been shunted to the background. Also scientific study of entrepreneurial activity, its character and its propagating forces has been all too much neglected. In this way a rift has manifestly opened between the study of business cycle phenomena in economics on the one hand and other social sciences, notably economic history in a general sense and "business economics", on the other. Business cycle researchers especially have not been able to give up their isolation, and economic historians have usually dealt with olden times and, in any case, have generally not understood, or been interested in, the problems of business cycle and econometric research.

The constructive thesis of the present work may be derived from the approach of the institutionalist, and notably Thorstein Veblen, to the problems of methodology in the social sciences, in combination with the fundamental principles of methodology of the Swedish economist, Johan Åkerman. In accordance with the latter interest is focused on a *causal analysis* of the economic development in Sweden in the interwar period. This means that the aim is an analysis of *a specific phase of history* by means of *a larger body of theoretical equipment and systematized, explicit sets of problems than is usually employed in research in economic history*. The crucial idea is that, with all due respect to "self-contained" economic theory which has many extremely important functions, it is particularly desirable at the present time that

<sup>1</sup>[This is Erik Dahmén's summary in English taken from the original Swedish edition of 1950. It is not reproduced in the English edition of 1970. As a complement to this summary the reader may be referred to the table of contents in the appendix on pp. 67–70.]

students of the problems of economic development force themselves to attempt a unification of theory and empirics by making it an object to analyze a certain historical *stratum* in the way suggested. A synthesis of elements originating in the historical chronicle on the one hand and in economic theory on the other appears to be prerequisite to further significant exploration of the process of industrial transformation. A quotation from J. Schumpeter may here serve as a guidepost:

Personally, I believe that there is an incessant give and take between historical and theoretical analysis and that, though for the investigation of individual questions it may be necessary to sail for a time on one tack only, yet on principle the two should never lose sight of each other. . . . In the handling of old and new facts, the historian will gain from keeping touch with theorists. Neither group should ever be distant from one another – but here the promise from collaboration is particularly great for both parties. As I have said before, the study of economic change is an area of research where economic historians and economic theorists can make an interesting and socially valuable journey together, if they will.<sup>2</sup>

The constellations of problems posed in this dissertation are based, to a large extent, on Schumpeter's approach in his *Theory of Economic Development* (1911, 1912) and the *Business Cycles* (1939). His theory of innovations here is not primarily conceived of as a theory of business cycles, however, *but rather as a means of attacking the problems of economic development in a larger context, and in another way than, say, traditional business cycle theory*. It should be emphasized in this connection that his theory, contrary to what is not unusually the case, must not be taken to be an overinvestment, or "malinvestment", theory.

The subject of investigation is Swedish *industrial* development in the interwar period, and it is pointed out from the outset that no pretense is made to present an all-inclusive analysis. It is considered important, however, to show that the technique and approach used are suitable for application in the border-regions common to different social sciences. Judging by present experience, this is a purpose in regard to which traditional business cycle research has less to offer.

The second part of the investigation is devoted to a study of innovations and the interrelationships between them in the interwar period.<sup>3</sup> This analysis of the development is aimed at establishing to what extent new commodities,

<sup>2</sup> Schumpeter, J.A., 1949, "Economic Theory and Entrepreneurial History" in *Change and the Entrepreneur*, Cambridge, Mass.

<sup>3</sup> [The first part, being an introduction, besides presenting the critical and constructive premises as outlined above also offered a survey of the Economic development of Sweden before World War I as well as an overview of the interwar economic development of Sweden in its international context.]

new methods of production, et cetera, have been of decisive significance, or to what extent the demand for goods has increased, relatively speaking, independently of “intramural” measures in the industries in question. Rayon products, prefabricated wooden houses, and wallboard, for instance, *created* their own markets. By contrast, the extension of the school system and state and local administration as well as the rapid increase in the number of households provided the strongest incentive to development in the school, office, and home furniture industries. In the former case the *driving force* was located *within* the industries concerned, while in the latter its location was mainly *outside* the furniture industry. In connection with the analysis of such developments, the causes of stagnation in certain industries are also analyzed, the main object in such cases being to establish to what extent the stagnation is due to innovations in other industries within or outside Sweden.<sup>4</sup> Always the main concern is with the struggle between the new and the old and between one industry and the other. Finally, attention is also given in this part to the development of production per man-hour, the use of fuel and power, et cetera, and to the development of earning power.

This analysis brings out the fact that Swedish industry progressed very rapidly in the interwar period, and that this development was the main contributing factor to the substantial increase in the standard of living of the Swedish population. The yield of industrial activity increased strongly in the twenties as well as the thirties. New or “infant” commodities played an extremely important part both as propagators of prosperity and as “saboteurs” of traditional economic activity geared to “old” commodities or “old” methods. In some respects, this is given a general illustration in Table I. With regard to this table it should be remembered that the new or “infant” commodities are substantially underrepresented. It has not been possible to make a desirable differentiation and weighing in greater detail of the statistical material and, further, most commodities of new or recent origin have declined in price – often absolutely, but more often and to an even greater extent, relatively – as they have conquered wider markets. Finally, it has not been possible to take into consideration quality improvements in “old” products.

After this study of the development of industrial manufacture, and notably the *transformation* of production, the question is posed:<sup>5</sup> What part was played in this development by 1) *new firms* (i.e., *firms started in the interwar period*), and by 2) *firms which were in operation even at the start of the period investigated*? A related question concerns the prevalence of discontinuation

<sup>4</sup>[See the appended note *On International Industrial Transformation*, pp. 64–66 below.]

<sup>5</sup>[Dahmén is now turning our attention to Part III of the dissertation. See Table of contents in the appendix, pp. 67–70.]

**Table I Survey of the “transformation” of production in the interwar period**Sales value of production in tenths of one per cent (‰) of the aggregate sales value of Swedish industrial production<sup>a</sup>

	1919	1939
Sponge iron	0.0	0.3
Electro-steel	1.3	9.7
Various alloys	0.1	3.8
Various new rolled (especially cold rolled) and drawn products, etc.	–	8.6
Aluminum and aluminum products	0.3	2.6
Various manufactures not produced within the iron works (fittings included)	0.3	6.2
Various non-ferrous metal castings	2.1	3.4
Central-heating boilers and low pressure steam boilers	–	1.4
Central heating radiators	0.2	2.5
Airplanes and automobiles	1.1	20.9
Motor cycles and bicycles	3.5	5.9
Various new transport equipment, etc.	–	1.9
Electrical heating apparatus, etc.	0.3	1.4
Radio receivers	–	3.9
Various electrical household appliances	0.2	5.0
Various new electrical apparatus, etc.	–	5.1
Pumps, fans, air conditioning equipment, etc.	0.9	3.9
Various business machines and office appliances	–	1.8
Various new instruments and tools (i.a., pneumatic)	–	2.7
Various new types of industrial machinery	–	8.5
Various new agricultural and dairy machinery	–	2.0
Various concrete goods and light-weight concrete	1.8	4.3
Porcelain equipment for electrical installations and sanitary goods	–	0.5
Various new types of ricks and pottery products	–	2.5
Glasswool and miscellaneous new glassware	–	0.4
Plywood	0.1	1.1
Wallboard	–	4.1
Prefabricated wooden houses	–	4.1
Prefabricated wood furnishings and other newly developed products of wood-working	–	3.9
Various wood products (i.a., impregnated)	0.1	0.6
Bleached sulphite pulp (i.a., viscose cellulose)	4.1	12.9
Bleached sulphate pulp (of an entirely new character)	–	3.3
Various sorts of paper and paperboard	0.7	7.1
Hard corrugated board and paper	–	1.2
Various new paper and paperboard products	–	2.4
Mineral water and sweet aerated drinks	2.0	3.6

	1919	1939
Various preserved products, jam and juice, etc.	1.1	4.5
Various foods (i.a., milk powder, condensed milk)	0.0	0.6
Cattle feed	1.8	7.0
Various textiles (i.a., machine felt, binder twine)	0.3	1.6
Rayon products	–	13.1
Garments and other ready-made clothing products	13.6	29.6
Various fur, rubber and leather products	0.7	8.0
Cellulose enamels, synthetic enamels and varnishes, etc.	–	1.6
Miscellaneous new products of the drug industry	–	1.1
Synthetic nitrogen products	–	0.6
Mineral oils, bakelite, vegetable oils, medical preparations, etc.	1.2	7.9
<b>Total</b>	<b>37.8</b>	<b>230.2</b>

<sup>a</sup>Mineral products, gold and silver ware, military equipment, flour mill, dairy and butchery products excluded.

among industrial enterprises during the period, and how it can be seen against the background of, i. a., the struggle between the new and the old. Naturally, a crucial point in the following empirical and theoretical analysis is the definition of “new firm” and “discontinuation of firm”, respectively. It should be noted that incorporation or other purely formal signs of a new firm, as well as legal dissolution of an established firm is not *per se* to be regarded as entry of a new firm and discontinuation of an old one. Rather, for the purposes of this work it is essential to apply such definitions as will yield an understanding of the initiation and discontinuation of firms in a more “real” sense. When operations have been continued without an appreciable break, for instance, bankruptcy has been regarded as discontinuation and the following reconstruction as initiation of a new firm only in cases when 1) a replacement of ownership and management has occurred, and 2) a simultaneous change of at least fairly substantial import has taken place in the organization or the character of production of the enterprise.

The investigation has been concerned with firms employing, as a rule, at least five workers and distinct in character from that of handicraft proper. It is based on a very rich body of sources consisting partly of published and non-published primary materials of official industrial statistics and partly of materials collected by means of special questionnaires distributed to several thousand firms and at systematic hearings, interviews, and study visits. Also, a large number of monographs and similar literature concerning individual enterprises should be mentioned, and, as a matter of course, a large number of technical and economic professional journals. Very briefly, the main results of the investigation may be summarized as follows:

1. A general survey of the number of new firms in various industries in the interwar period as well as of their significance with regard to employment is given by Table II.<sup>6</sup> The same table also gives the number of discontinuations in the same period among firms in operation at the beginning of the period, and, finally, the number of workers in these later discontinued firms in relation to the total number of workers in 1919.

The rate of entry of new firms was very high throughout the interwar period. A little more than half the number of industrial firms in operation in 1940 had been started after 1918. The formation of new enterprises reached particularly large proportions in most “light” and “medium-heavy” industries. In the heavy industries its significance was fairly limited or even negligible, especially when the development of these industries primarily depended on innovations in the form of new methods of production or distribution (as in the iron, pulp and paper industries). Only one very large and at the same time highly progressive enterprise was founded, Bolidens Gruv AB (The Boliden Mining Company), based on new discoveries of gold and other metal ores.

Within the “light” and “medium-heavy” groups of industries the new firms, in

<sup>6</sup>[Table II is in this volume only reproduced in a shortened summary version.]



**Table II Survey of the formation and discontinuation of firms in the interwar period<sup>a</sup>**

Industrial branch	Share of total number of workers in	
	1939 employed in firms started after 1919	1919 employed in firms discontinued before 1939
Iron and steel works	0	15
Metal manufacturing	19	10
Engineering; Machinery industry	14	16
Electrical engineering	23	16
Cement	12	26
Brick works	6	10
Potteries etc.	5	36
Glass works	19	21
Furniture	49	33
Pulp	19	8
Paper	16	7
Paper processing	32	26
Cocoa – candy	17	15
Margarine	47	3
Canning	46	22
Cotton	3	7
Woolen	2	14
Hosiery	38	14
Garment	50	26
Tanneries	3	22
Fur and leather processing	44	30
Shoe	(31)	(26)
Paint	17	25
Oil, soap, cosmetics	25	37

<sup>a</sup> [The table is a summary version of a more detailed table in the original Swedish edition. See Erik Dahmén, *Svensk industriell företagarverksamhet*, Vol. 1, 1950, pp. 417 ff.]

spite of being numerous, sometimes played a relatively modest part, quantitatively speaking, in the development of production. In such instances they usually started on a small scale and remained small, supplementing, as it were, older firms by subcontracting, or by production for a local or regional domestic market, often operating in fields not covered by the more standardized production of established firms. This was the case, for example, in the cocoa, candy and confectionery industry and, above all, in most branches of the engineering industry. In these branches, however, an array of new durable consumers' goods (e.g., household appliances) stimulated the formation of several new progressive enterprises. A modern all-Swedish automobile manufacturing industry was also established in the twenties.

By comparison it has been found that the formation of industrial enterprises before World War I to a much greater extent was characterized by progressive firms in these groups of industries. The interwar period in Sweden represents the era of formation of large numbers of small businesses in all those branches where small-scale operations are at all possible. This is a fairly commonplace occurrence in a country like Sweden with its limited domestic market. But in other industries it was, at the most, the period of the formation of many subsidiary companies. The formation of new firms was considerably influenced by changes in the methods of distribution and, not least, the development of the trade-mark system and other forms of so-called monopolistic competition. Thus, special attention has often been given to the relations between the structure of production and the organization of distribution.

In some cases the new firms in the interwar period were both numerous and of great quantitative significance, between one-third and one-half of the workers employed in 1939 belonging to firms started after 1918. Most firms in this group were progressive. The most typical examples here are provided by the hosiery and knitted goods and ready-made clothing industries. It is characteristic that the development of these industries in a very large part rested on new, strongly "expansionist" commodities. It is also characteristic of these industries that the launching of a new firm does not necessarily entail the mobilization of large amounts of capital.

2. The new firms cannot be accredited with the main rôle as pioneers of innovation. With a few significant exceptions the great innovations were introduced by older firms; the causes of these conditions are given fairly elaborate analysis. This is not to say, however, that the new firms did not play a very great complementary part in relation to the older. Their importance in Swedish industry was certainly great at the end of the interwar period, even if larger enterprises – with hundreds or more workers – dominated. The number and aggregate significance with regard to employment of the very largest enterprises – with several thousand workers – increased relatively speaking as did the relative importance of the very smallest firms, while medium-sized enterprises, by comparison, declined somewhat in significance.
3. The many new firms of the interwar period were started in most cases by workers, supervisors, or persons with a similar background. These firms were usually established in the same vicinity as that in which the entrepreneurs had previously been employed. Contrary to the rule before World War I the distributive trades and such social strata as those of estate-owners and public officials successively lost much in

significance as bases of recruitment of enterprise-founders. Neither before nor after World War I have craftsmen in the traditional sense, or their employees, been of great significance as founders of industrial enterprises. The shift in recruitment from distributors to workers, supervisors, et cetera, is partly to be regarded as a consequence of the fact that the general economic development itself provided a milieu increasingly suited to very small business (new products, fitted to small firms, often on subcontract terms, increased differentiation of consumers' demands, motorism, electrification, et cetera). It is also due to a substantial increase in the material and cultural standards of the "working classes".

There is another important explanation for the changing basis of recruitment that should be mentioned in this connection. When the development of Swedish industry entered its most accelerated stage around the turn of the century the number of workers increased very considerably. Thus, in the twenties the country had what it did not possess a few decades earlier: a large and trained body of industrial workers that could serve as a basis of recruitment of enterprise-founders. It is to be noted that the enterprise-founders generally had had at least ten, and often more, years of experience of industrial employment behind them when they started out on their own. During this period of employment they had often been able to accumulate some capital.

4. The shift in the recruitment of enterprise-founders and the partly related change in the character of the new firms (many of the worker-originated firms were started without any aspirations of development on a larger scale; their main function was to provide an independent means of livelihood) resulted, i. a., in a changed picture with regard to the business cycle variations of enterprise-formation. Whereas before World War I many more firms were formed in booms than in depressions this was not the case in the interwar period. On the contrary, in many branches of industry the formation of new enterprises increased in depression years. Unemployment, or the risk of becoming unemployed, in such cases was the most important, though not the only, motivating factor. In the ready-made clothing industry the increased number of new firms was due to the vigorous expansion of new commodities, a few pioneering enterprises having paved the way in the twenties. Other causes are also discussed.
5. The emergence of industrial workers as founders of new firms undoubtedly accelerated the natural tendency within Swedish industry to take up the production of goods that had previously been imported. Many of these commodities had rather a small market and were well suited to the worker-originated small businesses, while the larger established firms often did not want to divide their forces on such markets.
6. The new ventures were seldom launched as corporations. In a majority of cases they were individually owned and managed or could be classified as "family businesses". Speaking generally, the new firms were rarely financed by means of large sums of capital obtained from many persons. When the corporate form was adopted from the beginning the new firm was usually a subsidiary of an established enterprise. In the typical case the capital contributed by the founders themselves and their relatives and friends initially played the main part in addition to the

personal work of the founder. This work was usually excessively hard and given with slight regard to adequate material compensation.

The continued development of most firms was primarily financed by the plowing back of net proceeds and by what was formally short-term but in reality proved to be long-term bank credits on personal guarantees or mortgages. Thus, during the latter part of the thirties Swedish industry was fairly well consolidated. State or local government financing or subvention measures were of little significance. Issues of shares also played a minor part with regard to the continued expansion of business except with regard to subsidiary companies. Only some tens of millions of Sw. Crowns each year were contributed by private persons buying shares in connection with such expansion. As a rule only the largest firms could avail themselves of bond issues.

A rather common fear of an overdimensioned fixed indebtedness or dependence upon outside shareholders was often a major consideration in decisions relating to the expansion of business. This urge for independence is partly explained by the background of the interwar generation of new entrepreneurs. Finally, it should be pointed out that several of the most progressive new firms, especially in the engineering industries, expanded most rapidly after being bought out by some older and larger concern.

7. The entire period between the two great wars is characterized by a manifest tendency among the new firms to locate in smaller urban communities. Many branches of Swedish industry have always to a relatively large extent been localized away from the largest cities (e.g., the iron and steel and the forest industries). As the distributive trades – traditionally tending to concentrate to the larger cities – decreased in importance as training ground for would-be industrial entrepreneurs, the formation of new businesses in other branches, too, to a higher degree than before took place in smaller urban centers.
8. In most branches of industry, including some of the most progressive, discontinuation of business was a widespread phenomenon. Of the firms in operation at the beginning of the interwar period a majority were either discontinued or reconstructed financially. Approximately one-fifth of the total number of workers in 1919 were employed by firms that were discontinued before 1940. Especially during the twenties the rate of discontinuation was high in most industries, even in the boom period. During the thirties it was considerably much lower. Not even did the depression in the beginning of that decade bring about a very significant temporary increase, except in the stagnating saw-mill industry. In most industries the number of firms discontinued each year reached its minimum at the beginning of the booms. The discontinuation of firms was due primarily to the fact that the commodities produced and/or the methods of production employed had become definitely outmoded on account of innovations made by other enterprises within or outside Sweden. Malinvestment and over-investment were not very important. As from the middle of the twenties and all through the thirties – including the years of depression – many more enterprises were discontinued rather because of their having made too small investments than on account of over-investment. During and immediately after World War I, however, speculation in many ways gave rise to entrepreneurial activity of a kind that could not be of lasting value.

Discontinuation played a relatively small part as a direct cause of unemployment. Layoffs by firms in operation were of primary importance here. This is largely explained by the fact that most firms evidenced a period of regressive or stationary development before being actually discontinued, which, in turn, may be due to out-datedness of the type previously referred to.

9. Cartel arrangements, increasingly common in the thirties, in all probability did not, as a rule, have a restrictive effect with regard to the formation of new enterprises. On the contrary, cartels in some cases – presumably unintentionally – stimulated the entry of new firms. Organized restraints of trade as a rule were of greater significance to the continued development of the firms in an industry than to their formation. In many cases it was easy to get started outside an existing cartel in a certain branch, but it might well prove to be more difficult to grow. In a number of industries cartel agreements tended to lessen the number of discontinuations, at least during the thirties. This fact does not seem to have been of very far-reaching significance, however.
10. Earning capacity in most progressive industries was good, at least in the thirties, with some notable exceptions. Among such exceptions the wood-working industry should be specially mentioned. It presents a picture of repeated bankruptcies and changes in ownership, and undoubtedly several firms were almost constantly operating at the variable cost level. In stagnating industries earning power was generally poor but here, too, notable exceptions are found, such as the oleomargarine industry. It seems to be quite clear that earning capacity as a rule was greatest among those firms which were the first, or among the first to exploit a new field.

In a concluding part an attempt is made by drawing the threads of previous analyses together to give an overall picture of Swedish industrial development in the period under review. It is pointed out that Swedish industry rather suddenly received very strong influences from the United States immediately after the end of the World War I, as regards both new commodities and new methods of production and distribution. This country to a large extent replaced the previously dominating influence of Germany. As a result partly of this change and partly of the disruptions and transformations of international commodity, money, exchange, and capital markets caused by the war Sweden experienced all during the twenties a rather dramatic process of struggle and adjustment within industry, as well as agriculture, and not least a struggle between the new and the old in industry.<sup>7</sup> Some sections of industry after going through the severe deflationary crisis of 1920–1921 experienced a period of great prosperity. The most important among them were the pulp export industry and certain large enterprises in the engineering industries which were also producing commodities primarily for export and based on Swedish inventions and innovations from the prewar period. But in many industries the situation was certainly not equally bright, and the banks had to

<sup>7</sup>[See the appended note *On International Industrial Transformation*, pp. 64–66 below.]

take over numerous firms to protect their claims. At the end of the twenties, however, the process of adjustment was largely completed and the road was open to a period of general expansion. A number of pioneering enterprises of exceptional foresight and capital strength (sometimes increased by mergers) had paved the way and reached positions far ahead of other firms. The differences with regard to efficiency among various enterprises and various branches of industry were unusually great. Many of the achievements of pioneering activity were waiting to be more widely exploited. In this connection attention is also directed to the resistance against time studies and other aspects of "scientific management" characterizing management as well as workers for a long time, and particularly during the twenties. This resistance was only gradually weakened. The final victory of the new ideas was conditioned in part by the rise of a new generation in industry. It may be said to have coincided approximately with the turn of the decades.

It was suggested above that at the end of the twenties most out-dated commodities and methods of production had been definitely eliminated. This struggle is subjected to fairly thorough analysis in which it is emphasized that no attempts of appreciable significance were made to prevent this struggle from running its due course. Governmental measures played no part worth consideration, and neither did cartels or other forms of organized cooperation. The retarding force of greatest significance to the process of liquidation of the old was, traditionally, the prevalence of large overhead costs. Furthermore, at the end of the twenties the construction industry was entering the first stage of a lasting boom, and demand in this field never was even temporarily satisfied. In the field of communications, radio, motorism and the electrification of the railway system were well under way but these developments were as yet mere beginnings as compared to their significance in the following decade. It is emphasized in this connection that competition was violent between the automobiles and the railroads all during the latter part of the twenties. The two means of transportation then could not yet be regarded as mainly complementary. But soon the railroads entered a new course and began adjusting themselves according to the new competitive conditions. It was not until the thirties, however, that the benefits of this adjustment process could be reaped.

In all parts of the economy there were numerous potentialities of development waiting for the realization. These "structural tensions" in the economy are systematized by means of a concept that has proved very helpful, namely (incompleted) "blocks of development".<sup>8</sup> The significance of these tensions is illustrated from various points of view, and the conclusion is drawn that there was no cause for a "breathing spell" as the twenties drew to a close. The

<sup>8</sup>[See separate note on *Differentiations of the Concept Development Block* on pp. 63–64.]

period just completed had certainly not been one of speculation neither with regard to the formation of new enterprise, nor to the development of business, nor to inventory policies.

In this situation came the Great World Depression. It hit Sweden hard, but it was not an expression of an intensified struggle between the new and the old, either within Swedish industry itself or between innovations in other countries and obsolete commodities and methods of production in Sweden.<sup>9</sup> With the exception of saw-mill products and paving-stone the decline of exports may be said to have affected such products as were in a process of expansion from a long-term point of view. The Great Depression came at a time when a wave of unusually strong dynamic forces *had just begun to permeate the entire industrial economy of Sweden*, and in contrast to its predecessor in 1920–1922, it did not originate in the excessive speculation and malinvestments of a previous boom. This is of fundamental importance to any understanding of the economic development of the latter part of the thirties characterized by *general* prosperity to a much larger extent than the corresponding period of the twenties. As soon as the export markets showed the first signs of revival, a great number of previously pent-up “driving forces” within the business economy were released, and from then on the favorable development of the Swedish pulp exports, not least with regard to the American market, was of particularly great importance. Thus, the period of depression was relatively short.

The shift to an expansive financial and monetary policy that took place in Sweden as from 1931–1932 no doubt facilitated the rapid recovery and renewed expansion which may be viewed as a direct and cumulative continuation of the development of the twenties in a much more real sense than the development of the twenties represented a corresponding continuation of the decade before World War I. Above all, a great many firms could more easily avail themselves of the achievements of the pioneers of the twenties due to the fact that the money and capital market was “easy”, (again by contrast to conditions in the twenties). But it cannot be maintained that these new policies played a decisive part. With regard to the problems of financing it is also pointed out that large parts of Swedish industry needed several years after the great crisis in 1921–1922 to consolidate and acquire the possibilities of financing indispensable to large-scale modernization. In the general process of modernization during the thirties, to a large extent cumulative in character, self-financing played a most important part. It is clear that increased cartelization during this decade increased the possibilities of self-financing, even if it was not of a dominating significance.

In conclusion the discussion reverts back to the critical and constructive

<sup>9</sup>[See the appended note *On International Industrial Transformation*, pp. 64–66 below.]

premises of Chapter I, and mainly the question of the relationship between economic progress and the general business cycles in Sweden. An attempt is made to show that this relationship is extremely complicated and that it may be of quite a different nature from one time to the other, and a warning is sounded against preconceived ideas and generalizations. One conclusion with regard to methodology is the fact that it cannot be generally postulated that the most constructive approach to the study of economic development is to tie the entire analysis to the business cycle problem. Of course, the general cycle problem cannot be neglected. But the study of the process of "economic transformation" and its periodicity – which by no means is always synchronized with the business cycles – has in itself an interest which has hitherto been given insufficient attention. Furthermore, the business cycle problem may be advantageously approached by way of a more penetrating study of this process of transformation and its periodicity than that which traditional business cycle researchers with their set of aggregative concepts have taken the time and interest to make. It is also concluded that Schumpeter's approach has proved so useful as to merit its inclusion in the central theme of such a study. The question is posed whether this approach is not really of greater value in such a context than as a business cycle theory in a narrow sense. Expanded and projected in various directions this approach would seem well adapted to constructive and synthesized social science analysis of the economic and social development, an analysis of which the study of the business cycle would constitute an integral part. Such a comprehensive analysis has not been the object of this dissertation. Its scope has been limited to certain specific, industrial aspects.



# Notes on the Concept Development Block and Industrial Transformation

[Erik Dahmén]

## Differentiations of the Concept Development Block<sup>10</sup>

1. The concept “block of development” is intended, among other things, to direct attention to the fact that advances in technology in a certain stage of production or distribution, or in a certain area of the economy, oftentimes cannot be profitably utilized as long as certain other advances in other stages or areas have not been realized. Thus, if progress in one field is not “timed” in relation to progress in another one may speak about “structural tensions” within the frame of incompleting blocks of development.

[However,] the disparities with regard to technical or economic organization may not be of a fundamental nature. The “block” may simply be due to a time-lag, meaning that one has not yet had the time to complete it, although all the prerequisites for such a development are at hand.

The first type of development block is illustrated by the necessity of a certain degree of parallelism in the development of the technology of blast-furnaces on the one hand and that of refining on the other in the iron industry, the technology of internal transportation on the one hand and that of drying on the other in the wood-working industry, or the technology of spinning on the one hand and that of weaving on the other in the textile industry (the economic consequences of incompleting blocks of development on this score stand out with particular clarity in the history of the British textile industry in the eighteenth century).

The second type of development block is illustrated by the fact that it is generally not advantageous to electrify the trunk lines of a railroad system without also electrifying the feeder lines, and that the operations of a new railroad often will not be profitable until industries have grown up in the surrounding territory.

2. It should be noted that the concept, developmental block, ought to be differentiated: a) intentional developmental blocks, organised by a single entrepreneur or an entrepreneurial group, b) intentional developmental blocks, organised by several entrepreneurs independently, but with knowledge of each others plans, and c) unintentional developmental blocks. From the point of view of causal analysis, a) and b) are the most interesting, since it is in these types that typical motives and intentions are in play. One of the aspects of the process which deserves closer study is the role of

<sup>10</sup>[The text under 1. appeared as a text note in the English summary of the original Swedish edition. It has for expository convenience been moved from that text which has been reproduced in the preceding section to the present less hidden place.

The text under 2. is a footnote in Dahmén’s paper “Technology, Innovation and International Industrial Transformation”, published in *Economic Progress*, ed. Léon H. Dupriez with the assistance of Douglas C. Hague, Institut de Recherches Économique et Sociales, Louvain, 1955, p. 299.]

bankers and financial houses in the combination of developmental blocks. It is clear that the development of the credit and banking system is not simply a passive prerequisite for industrial development. There existed also a mutual interrelationship in that bank management helped to create bank customers through participation in industrial entrepreneurial activities alongside their ordinary banking activities.

### **On International Industrial Transformation<sup>11</sup>**

More attention has been paid to the international aspects of economic transformation than has been given to the national. For example, many studies have been made of what have been called structural changes in world economy and international trade, some of them in the attempt to explain the depression of the early 1930's or in connection with economic problems after the second World War. There is nevertheless much to be gained through the analysis of the developments in different countries on the basis of the transformation process. International cyclical fluctuations have been analysed mainly in aggregates, concentrating on the spreading of expansive or contractive impulses from country to country. Less interest has been shown for the influence of the transformation process, and its special character in different countries at different points of time, on the form of international fluctuations, and the influence of the connection between the transformation process in different countries.

It appears natural to examine first the reciprocal influence and the relationship between the development of technology and entrepreneurial activity in countries with differing social and political characteristics. Investigations of this type which have been begun during recent years should be of particular significance to the extent that they are woven into a broader transformation analysis and combined with the more general problem orientation of business cycle theory. As a step in the process of coordination, one of the questions to which interest should be directed is the relationship between entrepreneurial activity in different countries. To what extent has the industrial development in a given country been transferred to others through the demand for its products, and to what extent through the direct or indirect influence of entrepreneurial activity in one country on that of others? The latter form of influence is probably of greater significance than is usually assumed. At least that is the impression given by a study of Swedish industrialisation during the decades prior to World War I. Foreign entrepreneurs were active in Sweden, and Swedish entrepreneurs were active abroad, sometimes with the purpose of creating markets for their products or gaining access to raw materials, both within the framework of "developmental blocks". Not least interesting is the study of the significance of first the merchant houses, and later the banking system and financial houses for this international entrepreneurial activity. Here it is desirable to distinguish in principle between entrepreneurial activity on the level of enterprise organisation and that on the level of financial organisation.

It would be difficult to overemphasise the role of international capital movements in this connection. Capital has often been exported in connection with specific projects of an industrial nature or in the sphere of communications. For example, firms produ-

<sup>11</sup> [This text is taken from Dahmén's paper "Technology, Innovation and International Industrial Transformation", published in *Economic Progress*; ed. Léon H. Dupriez with the assistance of Douglas C. Hauge, Louvain, 1955, pp. 303–306.]

cing special products have been directly or indirectly interested in, or have taken active part in, the export of capital with the intention of creating markets for their products. This kind of capital export has often appeared natural from the point of view of the capital-importing country, since in many cases it was dependent not only on the import of capital but on the import of entrepreneurial and technical services as well. It would be a tempting assignment to investigate the relative importance of such capital movements in relation to those arising from the more "passive" desire to invest on the expectation of higher rates of return and/or greater security than was possible at home.

Every historical study of the international transformation process can give numerous examples of such aspects as the impact on business cycles of the tug-of-war between innovations in one country and the obsolete installations in another. Great difficulties have arisen in such a process. To the extent that a concurrent expansion on other lines did not occur in such countries as were subject to pressure, unemployment arose. It is obvious that political boundaries and geographical obstacles often created difficulties, not only for the movement of labor but also for the mobility of entrepreneurship and capital. As a result the liquidation of obsolete fixed capital was sluggish, sometimes in connection with explicit economic policy and agreements among the power elements in the economy to retard such liquidation. A special question is the extent to which this increased inertia contributed to the severity of cyclical fluctuations. This may have occurred in that liquidation was more highly concentrated than otherwise might have been the case when depressive impulses appeared. In other words, what has the degree of international synchronisation between the "positive" and the "negative" sides of the transformation process meant for cyclical sensitivity in the world economy and for economic development in general? For example, what has been the significance of a lack of synchronisation in comparison to that of the cumulative processes with their components of malinvestment which have sometimes arisen in different countries?

It is easy to cite examples of the situation in which "old" export items run into difficulties because their production has been taken up in countries which had previously imported them. In some cases industrialisation has been early and rapid simply because of the growth of needs for a product created by the expansion of the market for the product of a foreign industry. One conclusion which can probably be drawn is that the existing international specialisation of production and the growing international trade connected thereto depend to a large extent on a high frequency of innovation among export industries. Market expansion which is concomitant with the industrial expansion of other countries generally tends to weaken sooner or later. Thus export industries must meet such a development with innovations which contribute to the creation of new products and new markets. Advantage can be taken, for example, of the differentiation of needs which is concomitant with the increase in living standards. The situation was more easily mastered in this regard before than after World War I, in part because of the greater ease in maintaining continuous contact with other countries and the international character of entrepreneurial activity. During the war, however, some countries expanded rapidly in certain lines becoming more nearly self-supporting, and therewith creating difficulties for the industries abroad for which they had earlier been a market. Since this familiar development is always in process, it is perhaps not the most important *per se*, although it was hastened by the war. The most important new element was the fact that the frequency of innovations in exporting

countries became significantly smaller, because international contacts deteriorated or were broken off entirely. The prerequisites for entrepreneurial activity of international scope which had been so important in the spreading of industrialisation and economic development from country to country, had been torn away.

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  - The Hosiery Industry.
  - Light Chemicals.
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  - The Iron and Steel Works.
  - The Chinaware and Ceramics Industry.
  - The Glassworks.
  - The Woolen Industry.
  - Gloves, Leather, and Fur Products.
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    - The Clothing and Hosiery Industries.
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## **SECTION III**

### **The Reception of Dahmén's Dissertation of 1950**

## Editorial Introduction

### The Presentation of the Dissertation

The dissertation was presented and defended at the University of Lund in the spring of 1950. The main official discussant of it was Dahmén's former teacher Johan Åkerman. It was a major event not only for Åkerman and his Department of Economics of the University but also for IUI. The institute had the entire research staff travel to south Sweden to attend the event.<sup>1</sup> There was, however, one person notably absent on the above occasion: Svenilsson, one of the mentors of the dissertation and a direct inspirer of an important part of it. He had at that time not even read the final product, having been away from the IUI either on government investigations or abroad during most of Dahmén's dissertation work. This is said partly to avoid giving the impression that Svenilsson, because of his early role as advisor to Dahmén, had much to do with the actual research.<sup>2</sup> In that sense the general research staff and seminar of IUI meant more to Dahmén's work. However, in view of the collective effort behind the final product it should perhaps be underlined that the other members of the staff were generally quite far from the Dahménian approach in their own research. The lure of modern econometrics was now being increasingly felt also at IUI.

The general press and the popular reviews Dahmén obtained upon the event were overwhelmingly enthusiastic. No other Swedish dissertation in economics seems to have attracted as much public attention as that given to Dahmén's work. He was for a while spending considerable time giving lectures on his dissertation in various media and writing several accounts for the press. His research findings about Swedish entrepreneurship seem to have had a particular popular appeal. He issued a booklet about it where he expounded his views and results further (Dahmén 1953a).

<sup>1</sup>The various adventures of "high science" on this occasion together with numerous highlights on Dahmén have been recorded in a little booklet circulated in dedication to Dahmén as he left the IUI at the end of that year for a new phase in his career. The title of the booklet is "Några positiva och negativa sidor" (Some positive and negative pages) alluding to a central theme in Dahmén's research.

<sup>2</sup>In the final years of its completion he was stationed in Geneva under Myrdal at the UN Economic Commission for Europe and led a large survey of economic growth in Europe during the interwar period. A few years later he published his well-known monograph *Growth and Stagnation in the European Economy* (1954). This study was set up as a survey of Europe's transformation experience. Svenilsson refers with appreciation to Dahmén's dissertation in a footnote but there were no direct ties between these two studies. His adoption of the transformation view bears out an influence from Dahmén, however. See footnote 3 in the introduction to Section II, pp. 47.

## The Professional Reaction in Sweden

The professional reaction was also a strongly positive one. The tone among the economists was set by Erik Lundberg while Ernst Söderlund was the most notable framer of the views of the economic historians. The reception in Sweden is documented in this volume in two ways. It includes an English translation of the minutes of the proceedings of a meeting in the *Political Economy Club* that took place within a year after the presentation of Dahmén's dissertation. The editors have also seen fit to republish the English translation of Erik Lundberg's review of Dahmén's work that appeared in Swedish in *Ekonomisk Tidskrift* 1951.

While the Lundberg review article may be read without any particular guidance, a few comments about the meeting in the Political Economy Club may be in order. The economic historians had been especially invited to this meeting, and both the grand old man Eli Heckscher, then emeritus, and his successor in Stockholm, Ernst Söderlund, turned up, together with the leading younger members of the Stockholm Economic History Seminar. The economists were led by the chairman of the club, Erik Lundberg, and by Johan Åkerman who had travelled to Stockholm for this occasion. The fact that the proceedings of the meeting were taken down in short-hand shows that this was considered to be a very important encounter between the two wings of economic science.<sup>3</sup>

The discussion in the club shows that not only economists but also economic historians had received Dahmén's treatise with much acclaim. But there was also a fair amount of criticism from both quarters. The views of the economic historians were, not surprisingly, less appreciative than the views of the economists. None of them seem to have recognized that the ulterior aim of Dahmén's pursuit was that of providing a better economic theory. Judging his results and approach as an attempted contribution to economic history, their reactions were, however, quite generous. The senior economic historians seem to have aired few doubts concerning Dahmén's methodological precepts and seem to have accepted the Dahménian message that historical research should be conducted with more explicit use of economic theory. Junior members of the group were, however, more critical.

Considering that the radical thrust of Dahmén's methodological message was mainly directed at the economists, there is reason to note that in general they seem to have backed Dahmén in his skirmish with the economic historians. It is particularly notable that the economists seem to have raised few objections against Dahmén's attack on aggregated theorizing. It should be recalled that Erik Lundberg had been one of the main proponents of that type

<sup>3</sup>For a general background about this meeting in the club see Henriksson (1989) and (1991) which also provide a more general account of the institutional developments of economics in Sweden bearing on the reception of Dahmén's research.

of theorizing in Sweden, as evidenced by his dissertation (Lundberg 1937). However, Lundberg seems to have more or less abandoned this theoretical approach very soon after he had presented it and had by the time Dahmén presented his dissertation become increasingly skeptical of his earlier aggregated views.<sup>4</sup> He welcomed the views of Dahmén as support for his revised position. Other members of the Swedish economic profession at that time might have been more hesitant on the methodological issue. However, no such opponent was present at the meeting.

There was actually little discussion at the meeting of the theoretical aspects of the Dahmén approach. Only Åkerman seems to have paid explicit attention to the Development Block concept as being Dahmén's most important contribution. Other participants in the evaluations showed much less interest in the concept. And, as regards the Transformation view of the economic process, there were neither raised eyebrows nor much explicit praise. A type of Transformation approach may have permeated the views of Swedish economists directly through Schumpeter who, although he never stated the Transformation view as explicitly as Dahmén, nevertheless must be accorded a role in preparing the way for acceptance of Dahmén's contribution. Schumpeter had been read and appreciated not only by Dahmén but also by both Lundberg and Sennilsson in their early careers. Even Heckscher held to a view not far from Schumpeter's. However, structural views must be seen as part of a more general heritage in economics from the interwar period, and Schumpeter's as well as Dahmén's influence was therefore not the only source of Swedish thinking in that vein.

The main criticism directed at Dahmén from theoretical quarters came from Lundberg who elaborated on his points particularly in the review article. He announced some doubts as regards the value of some of the conceptual tools wielded by Dahmén in his dissertation. He thought some of them were too rhetorical and lacking in substance or operational meaning.

No Swedish commentator had anything but praise for the purely historiographical accomplishments of Dahmén. One may note Söderlund's enthusiastic acceptance of Dahmén's account of the pre-World War II development in Sweden. It should be "learnt by heart", he thought. As for Dahmén's analysis of the interwar period, there was perhaps less general acceptance. Here his results were hailed as tentative and should be tested by further research. Lundberg was particularly laudatory but also critical. He had himself written surveys of and was still absorbed in writing about the interwar economic history of Sweden. It was to appear as *Konjunkturer och ekonomisk*

<sup>4</sup>For Lundberg's account of this development of his position see Henriksson, ed. (1987).

*politik* (1953)<sup>5</sup>. He restated his appreciation of Dahmén's work in this book and even later.<sup>6</sup>

The feature in Dahmén's dissertation that was met with the most general acclaim, even among professionals, was the part that dealt with the development of the population of firms in the various industries. Particularly Arthur Montgomery, the predecessor to Dahmén on the chair Dahmén obtained at Stockholm School of Economics in 1958 and the long time colleague of Heckscher and like him an eminent economic historian, seems to have been more enthusiastic about this microstructural analysis of Swedish entrepreneurship. The picture of the births and deaths of firms in the various industries seemed to him a more substantive result than Dahmén's account concerning the nature of the driving forces and the mechanism at work in the various sectors.<sup>7</sup>

### **The Professional Reaction Abroad**

The reception may be seen to have been equally positive and generous abroad. However, because the dissertation was only available in Swedish, there were only a few very competent reviews. The two most important ones are reproduced in this volume. The review in the 1951 *Economic Journal* by Brinley Thomas may be read as a superbly clear and concise summary and introduction to Dahmén's study. It is an important one because Thomas was an authority on Swedish economics. He knew the Swedish economic field well, having spent several long periods of research in the country and written a book about the contributions of the Swedes in the early Stockholm School group (Thomas 1936).

The Gerschenkron review which appeared in the *Review of Economics and Statistics* in 1957 is important for a similar reason. Gerschenkron, who had achieved reading proficiency in Swedish, took a special interest in Swedish economic history. His review is probably the one that least of all needs further comment. We simply note that Gerschenkron's review was decisive for attracting the international attention to Dahmén's dissertation that led to its translation into English.

B.C.  
R.H.

<sup>5</sup>This work is also available in a revised English version (Lundberg 1957).

<sup>6</sup>Lundberg has seldom missed an opportunity to give his backing to the Dahmén accomplishment, thus also in his *Produktivitet och räntabilitet*, 1961.

<sup>7</sup>See Montgomery in *Ekonomisk Revy*, 1950, Vol. 7, pp. 325–329.

## Encountering the Economic Historians

### Discussion of Docent Erik Dahmén's Dissertation in the Political Economy Club, February 16, 1951<sup>1</sup>

<i>Chairman:</i>	Professor Erik Lundberg
<i>Present:</i>	Professor Eli Heckscher
	" Kjeld Philip
	" Ernst Söderlund
	" Johan Åkerman
Överdir.	Karin Kock
Docent	Karl-Gustav Hildebrand
	" Erik Dahmén
	" Olle Gasslander
Doctor	Erin Fleetwood
Licentiat	Guy Arvidsson
	" Sven Igglund
	" Börje Kragh
	" Lars Lindberger
	" Gunnar Lindgren
	" Kurt Samuelsson
Magister	Åke Elmér
Fil kand	Herman Holm
Pol mag	Torsten Carlsson

*Prof. Lundberg:* Today we have an opportunity to confront economic-historical research with business cycle analysis. Doc. Dahmén will now first receive criticism from lic. Samuelsson from the point of view of economic-historic method.

*Lic. Samuelsson:* The dissertation lies on the boundary between economic history and economic theory. It sheds light on the task of cooperation which so far has existed between these two sciences – the difference between them lies not so much in the failure of economic historians to take a theoretical approach as in what is meant by economic theory.

Doc. Dahmén's dissertation is too dependent on Schumpeter and Johan Åkerman. The author has tied himself so much to them that he does not see any other

<sup>1</sup>[The dissertation was presented and defended at the University of Lund on May 20, 1950, with Johan Åkerman as the main discussant. The meeting in Stockholm in the Political Economy Club was arranged to give the economic historians an opportunity to air their views. For some background see Rolf G.H. Henriksson (1991). The translation of the minutes was carried out by Rolf G.H. Henriksson with the assistance of Bo Carlsson.]

problems which would be important to consider. It would have been more fruitful to start by posing the problems independently of the theories mentioned. The presentation would then have been different. Thus the author could first have presented the descriptive material and only after that have tried to analyze the problems this would have provided. Now the presentation is mainly chronological, which is not so good. This is particularly notable on page 40 ff. Here one finds a repetitive account, industry by industry. It would have been much better to have posed the questions once and for all and then to have subordinated the material to them systematically.

The so-called innovations have become the object of a conceptual apparatus which confuses both the reader and the author. One is misled if one begins by posing a conceptual apparatus. Another approach might not have been equally scholarly but would have been simpler and more clear even if the results might have been about the same.

*Doc. Dahmén:*

My introduction is not designed to pose hypotheses about causality but rather formulate problems. It asks what kind of events are the interesting ones? The approach is not the classical one of first posing a causal hypothesis and then trying to test it.

It is difficult to give a short description that does not distort reality. The applicability of the results is reduced when the detailed picture disappears. The descriptive account had to be made in accordance with some *a priori* principles. These principles must first be defined and I have done so in the introduction. Other questions and other causal hypotheses might of course have been focused on. However, I have not had the energy to do this and had to let that task wait.

Lic. Samuelsson considers the concept of innovation confusing, but I think the label is good. It is a simplification which makes it unnecessary to keep repeating the matter it stands for. The advantage of a new concept lies in its use as a divining rod when looking for other phenomena in another time context. But, of course there is the risk of forcing phenomena into the concept that do not belong there.

- Lic. Samuelsson:* It is equally dangerous to have a casual hypothesis as a divining rod before showing that the hypothesis or the concept is relevant. Of course, the author knew the material before he wrote chapter one, but the reader, too, would want to know it. On the other hand, it may be deplored that the concepts have not been used in organizing the presentation of the material in volume two.
- Lic. Lindberger:* When reading Dahmén I get the impression that the concepts have been created out of the material. It is inherent in the approach that the type of problems the author has been interested in defines the object of the study. One has to respect that. Besides, Schumpeter is kept in the background after the first chapter.  
The more general description is admittedly a bit boring. The specific account is more interesting, bringing the reader in contact with the problems of sixty industries.
- Prof. Lundberg:* Doc. Dahmén's conceptual apparatus contains two types of terms; there are definitions such as "firm creations" and "firm mortality" and there are such terms as "structural tension", "market suction (pull)" and "market extensions (push)". The former are illuminated in a very valuable manner, but the latter are unmeasurable hypothetical notions. Like driving forces they are tightly tied to the theoretical framework. However, the description of the development during the 1920s is very plausible.
- Doc. Dahmén:* It is true that there are two kinds of concepts in the dissertation. I stress in my final chapter that the second type is used to throw light on certain aspects without implying that other aspects are less interesting. Besides, notions of the second type have been thoroughly considered earlier and there is no need for me to discuss them further. I make no attempt to weigh the effects of the relationships I consider against those I do not consider.
- Prof. Lundberg:* The reservations only appear every 100th page.
- Lic. Samuelsson:* I am turning even more suspicious of the conceptual apparatus as I now hear the author's summary. However, it is good that models have been avoided and that real material is supplied instead. But the selection by the author makes a model of it, nevertheless.



*Prof. Lundberg:* The second type of notions catches the reader the most. However, it would be possible to quote a number of statements in the dissertation leaving the impression that the problems have been fully explained. Nor is anything said about money, foreign trade and other things we business cycle researchers are concerned with. Here is a new complete business cycle theory stressing structural tensions, etc. There is even a hint that the theory may explain the international development – even though this is not exactly what docent Dahmén intended. It is quite natural that the author likes his own conceptual apparatus and it looks like Dahmén intended his explanation to explain everything.

*Prof. Söderlund:* I find it hard to concur with lic. Samuelsson's views and I rather agree with doc. Dahmén. Professor Lundberg's statements at the end are correct although somewhat exaggerated. Doc. Dahmén's method is good and, like him, I would rather underline our necessary dependence on theoretical premises. Accounting for one's theoretical premises is honest, but pushing them aside in the later detailed analysis of the material is good. While I find it hard to understand lic. Samuelsson's demand for a descriptive introduction, I would have preferred an addition to the dissertation summarizing it at the end. The long accounts are useful when looking for information but of course not if the book is read for pleasure.

*Lic. Samuelsson:* If truth be told I am enormously fond of the book but I had to express some criticism. Establishing the facts first of all would, despite all, have been a good thing because without such an introductory description, any odd concept could have been marshalled. If instead Dahmén had picked the vantage point of business cycle theory, the whole thing might have gone completely astray. A descriptive account of 15–20 pages could have been worked out last of all but placed first to make the reader realize why the concepts applied – and precisely those concepts – have been proposed and used.

*Doc. Dahmén:* Schumpeter is nowadays – cf. Clemence and Doody<sup>2</sup> – considered to be a business cycle analyst. However, in my

<sup>2</sup>[Clemence, R.V. and Doody, F.S. (1950).]

discussion I view him as a transformation analyst, i.e. as a researcher of structure. A sufficient reason for a thorough treatment of the formation and disappearance of firms is that this has so far been neglected.

*Prof. Söderlund:* I want to say this to lic. Samuelsson: It is inconceivable that anyone would use a theoretical point of departure without knowing that it is relevant for the material with which he is working.

*Prof. Lundberg:* I too am enchanted by the book, but this does not prevent me from being astonished here and there. Doc. Dahmén draws extensive conclusions from the comparison between the 1920s and the 1930s. The wretched 1920s receive a dreadful verdict. Their only redeeming feature is that of being the basis for the flourishing 1930s. Certainly, a lot of evidence is put forward for this view but I do not understand the distinction between market pull and market push. To me the problem is that of econometricians; total demand and pricing policy plus the fact of new commodities appearing. Dahmén does not use statistical measurements when dealing with “market push” and “market pull”. Therefore, his demonstration of the relevance of these concepts in the various cases is not completely convincing. Dahmén has become so fascinated by the market pull in the 1930s that he even includes in it the increase of unemployment benefits in 1934 which was but a trifle. There were lots of market suction effects in the 1920s which are bypassed. Real national income actually grew faster in the 1920s than in the 1930s. The figures are uncertain, but there is, at any rate, no noteworthy difference supporting Dahmén’s claims. There were market pulls and market pushes during both decades. Note that exports grew faster during the 1920s than during the 1930s. In spite of that Dahmén talks about the exports of the 1930s, but not about the exports of the 1920s. In addition, there is no doubt that the author underestimates the effects of the 1931 depreciation of the crown. However, despite these remarks I find most of his account correct, even in so far as it deals with the characteristics of the 1920s and the 1930s. I find it quite reasonable that other things are brought up for discussion than what is usually discussed.

- Doc. Dahmén:* I have proceeded industry by industry and have not used the labels “market suction” and “market extensions” in a general way. Of course, both may be found in the 1920s as well as in the 1930s. The export expansion of the 1930s was equal in size to that of the 1920s if correctly measured, i.e. from trough to peak in the business cycle rather than from the first calendar year to the last.
- Prof. Lundberg:* I did not realize that the author measures from trough to peak. Let us hope that remark is valid for both decades. It is questionable to view the increased incomes of farmers in the 1930s as an effect of market suction. This was merely a result of an income transfer from one group to another. The increased demand for iron in the 1920s was about as large as in the 1930s. Is this possibly a mere relabelling of the market suction in the 1920s as market extension?
- Doc. Dahmén:* The demand for iron in the 1920s was partly met by imports. There was then no market suction corresponding to the armament demand of the 1930s. As regards the depreciation of 1931 the effect was an automatic increase in demand which is neither of the market extension type nor of the market suction type. Professor Lundberg fails to see that the issue is one of market suction on the industry (branch) level. This is why the increased incomes of farmers are relevant in this context. They led to increased demand for agricultural machines, for example.
- Prof. Lundberg:* But was not the increase in farmers’ income obtained at the expense of the purchasing power of the consumers? Thus such a general assessment is dangerous.
- Doc. Dahmén:* I make no such general judgement about “total” effects. I only assess whether there is market suction or not for the industrial sector in this period.
- Prof. Lundberg:* The increase in real national income must have had an effect somewhere. I still think that the characterization of the decades has been given too categorical formulations. This, in turn, is due to the conceptual apparatus constructed at the outset.
- Prof. Åkerman:* I agree with the criticism directed at the notions “market suction” and “market extensions”. At the dissertation defense I, as the appointed faculty opponent, suggested that these two concepts should be replaced by “initiatives

from the side of demand” and “initiatives from the side of supply”, respectively. That would have made the analysis more concrete and the actors would have been put more in the forefront.

As regards the “positive and negative components of the transformation process”, I think that these terms might preferably be identified with “innovation” and “liquidation”, respectively. These concepts are of much lesser importance, however, than the central ones: transformation and development block.

As I have had the opportunity to follow the work on this dissertation for fifteen years I would here like to provide a key to understanding the method of docent Dahmén, as I see it. The key here lies in the notion of malinvestment. This was Dahmén’s point of departure and first object of study. This notion then led – logically but also quite independently – to the concept of development block, which is Dahmén’s greatest invention. This forced him to take issue with the state of economic theory. Classical theory, Keynes and the Stockholm School, but also received business cycle theory are concerned with “total categories”. Thus they exclude precisely what the author wants to study: the transformation, the interdependence of its component parts rather than the interaction of aggregates such as income, investment and interest rate.

This was Dahmén’s *first* crossroad. Faced with the choice between aggregates and notions concerning business-institutional activities (the formation of firms, firm mortality), he chose the latter and developed them. He opted for “micro” rather than “macro” – if agreement can be reached on the meaning of these terms. The *second* crossroad followed immediately. Presented with the option of studying the business cycle – which concerns the total changes in national income, saving, investment and so forth – and structural change, Dahmén quite naturally chose structural change which he coined “transformation”, an apt term of his own making. Hence, Dahmén’s analysis is micro-structural.

One may now ask: Should Dahmén be criticized because he has not given a more elaborate account of how his approach relates to the macro-concepts used in models and in business cycle theory, and because he has not compared his business-institutional results with those

gained through economic-historical, business cycle theoretical, econometric and sequence-analytical methods? Description provides direct contact with economic history but there is no apparent relation to results of the other approaches. However, in his last chapter the author puts together his structural changes to some extent with the business cycle.

In my view, one ought primarily to be grateful to the author because he has conducted his investigation with its enormous material so thoroughly and that he has paved the way for relating structural and business cycle changes to each other. I hope myself to be able to present a first result in this direction soon.

*Lic. Lindberger:* The notions of market suction and market extensions or the realities covered by these terms enrich the picture in several cases. Thus the brick industry experienced market suction during the 1930s. However, the author is so fond of his concepts that he uses them too frequently. – But I think Professor Lundberg is exaggerating when he says that Dahmén claims to have given a complete explanation.

*Doc. Dahmén:* I have discussed market suction and market extension very thoroughly with professor Åkerman during the defense of my dissertation, and much has been said about them here tonight. Therefore I prefer not to go further into that subject. Were I to rewrite the book, these concepts might not be employed equally profusely. Their marginal utility sometimes turns out to be too small. However, I maintain that they are quite suitable in their proper place.

*Prof. Lundberg:* There is not much business cycle theory in the dissertation, although the author says the opposite. Consider the description of the 1929 crisis. Unless Dahmén had known about the crisis in the USA in 1929, he might have described the state of the economy there in the same way, i.e. without resorting to business cycle analysis. If professor Åkerman is right when he says that the author has gone the micro road and therefore is unable to say anything about the aggregates, then it ought to be difficult for the author to assess whether a development block leads to depression or to boom. Has not Dahmén made statements about the Swedish business cycle situation in 1929 and in that context labelled it stable?

- Doc. Dahmén:* I have stressed the tensions in 1929 as leading to depression but I have also regarded them as a basis for the expansion of the 1930s. There is no contradiction in this: The effects are short run and long run.
- Prof. Lundberg:* I would like to see Dahmén's incomplete development block applied to the USA in 1929. If Dahmén's thesis is correct, one should then find developments that ought to have led to an upswing in the 1930s.
- Prof. Åkerman:* The dissertation actually presents a lot of data, which – if exploited – permit of a juxtaposition of “transformation” and the business cycle. One may thus relate business profits and net formation of firms in the engineering industry. Unfortunately, the first mentioned series is not continuous. This is to be deplored, considering the decisive importance of profits for investment and production volume. However, we have here a point of departure for a synthesis of business cycle sequences, formation of firms, transformation and development blocks. One may also relate the formation of firms in the machine industry with the official statistics on the value of production in the metal industry. Such a table shows [a table is shown] that the downturn in the formation of firms in 1929 forecasts the turning point in the value of production after 1930. As is well known, the downturn in Swedish employment did not begin until in 1931. The diagram also shows the new and surprising fact, discovered by Dahmén, that there was a strong formation of firms even before the depression ceased (1932–34); this is particularly clear in the textile industry. This is just one example among many of the importance of the dissertation; it has opened up completely new areas of exploration and has shed entirely new light on the Swedish industrial development in the interwar period.
- Doc. Dahmén:* The construction of curves may be suggestive but it is dangerous to compress my figures to net formation of firms. As regards the data about business profits, 1929 has been omitted not because it would have been too time-consuming to compute such data for all the years of the interwar period, but rather because these data are not applicable in a business cycle analysis. The figures can only be used in comparing various industries at various points

in time, but not as a basis for studying the sequence year by year. The data are too unreliable for the latter task.

*Prof. Lundberg:* The great formation of firms in 1932–34 is interesting. Doc. Dahmén’s explanation is based on an analysis of the various entrepreneurial groups. The great entry boom of 1932–34 is seen as dependent on the “livelihood motive” – i.e. the many unemployed foremen etc. set up new firms of their own. However, an additional incentive, omitted by Dahmén, must be added. The depreciation of the crown in 1931 served as an increased level of tariff protection by 50 %. This is a fact of great importance. It should have been investigated instead of talking about “market suction” in a general way. Is the depreciation of the crown a macro event which does not belong to the subject of the dissertation?

*Doc. Dahmén:* I have not cut off the tie with the macro concepts. I have mentioned the depreciation but perhaps I have not treated it with sufficient depth. I believed at the outset of the investigation that the effects of the depreciation dominated the expansion. However, I found that the commodities leading the expansion were not those supported by the depreciation. This type of protection played no role in the garment industry; perhaps some role in the underwear branch though. Licentiate [Erik] Ambjörn is at work on a dissertation about the self-sufficiency tendencies in Sweden.

*Prof. Söderlund:* A concrete question: Those underwear firms in Västergötland with little capital may have started as a result of “the livelihood” interest but grew because of the protection. Besides, the founders may have had an insufficient overview of the market to select the right kind of commodities in planning for production.

*Doc. Dahmén:* However, unemployment played no role in that industry. Technical change was more important.

*Prof. Lundberg:* Doc. Dahmén’s dissertation is a source to which one will always return. The material may also be used for further conclusions. I may myself have overrated the 1920s; as for example in “*Det svenska näringslivets konjunkturkänslighet*” (The business cycle sensitivity of the Swedish

economy), 1945.<sup>3</sup> The liquidation effect was present in the 1920s but not in the 1930s and not now. Nevertheless, productivity is rising. Again new problems!

*Doc. Dahmén:* I have not glorified the 1930s. I make a point of the initiatives being taken in the 1920s. Of course, I have not dealt with the effects of general economic policies during these two decades.

*Prof. Lundberg:* What about the period before 1914? Here Dahmén has a lot of material, but I am unable to assess it.

*Prof. Söderlund:* As I have studied the development of the saw mill industry in the 19th century I may say something about that. Docent Dahmén has a superb and correct grasp of this period. What he says in the dissertation concerning the 1850s and 1860s is so strikingly correct that it should be learnt by heart. Reading it I have often been happy to find something new which fits in with my view of the period.

*Prof. Lundberg:* Alas, I have often experienced the opposite. I have had to revise my view. It is remarkable that professor Söderlund and docent Dahmén have reached the same results through different methods.

The dissertation also contains data and points of view concerning the 1940s. We at the KI (the Swedish National Institute of Economic Research) are particularly interested in these – especially the issue of latent instability and its tendency. Investment controls create incomplete development blocks, don't they? Tensions must arise when these controls are abandoned. Either there follows a depression or a violent expansion. I have dealt with economic expansions using a different method. Now I ask myself: Does a continued expansion require an uneven development without adjustment at every point in time? Might there not be expansion without tensions? We at the KI are forced to try to measure these phenomena and to be cautious in employing the conclusions.

<sup>3</sup>[This publication was a summing up of Lundberg's empirical research as the leader of KI (the Swedish National Institute of Economic Research) from its inception in 1937. It offered an account of the Swedish business cycle experience during the interwar period. In this analysis Lundberg applied the theories he had worked out in his renowned dissertation of 1937 (*Studies in the Theory of Economic Expansion*). The 1945 publication was reviewed by Dahmén in *Ekonomisk Tidskrift* 1945, Vol. 47, pp. 163–168.]



- Doc. Dahmén:* There are many things that cannot be measured. The whole initial building up of ASEA and Marcus Wallenberg's establishment of Norsk Hydro to secure a market for the ASEA generators is something which is not easily expressed in figures.
- Prof. Åkerman:* No, but the various steps may be dated. The time sequence alone often offers suggestions.
- Prof. Lundberg:* Nowadays, there are statistics concerning building permits. These could provide information about tensions by explaining extensions as due to inventions, market opportunities, etc.
- Prof. Åkerman:* Inventory statistics, especially data on inventory changes in the various stages from raw material to the completed product, ought to be of interest in this context. Changes in the dispersion of profits within different industries ought to be of importance. Generally speaking, it is hard to understand why business cycle analysis in our country pays so little attention to the course of profits. In a liberal society, this was the decisive incentive for all economic change and it should still be of great importance.
- Doc. Dahmén:* Yes, that is true in principle, but data are still too scarce and insufficiently representative. One has to get closer to the firms.  
After this discussion I would again like to ask the historians: What about the conceptual apparatus? Should such concepts be allowed at all?
- Lic. Samuelsson:* I have not taken a stand in principle against a conceptual apparatus. But there should be as little of it as possible. The concepts criticized, market suction and market extension, should accordingly not be used so often. They have brought about conclusions that are too far-reaching. Instead, the author should have provided a more thorough discussion each time. However, I am no opponent in principle of such concepts.
- Doc. Dahmén:* Maybe I am mistaking economic history for the historical school in economics when I expect historians to have a critical attitude to conceptual analysis. Evidently the issue is more one of proper application.

*Prof. Lundberg:* The dissertation seems to have met with few objections from economic history. The synthesis between the author's transformation analysis and business cycle analysis concerning aggregated sequences is the most difficult part. This is the next phase.

*Prof. Heckscher:* The issue concerning the relationship between economic theory and economic history is no problem. There is in this dissertation nothing that I know of that is not represented in economic-historical research. Any attempt to explain the sequence amounts to a causal analysis. I find nothing in the introductory chapter that violates the principles of economic-historical research. The essential difference is that historians are more concerned with establishing facts than are economists. I have many times told Johan Åkerman that I doubt the benefit of pushing business cycle research as much as is being done today. This is a fad arising from recent experiences. Nor is it right merely to distinguish, as docent Dahmén does on the first page, between business cycle research, econometrics, and economic history. Adam Smith and Ricardo represent a different type of economic theory and there are several economic schools. The most correct approach is to ask for the more or less general phenomena which are of importance for structural changes, i.e. variations in the premises. In economic history the most important thing is to find out about economic relationships under various premises.

*Doc. Dahmén:* My analysis does not diverge very much from economic-historical research. However, I do have certain specified concepts as my point of departure. This is not commonly found among economic historians. Thus, my thinking is a bit more deductive. In political history there is even less resort to concepts. The economic historians do have concepts, but they are not accounted for.

*Prof. Heckscher:* I am not thinking of the many economic historians, who have no thoughts in their heads. The others take the same point of departure as Dahmén but use different terms such as 'subsistence economy' and monetary economy. What does docent Dahmén really want to help us with?

*Doc. Dahmén:* From a methodological point of view most of all with the concept of development block and, related to that, with

the analysis of firm formation and deaths during the inter-war period.

*Prof. Heckscher:* Only to the extent that business cycle theoreticians explain the long courses of events do they become useful to the historian. Otherwise they are near-sighted and provide no perspectives. Business cycles are in the words of Schumpeter circular processes: that is why they are unrewarding objects of study. Economists often have no sense that economics is an abstraction from a social context. It only provides a point of view, and does not have a confined area. Economic history has to be dealt with in the same way.

*Doc. Dahmén:* Professor Heckscher's characterization of economics is at least as unfair as mine of economic history. Economists have analyzed long courses of events and have paid attention precisely to the technical, political, economic and social interdependences.

*Prof. Heckscher:* Tell me any such economists.

*Doc. Dahmén:* Veblen and Johan Åkerman: This must be admitted even though one might disagree about some of their hypotheses and theories.

*Prof. Heckscher:* Johan Åkerman is mainly a business cycle theoretician, isn't he? Veblen is a sociologist.

*Doc. Dahmén:* Business cycles are quite important societal phenomena.

*Prof. Lundberg:* Business cycle theories confined to wave movements are already outmoded. We are dealing with long series of years as is the wish of professor Heckscher. The only difference is that we are dealing with recent years, while Heckscher deals with earlier periods. The Keynesian formulation, however, is a fad; stagnation research more than business cycle research. For the rest, there is no conflict. At least we are not worse than the classics as regards abstractions, and we pay attention to political premises.

*Prof. Heckscher:* Dependence on politics is something different than being open to the other types of interdependence.

*Prof. Lundberg:* We are not strangers to that distinction. J.M. Clark is always taking social reality into consideration as does [J.H.] Williams.

- Prof. Heckscher:* Business cycle research is concerned with iterative sequences, history is “einmalig”.
- Prof. Lundberg:* In order to explore sequences you have to use a suitable method. A purely historical method provides no answer regarding the economic fluctuations.
- Prof. Heckscher:* Yet, docent Dahmén holds that there are only business cycle theories; that there is no other economic theory.
- Doc. Dahmén:* I have in my first chapter only talked about a causal analysis of economic development. So-called “central theory” is something different, but I have had no reason to touch upon that subject.
- Prof. Åkerman:* It is to be deplored that the representatives of economic history are unfamiliar with – and often do not even wish to be familiar with – the questions, methods and results of present day economics. It is equally deplorable that most economists lack knowledge about the history of industrialism – the economic one as well as the political one. People draw up and guard borders between research areas instead of seeking cooperation. Let us hope that this standpoint will soon be passed. Docent Dahmén’s dissertation proves the fruitfulness of working simultaneously with different methods. The reason why Dahmén has reached so many new results – and results important for future research – is in my view that at the outset of his studies in economics he came in contact with research in comparative methodology. He was not shunted off into any specific – theoretical or historical – school.
- Prof. Lundberg:* The discussion has now gone on for three hours. I declare the meeting adjourned.

The minutes at the meeting were taken by Åke Elmér.

# Entrepreneurial Activity and Industrial Transformation<sup>1</sup>

Erik Lundberg

It is not possible in a review to make a detailed and comprehensive examination of Dahmén's *magnum opus*. It would be unreasonable to expect this, for the simple reason that the book contains a tremendous amount of new empirical material, new theoretical ideas, and new approaches to old problems. On each re-reading of different parts of this work one encounters something which is new and fascinating, but which was overlooked on a first reading. Accordingly, I consider that I am at liberty to choose rather arbitrarily some aspects of his work which have struck me both on a first and later reading, without thereby meaning to assert that these particular viewpoints are the most relevant ones in the long run.

The main object of Dahmén's thesis is to elucidate and explain the *transformation process* in Swedish industry. This involves penetrating behind the aggregative categories of business cycle research such as investment, saving and consumption outlays, and infusing the process of expansion with life and substance by studying how initiatives developed and were carried through, how new methods and new goods replaced old ones, how new firms were born and old firms died, and how in general the dynamic course of development consisted of a perpetual struggle between the new and the old. As Dahmén argues, the ordinary theories of the cycle or expansion generally take this transformation for granted, so much so that it hardly requires any special analysis. Dahmén shows, however, that this process of change is not at all something that can be assumed; on the contrary, it has widely differing characteristics in different epochs.

In fact Dahmén's methods of enquiry imply a challenge directed against the Keynesian type of theory, whether it works with purely theoretical models or is extended into econometric applications. Global categories conceal the processes of transformation in different sectors of the economy, yet in Dahmén's view these constitute the essential *motive power* of economic development, and cannot be taken as given.

The present work is at the same time a challenge to the research methods of economic history. Dahmén is particularly anxious to avoid being bogged down with all his material in pure empiricism in describing economic development. He makes use of causal analysis based on "explicit theoretical formula-

<sup>1</sup> *Ekonomisk Tidskrift*, 1951, Vol. 53, pp. 66–72, translated from Swedish in *International Economic Papers*, 1959, Vol. 9, pp. 189–196. [Page references are to the original Swedish edition of Dahmén's dissertation of 1950. Page references to the 1970 English translation of the dissertation have been added within brackets.]

tions”, but to a large extent with a different conceptual apparatus and different questions from those with which cyclical or expansion theory operates. The studies of actual historical developments in this work are far more systematically integrated into and subordinated to an analytical system based on economic theory than is usually the case in economic history investigations. Dahmén considers that ultimately an attempt should be made to arrive at a systematic coordination, a synthesis between cyclical research (in the widest sense as a theory of economic development) and research in economic history. This is not, however, the author’s aim in this study.

The main emphasis is placed on one aspect of economic development, namely the transformation of industry: Dahmén stresses explicitly that he is discussing only *one* aspect, though an extremely important and previously much neglected one, and that a more complete explanation of development presupposes co-ordination with general cyclical theory. The author emphatically declares that this aspect is of limited explanatory value, e.g. on p. 382 [410]: this “study of the process of industrial change has merely pointed to one aspect of development which has received little attention and which it seems fruitful to consider in a more general study”.

Actually, however, the book rather frequently gives the impression that the transformation analysis explains considerably more than seems possible. It appears as though Dahmén has, naturally enough, been overwhelmed by his new material, his new aspects, and perhaps above all by his theoretical apparatus with its suggestive concepts, and has become much too bold and dogmatic in his conclusions. The work in fact displays a strong propensity to make general and sweeping judgements about different phases, and about the characteristic features of the development of various industries. These conclusions do not always follow clearly from the empirical material presented. They are perhaps frequently based on strong impressions which the author has gained in interviews with entrepreneurs. It is of course primarily the fascinating theoretical apparatus of the work, with its “absorptive” concepts, which tempts him to draw too categorical conclusions. Chapter I and Chapter IV in particular give a strong impression of how deeply the author is caught in a forest of loose and dangerous concepts. In my view, these do not always yield “the desired consistency and systematization in the causal analysis” (p. 53 [51]), but often push the author into making too one-sided propositions. On the other hand, it should be pointed out that one of the many merits of the work is precisely this manifest willingness and ability on the part of the author, despite an overwhelming empirical material, to arrive at interesting conclusions about the characteristics of the industry of the period in question. The book is stimulating to read precisely because the conclusions are in large measure new, bold, and in part even shocking.

Something ought perhaps to be said first of all about Dahmén’s conceptual apparatus. Some concepts, like the founding of firms and the death of firms,

are measured statistically. There is an excellent and clear discussion of these concepts (pp. 177–184 [181–190]), and the statistical measurement of these phenomena for different branches of industry and periods constitutes, in my opinion, one of the most important results of the investigation. Then there are concepts that are auxiliary in character and which enter as necessary elements into the analytical scheme of things but cannot be directly measured as readily, if at all. These include the concepts of innovation, investment errors (malinvestment), market expansion and market absorption, stable and unstable structure, structural stresses and motive forces. To be sure, good examples are given of what is meant by innovations in the matter of new goods and methods, investment errors of various kinds, and unstable branch structure. But there is plenty of scope for free interpretation in deciding the degree to which such things exist, and one is often completely at the mercy of the author when, for example, he shows how a big structural strain releases motive power. Thus, this latter type of concept gives plenty of scope for artistic creation, and Dahmén makes ready use of it.

What Dahmén has to say about the problem of balance in development, structural stresses which arise during the uneven pace of technical advance in different stages of production, incompleting blocks of development, and temporary investment errors which provide the impulses for development is undoubtedly of the greatest interest. His examples are as a rule convincing. The concepts are often much too imprecise for a general theory of development, however.

To my mind this is particularly true of the twin concepts of market expansion and market absorption, which are fairly basic for the characteristics of the process of transformation in different branches of industry and for different periods. Thus the bold conclusions include what are often very definite judgments about the part played by market expansion and market absorption respectively in the development of various branches of industry. It is difficult to see that a marked difference between these phenomena does as a rule exist. Even in the chocolate and confectionery industry, whose development is said (p. 126 [124]) to have been based primarily on market absorption (i.e. a “passive” increase through strong external demand) a tremendous lot of new goods (and new production and selling methods) occurred which ought to have played an important part in the form of “active” market expansion. It is simply a very difficult question of degree to judge whether the expansion in this branch is to be represented (as in the book) as being determined principally by market absorption, while the expansion in the soft drinks industry is stated to have been determined by market expansion. There are, in fact, elements of both in every industry, and Dahmén’s conclusions seem to me to be far too categorical in the light of the vagueness of the concepts of market expansion and market absorption.

Another example among many is the assertions about the market expansion in the engineering industry in the 1920s. “The course of events had the character of market expansion in part because there were a whole lot of new consumer capital goods, and partly because ‘young’ goods, which were unknown to many potential consumers at the beginning of the inter-war period, continued to widen their market. On the other hand, there was practically no market absorption of any significance. In most areas imports could continue on a sufficient scale” (p. 132 [130]). Yet the development of this industry in the 1930s was determined chiefly by strong market absorption. No doubt there were differences in the direction argued by the author, but again his judgements seem much too definite. Total sales of consumer capital goods in many cases increased at approximately the same rate in the 1920s and 1930s, because in real terms purchasing power and consumption expanded at an approximately constant rate over the whole inter-war period (see below).

What seems to me perhaps to be an even more striking example of Dahmén’s free interpretation is his comparison between developments in the iron and steel industry in the 1920s and 1930s. He makes many apposite judgements about difficulties in the 1920s; the lack of structural balance between the productive capacity in iron and engineering industry’s requirements, lost and deteriorated markets, the shortage of risk capital, far-reaching rationalization, and about the 1920s as a period of transition in which the negative components of development predominated. It is, then, very tempting to depict the happy expansion of the 1930s as a contrast. Dahmén does this, and he is undoubtedly right to some extent, but in my view he grossly exaggerates the contrast. “The shift in the development which emerges in the 1930s is shown both in the number of workers and in the increase in the manufacture of most individual goods” (p. 159 [161]). “Developments in the whole iron and steel industry were however also favoured by the market absorption both at home and abroad which began in the early 1930s and which contrasts this decade with the 1920s” (p. 160 [162]). This judgement recurs in even more emphatic form in the section dealing with the founding of firms: “Nor was there any market absorption in the 1920s” (p. 293) [310]. I cannot find that Dahmén has given convincing proof for these assertions. Diagram 15 on p. (160) [162] shows that consumption of iron rose somewhat faster between 1921 and 1929 than from 1932 to 1939. Production of iron seems to have risen somewhat faster in the 1920s than in the 1930s, while imports if anything rose more slowly in the 1920s than during the upswing of the 1930s. A far more detailed account of the reasoning is needed in order to support the paradoxical conclusion that the 1930s contrasted with the 1920s both in the matter of production increases and market absorption.

Dahmén’s tendency to advance too dogmatic theses, not least concerning the difference between 1920s and 1930s, can somewhat facetiously be termed a rash of “conceptual absorption”. This may have been particularly in evi-



dence in what is an extremely stimulating characterization of the general dissimilarities between the factors affecting economic development in the 1920s and 1930s. Much of what is said here on this subject, particularly concerning the founding and passing away of firms, is new and striking. Again, however, it seems to me that the conclusions are too categorical and unqualified in the absence of better documentation. A general characterization which, on the face of it, is not convincing is given in Chapter III, where a picture is presented which recurs continually later on, namely that expansion in the 1930s was faster than in the 1920s (see, e.g., p. 42 [41]). If, however, we take the trend of the real national income over these two decades the difference seems slight, and one is more inclined to arrive at the conclusion, as I myself have done earlier, that the rate of expansion was somewhat more rapid in the 1920s than in the 1930s.<sup>2</sup> If instead we measure the rate of expansion during the upswing<sup>3</sup> only, the opposite conclusion is perhaps more appropriate, but it is scarcely a question of a decisive difference which justifies the ever-recurring verdict that the phenomenon of market absorption was typical of the 1930s but not at all to the same extent of the 1920s. E.g., “In the third place, we must remember that the 1930s were marked by market absorption for whole sectors and branches of industry in quite a different manner from the 1920s” (p. 379 [406]). Or is it the case that the movement of real national income does not give any comprehensive measure or indication of market absorption? Possibly not, but as far as I can see, Dahmén has not helped the reader to understand the difference between the 1920s and 1930s in this respect. It is true that many reasons are advanced to show that the 1930s should have displayed a greater degree of market absorption than the 1920s. In part, however, these reasons are of doubtful or extremely little significance, e.g. agricultural policy (which was in the nature of a transfer of income, although it could bring about market absorption for certain industries, such as the manufacture of agricultural machinery) and public works policy. I am skeptical of the parallel verdict that exports were also more subject to market absorption in the 1930s than in the 1920s. It would be paradoxical, if not entirely impossible, if the general expansion in world trade in the 1920s had brought about a smaller increase in the demand (market absorption) for Swedish export goods than the largely stagnating world trade of the 1930s. More support is needed for this point of view than Dahmén produces.

<sup>2</sup> See Erik Lundberg, *Det svenska näringslivets konjunkturkänslighet* (The Cyclical Sensitivity of the Swedish Economy), KI, Stockholm, 1945, pp. 16–29.

<sup>3</sup> It is not always clear what period Dahmén has in mind. Sometimes it is the whole decade, as when the 1920s and 1930s are compared (e.g. on p. 42 [41]), since he speaks about the “rather modest increase in exports” for the 1930s; sometimes, and perhaps most frequently, only the upswing from 1932 or 1933 onward. But then he also speaks very emphatically of “the structural boundary in economic policy of 1931”, in which case the 1930s should really be reckoned from September 1931.

The comparison between the 1920s and the 1930s ought possibly to be made in nominal and not real terms if we are to interpret Dahmén correctly. The fall in prices in the 1920s and the price rise of the 1930s signify stagnation and expansion, respectively, in nominal purchasing power. In a way an interpretation of this kind is perhaps obvious, but for that very reason it is also rather empty. More severe competition and rationalization in the 1920s led to price reductions: an increased volume of production and sales when prices were on the average falling is depicted as market expansion. And the equally large average increase in the volume of production and sales with constant or rising prices in the 1930s is market absorption. Used this way, the concepts have little explanatory value. Instead the problem becomes that of the reasons why prices in general fell in the 1920s and rose in the 1930s. Dahmén has a number of interesting things to say about this, but, as he himself maintains, he cannot clarify this without entering upon an aggregative analysis of the effects of monetary and foreign exchange policies.

The partially new viewpoints which are put forward about stability during the process of transformation are of great interest. Dahmén shows that during the “boom” of the 1920s, which was really a period of liquidation and adaptation, Swedish industry primed itself (e.g. by generating incompleting blocks of development) so that great possibilities for expansion existed when the international economic crisis began (see p. 372 ff [398–410]). This is undoubtedly an extremely stimulating idea. The only difficulty is that it is sometimes not easy to decide on the basis of structural strains which have been perceived (but which unfortunately cannot be measured) whether these work towards expansion or contraction! The (relative) international surplus of raw materials and agricultural products towards the end of the 1920s constituted a structural strain which could have, and in the long run ought to have, brought about an expansion of industrial production. But in the short run this strain provoked contraction, e.g. via a fall in the prices of raw materials and agricultural products. This point does not of course conflict with Dahmén’s account. He himself argues that the process of transformation, which is an organic element in progress, creates instability and weak sectors. However, there are probably no clear criteria for settling the decisive question whether and when the expansionary tendencies outweigh the tendencies to contraction. I am therefore not convinced that Dahmén is correct in his assertion that the Swedish economy was more sensitive to depressionary influences in 1926 than in 1930 (p. 394 [423]). What one misses in large measure on this point in Dahmén’s book is an analysis of the way in which incompleting blocks of development influence price and income determination, how economic development is affected thereby, and how the direction in which the stresses operate is determined. There is a grave risk that a discussion of unmeasurable structural strains whose short-term effects cannot be known will degenerate into vague statements about increasing or declining stability. However stimulating these

may be, it is too easy to adjust them according to the developments actually observed.

It is quite possible that Dahmén's conceptual apparatus will have to be altered considerably, and that his conclusions will be modified at a number of points when further research is carried out along the new lines suggested in his book. A pioneering work, which this book undoubtedly is, naturally displays a certain amount of enthusiastic one-sidedness as a useful and stimulating reaction against previous neglect. The research results given here will for a long time to come undoubtedly provide a new and fruitful basis both for further empirical investigations into the process of transformation and for new ideas on the subject of the relationships and driving forces behind economic expansion.

Let me conclude these reflections with some examples of new results which have particularly impressed me. The difference that has been demonstrated between the recruitment of entrepreneurs in industry in the period prior to the first world war, when in general new firms quickly became large, and the inter-war period, when small enterprises came to predominate among newly-established firms, is striking and surely significant. The circumstances surrounding the financing of new firms are elucidated with new if somewhat unreliable material. We have obtained a picture of the formation and death of businesses in the inter-war period which we previously lacked completely. Dahmén's account and analysis of the proportion of new firms and of birth and death rates of firms in different branches of industry is tremendously rewarding and stimulating. It gives one a completely new understanding of the conditions and significance of the formation of new firms, and one obtains a strong impression of how widely these have differed for different industries. The hazy old-fashioned stereotypes of new entrepreneurial activity can now be replaced by Dahmén's diversified and precise conclusions in Part III of his work, "The formation, development, and discontinuation of industrial enterprises in the inter-war period". Not the least suggestive are the epoch-making discoveries about the order of magnitude of the discontinuation of firms (half of all the firms in existence at the beginning of the inter-war period fell away or crashed before 1940).

In such a context one can readily forgive the effect of "conceptual absorption" in producing, unnecessarily tiresome formulations, such as the explanation of the large number of discontinued firms almost everywhere, especially during the 1920s: "the predominance of the negative side of development, which is bound up with the process of transformation, over the strategic errors in investment in most industries" (p. 199 [206]). It is also new and extremely interesting to be told that the formation of firms *increased* between 1931 and 1932, i.e. during the trough of the depression (in part this is explained by the effect of the "livelihood" principle in time of unemployment), and to learn that business mortality was significantly lower during the boom years of the

1930s than during those of the 1920s. This opens up broad vistas on the large question of whether the more severe climate of competition in the 1920s was in the long run more successful in promoting production and efficiency than the hothouse climate of the 1930s and more especially the 1940s. There is a risk that Dahmén's flood of rich new material, and his conclusions which stir the imagination, will be misused in insufficiently well-grounded speculations on questions of this type. What is instead most desirable is that this book should provide a stimulus to new investigations which supplement, modify or possibly dispute the results which Dahmén has arrived at in his research.

# Swedish Industrial Entrepreneurship<sup>1</sup>

Brinley Thomas

This study of entrepreneurial activity in Sweden in the period 1919–39 should command wide attention. Influenced particularly by the ideas of Schumpeter and Johan Åkerman, it represents a reaction against the tendency to concentrate on aggregates. Mr Dahmén believes that to understand the driving forces in an economy one must probe behind such concepts as income, investment and consumption. He feels that the study of economic development has been hindered in some ways by the excessive attention given to the business cycle, even allowing for the marked improvement due to recent econometric research. An economic historian and an economist interested in cyclical fluctuations, both working on the same period, seldom dwell in the same universe of discourse; and neither of them manages to give satisfactory answers to some of the deeper questions raised by economic growth. It is therefore felt that economists would do well to take a holiday from Keynesian aggregates and pay heed to the lessons taught by pioneers such as Veblen and Schumpeter. Mr. Dahmén has worked out a technique deriving from this tradition, and has shown considerable skill in using it to interpret a voluminous mass of statistical data on the changing structure of Swedish industry between 1919 and 1939. The statistical basis of the work is set out in full in Volume 2.

The plan is on an ambitious scale. The Introduction sketches the economic growth of Sweden up to the First World War, places the period 1919–39 in its international setting and describes the analytical tools to be used to investigate the process of industrial “transformation”. In Part II we are given the results of a detailed scrutiny of the expanding, stagnating and declining industries in Sweden between the Wars; and Part III traces the pattern of enterprise in the various departments of the economy – the births and deaths of individual firms.

This is not another conventional survey showing how faithfully the organisation of industry follows the axioms of the text-books. The author takes pains to fashion tools appropriate for the job in hand. A recurrent theme is the incessant struggle between the new and the old – a process which implies on the positive side the application of innovations and the launching of new products, and on the negative side the liquidating of technique and commodities which become obsolete. Mr Dahmén introduces the idea of “structural tension” arising because a technical advance in a certain stage of production or region is not accompanied by an essential complementary advance in other stages or regions. Such a situation is inelegantly described as an “incomplete

<sup>1</sup>[This review of the original Swedish edition of Dahmén’s dissertation appeared in *Economic Journal* in 1951, Vol. 61, pp. 626–629.]

block of development”, and is the seed-bed from which one or two of the more potent driving forces are found to emerge. Much use is made of this concept, and it is hinted that it could be applied with advantage to the analysis of international economic adjustment.

Another central idea turns on a distinction which many readers may find ambiguous. An expansion in the level of activity in an industry takes place as a result of either an *external* change – a favourable shift in the conditions of demand for the product (without any alteration in the production or price policy of the firms) or an *internal* change – the offer of a new commodity, an advertising campaign or a new price policy. It is argued that in the twenties the latter type of expansion was dominant in Swedish industry, whereas in the thirties the pure increase in demand was the prominent feature, caused partly by the fulfilment of “development blocks” which had been started in the previous decade. Clearly it is impossible to give any statistical precision to such a distinction, and one is not convinced that it adds much to the value of the analysis.

Part II brings out in a striking manner the dynamic implications of the struggle between new and old commodities. There is no need for Sweden today to send Productivity Teams to the United States; her entrepreneurs were enthusiastic in adopting American methods during the twenties, and the already strong tradition of technical education developed by leaps and bounds. A range of commodities which had just made their appearance in 1919 and represented 4% of the aggregate sales value of Swedish industrial output constituted as much as 23% of the total by 1939.

The most original section of the book is devoted to the rise and fall of business firms. The author was aided by the willingness of several thousand companies to fill up a fairly elaborate questionnaire, and he had access to unpublished official and private material. For an admirable discussion of the statistical basis of this inquiry the reader is referred to pp. 177–184 [181–190] of Volume 1. The results are striking. Over a half of the number of firms in existence in 1940 had been started after 1918; and, partly as a result of changes in methods of distribution and the tendency towards monopolistic competition, e.g., the trade-mark system, a substantial number of these new firms were small ones.

Of particular interest was the change in the social stratum from which the entrepreneurs were recruited; the full statistical details for each branch of industry are given on pp. 279–287 of Volume 2. Before 1914 the builders of enterprises came from a narrow section of society, the relatively affluent class; they concentrated on the country’s raw materials, and their firms grew big. Between the wars a surprisingly large proportion of those who started business were workers, most of whom went into industries producing for the home market. Moreover, a number of these small firms were started in the depth of depression. Among the reasons for this remarkable development were the

growth of educational facilities, easy access to credit, decentralisation of economic activity due to transport and electricity and the emergence of a milieu increasingly favourable to small-scale operation (e.g., differentiation of consumers' demand and sub-contracting).

The driving force of innovations and new commodities was at work in other countries as well as Sweden during the twenties; but why was the rate of expansion in Sweden in the thirties so much greater? Mr Dahmén points out that Sweden was strongly under the influence of American methods, vigorously exploited her own inventions, had the good fortune to avoid the ravages of war and received a powerful impulse from the buoyancy of her pulp industry. If the Government's monetary policy in the early thirties had not been wise, the upward movement would have been a little slower.

A review can touch on only one or two of the many topics dealt with – perhaps at excessive length – in this interesting book. The Swedish brand of Fabian socialism seems to be moving towards a property-owning democracy, judging by the marked change in the social origin of business-men. Perhaps the true “middle way” which Sweden can evolve is an Old World welfare state infused with the inventiveness, resourcefulness and productivity of America.

In his conclusion the author reiterates his conviction that business-cycle analysis is overdone. What he wants is a study of “the periodicity of economic transformation”. Despite the looseness of some of his concepts, Mr Dahmén is to be congratulated on a book which is both solid and stimulating. Its quality owes much to the method of thinking which Professor Johan Åkerman has been developing over many years. The book contains a short summary in English. It is a great pity that it has no index.<sup>2</sup>

<sup>2</sup>[This deficiency has been remedied in the English edition.]

# A Schumpeterian Analysis of Economic Development<sup>1</sup>

Alexander Gerschenkron

In some of the recent writings devoted to the late Joseph Schumpeter, one finds a few wondering comments on the absence of a “Schumpeter School” in economics. The present study by Erik Dahmén must be viewed either as an exception to or as the first long step toward a refutation of the observation underlying those comments. For, in a very real sense, Dahmén is a Schumpeterian. Whereas the immediate stimulation appears to have come from Johan Åkerman, it is Schumpeter’s spirit that dominated and guided the formidable research effort which now lies encompassed in the 700-odd pages of Dahmén’s book.

The title of the study gives at best a very approximate idea of its contents. It is not an “entrepreneurial study” in the sense of placing the main weight of emphasis upon personality, value judgements and activities of individual entrepreneurs. Although Dahmén’s work has much to say to scholars whose interest is specifically “entrepreneurial”, it is essentially a study of economic development in the Schumpeterian sense of the word. From Schumpeter comes the author’s pre-eminent interest in observing and understanding the processes of economic change; from Schumpeter comes the basic belief that those processes cannot be revealed by methods of analysis dealing in economic aggregates, that attention must be focused on what happens within the individual enterprises, and that the concept of innovation provides the clue to the secret of economic development. From Schumpeter derives the emphasis on new versus old enterprises in the process of growth; and from the same source, finally, comes the interest in the relation between cyclical fluctuations and economic development. In fact, the study might be described as an attempt to pit some of Schumpeter’s suppositions, or intuitions, against the industrial history of Sweden in the interwar period. But such a description probably would be unfair, for two reasons. It would not do justice to the considerable originality displayed by the author; and Dahmén – at least in this study – is not an economic theorist, but an economic historian in the sense that he is much less interested in the *verification* of a theoretical model than in its *application* to empirical material.

The basic concepts with which Dahmén operates are rather few. He distin-

<sup>1</sup>[This review of the original Swedish edition of Dahmén’s dissertation, was published in the *Review of Economics and Statistics*, November 1957, Vol. 39, pp. 471–476. It was reproduced in Alexander Gerschenkron, *Continuity in History and Other Essays*, The Belknap Press of Harvard University Press, Cambridge, Mass., 1968. Page references to the 1970 English edition have been added within brackets.]



gushes first of all between what is, from the point of view of the individual enterprise, a process of “market creating” (*marknadsutvidgning*) or “market filling” (*marknadssugning*). It is the former that is engendered by economic innovations. The author distinguishes between innovations involving creation of new commodities and those involving change in production methods. He also separates primary, or original, innovations from secondary innovations designed to improve upon already existing commodities or productive processes. Finally, in viewing the process of economic development, he attributes great importance to what he calls “development blocks”, to the fact, that is, that, essentially for reasons of technological and economic complementarities, rapid development requires the cooperative effort and coordination of a large number of entities, often spread over several industrial branches. Even though the author speaks of “the problem of balance in development”, his concept is only indirectly related to Nurkse’s “balanced growth”, since the author’s main concern is with the supply side rather than with the demand side. In Dahmén’s thinking, development blocks are the vehicle for the consummation of a significant innovation. He views the history of the creation of such development blocks with particular attention. A development block *in statu nascendi* appears to him as shot through with specific weaknesses, “structural tensions” in his language, and it constitutes an important link between cycle and growth analysis.

Equipped with that set of tools (to which perhaps his own concepts of “malinvestment” and “the negative effects of growth” might be added), Dahmén proceeds to investigate the course of Swedish industrialization. His short treatment of the pre-1914 period to a large extent is designed to illustrate the role of development blocks in long-term growth. After the slow start, he finds the development gathering speed rapidly from the 1870’s on, suffering a setback in the early 1890’s and then proceeding with renewed vigor until the end of the period in 1914.<sup>2</sup> The latter subperiod was characterized by the exist-

<sup>2</sup>It may be remarked here that the statistical data shown for the development of the individual industrial branches do not quite confirm the author’s view that the great industrial spurt began in the 1870’s. As far as this reviewer can see, for the majority of industrial branches the commencement of rapid growth falls into the 1880’s; while for a smaller number of branches that grew swiftly in the 1870’s, this rapid development was but a continuation of a growth, the beginning of which antedated the decade of the 1870’s. It is true, however, that the picture is blurred, first because some of the data on output are given in kronor, presumably at current prices, and, second, by the author’s aversion to ratio scales. The reason is said to be to avoid the exaggerated impression of very rapid growth in the initial period as long as output is quantitatively small. But apart from the fact that those high initial rates are not just a freak of the percentage calculus, but possess an economic significance of their own, there is no justification at all for presenting growth data pertaining to the interwar period along an arithmetic scale. The lack of logarithmic diagrams has rendered absorption of the material more difficult, for at least one reader.

ence of many “completed development blocks”, which had been still in the process of creation during the former subperiod. Cumulative effects were released, and the result was a somewhat more rapid and even growth in the decades preceding the outbreak of World War I. From this point of view, the author regards the cyclical fluctuations after the 1880’s essentially as disturbances brought in from outside rather than generated within the Swedish economy (Vol. I, p. 88 [87]).

In approaching his actual topic – Swedish industrial development in the interwar period – the author presents first a general statistical survey of growth of output, profitability, and the changing significance in the total for individual industrial branches. The purpose is to classify those industries as either progressive, stagnating, or regressive. Despite some inevitable arbitrariness, the author’s formulation of the three concepts on the basis of the empirical material is altogether reasonable. Proceeding then from industry to industry, Dahmén tries to reveal in each case the specific “driving forces” at work – that is to say, to relate the rate of progress, positive or negative as it may be, to the presence or absence of market-creating activities or market-filling responses of the respective enterprises; and thereafter to associate the market-creating activities either with the introduction of new commodities or with new production methods. As could not be expected otherwise, the empirical material shows some resistance to being pressed into a rigid classification. Several times the author has to point out (Vol. I, p. 134 [132], 144 [139], 150 [150]) not only that market-filling and market-creative situations appeared conjoined, but also that the two forces need not be independent of each other, in the sense that the pull of market may cause, or at least facilitate, the innovational push into the market on the part of the enterprises. This difficulty is probably more than just a beauty blemish in a classificatory picture, since it impinges on the basic problem of what Dahmén calls “causal analysis”. Still, as far as the classification of industries is concerned, the attempt seems quite successful, and the reader emerges from the discussions of Part Two with a good deal of knowledge of the predominant forces within the individual industries.

In some respects Part Three, contrasting the “new” and the “old”, must be considered the central portion of the study. It is here that Dahmén deals with the problem of “birth, growth, and death of enterprises” in the interwar period. This again involves construction of empirically usable concepts of the enterprise (essentially defined by the author as a productive entity), as well as of its beginning and end-problems to which the author finds quite satisfactory practical solutions. His vast empirical material is summarized in the following five ratios: (1) percentages for the number of new enterprises (enterprises that began between 1919 and 1939 and were still alive in 1940) in the total number of enterprises in existence in 1939; (2) the percentage ratios of workers in new enterprises in 1939 to the total number of workers in 1939 both in new and in

old enterprises (those already in existence in 1919); (3) the ratios of the number of workers in new enterprises to the increase (or decrease) in the number of workers in the old enterprises between 1919 and 1939; (4) percentages of the number of old enterprises in 1919 which went out of existence after 1919 in the total number of (old) enterprises in 1919; and (5) the percentage ratios of the number of workers in 1919 in the old enterprises that disappeared after 1919 to the total number of workers in (old) enterprises in 1919. All these ratios have been computed for no less than twenty-six groups and sixty-one subgroups of industries.

A couple of brief comments may be in order at this point. Some question may be raised about the choice of 1919 as a basis for the comparison, a year doubtless still in the shadow of the abnormal conditions prevailing during 1914–1918. Furthermore, it will be noted that no measure has been constructed to gauge the death rate of new enterprises. Finally, it must be emphasized that the relative importance of new enterprises (ratios 2 and 3 above) as well as the death rate of old enterprises (ratio 5 above) is measured by the number of workers in the respective enterprises in relation to the larger totals. This method apparently requires at the very least the assumption that within each industrial group or subgroup, the labor-output ratios were fairly equal as among the new and the old enterprises. To the extent that the assumption does not hold, the meaning of the ratios becomes somewhat elusive; and to the extent that there were significant differences in this respect as among the individual groups or subgroups, the value of intergroup (or subgroup) comparisons of the ratios tends to be diminished. It is regrettable that data on net outputs of individual enterprises could not be used instead. Given their unavailability, Dahmén's method must be accepted as the best solution in the circumstances.

The statistical findings just described are then conjoined with the results obtained in Part Two on the classification of industries with regard to the major driving forces prevailing within them. The extremely interesting result may be summarized with regard to progressive industries as follows: (p. 194 [201]): (1) In industries characterized by market-creating forces in consequence of introduction of *new commodities* the share of new enterprises in the total number of enterprises in 1939 was very large, and varied between 50 and 80 percent; at the same time, the number of workers in the new enterprises in relation to the total number of workers in those industries in 1939 was also quite high, although the respective percentages in all cases were below those obtained for the number of new enterprises. (2) In industries characterized by strong market-creating forces in consequence of introduction of *new methods of production*, the share of new enterprises in the total number of enterprises in 1939 was much smaller than in the previous case, and so was the share of workers in new enterprises in the total number of workers in such industries in 1939. (3) Finally, those industries that were dominated by the

pull of the market showed as a rule high ratios of the number of new enterprises to those of all enterprises in those industries in 1939, although not quite as high as in the first case: the ratios of the number of workers in new enterprises to the number of all workers in such industries tended to lie somewhere between the high ratios in case (1) and the low ratios in case (2).

These results seem to reveal that, despite a rather lively rate of formation of new enterprises in the growing Swedish industries of the interwar period, the old enterprises by and large managed to retain a predominant position with regard to the size of labor force employed. It is more than likely that the position of the old enterprises would appear even stronger if the relative growth of the two groups had been measured by the amounts of value added within the respective industries. This conclusion is further strengthened by Dahmén's general finding that the old enterprises as a rule were the seat of pioneering innovational activities, and this was so not only in industries where innovations in productive methods were pre-eminent, but also in industries characterized by introduction of new commodities. Dahmén is quite emphatic on this point (Vol. I, p. 197 [204]). Thus, Schumpeter's supposition that innovations as a rule are launched by new men in new enterprises does not hold for Sweden of the interwar period. On the other hand, the data described under (1) above do point with considerable clarity to the existence of a strong Schumpeterian secondary wave following the introduction of new commodities by old enterprises. It is interesting that Dahmén found cases where old enterprises that had launched the innovation abstained from advertising it too widely in order not to provoke the start of the secondary wave before they had succeeded in bringing about some reductions in cost of production (Vol. I, p. 236 [247]). Nevertheless, in general, "secondary innovations" – further improvements upon primary innovations – were frequent in both old and new enterprises. It must be added that the lack of a strong secondary wave following innovations in methods is perhaps not surprising, for in general imitation of new commodities should be a good deal easier than that of new methods of production.

Dahmén did not confine his effort to the quantifiable aspects of the problem. In a rather detailed presentation, he proceeds to deal descriptively and analytically with the process of enterprise formation in the individual industries, trying to trace differences between industries with high and low rates of enterprise formation. At the same time, he attempts to elucidate the character of new enterprises and to ascertain the nature of their relation to old enterprises (competition or complementarity, direct organizational affiliation or independence, and such). An impressive amount of material derived from special literature, and particularly from the author's questionnaires, personal interviews, and correspondence, has been organized to throw light on conditions in the individual industries. The treatment of these industries, however, is somewhat uneven, since the volume of information obtained varied from

industry to industry. It is especially the important machinery industry, along with the forest industries, wood-working industries, and clothing industries, that comes in for fuller treatment. Much information is provided in these sections on the “death” of enterprises, the changing range of output (Dahmén has developed a Linné-like scale, 1–10, for measuring the degree of specialization of individual enterprises), and the effect of monopolistic compacts on the process of enterprise formation. With regard to the latter, his conclusion is that cartels and other similar restraints on trade rarely impeded the formation of new enterprises, although they tended to thwart their further development.

After an interesting attempt to connect the locational changes in Swedish industry with his findings, Dahmén winds up his presentation by a discussion of the size and types of capital supply in the new enterprises. His computation of the share of investment in new enterprises in the total (he makes it 38 per cent) is one of the very few occasions in the study where the crudity of the method casts a severe doubt on the significance of the result. (He assumes that within each industry investment is proportionate to the number of workers, and aggregates the data for individual industries by using fire-insurance values for weights). But the data on the sources of finance are important. They show the predominant significance of the entrepreneurs’ own funds in the formation of enterprises; by contrast, recourse to the stock exchange was quite limited. On the other hand, the role of bank loans was far from negligible (particularly during the 1930s). As one might have expected, it is rather clear, though not stressed by the author, that bank loans tended to play a much greater role in metalworking and forest industries than in industries producing textiles or foodstuffs. The same is true of the cases of recourse to stock issues. The ubiquitous fact of the banks’ short-term loans being actually used for long-term investment is duly recorded by the author for Sweden of the interwar years. Of some significance is his conclusion that it was easier to obtain capital in order to start a new enterprise than to make possible its further growth (Vol. I, pp. 328–329 [348–349], 334–335 [355–357]).

In the second volume of the study, Dahmén has assembled, with exemplary completeness, the basic statistical data that underline the text of Volume One. It might be added that only a portion of the material contained in Volume Two has been fully worked into the text volume. This is particularly true of the separate computations for the two halves of the interwar period. Since the preceding attempt to summarize the contents of Dahmén’s study has been necessarily fragmentary, the interested reader may profitably peruse the English summary appended to Volume One. With a modicum of help from the dictionary, those who do not read Swedish should find the statistical diagrams and tabulations throughout the study quite accessible.

As said before, Dahmén’s book is first and foremost a contribution to Swedish industrial history in the interwar period. It is at the same time a

contribution to the scholarly (though politically not always quite neutral) controversies on the relative merits and demerits of the two interwar decades. Against those who pitch the deflationary 1920s against the expansionist 1930s stand the economists who point to losses sustained by Sweden in the 1930s through increases in the degree of autarky and through an income distribution less propitious to investment and growth. As Erik Lundberg has shown, comparison of the rates of industrial growth in the two decades is difficult, the result varying with the choice of the respective base years.<sup>3</sup> Dahmén avoids taking sides in the controversy. He is conscious of using a special approach which leaves important factors outside his purview. Still, from the point of view of his approach, the separation of the two decades appears spurious. For in his view, the 1920s are characterized by the formation of important development blocks, the consummation of which fell into the 1930s. Accordingly, the 1920s appear burdened with many structural tensions, which were then eliminated in the following decade.

For those in whose minds the prosperous twenties are contrasted with the hungry thirties, the Swedish discussion may appear somewhat unreal. The fact is, however, that the Great Depression in Sweden never assumed the severity or the persistence it had in other countries, and the process of recovery was quite spectacular. Whether the explanation lies with the government's Keynesian policies – “Keynesian”, that is, *ante litteram* – or with the quick revival of the foreign demand for wood products, or with the play of forces stressed by Dahmén, or, as is quite probable, with all these factors in varying degrees, is less important for present purposes.<sup>4</sup> Nor is it of interest here to inquire whether a different economic policy pursued in the 1920s might not have hastened the process of creation of development blocks and might not have enhanced the prosperity of the later 1920s which in Sweden, according to Dahmén, was far from being as general as appeared to superficial observers (Vol. I, p. 368 [394]). What matters rather is that the absence of a prolonged depression in the 1930s has made it possible for Dahmén to attempt a treat-

<sup>3</sup>Erik Lundberg, *Konjunkturer och ekonomisk politik*. (The Business Cycle and Economic Policy), Stockholm, 1953, Chapter 2, esp. pp. 57–64. [The corresponding reference to the English edition of Lundberg's book is Erik Lundberg, *Business Cycle and Economic Policy*, London, Allen & Unwin, 1957, Chapter I, pp. 7–12.]

<sup>4</sup>Incidentally, Dahmén's apparent belief that only an approach to economic development which centers upon the individual enterprise may be regarded truly as a “causal analysis”, while an analysis that runs in terms of aggregates could not be so designated, seems to this reviewer to be at variance with the maturity of methodological judgment displayed throughout his study. Since the *ultimate* cause in a continuous and interacting process is not an operational historical concept, it must depend on the judgment, needs, and purposes of the historian as to just what factor in what “model”, or combination of models, he should turn into a causal agent, into a “driving force”, in his attempt to observe and to interpret the course of events and the processes of economic change.

ment of the Swedish interwar period not as a cyclical analysis but as a study in economic development. Different economic conditions in the 1930s might have easily blurred the long-term factors so as to make them unrecognizable, even to Dahmén's keen eye. It might still have been true, as our author holds, that Sweden at the end of the 1920s stood at the threshold of an industrial growth comparable to that which began in the 1890s, but the verification of this hypothesis would have remained much less plausible. So would have Dahmén's belief that the economic difficulties in Sweden during the early 1930s had been caused not by too much but by too little industrial investment in the 1920s (Vol. I, p. 373 [400]). Most inevitably, the interesting idea of approaching the cycle through a treatment of growth would have bogged down.

Thus, Dahmén's approach in some respects has been facilitated by the peculiarities of the Swedish economic scene in the interwar period. Nevertheless, the importance of this book far transcends the boundaries of the author's own country. There is little doubt that the concepts and methods developed by Dahmén could be most profitably employed in the study of other countries and other periods. In particular, this writer, who in his own work has laid a good deal of stress on the degree of backwardness and the importance of "bigness" in relation to the great initial upsurge of industrial development in various European countries of the nineteenth century, feels that he has much to profit from extending his studies in the direction suggested by Dahmén's approach. In fact, it is just possible that, given availability of material, Dahmén's methods might prove of even greater fruitfulness when applied to earlier stages of industrialization. To some extent, Dahmén's interest in the formation and growth of new enterprises within the mature Swedish economy of the interwar period has not been fully rewarded. The smallness of the new enterprises (which in Dahmén's apt expression often were just the "underbrush" of industrial growth), their imitative rather than creative character, their frequent subordination in one way or other to the old established firms, and the pre-eminence of the "livelihood principle" rather than of the "profit principle" in a goodly number of cases studied by Dahmén could not help detracting somewhat from the significance of one of his central emphases. Very different results are likely to obtain for the less developed countries of our day or for the earlier periods of the history of advanced countries, including the United States, and it is to be hoped that serious attempts along these lines will be made. For this reason alone, a translation into English of this trail-blazing study would seem eminently desirable.

In addition, Dahmén's study should be of particular interest to those devoted to the entrepreneurial approach to economic history. This study contains a good deal of interesting information on the Swedish entrepreneurs. Thus, the author points out the narrow social basis for recruitment of Swedish entrepreneurs prior to 1914 (which, incidentally, runs counter to another

Schumpeterian supposition), and his research reveals a considerable widening of that basis in the interwar period: with the general democratization of the Swedish social milieu and with rising educational standards, the number of entrepreneurs originating from the ranks of industrial labor tended to increase noticeably; the author has something to say on the attitudes and the modes of behavior of such entrepreneurs. Or, to give another example, Dahmén registers the fact that during the interwar period “men with ideas” preferred to take jobs with the established enterprises, which could place both capital and an efficient sales organization at their disposal, rather than start uncertain enterprises of their own; in addition, the policies of the banks tended to reinforce such preferences. These examples could be multiplied, even though the author’s interests in this direction have remained in the background of his study. But the study as a whole provides an incomparable framework for those who are seriously interested in the study of the economic significance of entrepreneurial behavior. The concept of development blocks and the vicissitudes of their creation raise, for example, the question of the degree to which individual entrepreneurs are able and willing to think in terms of such development blocks and of the extent to which their behavior will be modified thereby. The story of many an entrepreneurial failure could be meaningfully written against the background of Dahmén’s “structural tensions”. The changes in the rate of enterprise formation and in the death of enterprises could be further elucidated by the study of entrepreneurial behavior in various historical situations. To understand entrepreneurial attitudes in advancing and shrinking industries would shed further light on the very processes of progress and retrogression. A study of entrepreneurial evaluations of market-filling forces and the impact of these evaluations on their readiness to innovate, and by so doing to widen the market, may put to test the value of Dahmén’s dichotomy of “market pull” and “push into the market”. Almost every finding of Dahmén’s can be turned into a question directed to the entrepreneurial approach to economic history. In order to achieve economically significant results, the adepts of that approach need above all firm knowledge of aspects of economic development which are both significant in themselves and congenial to the approach in the sense that they can become promising objects of “entrepreneurial” explanations. To have shown them the road to such a knowledge is probably not the least merit of this remarkable book.



## Postscript<sup>7</sup>

Schumpeter stood at the cradle of modern entrepreneurial explorations in the United States. It is all the more surprising, therefore, that American research in the field by and large has failed to draw to any significant extent on the wealth of the Schumpeterian hypotheses and intuitions. This becomes very clear if one compares the type of work performed here, interesting and rewarding as it doubtless was, with what was accomplished by a gifted Swedish scholar. It was Erik Dahmén who in his *magnum opus* addressed deeply probing questions to empirical Swedish material, questions designed to put Schumpeter's ideas to imaginative quantitative tests: To what extent was it true, as Schumpeter believed, that entrepreneurs originated indiscriminately in all strata of the society? Was it true that innovations were typically a product of new enterprises, while the old enterprises either were pressed and choked to death by the resulting geological shifts in the folds of the production functions, or else managed to be carried to the crest by Schumpeter's secondary wave? And as far as that tidal wave went, did it rise equally high and spread its waters equally far whether the innovating earthquake had occurred in the area of new products or of new methods of production? Was Schumpeter right in what he had to say about the impact of supply upon demand; that is to say, in Dahmén's language, to what extent was the innovating entrepreneur "market creating" or merely "market filling"? And what was the incidence of new versus old enterprises within the secondary wave? (It is true, of course, that Jacob Schmookler dealt with some of these problems in his excellent study, but he did not consider them in terms of the entrepreneurial approach and his inspirations certainly did not come from Schumpeter.)

To have placed these and other questions, as Dahmén did, within the

<sup>7</sup>[Gerschenkron has made repeated attempts to promote interest in Dahmén's work. This postscript reproduces his statement at the 1967 convention of the American Economic Association and published in the *American Economic Review*, Vol. 58, Proceedings 1968, pp. 96–98. It is also of interest to cite his final plea for Dahmén: "A very interesting Swedish economist, Erik Dahmén, made an earnest effort to test some of Schumpeter's intuitions and suppositions in the light of the Swedish empirical materials. The period treated by Dahmén (the interwar period) is a rather short one in terms of broad historical research. But in default of other kindred studies, his findings deserve much notice, and among them is of particular importance the discovery that most of "market-creating" innovations (Dahmén's term) were evolved within the lap of old enterprises. Is this a refutation of Schumpeter's supposition? Yes and no, for the accent has been shifted from men to enterprises, and it is quite possible that it was new men within the old enterprises who were responsible for the innovations. (In a family enterprise, it may have been the son, or the son-in-law who took over the guidance of the firm.)" This quote is taken from his paper "Biographical Material in Economic History" in *Biographie und Geschichtswissenschaft, Aufsätze zur Theorie und Praxis Biographischer Arbeit*, München 1979, pp. 130–131.]

framework of quantitative analysis with continuing stress on entrepreneurship was a most worthwhile achievement, and I am glad to hear that the American Economic Association is preparing for publication an English translation of Dahmén's work. It may be noted that Dahmén's findings are not always those one would have expected on the basis of Schumpeterian theories, which has more than merely negative significance: as regularly happens in research, the failure of a hypothesis is most likely to raise further intriguing problems as to the reasons for the failure. Nevertheless, Dahmén is a true Schumpeterian, one of the very few in the world, and one cannot quite spare those engaged in entrepreneurial research in the United States the reproach that although they have been so much more closely and directly exposed to Schumpeter's parturient mind, they have proved unwilling to proceed along the road that was so clearly lighted by the beacon of his thought. It is to be hoped, however, that once Dahmén's book has become available, it will belatedly stimulate similar empirical studies of American entrepreneurship. In so doing, the entrepreneurial economic historians may well pay heed to the fact that Dahmén did not simply consider the Schumpeterian hypotheses in isolation. He tried to place them within a broader view of economic development. In this way – a true disciple of the master – he tried to merge into intelligible unity long-run problems of economic development with those of the business cycle. And this is the area where a great deal, perhaps everything, still remains to be done by the adepts of entrepreneurial research.

## **SECTION IV**

### **Recent Restatements of the Dahménian Approach**

## Editorial Introduction

Despite the attention and praise awarded Erik Dahmén's dissertation, it was to take nearly thirty years before he returned in his own writing to the major research agenda and approach to economic-historical analysis presented therein. Dahmén's research in the interim dealt primarily with issues in economic policy in Sweden rather than with his original more theoretically oriented research agenda. It is interesting and illuminating to review the path by which Dahmén returned to the main themes of his dissertation work, rediscovering old truths, reformulating them in the light of more recent literature, adding new insights, and putting it all together more succinctly in the process.

There are several factors explaining why Dahmén did not follow up on his dissertation immediately. Anyone familiar with the scope and content of that work, the amount of grass-roots research with interviews, questionnaires, archival work in digging up facts, and other types of laborious data collection required for its completion, realizes that a research project of that magnitude can be conducted only once in a lifetime.

Another factor may have been the nature of the reception Dahmén's work encountered. Economic historians were primarily concerned with earlier periods in history than the interwar period, and economists who seemed to have greater appreciation for Dahmén's contribution to historical research were more interested in macroeconomic (particularly Keynesian) issues than those addressed by Dahmén. His interest in the past was more that of a theorist than that of a professional historian. His major justification for pursuing explorations of the past was as a way of uncovering empirical regularities of the economic system and of finding the roots of the present, applying what he referred to as the method of "historical reconstruction". In that perspective, the call for further historical research, emanating from the dissertation, was not primarily a call for additional light on the interwar period but rather a call for research on the period thereafter, i.e., the World War II period and the postwar era. Clearly, a decade or more would have to elapse before one could get a sufficient perspective – and data – for such research.

The decisive reason why Dahmén did not continue research along any of the lines of his dissertation – historical, theoretical or methodological – appears to have been his appointment, soon after he finished his dissertation, as scientific advisor to the Wallenbergs and the Stockholms (later Skandinaviska) Enskilda Bank. While there were no strings attached to this deal requiring Dahmén to relinquish any of his scientific research ambitions – to the contrary, further scientific research was precisely what was requested of him – the Wallenbergs needed someone who could not only enlighten them on the long-run dynamics of the economic system but also, and particularly, analyze

more short-term issues of the credit markets and of the impact of various government policies, state budgets, etc. It should be noted that this had been a major preoccupation of Dahmén during his IUI years.

Abandoning any intentions Dahmén might have had to follow up on his dissertation, he shifted his research focus from the dynamics of industrial transformation to what might be called monetary dynamics. His alignment with the Wallenbergs gave him monetary and credit questions as a new focus for his research. Credit was a key factor in the Development Block mechanism Dahmén had explored already in his early licentiate work before 1942, and although it was taken up in his 1950 dissertation where he studied the financial side of industrial transformation, it was not in focus in the same way as it was to be in his new assignment. From now on, financial issues became a recurring preoccupation of Dahmén as a consultant to the Bank until his retirement in 1981. The really new thing was that they were now to be analyzed from the perspective of economic policy and, of course, from the particular perspective of the bank as a participant in the market.

An important result of Dahmén's involvement in monetary and financial problems was his eventual discovery of Wicksell's monetary theory as a potential complement to his own Transformation cum Development Block approach. The importance of the Wicksell connection for Dahmén's core theory was not only to make financial considerations more explicit but, above all, to permit better inclusion of the macro level of the problems dealt with. This emphasis on Wicksell fitted neatly into that theory. The students in his elementary classes were always taught the simple Schumpeterian formula; innovation + credit = economic development, with a reference to Wicksell for the credit part. However, for a long time his attention to Wicksell remained unintegrated in his Transformation cum Development Block approach. During the 1950s Dahmén published a number of papers and articles about the regulation of the capital market and capital formation building upon the tradition from Wicksell and the distinction between the market rate and the "natural" rate of interest but the Transformation cum Development Block apparatus was not resorted to in these studies. That type of synthesis was not applied in empirical research until several years later in a study on the Finnish economy (Dahmén 1963).

Dahmén's 1963 study on the Finnish economy turned out to be just a temporary return to the main research agenda. Apparently, it was only when he was sufficiently removed from the current Swedish economic policy debate and secured a certain distance – this time geographical rather than historical – to the object of scrutiny that he was able to undertake "causal" explorations that demanded full use of his unique analytical apparatus. Throughout the remainder of the 1960s Dahmén's writings bore little witness to this undercurrent in his thinking. He seems in this period to have been even more absorbed in policy issues than earlier, and he actually worked much closer to main-

stream theory than was warranted by his now Wicksell-extended Transformation cum Development Block approach.<sup>1</sup>

### **Resuming the Dissertation Themes**

However, change was in the making. Encouraged by the translation into English of his dissertation and by the new wave of thinking coming from the right, with neo-institutionalists and neo-Austrians joining forces in what was called “the supply side” criticism of mainstream positions, Dahmén during the turbulent 70s became more forthcoming in stating his own theoretical notions. This also induced him to revert back to his thinking of the pre-dissertation era and he was eventually led to a significant restatement of his approach which in many ways implied a revision of it. However, the basics remained.

Beginning around 1970, Dahmén tried to stimulate his students at the Stockholm School of Economics to take up research along lines similar to those in the dissertation. He urged those who, like Rolf Henriksson, queried him for suggestions as to possible projects, to carry out work in what he called Industrial Dynamics. One example was a major in-depth study of the births and deaths of firms in several Swedish industries during the postwar period conducted by Gunnar Du Rietz (1975). Another was a study by Johan Facht (1976) on the costs of environmental control measures in Swedish industry, combining Dahmén’s interest in environmental issues with detailed data collection at the plant level, focusing on technical and structural change within industries. Johan Örtengren studied industrial finance and its role in the industrial transformation process in Sweden, and together with Märtha Josefsson he examined long-term changes in relative prices as indicators of positive and negative transformation pressures.<sup>2</sup> All these studies were conducted at IUI during the 1970s.

From the early 1970s and onward, Dahmén’s dissertation work has had an important influence on many Swedish economic historians of the younger generation. His dissertation was observed as a vitalizing force at all levels of teaching in Swedish university departments in Economic History. There are probably few students in that field who have not learned the basics of his notion on Transformation cum Development Block. Over the years there has been a steady recruitment of historians attracted to do research following up on or being guided by the results and approach in Dahmén’s dissertation.

<sup>1</sup> Klas Eklund has in a much esteemed bio-bibliographical paper, written on the occasion of Dahmén’s 70th birthday, 1986, given a good survey of his writings with a particular focus on his analyses of policy issues outside the theme of the present volume. See Eklund (1986).

<sup>2</sup> The research of Josefsson and Örtengren was first reported in an IUI-IVA study, mentioned below as Carlsson, Dahmén, Grufman, Josefsson and Örtengren (1979). However, a more comprehensive account is given in Josefsson and Örtengren (1980).

Because of the risk of neglecting many important names that should appear on a list of economic historians that are intellectually indebted to Dahmén, no names are given here.

In 1977 Dahmén himself became directly involved in a study within the Dahménian approach. The Royal Swedish Academy of Engineering Science (IVA) initiated a study on Sweden's techno-industrial competence and future competitiveness. Erik Dahmén was appointed chairman of one of the working groups, with me as secretary, supported by a team of IUI researchers. The resulting report, published with the title *Teknik och industristruktur – 70-talets ekonomiska kris i historisk belysning* (Technology and Industrial Structure – The Economic Crisis of the 70s in Historical Perspective),<sup>3</sup> bears the hallmark of Dahmén, even though that may not be apparent at first glance. Dahmén himself co-authored only one of the chapters, but he guided the research effort with such subtlety and finesse that it is only with more than a decade's hindsight and with the benefit of working even more closely with him, that I, as leader of the research team, have become aware of the extent to which we were influenced by his thinking.

It is of some interest to dwell a bit on this. There are several ways in which Dahmén's influence can be seen in the study: the approach of viewing Sweden's then current industrial crisis in a 100-year perspective; establishing the "apparent" statistical facts, in international comparison, followed by an analysis of the microeconomic changes going on below the macroeconomic statistical surface; discussing the role of economic policy and – please note! – policy mistakes in contributing to but not generating the crisis; trying to identify the longer-term, deep-rooted causes – these are all vintage Dahmén features. The idea of comparing the current crisis to earlier crises in order to look for differences and similarities which might provide clues as to the empirical regularities determining the behavior of the system is entirely in line with the principles of causal analysis which constitute the key methodological precept of the Dahménian approach. Searching for the roots of present problems, by analyzing the content as well as the rate of technological change opens for his Transformation cum Development Block conception, sharply contrasted with the stale approach of conventional macroeconomic analyses; this also bears the hallmark of Dahmén.

The IUI-IVA study may have stimulated Dahmén to resume more full-scale the theoretical research he had carried out in the dissertation and which, barring some exceptions, generally had been suppressed since then by other research pursuits and above all by his manifold policy writings. In a conference volume honoring Dr. Marcus Wallenberg on his 80th birthday in 1979, Dahmén not only restated his earlier position; his essay, entitled "Hur studera industriell utveckling" ("How to Study Industrial Development") also elabor-

<sup>3</sup> Carlsson, Dahmén, Grufman, Josefsson and Örtengren (1979).

ates the basic theory in the dissertation, reaching beyond it in several important ways (Dahmén 1980). The main new main elements incorporating also his post-1950 Wicksell extension of his theoretical thinking are illuminating.

Dahmén starts by placing his theory in the context of the mainstream economic literature, both pre-1950 and more recent, pitching the methodological stance of his original approach against the received modern view. He articulates his views in two points. First, he criticizes the Walrasian type of general equilibrium theory as useless in trying to understand the mechanisms of industrial transformation generating economic growth. Insofar as partial equilibrium theory permits individual units to act independently and on their own initiative, he finds the Marshallian variety of theory which he employed in his environment research in the 1960s, much more useful in transformation analyses.

Secondly, he rejects Keynesian macroeconomic theory as being totally unable to identify the driving forces behind economic development. Here he instead reverts back to Wicksell whose monetary theory he had explored already in the 1950s in searching for a better macro framework for the transformation approach. Thus he takes off from Wicksell's distinction between the "real" (or "natural") rate of interest (reflecting expected returns on investment under consideration) and the borrowing rate; a positive (negative) difference between them leads to expansion (contraction) of economic activity. However, in this restatement of his Wicksell-extended theory he now introduces a further amendment to the Transformation cum Development Block side of the picture. In this model he incorporates Salter's notion of the vintage structure of plants in an industry as an important analytical advance in his Transformation theory (Salter 1960). Through this Dahmén achieves an integration of theories on the micro and macro levels, synthesizing three central aspects of industrial transformation, namely technological change (resulting from entrepreneurial activity), market changes, and changes in industry structure. This was an important step in bringing his supply side theory closer to the theoretical discourse of other Swedish economists of the time, and there was a reciprocal insemination of Dahménian ideas into their thinking because of this.

Typical for Dahmén, although the essay is a programmatic one, its final part is a summary of Dahmén's analytical scheme applied to a brief examination of the industrial development in Sweden during the postwar period.

Somewhat of a restatement of this essay appeared in English in a contribution to the Rostow Festschrift (Dahmén 1982a). This paper is interesting particularly because it renewed Dahmén's attempt to place himself in the Schumpeterian tradition. In view of both his one-time dependence as well as criticism of Schumpeter and the characteristics of his own restated approach, he accepted at the time the suggestion of Rolf Henriksson that his approach be referred to as Neo-Schumpeterian. However, as this term was increasingly



being used by neophytes in the Schumpeterian tradition who in many ways were quite alien to the methodology of Schumpeter, he soon abandoned this term and reverted to the term Schumpeterian.

His preference for this labeling of himself was made evident in the essay “Schumpeterian Dynamics: Some Methodological Notes”, presented at the IUI conference in 1983 on The Dynamics of Decentralized Market Economies, commemorating the 100th anniversary of the birth of Joseph Schumpeter (Dahmén 1984b). As the first of two essays reproduced in this section, it represents a more fully worked out attempt by Dahmén to present his approach in English to an international audience. It is put forward in a typically Dahménian fashion in a very low key, with an unobtrusive title (Some Methodological Notes!). There is not even a mention of Dahmén’s own work, including his dissertation. Yet it provides a succinct account of the theoretical updates and reformulation of his basic analytical dissertation approach which he initiated in his 1979 Wallenberg symposium paper and which, as noted, he kept amending in his subsequent writings.

In the mid-1980s the Federation of Swedish Industries presented Dahmén with an opportunity to return to his analysis of the long-term development of Swedish industry. Producing a new (1985) edition of its *Sveriges Industri* (Sweden’s Industry), a comprehensive survey of a variety of aspects of industrial development in Sweden which first appeared in 1935, the Federation asked Dahmén to summarize the empirical results for the interwar period in his dissertation and to extend the survey to include also the postwar period. This he did, with the postwar survey being co-authored with me (Dahmén 1985, Dahmén and Carlsson 1985). Here the reader meets Dahmén’s, to date, most full-scale and synthesized account of Sweden’s modern industrial history, as captured in his particular approach.

Again in a characteristic Dahmén fashion, the macroeconomic picture presented by statistical indicators is set against a description of underlying microeconomic conditions, and his picture of “how it really was” is then combined with detailed analyses of the driving forces at the micro level together with an institutional/policy analysis.

The essay on “‘Development Blocks’ in Industrial Economics”, the second paper reprinted in this Section IV, represents the latest statement of the revised Dahménian approach (Dahmén 1988a, 1989c). This restatement places particular emphasis on the notion of the Development Block, along with examples of its empirical significance. This paper was presented in 1987 at an international workshop at Case Western Reserve University and appeared in the resulting conference volume entitled *Industrial Dynamics: Technological, Organizational, and Structural Changes in Industries and Firms* (ed. Bo Carlsson; Kluwer Academic Publishers, Boston/Dordrecht/London, 1989).

This paper by Dahmén is of particular interest because it relates most

significantly to the purpose of the conference which was to define the subject matter, research issues, and theoretical framework of the previously undefined field of Industrial Dynamics. The basic concern was that Industrial Economics as traditionally defined had become too narrowly focused on issues of public policy towards enterprise with emphasis on antitrust and regulatory policy, leaving out a number of interesting and important questions about how industries evolve over time, what the role of technological (and organizational) change is in that process, and the associated structural changes within industries and firms.

There are four main themes of Industrial Dynamics, namely

- (1) the nature of economic activity in the firm and its connection to the dynamics of supply and economic growth;
- (2) the boundaries of the firm, the degree of interdependence among firms, how these change over time, and what role this interdependence plays in economic growth;
- (3) the role of technological change and the institutional framework conducive to technological progress; and
- (4) the role of economic policy in facilitating or obstructing adjustment of the economy to changing circumstances.

Clearly, these themes have many similarities with the Dahménian approach. In order to see that more plainly, it may be useful to summarize briefly the basic elements of the Dahménian approach as they emerge in the two essays presented in this section:

1. *Transformation.* Dahmén focuses on the *content* of the economic development process rather than on its aggregate result, macroeconomic growth. This is closely connected to the idea of the “fallacy of aggregative thinking”: aggregate indicators of economic activity are often misleading in that they hide the variety of underlying microeconomic driving forces; without that variety, the dynamism of the economy is lost. Also, without identifying the variety of driving forces, the observer is less likely to make a correct assessment of the state of the economy.

2. *The role of entrepreneurial activity.* It is micro units (entrepreneurs and firms or similar organizations) which generate and respond to business opportunities and thus create economic activity. It is they who possess *development potential* (or power). This potential is based on *innovative activity* which creates business opportunities (“positive transformation pressure”) at the same time as it causes adjustment problems (“negative transformation pressure”) for existing businesses in a process of Creative Destruction. The greater the economic importance of an innovation, the more transformation it causes; its potential can be fully exploited only if the necessary complementary changes take place, i.e. if a development block is formed. The develop-

ment potential of the economy depends on the number and the degrees of completion of the *development blocks* within it.

3. *Financial elements (or the Wicksell connection): the micro-macro links.* Following Wicksell, Dahmén distinguishes between the “real” or “natural” rate of interest (reflecting expectations as to the return on investment, planned or considered) and the “money” rate of interest (i.e. the borrowing rate). Differences between these create expansion or contraction of the economy. This provides both a connection between cyclical and structural development in the economy and a link between micro and macro analysis.

4. *Economic policy aspects.* Economic policy may help or hinder economic activity (e.g. investment or the formation of development blocks) but it cannot create it. For example, subsidies can alleviate negative transformation pressures, but only at the cost of curtailing the development potential of other development blocks. Similarly, a currency devaluation creates short-term profits but hinders resource reallocation in the longer term. Thus, in Dahmén’s view, economic policy creates “ripples on the surface”, whereas the development potential is created by micro units and their interaction.

5. *Research methodology.* Dahmén’s approach calls for a combination and cross-fertilization of economic theory, statistics, business economics (or management), and economic history: in order to understand *causality*, it is necessary to establish, with the help of economic theory, the historical facts, not just their “exterior surface” represented by macroeconomic statistics but also the microeconomic content below the surface and the “empirical regularities” or “laws” governing the economic system.

The similarities between these two sets of research topics are striking. The language may be different, but the main thrust is almost identical. While the similarity is certainly no accident, neither is it a foregone conclusion. It is fair to say that it did not cross my mind in organizing the conference and launching the “new” field that this could be seen as an effort to promote the Dahménian approach, nor was I aware that Erik Dahmén had previously used the term “Industrial Dynamics”. But if, in the process, his work was indeed promoted, it would certainly be a welcome result. Whether or not this was a successful launch of Industrial Dynamics is still too early to tell, but it is clear that Erik Dahmén has contributed a major part of the thinking behind it. The somewhat embarrassing truth is that prior to the work on the present volume I simply had not thought of Dahmén’s scientific contribution as a systematic *approach* or *research program* but rather as representing deep insight into the industrial transformation process in Sweden, as a challenge to conventional macroeconomic theory, and as an example of how economic analysis ought to be done.

Among the things I have learned from Erik Dahmén is that economic analysis can and should be useful in understanding events and phenomena in

the real world involving real people of flesh and blood, real institutions, and particular geographic localities, all in real historical circumstances and not removable therefrom. Therefore, it should not be primarily concerned with generalizations based on abstract mathematical models. Although such models can be useful as a complement to causal analysis – which is also the position of Dahmén – they should not be an end in themselves.

Industrial Dynamics does in fact owe a great deal to Erik Dahmén. He is certainly a precursor, but his role goes far beyond that. It is not easy to trace the origin of all the various elements, particularly since it has been a 15-year learning process primarily involving conversation and joint writing rather than reading. Just as was the case with the 1979 study (*Teknik och industristruktur*), it is only with hindsight that Dahmén's influence can be identified. Certainly the emphasis on transformation (i.e. the content of industrial development) as distinct from aggregate growth, the focus on entrepreneurial activity and its content, on linkages among firms in the form of development blocks and between microeconomic behavior and macroeconomic results, and the role of institutions (both organizations and “rules” of the economic game), including financial institutions, can be traced to Dahmén. Directly and indirectly he has inspired much of the work and given gentle guidance and encouragement. I anticipate that a closer study of his works will reveal even more of importance to Industrial Dynamics. Actually, as a young field, it is still in a bit of flux. Certainly Dahmén's work suggests some possible future directions.

I suspect I am not alone in not until recently having seen, clearly and systematically, the full significance of Erik Dahmén's scientific contribution. Among the reasons for this are the sheer volume and variety of his research – a complete bibliography of his writings would include more than 500 items – his consistent emphasis on empirical work, his low-key and practical approach to presenting theory, and the fact that it is only in the last few years that he has presented his work as “theory” rather than empirical research. Perhaps if he had interacted more with economists in other countries during the 1950s, 60s and 70s, and if he had taken a more active role in international conferences and published more articles in international journals, he might have been stimulated to articulate his theory more clearly and concisely – and as a result his impact on economic research both within and outside Sweden might have been even greater.

B.C.

# Schumpeterian Dynamics

## Some Methodological Notes<sup>1</sup>

Erik Dahmén

The main purpose of this chapter is to define “Schumpeterian dynamics” and to indicate how it can serve as a basis and starting point for studies in development economics irrespective of how Schumpeter used his general approach and what kind of hypotheses he launched. Schumpeterian dynamics is characterized by its focus on economic transformation. This implies that the main interest is in causal chains outside the scope of macroeconomic growth analyses, namely in disequilibria and chain effects created inter alia by entrepreneurial activities, market processes and competition as a dynamic force. The micro underpinnings of such analyses therefore differ from those of growth models which deal with aggregates, such as investments and saving, productivity, income distribution, wage shares in value added, and capital/output ratios. Seen through Schumpeterian glasses, the micro units have no well-defined generalizable “propensities”, and they are not fully informed calculators reacting in a mechanical way to prices that they cannot influence. Instead, firms continuously seek new information and often search for projects which, if carried out, exert transformation pressure on the markets. Consumers can also actively influence firms and markets and do not only passively react to supply prices. Transformation analyses should not replace macroeconomic growth models, but a change of roles is called for. Such analyses have too long and too often been regarded as empirical complements to growth analyses and therefore as belonging mainly to the domain of economic historians. The stress on “complement” instead of “alternative” implies that some sort of a synthesis should be sought in theoreticals well as in empirical research.

### 1 Introduction

The main purpose of this chapter is to define “Schumpeterian dynamics” and to indicate how it can serve as a basis and starting point for studies in development economics irrespective of how Schumpeter used his general approach and what kind of hypotheses he launched. “Basis” and “starting point” should be stressed because by developing his conceptual framework areas can be opened up for theoretical and empirical research which so far have been covered only to a comparatively small extent. One of these is the dynamics of decentralized market economies. Particularly in view of what has happened in mixed economies in recent decades and especially in view of frustrating policy

<sup>1</sup>[This text is reproduced from *The Dynamics of Market Economies*; edited by R.H. Day and G. Eliasson (1986), pp. 181–190. The paper was originally presented at the IUI Conference on the Dynamics of Decentralized Market Economies, August 28–September 1, 1983 and has also been published in *Journal of Economic Behavior and Organization*, 1984, Vol. 5, pp. 25–34.]

experiences it is worth raising the question whether important aspects of economic developments, particularly those connected with networks of micro-macro links, have been too much neglected in mainstream theoretical and empirical research. If the answer is in the affirmative, it is timely to emphasize Schumpeterian dynamics which is concerned exactly with the micro-macro links. It also offers great flexibility to explore a broad range of historical and social science issues.<sup>2</sup>

## 2 Transformation

Schumpeterian dynamics is characterized primarily by its focus on economic *transformation* rather than on economic growth, defined as an increase in “national product”, “capital stock” and other related broad aggregates. It contrasts not only with Walrasian macroeconomic equilibrium theory but also with neoclassical and postkeynesian macroeconomic growth models. Though “dynamic” according to generally accepted terminology such models do not analyze underlying processes at the micro level and in markets but instead relations between a number of broad aggregates and the result of such processes. This means that changes and disequilibria at micro levels as well as the processes they depend on and give rise to (besides smooth equilibrating adjustments) are left out. They therefore differ from Schumpeterian dynamics even in cases where statistics are disaggregated to give a more detailed picture of facts.

The following phenomena create pressures that are bound to bring about *transformation*:

- Introduction of new methods of producing and of marketing products and services.
- Appearance of new and marketable products and services.
- Opening up of new markets.
- Exploitation of new sources of raw materials and energy.
- Scrapping of “old” methods of producing and marketing products and services.
- Disappearance of “old” products and services.
- Decline of “old” markets.
- Closing of “old” sources of raw material and energy.
- Formation of new “institutions”, i.e., political and organizational struc-

<sup>2</sup>Due to its purpose the paper does not deal with what Schumpeter may have meant on points where there are, or seem to be ambiguities. Nor does it discuss who influenced his thinking. It does not even bring up his theory of business cycles and long waves with its integrated credit theory of money or his vision of the future of capitalism. Such subjects are of course interesting and have recently been dealt with by many writers, but they are less important for the purpose at hand than methodological aspects of Schumpeter’s general approach and conceptual framework.

tures and systems, legal framework and compliance procedures, patterns and importance of organized interest groups etc. Even political ideologies and social norm systems are sometimes so deep-rooted that it may not be farfetched to let them be covered by the concept of “institutions”.

- Scrapping of such “institutions” after a usually rather long period of tension between them and technical and economic changes.

Transformation thus includes both economic growth and decline but a conceptual distinction is instrumental. This is because transformation analyses focus on causal chains outside the scope of growth analyses namely on disequilibria and chain effects created inter alia by entrepreneurial activities, market processes and competition as a dynamic force. The micro underpinnings of such analyses therefore differ from those of growth models where the main interest is in aggregates, such as investment and saving, productivity, income distribution, wage shares in value added, and capital/output ratios and things like that. Seen through Schumpeterian glasses, the micro units have no well-defined generalizable “propensities”, and they are not fully informed calculators reacting in a mechanical way to prices that they cannot influence. Instead, firms continuously seek new information and often search for projects which, if carried out, exert transformation pressure on the markets. Consumers can also actively influence firms and markets and do not only passively react to supply prices.

What has now been said should not be taken to mean that transformation analyses ought to replace macroeconomic and neoclassical growth models. Such models, though according to Schumpeter “flimsy structures based on arbitrary assumptions”, should be seen as complements to transformation analyses. This would mean an appropriate change of roles because transformation analyses have too long and too often been regarded as mainly empirical complements to growth analyses and therefore as belonging mainly to the domain of economic historians. The stress on “complement” instead of “alternative” implies that some sort of a *synthesis* should be sought in theoretical as well as in empirical research. Transformation analyses give insights into really dynamic developments but macroeconomic and neoclassical models are important for understanding other aspects. Furthermore, there are such things as “fallacies of composition” which macroanalyses are designed to avoid. On the other hand macroanalyses run considerable risks of missing important points and even of misreading actual events.

### **3 Fallacies of Aggregative Thinking**

That “fallacies of composition” can be avoided by macroeconomics is too wellknown to need exemplifying. I shall instead draw attention to some “fallacies of aggregative thinking” as an introduction to the presentation of some

examples of Schumpeterian dynamics. The choice is not arbitrary because it has been inspired by experiences from Swedish research and debate.

*Unit labor costs* (ULC) time series are often used as indicators of competitiveness. Such macroanalyses may be very misleading. ULC aggregates do not show reductions in overseas transport costs that have made foreign products cheaper than before. They do not indicate that new entry of foreign competitors performing at much *lower ULC levels* can result in rising *absolute* cost differences, even when the new competitors' *rate of increase* in ULC is faster. Furthermore, and most important, not even a smaller rate of increase in ULC than that of a group of competitors is a certain indicator of improved competitiveness, if *new products* constitute an important element of the competitiveness of foreign competitors. These examples suffice to make clear that only ULC series covering short periods and showing substantial divergencies may be reliable indicators. If transformation has changed the composition of the aggregate substantially, they are not. Schumpeterian eyeglasses do not miss such things.

Another ambiguous component of many macroanalyses is the “*terms of trade*”. A fall in prices on imported goods that are also produced at home could have an effect very different from that due to a fall in prices on imported raw materials. That is so especially to the extent that there are difficulties in reallocating resources and comparatively weak entrepreneurial spirits and dynamism. Transformation analyses focusing on rigidities, time lags and on the “supply” of entrepreneurship are not likely to miss this point.

Aggregated series of *profitability and equity debt ratios* used in connection with macroeconomic analyses make it easy to disregard the fact that business firms whose profitability has deteriorated so much that they have been forced to close down have disappeared from the statistics. Furthermore, aggregative thinking easily underestimates the gravity of deteriorating profitability and equity/debt ratios as not only bridging recessions but also renewing the production has become a more pressing task than before. Transformation analyses can hardly fail to observe such relevant circumstances.

In summing up I assert that macroanalyses are sometimes trapped by the availability of statistical series that statisticians have defined and calculated to serve traditional macro theory. In view of this, econometrics, with all its merits, has sometimes done development economics a disservice. Such risks can be reduced by emphasizing transformation and by letting macroeconomic and neoclassical models be complements to transformation analyses rather than the other way round. Unfortunately transformation analyses often have a drawback of their own, namely difficulties of getting access to adequate empirical material, all the more as this sometimes requires both interest and training in historical research on microlevels beyond the range of the great majority of general economists.



#### 4 Entrepreneurial Activity

So far this paper has sketched some general characteristics of transformation analyses. A few examples of easily misleading thinking in aggregates have been mentioned. This has been done in order to clarify a methodological point and to pave the way for some concrete examples of Schumpeterian dynamics.<sup>3</sup>

A vital role in transformation processes is played by entrepreneurial activities. To catch part of their essence it is appropriate to start with two basic definitions.

The concept of *innovation* is usually associated with more or less spectacular technological and technical advances, but experiences from actual studies in industrial development make it quite clear that the concept has to be broadened to include the multitude of small day-to-day improvements on the shop floor. The best choice is to let the classification of innovations be guided by the extension and importance of their impact on markets instead of by their degree of novelty or to what extent they help explaining business cycles. Empirical research indicates that the combined importance of a great number of minor improvements made in every-day work is often underestimated compared with that of great innovations. This may be a certain disproof of Schumpeter's specific business cycle theory but it does no harm to Schumpeterian dynamics.

Schumpeterian dynamics makes it natural to use a broad concept of "*investment*" and to actualize other causal chains than those connected with "hard" investments and their size in relation to the national product and with capital output ratios. The focus on entrepreneurial activities is bound to draw attention even to "soft" investments which should include R&D, establishing of sales organizations, marketing etc. Even purchases of other enterprises should in some cases be regarded as investments in a macro context, if the new owners are able to make combinations which could release potentially dynamic forces. This has come to play a great role in times of strong transformation pressures and tight credit markets.

Entrepreneurs often visualize "*development blocks*" of complementarities of many technical and economic varieties *ex ante* and at least parts of the blocks may be completed by one and the same entrepreneur or group of entrepreneurs, sometimes co-ordinated by financiers. The core of the dynamics often consists of concerted activities on a number of fronts by entrepreneurs, under conditions of uncertainty, with the aim of creating new markets for their products by investing and by promoting technical progress in other sectors,

<sup>3</sup>I am aware of the somewhat cryptical character of some of these examples but hopefully they may serve the purpose of hinting at what kind of analysis is characteristic of such dynamics even though no empirical evidence can be explicitly presented in this paper. There is, however, considerable evidence available based on studies in Swedish and Finnish industrial development.

thus achieving various linkage effects. Equilibrium on subaggregate levels, encompassing parts of the economy, may be reached through an expansionary process, if complementary new techniques are found and introduced and/or specific investments are made. This, however, has nothing to do with mechanisms establishing general equilibrium by optimizing the allocation of given resources.

Development blocks work as expansionary forces through market mechanisms and illustrate crucial micro-macro links. Shortened time horizons and lack of finance occasionally may have depressive effects because parts, already in existence, of “uncompleted” blocks may be unprofitable. Usually, however, this is a temporary phenomenon which incidentally might offer good opportunities for those who dispose of sufficient capital. Central planning of development blocks whereby micro units are supposed to coordinate their efforts often fail because market mechanisms are not allowed to play their decisive role. Decentralized information structures characteristic of market economies are usually more effective in “block building”. It is also more correct to say that infrastructures which often constitute parts of blocks have usually developed in response to market pressures than to argue that infrastructures have generally initiated market processes.

More often innovations in certain sectors and branches without any vision of a development block *ex ante* bring about “structural tensions” which are observed *ex post* in the markets as an opportunity by actual and potential entrepreneurs. In such cases entrepreneurship consists of “gap filling” within the framework of a *development block ex post*. Also such “gap filling” by activities not co-ordinated *ex ante* often require a two-way traffic between economic and technical progress. It is far from always a matter of making use of existing knowledge of technical possibilities, in other words of available technology, nor of an “arbitrage”, profiting from chances of equilibrating price and cost relations. What often carries the weight is to respond to uncertain opportunities by active search.

Without causing “structural tensions” innovations often give rise to important changes and chain reactions outside sectors where they originally appear. New technology and new techniques and not least new materials often find applications never visualized from the outset of those having introduced them within their sectors of activity. Such novelties therefore may have potentials not only for solving already known problems but also for actualizing possibilities not envisaged before. In such cases entrepreneurs often are decisively active but what it is all about is far from always a cashing in of profits from what one has just discovered. Newly acquired knowledge may stimulate activities never imagined before. This is an interesting feature of developments in which entrepreneurs, and not only technicians and researchers, play a role.

Innovations not only create chain effects through an interplay between, on the one hand, technological and technical progress and, on the other hand,

further entrepreneurial activities which sometimes, though of course not always, are adequately covered by the concept of “development block”. They can also have a “destructive” impact that calls for adjustments primarily of a defensive character. To a certain extent this is a reaction described by neoclassical theory in that market signals give rise to adjustments which have already been known as possibilities but have not been called for until now. However, sometimes such adjustments require solutions not known to be at all possible before. In other words, it may not only be a matter of moving to a new point on a known substitution curve but more or less a necessity to explore outskirts of those actually existing and even to establish new ones. The borderline between passive reactions of a defensive nature and active search under uncertainty therefore is often blurred. This is so particularly because a search process initiated in a new situation occasionally opens the eyes to new opportunities which might bring about developments not at all related to the original need of adjustment. Creation may be destructive but destruction may also be creative just as criticism can be either destructive or constructive.

Another example of the possible importance of destruction for creative activities is that rigidities and delays, possibly increased by government subsidies, or by other ways of throwing good money after bad money, in scrapping obsolete production capacities are bound to tie up capital and labor that could be used elsewhere in a more productive way. It is less observed that potential entrepreneurs might be “locked up”. Thus even the supply of human capital, represented by entrepreneurial talents, is reduced. The history of industrial development offers many examples of shut downs and lay offs leading to starts of many new enterprises. Stick and carrot have worked together.

Measuring and analyzing transformation *pressures* in relation to *actual* transformation can result in insights into the viability of markets and the adaptability of the economy, thus making it natural to pay attention to “institutional” circumstances and economic policies of more or less decisive importance.

Transformation processes are often based on a two-way traffic between producers and customers in developing new or improved products and services. Even here it is a matter of contacts not only outside the realm of general macroanalyses but also of another kind than those enlightened by neoclassical micro theory. The extent to which initiating dynamic forces represented by entrepreneurial activities are located on the producer side or on the user side is of course different in different branches and changing from time to time. Such differences and changes cannot be found by observing aggregated series of productivity increases in the different branches. One has to step down to micro levels.

This lastmentioned point is partly related to the fact that entrepreneurs are active also in market processes where price changes, i.e., signals from markets

as shown by neoclassical theory, far from always dominate the picture. Particularly in recent decades when all distances have been radically shortened thanks to improved communications in a broad sense, and not least because of recent technical trends in industry, many networks exist which connect firms and groups of firms and which make the importance of traditional market signals somewhat less important and persisting price disequilibria a relevant subject of research. This phenomenon is most common within big transnational business enterprises but has appeared on broad fronts even outside them. It should not be mixed up with organized monopolies and cartels because it has to do with other forms of cooperation and coordination.

This sketchy picture of some essential ingredients of Schumpeterian dynamics should not be allowed to give the impression that what may be named primary innovations, including their most discernible chain effects, usually play a dominating role. Rather another impression should be taken to heart, namely, first, that mostly not much is to be gained by attempts to use a distinction between primary and induced innovations and, second, that Schumpeterian dynamics should not mainly be regarded as a business cycle theory. What is important is its enlightening of transformation processes as such. In Schumpeter's basic model primary innovations, appearing on the scene as "Deus ex machina", are the important thing and are also creating the business cycle. But by using his general approach to the study of economic developments in causal analyses, numerous important aspects can be brought into focus. These aspects call for theoretical and empirical research in which in the first place general economics, business economics and economic history could be merged.

The focus on transformation is bound to give *financial* aspects of transformation processes, touched upon only in passing in the foregoing, an important place in development economics. Aggregative thinking in terms of "investment" and "saving", representing quite different micro-macro links, is of much less use in this respect, particularly when it implies concentrating on the importance of general demand in a macro context. What really matters is that entrepreneurs can dispose of money to reallocate productive resources, inter alia by making innovations. This is one reason why in Schumpeterian dynamics the focus is on *credit creation*. Credits are created by financial micro units and extended to industrial micro units in many different ways and under many different conditions which together with the supply of venture capital, possibly self-financed, directly and indirectly play a decisive role in all development processes, inter alia in connection with development blocks. A liquidity squeeze and tight credit markets may lead to shortened time horizons which in turn could change uncompleted blocks from being expansionary to being crisis creating. Thus, institutional arrangements are of decisive importance. Primitive institutional arrangements may prevent saving from resulting in consumption or real investments, whereas institutions efficient in establish-

ing connections between savers and investors as well as in creating credit can be efficient also in promoting transformation processes.

## 5 Wicksellian Considerations

There is one macro model that is well suited for being not only a complement to transformation analyses, as are a number of growth models, but also for having the financial sphere integrated with such analyses, namely Knut Wicksell's construct to explain long waves in general price levels. Expectations as to the return on planned, or at least seriously considered, investments are regarded as one of the decisive factors for actual investments.

In Wicksell's terminology such expectations constitute the "real" or "natural rate of interest". The other decisive factor is the loan rate ("the money rate of interest") which also influences saving rates. The model can explain cumulative expansionary and contractive processes and integrate them with the banking system's capacity of both credit creation, bridging a disparity between investment and saving, and credit contraction. Later this model was developed by others as an important part of some business cycle theories. To my knowledge nothing has so far been done to adapt its main concepts and contents to development economics. The following tentative lines of thought to that end or, more exactly, to merge Wicksellian dynamics with Schumpeterian dynamics, could possibly be promising.

The "real rate of interest" (n.b. not to be mixed up with the deflated nominal rate of interest) clearly is an "entrepreneurial" concept, sometimes connected with ideas of prospective innovations and possibly also with development blocks *ex ante* and chances of steps towards finishing uncompleted blocks *ex post*. As ingredients of a monetary theory, "the real rate of interest" and "the money rate of interest" as averages are sufficiently instrumental. To be helpful in transformation analyses they are not. In Schumpeterian dynamics it is not averages that count.

In reality, there is of course a wide spectrum of "real rates of interest". The spread is relevant for the character and impact of "transformation pressures" and actual transformation, the later being influenced by differences in reallocation capacity as determined both by swiftness in adjustments and by the institutional regime for entrepreneurial activities.

The "money rates of interest", constituting the twin factor determining actual investments (as they together determine the "difference rate of interest") are also numerous though fewer than the number of "real rates of interest". This is particularly so considering that different conditions for disposal of capital could be translated into "shadow interest rates", thus widening the spectrum of relevant rates compared with that constituted by the announced ones. Thus even here it is not averages that count.

In sum: *pattern* and *flexibility* of "real rates of interest" and "money rates

of interest” are of great interest in transformation analyses.

It is interesting to notice that in Wicksell’s monetary theory the “money rate of interest” had no direct influence on the “real rate of interest”. This was challenged by maintaining that lowered “money rate of interest” in relation to the “real rate of interest” could be expected to have a depressive effect on the latter as the ensuing increase of real capital formation is bound to lower the marginal productivity of capital and thus sooner or later also “the real rate of interest”. This was of course a typical neoclassical remark. With Schumpeterian eyeglasses one should rather contend the opposite. Lowered “money rates of interest” and increased availability of capital can be supposed to have a positive effect on the “real rate of interest” because it will make it possible and attractive for many entrepreneurs to lengthen their “time horizons”, and to widen their search for promising projects. And conversely: more expensive and less available capital is bound to force many entrepreneurs (or make them inclined) to shorten their “time horizons”, thus reducing the likelihood of finding such projects. Furthermore, long-term commitments are reduced and immediate and small adjustments are preferred to more time-consuming and far-reaching ones. It goes without saying that the monetary as well as other more general policy implications of these observations is quite another issue.

The following empirical evidence gives an example of what can be observed through a combination of Schumpeterian and Wicksellian dynamics: During the first two decades after World War II “real rates of interest” were generally high in most industries. Some of them were very high and few were low. The reasons for this are many and wellknown, particularly in retrospect. The “money rates of interest” were generally low for two main reasons, namely the fact that inflationary expectations were no yet widespread and deep-rooted and furthermore because fiscal policies were relied upon in stabilization policy whereas monetary policy was not à la mode. Since the late sixties and particularly during the seventies the “real rates of interest” declined in many industries, even this for a number of wellknown reasons, where the “money rates of interest” were stepped up, very untimely in view of what had begun to happen with the “real rates”, due to persisting inflationary expectations, declining efficiency of fiscal policies and a renaissance of monetary policy. It is no wonder that the result was a slowdown of economic transformation and growth, especially as there were also increasing rigidities in resource reallocation. Further down the road it became clear in many branches and firms that the deteriorating availability of appropriate capital at an attractive price due to declining self-financing possibilities, short supply of venture capital and tight credit markets had a depressive impact on many “real rates of interest”.

# **‘Development Blocks’ in Industrial Economics<sup>1</sup>**

**Erik Dahmén**

## **I Introduction**

The concept *development block* refers to a set of factors in industrial development which are closely interconnected and interdependent. Some of them are reflected in price and cost signals in markets which are noted by firms and may give rise to new techniques and new products. Some of them come about by firms creating new markets for their products via entrepreneurial activities in other industries. This, too, may include the creation of new techniques and new products. In both cases, incomplete development blocks generate both difficulties and opportunities for firms. This analytical approach can contribute to closing the gap between micro and macro analysis.

The presentation here is arranged as follows: The first section explains to what kind of analytical framework the ‘development block’ concept belongs. This concept is then defined, differentiated and related to others within the same framework. The definitions and differentiations have been derived from studies on industry and trade with the ambition to strike a balance between, on one hand, economic history research with only little, mostly implicit, theory and, on the other hand, very explicit theory with empirical data being used mainly to test more or less sophisticated models. There will be no attempt to outline a ‘general theory’ which could possibly be tested empirically, i.e. by econometrics, but instead sort of a tool-box with analytical instruments, including the development block concept, which have proved useful in historical analyses. In a second section examples are given of Swedish industrial developments which have been analyzed and interpreted with such a tool-box. In the final section it is demonstrated how the results may be helpful in perceiving possible effects of various economic policies. It is argued that the macrotheoretical basis of economic policy measures has a drawback in its insufficient microunderpinning worthy of the name industrial economics and even less of being labeled industrial dynamics.

## **II Theoretical Approach**

### **Transformation Analyses**

The first thing to observe in order to grasp the aim and suitability of the development block concept is that it belongs to a different kind of analysis than

<sup>1</sup>[This text is reproduced from *Industrial Dynamics, Technological Organizational, and Structural Changes in Industries and Firms*, edited by Bo Carlsson (1989), pp. 109–122. The paper was originally presented at the Workshop on New Issues in

the theoretical constructs which have long been well established in economic literature and which still dominate the textbooks. It belongs to what I have chosen to call 'Schumpeterian dynamics' and is conceived as the cornerstone of much industrial economics.<sup>2</sup> This is because here the interest is in the *transformation* of industry and trade, i.e. neither in optimal allocation of given resources nor in the main subjects of general macroeconomics, i.e. business cycles, employment and price levels. It also differs from theories of economic *growth* which have a neoclassical or traditional macrotheoretical basis. Their equilibria and disequilibria are something very different from what is focused upon in 'Schumpeterian dynamics'.

Putting transformation in the center means focusing on what is changing the contents of broad aggregates. The interest is in *changes through time within and among micro entities*. Such changes, being much of the essence of *industrial dynamics*, imply disequilibria which should not be called disturbances because they are essential in transformation processes.

The following examples of transformation should be sufficient to pave the way to the next analytical steps:

- Introduction of new methods of production and marketing.
- Appearance of new and marketable products and services.
- Opening up of new markets.
- Exploitation of new sources of raw materials and energy.
- Scrapping of 'old' methods of producing and marketing products and services.
- Disappearance of 'old' products and services.
- Decline and fall of 'old' markets.
- Closing of 'old' sources of raw material and energy

A characteristic feature of almost every transformation is a constant conflict between 'new' and 'old' things, in which *entrepreneurial activities*, implying a two-way traffic between technical – in a broad sense – developments and economic changes play a decisive role. This means that it is largely a matter of innovations and their diffusion as well as creative destruction. What happens is not only that new things with lower prices or higher quality compete 'old' products and services out of the market. Many new things also open up previously unknown possibilities and generate new needs. Even this is bound to have consequences for other producers who may be confronted

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<sup>2</sup>I have expanded on the subject in "Schumpeterian Dynamics," *Journal of Economic Behavior and Organization* 1984:1, also published in R.H. Day and G. Eliasson, (eds.), 1986, "The Dynamics of Market Economies", IUI, Stockholm (see this volume, pp. 126–135).



with a more or less pressing necessity to adapt to new market situations due to actual or expected changes in raw material prices and wages or to the fact that people have become induced to spend money on the new products or services instead of on the 'old' ones.

A transformation process usually has its center somewhere between two extreme situations. One of them is dominated by *opportunities* to generate new fields of activities and thus to contribute to a restructuring of industry and trade. If so, the transformation pressure is labeled *positive*. The number and importance of such opportunities and the extent to which they are seized depend i.a. on the quality of entrepreneurship as well as on 'institutional' factors such as the characteristics and functioning of labor and capital markets.

A situation might also be dominated by a more or less strongly felt *necessity to adjust and to adapt*. Here losers in a conflict between 'new' and 'old' things are numerous and in many industries possibly in a majority, namely if the winners happen to be foreign producers. How such a negative transformation pressure is handled, i.e. how efficiently the ensuing economic problems are dealt with, is likewise dependent on entrepreneurial qualities and institutional circumstances.

#### **'Structural Tension' and 'Development Block' – Basic Definitions**

It is now appropriate to introduce two operational concepts. Both refer in one sense or other to *complementarities* among technological, economic, and other related factors. Such complementarities appear in many different forms as important elements of industrial dynamics.

Economic success at certain stages in a development process might require the realization of one or more specific complementary stages. This implies development potentials. It may lead to a depressive pressure in stages which are 'premature' as long as the complementary ones are missing. This represents a 'structural tension'.<sup>3</sup> This, in turn, means that the development potential will be released as soon as the missing stages have come into place or are expected to do so before long. The 'premature' stages thus could be stimulants of entrepreneurial initiatives.

<sup>3</sup> In order to introduce the reader immediately to the basic essence of the concept, the following example from the history of the British textile industry may be appropriate: Once the flying shuttle had come into use in the 1730s, there emerged an acute shortage of yarn. This induced a number of inventions and innovations in spinning shortly after 1750. These were so radical in nature that the weaving technology now fell behind. As long as this technology did not catch up with that in spinning, the spinners were plagued with serious overproduction problems. The invention of the mechanical loom toward the end of the century finally created the preconditions for balance among the different stages of production in the textile industry.

Such a tension may be fundamental in that nobody in a position to act knows how to solve the problems involved, i.e., those related to technology, applied techniques, production organization, marketing, customer service, etc. A retardation in eliminating a structural tension may, however, also be a more trivial matter of time lag due to the simple fact that many measures taken by those who think they know how to go ahead necessarily are time consuming. Or it may be caused by institutional factors such as resistance of groups with vested interests, monopolies, government regulations and legal framework.

The focus on complementarities and structural tensions makes the '*development block*' concept fall into place. It refers to *a sequence of complementarities which by way of a series of structural tensions, i.e., disequilibria, may result in a balanced situation*. A metaphor may be helpful in making clear at least part of this concept:

After a primary underground stage, creating a growth potential, a plant starts growing above the ground whereas for the time being nothing happens below the soil. After a time this leads to an unbalanced situation which stops the growth but makes the root system enter a secondary stage of development. This, in turn, results in a new lack of balance between growth potentials and actual growth. This sets off a renewed growth of the plant. Such a biological '*development block*' ends up in a stable balance when the plant is capable of shedding new seeds. This metaphor could be extended further if it is recognized that the speed and quality of the process are to a great extent genetically programmed but also dependent on the quality of the seeds and the soil as well as on weather conditions. If one stage of the process is decisively hampered, the other stages are doomed to wither away. The two analytical concepts, '*structural tension*' and '*development block*', have proved useful in giving substance to transformation analyses. Together with the distinction between two kinds of transformation pressure, they also have certain economic policy implications.

### **Some Theoretical Elaborations**

Suppose that a considerable number of powerful development blocks have been interrupted by a cyclical, i.e. by definition temporary, downturn, involving a shortened time horizon among lenders and investors and thus also by tight credit and capital markets. A coming upturn coupled with less tight such markets is then likely to release the development potentials and therefore to be followed by a comparatively swift expansion, dominated by a positive transformation pressure. A considerable development power can be expected, especially if the general environment for entrepreneurial activities is favorable. This would insert strong cumulative elements into such an expansion.

Suppose, on the other hand, that the number of powerful development blocks is small. Particularly if there is also a considerable negative transformation pressure, a business downturn is likely to be deep and lasting and the chances of a following rapid cyclical expansion rather poor. Industry and trade may be internationally competitive, perhaps due partly to a recent devaluation, but has in this case only a comparatively weak development power. The distinction between the static concept 'competitiveness' and the dynamic one 'development power' is essential.

Important aspects of the decisive role played by entrepreneurial activities can be illuminated by a closer look at their role in promoting development blocks. This role is being played in two main ways which should be kept strictly apart in theory but are far from always easy to separate in empirical studies.

Uncompleted blocks are usually indicated by price and cost 'signals' on various markets. This could mean low current profits – or even losses – in some areas but also promising prospects, if the steps necessary to complete the blocks are within reach. Less anonymous impulses may also come via networks of relations and contacts outside what theoreticians call a 'market'. In both cases the challenge is in 'gap filling' which tends to eliminate structural tensions but may also lead to new tensions by overshooting, as technical and other solutions sometimes run ahead of the immediate goal. They both represent a development block *ex post*. It should be observed that this 'gap filling' which usually implies a two-way traffic between economic and technical progress far from always is a matter of making use of knowledge about already existing possibilities but of responding to signals by active search.

This kind of development block *ex post* is well-known among historians and economic geographers who, however, are rarely inclined to make explicit use of theoretical concepts other than neoclassical ones which are far from sufficient to capture industrial dynamics. This means that they do not take advantage of opportunities to make the kinds of micro observations which are essential in building macrotheories of economic development. Less well-known are cases where entrepreneurs visualize development blocks *in advance* clearly enough – at least in their own perception – to make them act. If they do so, there are two main alternatives.

At least part of a block may be completed by a single entrepreneur or group of entrepreneurs, possibly supported and/or coordinated by financiers. The core of the dynamics involved in such development blocks *ex ante* then is in concerted activities on a number of fronts. The aim is to make products and services saleable by initiatives to find new technical solutions and to invest, or make others invest, in other sectors of the economy. This is not a matter of responding to actual market signals but instead of *creating* markets by coordinated entrepreneurial activities which go far beyond advertising, conventional sales promotion and marketing.

The same kind of development blocks *ex ante* may be brought about even

without coordinated activities by a single entrepreneur or group of entrepreneurs, namely purely on the basis of knowledge about technical advances somewhere else and/or about investments made, or planned, by other enterprises or by government institutions. In such cases, networks of business and other contacts and relations may play a particularly important role.

### **III Empirical Evidence**

In this section, a few examples, taken mainly from research on Swedish industrial development during the Interwar Period, are given of the application of the approach presented above.<sup>4</sup> I begin with some examples of tensions which have had no development blocks – in the sense described above – attached. These are nevertheless characteristic of what often happens in the course of a transformation process.

The diffusion of an innovation sometimes led to economic difficulties because the market was too narrow for a large number of enterprises, including both pioneers and followers, resulting in excess capacity. The fact that several engineering industries in the late 19th century struggled with poor earnings was in many cases due to such imbalances. However, sooner or later these imbalances were dissolved as the most unprofitable plants, i.e. those having proved to be malinvestments, i.e. investments which turned out to be unprofitable, were scrapped. World War I and in particular the following two inflationary years led to a wave of investments which were sometimes markedly speculative and often financed by large loans. Many of these did not survive the following deflation and deep depression. This made entrepreneurs, investors and bankers careful in the following years of the 1920s. Overinvestment was therefore by and large absent during that period. This contributed to making the depression in the early 1930s rather different from the earlier one.

In the 1920s, another kind of tension appeared as a profit squeeze among innovating firms. This was because many non-innovating enterprises carried on in the innovators' shadow without normal depreciation charges as well as without reinvesting – as long as plants and equipment were not physically worn out. This happened, for example, in the furniture industry. Such delays in the creative destruction process were rather common in many industries in the 1920s when numerous innovations within Sweden as well as abroad were introduced and started to exert a negative transformation pressure.

In the early 1930s the great majority of enterprises which had managed to carry on for long got a final blow by the deep depression and a general credit

<sup>4</sup>Most results of later research, mainly on more recent industrial developments in Sweden and Finland have, in so far as they have been at all published up till now, appeared only in Swedish and, in some cases, in Finnish.

squeeze. The positive side of this was that the situation for other enterprises improved.<sup>5</sup> The liquidation process in the beginning of the 1930s and the end of the negative transformation pressure happened to coincide with many innovations of the 1920s which had started development blocks with considerable potentials both within and outside the manufacturing industry. Some of these had important geographical aspects, i.a. those connected with electrification of the countryside and the use of trucks and buses as means of transportation. Particularly as the late 1920s had not given rise to many malinvestments, this coincidence of interrupted development blocks and a disappearing negative transformation pressure had important consequences in the years to come. This will be commented upon in the last section of the chapter.

In the following, some examples of structural tensions with development blocks clearly attached will be given. The presentation starts on a micro level with some examples of mostly economic-technical complementarities mainly within enterprises and then moves to the 'meso' – or microstructural – level which means focus on the interplay between enterprises. Finally a somewhat broader socioeconomic context will be considered. The main perspective throughout is the focus on structural tensions and development blocks.

Illustrative structural tensions with development block attached can be found in the history of the Swedish steel industry. In the 1870s, as long as converter techniques were more advanced than blast furnace techniques, it was not yet advantageous to introduce ingot steel. It proved to be impossible to get sufficiently large quantities of pig iron at profitable prices to feed Bessemer converters or open hearth (Martin) furnaces. This problem was solved by substantial advances in blast furnace techniques which were searched for and found under the influence of this structural tension.

There appeared also another structural tension. Although the Bessemer process was especially appropriate for most Swedish ores, and the fuel consumption was little more than half that of the Lancashire hearths, it still took many years before the Bessemer metal was produced in big quantities. One rather trivial reason in addition to that already mentioned was that the new process required expensive equipment and was therefore not suitable for small works with low levels of production. A more interesting reason was connected with market conditions and related to technical and organizational factors. The Bessemer process was not suited for producing bar iron. This did not constitute a definitive obstacle, but a significant expansion of the iron and

<sup>5</sup> It is interesting to compare the creative destruction of the 1920s and early 1930s with what happened in the 1970s when very big subsidies led to a long delay in accepting the consequences of a widespread negative transformation pressure. Contrary to what was the case in the interwar period, when there were practically no subsidies at all, this meant that resources of capital and labor were engaged in enterprises having neither competitiveness nor any development power. A structural tension which had almost no potential dynamic elements was maintained for several years.

steel industry could be attained only by producing something other than bar iron. However, the world demand for such products was rather limited. The problem was that Sweden had scarcely exported any other form of iron than bar iron and wrought steel. It was necessary, therefore, at the same time as the transition was made to the Bessemer process, to start production of new steel products and/or products with considerable steel content. Thus, besides the technical problems there was the additional problem of finding markets. This structural tension was both a threat and a challenge. When it had been resolved, a new and successful era started for Swedish steel – and lasted almost a century. In the 1950s, a strong development block emerged with shipping and shipyards as components. This block began to fall apart in the late 1960s. This resulted in a severe negative transformation pressure which spread to other industries as well.

The 1880s were characterized by negative transformation pressures in many areas of the economy. It was a period of destruction – but a creative one in the sense that there were also early stages of many strong development blocks, including railways and building activities in growing cities. However, these blocks were not yet general and widespread enough to be of importance to the economy as a whole, at least not to a degree sufficient to fully neutralize the negative transformation pressure.

In the course of the 1890s the scene changed dramatically. Many of the ‘old’ areas which had suffered most had been definitely destroyed or had managed to adapt. The development blocks of the 1880s had gained full speed not only in areas of some importance already in the 1880s but also in new ones, such as those in steel mentioned earlier – now including new big iron ore mines and many young engineering branches. There were also some strong ones in the forest industries. Although technical and market preconditions existed to permit rapid growth in sawmilling and pulp industry, the actual development had been retarded by the time consuming process of clearing river channels and extending them to provide floatways for timber. This complement was by and large attained in the 1890s and early twentieth century. A typical example of an *ex ante*-block that was now in its most dynamic phase is found in the cement industry. An innovation producer had run into problems as long as the use of cement had not become widely known. Advertising and other forms of sales promotion had not proved sufficient to create a market. The management therefore tried, and managed, to induce innovation and development in concrete products industries and went directly into construction activities in which cement was required.

In the beginning of the twentieth century some of the most important blocks had reached a certain balance in response to what had happened in the steel, engineering, textile and forest industries. At the same time, one of the most important new blocks which had been initiated by earlier innovations had reference to electrification.

The Swedish General Electric (ASEA) which had specialized in electrical machinery and equipment faced a crisis similar to that experienced by the cement producer. It was solved partly by promoting, incidentally at the initiative of a banker and outsider entrepreneur, technological progress and investments in a hydro-electric industry which soon became a customer of ASEA. Later more solutions were reached by expanding interests directly, or through subsidiaries, into the electrification field where power production and transmission equipment was required. Only by the completion of such development blocks was a lasting success in building up an electrical machinery industry possible. Certainly completion was not an achievement of ASEA only, and there were also ex post blocks involved, but that innovating company contributed much to its start.

Innovating enterprises producing advanced capital goods thus often had to take an active part in potential customers' business, via initiatives to develop their production techniques. Sometimes they also had to engage in entrepreneurial activities outside their own industries. For obvious reasons this was not as frequently the case among enterprises producing consumer goods. But here, too, there were structural tensions and development blocks worth mentioning.

Innovations and their diffusion could meet with difficulties because of limited local or regional markets. As long as communications were underdeveloped, many industries were unable to sell their products beyond the border of fairly narrowly circumscribed areas. Such a situation was typical for most sawmills, brickyards, flour mills and bakeries. In small places the extent of the market was usually insufficient to carry high capital costs. It is significant that steampowered saws were first introduced in sawmills which were already in a position to enter export markets. Most of the enterprises in the other industries had to wait for a growing local or regional market and, more often, for a market widening thanks to improved communications and transport facilities – a business in which they were sometimes directly involved. A closer study of this kind of tensions reveals a great many other cases in which communication and other forms of infrastructure were involved. Some railroads were originally built for transporting sawmill products. Continued development was retarded by lack of profitable freights until a woodworking industry had grown up and had been able to expand – partly thanks to the supply of transport facilities which could bring down raw material costs and/or open up wider markets. Others were first built in response to the requirements of agriculture, whereas their full development, and sometimes even their profitability, was delayed until industries had grown and created a demand for transportation services.

Although there were *cumulative* elements inherent in many development blocks of the kind hitherto exemplified, it might be worthwhile to underline some of them. Most of those mentioned were ex post development blocks in

which many stages had to do with a wide socioeconomic network. There are a great many examples of this. One of the most illuminating ones is offered by the apparel industry.

At the outset new factory-made clothes were by no means cheaper than home-made or tailor-made products. Ready-made clothing could not force out older types until circumstances arose which made the latter, especially production in homes, more difficult. This also depended on the rise of a new social group, the urban working class, which provided the necessary markets. Later on, employment of housewives outside the home promoted the development of factory-made clothes – and was partly also an effect thereof. The same kind of dynamic interdependence within a broad socioeconomic context characterized other industries as well, particularly those making consumer durables. The most remarkable example, however, of a mainly ex-post development block, covering an exceptionally wide socioeconomic area, is represented by the consequences of the widespread use of automobiles. There is no room here for looking into this fascinating subject. Suffice it to say: Put on Schumpeterian eyeglasses, adapted to the approach suggested in this chapter, and look around you! You will find many examples of structural tensions of the development block extending over wide areas of the economic and social life. No other block, with the exception of that started by the railways, has transformed the economy as much as the widespread use of automobiles for personal transportation.

Developmental interdependences have had a decisive influence not only upon the course of industrialization as such. There are many examples of an influence on structures of ownership in industry and trade. In addition, there are many questions worth raising about the roles played by such structures in connection with innovations, diffusion of innovations, and with development blocks, as well as with reactions to negative transformation pressures. There is, however, only one aspect of this complex of interesting subjects for research to which I am in a position to draw attention here.

As mentioned earlier, the 1920s were characterized by a widespread and strong negative transformation pressure and by early phases of a number of development blocks with strong potentials. Some of these blocks were interrupted by the depression of the early 1930s. Liquidity problems and insufficient availability of equity capital and other external sources of finance created serious problems for enterprises which had expanded in advance of the other components of their development blocks and consequently were facing financial difficulties. Many of them were taken over by other enterprises or by banks. These other enterprises were often in a position to complete, or at least to continue building, the block. The banks sometimes took an active part not only in financial reconstruction but also in promoting new entrepreneurial activities. The newly acquired enterprises were of greater value to the new owners than to those who possessed insufficient liquidity



and/or had too limited perspective to see what could possibly be achieved by resolving structural tensions and by completing development blocks. This contributed to a concentration of the ownership in some branches of industry and trade.

#### **IV Some Policy Implications**

Some economic policy implications stand out clearly from comparative studies of developments in Sweden and Finland. They are comparatively easy to perceive in what happened after *devaluations*. These were made in both countries and for a time made each of the currencies undervalued. The fact that industrial dynamics was from time to time different in some important respects helps explain some differences with respect to the effects of undervaluations.

In Sweden there were in the 1930s a great many uncompleted development blocks and, contrary to the 1920s, only a slightly negative transformation pressure. In addition, there were not many burdening malinvestments. Therefore, the 1933 devaluation was fairly effective as a stimulant, particularly as it led to high liquidity and easy credit markets. It not only improved *competitiveness* – which is always easy to achieve temporarily – but contributed also to an industrial expansion because the basic *development power* was strong. Nor did any considerable inflationary effects occur, particularly as the fiscal policy was not expansive and the labor unions not very powerful.

In Finland, uncompleted development blocks were at this time less numerous than in Sweden, and those that existed were mostly in a more preliminary stage. The country was still predominantly agrarian. This being so, the result of the undervalued currency was somewhat less expansive than in Sweden, forest industries being the only important exception.

In the 1940s both countries again devalued heavily and Finland also in 1957 and 1967.

Sweden had escaped the war and could profit from undamaged human as well as physical capital. This in itself made the chances of expansion fairly good. There were also many development blocks, some of them, particularly those connected with a much more general use of passenger cars, in their early but quite forceful phase. Contrary to what had been expected, a negative transformation pressure was not strong enough to countervail the positive one. When in the 1950s the negative pressure became severe in the textile industries, the positive pressure became even stronger in many other sectors than before because most development blocks with widespread effects had gained much strength. This was particularly so in the first half of the 1960s. Though the inflationary effects were stronger than in the 1930s, i.a. due to more powerful unions in combination with tax increases which began to give rise to compensatory wage increases, they were not as strong as could have

been expected. One of the explanations was the fact that the positive transformation pressure, i.a. the many development blocks, dominated industry and trade.

Around the mid 1960s the scene changed fundamentally. Some of the earlier most important blocks either began to break into pieces or to lose most of their strength. Furthermore, many parts of industry and trade experienced from now on a negative transformation pressure. In spite of the fact that the krona was not undervalued any longer, but instead somewhat overvalued, inflationary forces became accentuated and could be kept within limits only by abstaining from purposeful countercyclical measures.

In Finland, industrialization on a broad front began to gather full speed in the 1960s, although at the end of the decade it had not yet transformed the country as much as in Sweden. A positive transformation pressure was strong in the forest industries and now began to grow also in engineering industries. The years of an undervalued currency under these circumstances no doubt played a certain positive role. As particularly the forest industries were susceptible to expansionary and inflationary impulses from abroad, the exchange rate policy also resulted in a rather rapid domestic inflation – and was consequently soon followed by an overvaluation and a new, substantial devaluation in 1967. This time the inflationary effects turned out to be somewhat smaller than before, partly because there had now appeared more – and more important – development blocks both inside and outside the forest and engineering industries. From the late 1960s the general use of individual motor cars constituted a very strong one – about ten years later than in Sweden.

In the late 1970s Sweden started a series of devaluations. The first ones, in the 1970s and in 1981, had much less expansionary effects on industry and trade than those in the 1930s and 1940s which was only partly due to the fact that they did not result in a clear undervaluation. An additional explanation is that the basic conditions for industry and trade were fundamentally different from those prevailing in the earlier decades, particularly before the mid 1960s. The transformation pressure was now negative on a broad front – and very much so in some of the most important branches of industry. Ailing industries were in many cases heavily subsidized. Social and political considerations were decisive here. Particularly as the development blocks were few and/or weak, at least outside a few and less important high-tech industries, the result of the devaluations was that competitiveness was reestablished for a certain time but a lack of development power, i.e. something that a devaluation as such cannot possibly create, made the prospect for satisfactory effects rather poor.

In 1982, a large devaluation resulted in a substantial undervaluation that lasted about three years. At that time the industrial scene had begun to change. Most of the adjustments and structural adaptations called for by the

earlier severe negative transformation pressure had been made and the pressure was much less negative. The result had been a by and large effective industry with a certain development power – but an industry that was too small to be likely to keep foreign trade in balance through a whole business cycle. Under these circumstances the effects of the undervaluation so far seem to have been somewhat more like those experienced in the 1950s than those characterizing the 1970s and early 1980s.

In Finland, the government announced that the earlier exchange rate policy was to be stopped at the same time as Sweden entered a period of exchange rate policy like the former Finnish one. An overvaluation of the currency was now allowed to persist longer and the corrections then made did not create undervaluations. After about a year this new policy had favorable consequences in many respects as it led to a rapid squeeze-out of many malinvestments and forced enterprises to rationalize more, and on a broader front, than before. A continuation of the earlier policy would most likely have led to an accelerating inflation and would have had predominantly unfavorable consequences for industry and trade in the longer run. This was so not only because earlier experiences of inflation had resulted in widespread and deep-rooted inflationary expectations but also because the positive transformation pressures had by now become somewhat less dominating at the same time as more of a negative one could be expected to appear. Attempts to compensate this by an undervaluation of the currency would most likely have meant taking great risks.

Whereas it has been possible to show that the results of exchange rate policies have differed considerably due to the characteristics of basic industrial dynamics, it has proved to be more difficult to analyze the extent to which the results of fiscal and monetary policies have been dependent on such characteristics. This is simply because it has not been a matter of only one main policy parameter. It is, however, clear enough that the importance of looking into underlying characteristics of industrial dynamics with Schumpeterian eyeglasses is greater than so far generally observed in conventional macroeconomics.

When drawing practical conclusions in actual research from what has been the main thesis of this chapter, one is faced with difficulties of a kind which most economists are not used to – and rarely sufficiently equipped to – handle. This is because such research must be a combination of work with economic theory and statistics, business economics and, not least, methods used by professional historians. In addition, a certain amount of practical business experience would do no harm. This fact should, however, not be allowed to discourage and even less to be a deterrent. There is much to be gained by attempts to bring attention to such new issues in industrial economics in a macroeconomic context.

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