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Volume 5

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Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published in 1982 by Croom Helm Ltd

This edition first published in 2017
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-138-29250-5 (Set)
ISBN: 978-1-315-23288-1 (Set) (ebk)
ISBN: 978-1-138-23020-0 (Volume 5) (hbk)
ISBN: 978-1-138-23022-4 (Volume 5) (pbk)
ISBN: 978-1-315-38662-1 (Volume 5) (ebk)

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CROOM HELM LONDON

Croom Helm Ltd, 2-10 St John's Road, London SW11

British Library Cataloguing in Publication Data

Hansson, Björn A.
The Stockholm School and the development of dynamic method.
1. Economic development
2. Economics–Sweden–Stockholm
I. Title
339.5 HB199

ISBN 0-7099-1225-0

Printed in Great Britain by
Biddles Ltd, Guildford, Surrey

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Preface

All Scandinavian sources cited in this work have been translated by the author, while all the cited correspondence between the Swedes and the non-Scandinavians remains in the original English.

I would in particular like to thank Dr. M. Milgate, Dr. R.M. Goodwin, Dr. K. Velupillai and Miss Victoria Chick who have been very helpful during different stages of my work. Furthermore, the work could not have its present shape without the help through correspondence, private talks and access to unpublished material of Professor Sir John Hicks, Lady Ursula Hicks, Mrs. Getrud Lindahl, Professors Erik Lundberg, Gunnar Myrdal, the late Bertil Ohlin, Otto Steiger, Björn Thalberg, and William P. Yohe. Mr. C. Szalwinski provided the secretarial assistance and was responsible for typesetting the manuscript to printer's specification. Finally, there would not have been any book at all without financial assistance from Lunds Universitet (Lund), Kungliga Vetenskapsakademien (Stockholm), Stiftelsen Siamon (Stockholm) and the British Council.

It goes without saying, that all errors and interpretations are entirely my own responsibility.

Björn Hansson

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Chapter 1

Introduction

Interest in the development of economic theory in Sweden in the period after Wicksell was heightened by Ohlin's article in Economic Journal (1937A-B) where the existence of a "Stockholm School" was mentioned for the first time. Of course, this interest had been partially awakened already by the Wicksellian flavour of Keynes' Treatise on Money[1] which was followed up by the translation into English of Wicksell's Interest and Prices and Lectures.[2] After most of the major Swedish works had been translated in the late 1930's a consensus arose on the nature of the contribution of the Stockholm School, which has been aptly summed up by Winch:

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1 This is of course only true for the Anglo-Saxon world since Wicksell's works were certainly known in the Germanspeaking countries, which was the basis for Myrdal's somewhat caustic remark on Keynes' Treatise:

> "J.M.Keynes' new, brilliant, though not always clear, work, A Treatise on Money, is completely permeated by Wicksellian influence. Nevertheless Keynes' work, too, suffers somewhat from the attractive Anglo-Saxon kind of unnecessary originality, which has its roots in certain systematic gaps in the knowledge of the German language on the part of the majority of English economists" (Myrdal 1939, pp.8-9).

2 Cassel's Theoretische Sozialökonomie from 1917 had already been translated in 1923 as The Theory of Social Economy and his writings had a certain influence on Dennis Robertson (cp. Robertson 1926, p.5). Furthermore, it is not unlikely that it was through Cassel's work that Keynes got to know Wicksell's ideas on the normal rate of interest.

> "Swedish economists, building on a Wicksellian foundation, developed a body of analysis which is separate from, but paralell to, that associated with the name of Keynes" (Winch 1966, p.170).

However, this consensus was only based on a few articles in economic journals and no monograph existed which analysed the contribution of the Stockholm School in any detail. It is therefore not surprising that the debate started anew in the 1960's when Landgren's dissertation (Landgren 1960) - a complete work devoted to the Stockholm School - appeared and challenged this commonly held view. Landgren's standpoint was in its turn attacked later by Steiger in his dissertation of 1971 (Steiger 1971), which consequently has as its subtitle: "Eine Anti-Kritik". The renewed interest in the Stockholm School is perhaps best illustrated by the fact that almost a complete issue of History of Political Economy was devoted to the question. This issue contained a translation of an article by Ohlin (Ohlin 1933C-D) and papers by Brems, Patinkin, Steiger and Yohe. However, these earlier works concentrated on the macroeconomic theory and the economic policy of the Stockholm School and its relation to the Keynesian revolution. In fact, the connection between Keynes and the Swedes has been obscured by the concentration on these issues. The substantial contribution of this disseration, although it will partly cover the same ground as the earlier works, is therefore to analyse these issues from a different angle; namely, the development of dynamic method within the Stockholm School. Furthermore, this new approach has certain points of contact with the very recent development in dynamic theory, since some of the methods discussed in this work have actually surfaced again in the modern debate.

1 - The main purpose of the work.

The core of the work is a reconstruction of the development of dynamic method by some Swedish economists between 1927 and 1937.[3] The reconstruction is considered to be a necessary basis for tackling the following three questions within the history of economic thought.

The first question relates to the existence of a School. Our reconstruction will show that there was an interrelated development of dynamic method, and this development, once it was under way, was almost completely isolated from outside influences. Furthermore, the construction of the different methods was probably a unique accomplishment, except for intertemporal equilibrium. Indeed, it is held that their ideas on macroeconomic theory and economic policy cannot prove the existence of a particular school, since these ideas were influenced by outside sources and they were therefore not unique. Hence, it will be argued that the development of dynamic method is the essential element of the Stockholm School. To support this proposition it is necessary to show that the outside influence on the development of the dynamic method was insignificant. But on the other hand it does not matter whether they took most of their macroeconomic ideas from foreign sources.

The second question refers to the nature of the Swedish origin of the Stockholm School, which in this case refers mainly to the the possible influence of Wicksell and Cassel. It will be shown that they could only have had a direct effect on the macrotheoretical propositions. Hence, in the macroeconomic sphere the Swedes chiefly analysed changes in the general price level with a savings-

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3 'Dynamic methods' refer to notions such as temporary equilibrium, disequilibrium sequence analysis etc. (cp. Ch.II). The term has been used in a similar way by Hicks for classifying models according to the manner in which they deal with the dynamic character of reality (cp. Hicks 1965, pp.28-29). The discussion of dynamic method is not a methodological discussion in any philosophical sense, like for example the advantages of a deductive or an inductive method.

investment mechanism, and they explicitly referred to Wicksell's theory as their starting-point. However, even if they leaned heavily on Wicksell's theory for analysing changes in the price level, they did not take up his strictly sequential analysis in Interest and Prices (cp. Wicksell 1936, p.136f.) It is in Lundberg's Studies in the Theory of Economic Expansion that we first find an explicit comment on Wicksell's procedure in Interest and Prices. Of course, that does not exclude the idea that Wicksell's and Cassel's analyses of the cumulative process created a climate of opinion which might have been generally conducive to the development of dynamic methods, but this common background is only proof of an indirect and very loose influence; indeed, it is of an almost trivial character. Furthermore, the proposition that the development of economic method constitutes the Stockholm School implies that their constructions of notions such as the 'method of expectations' (Myrdal 1927) and intertemporal equilibrium (Lindahl 1930) are theoretical breaks with an earlier tradition. The explanation of this issue is worthwhile given the possibility that the Swedish or other predecessors may have had a tangible influence on the character of these notions.

The third question takes up the relation between the Stockholm School and the Keynesian revolution. This relation is located within the macroeconomic sphere. The analysis in this work does not entail a step by step comparison between Keynes' development prior to and inclusive of the General Theory and the concomitant development in Sweden. It is instead a comparison between certain macrotheoretical propositions of the Stockholm School, independently of whether these propositions are original or not, and Keynes' finished construction in the General Theory. It is therefore necessary to analyse the macroeconomic theories of the Stockholm School, which we are particularly well-placed to do once we have sorted out the dynamic method involved, since it is not possible to state the exact character of their macroeconomic ideas without understanding the nature of the applied equilibrium notions. Although the Stockholm School in its mature stage analysed the effects on output during a dynamic process as well as

output changes as a part of the equilibrating mechanism between savings and investment, nevertheless their analysis of the equilibrating mechanism is a dissection of the composition of the factors constituting the ex post equalities, and is never the matter of determining the equilibrium level of output and employment. We cannot therefore find the principle of effective demand in the work of the Swedes. Furthermore, there is no evidence that they considered their analysis as a complete substitute for the propositions of orthodox theory, since the latter were still supposed to play some role.

The analysis of the development of dynamic method is in itself of interest in relation to the current evolution within economic dynamics, as is shown by the development in the late 1960's and the 1970's when mathematical economists moved away from the use of intertemporal equilibrium, in part due to the problems of including money in this method, and made attempts to develop different notions of temporary equilibrium (cp. sect. II:3). These developments bear a remarkable resemblance to what was going on in Sweden in the first half of the 1930's. In fact, there is an indirect link over time between the modern practitioners and their Swedish counterparts, since the former drew on Hicks' development of temporary equilibrium (cp. Weintraub 1979, p.68) and Hicks in his turn was clearly influenced by the development of the same notion

within the Stockholm School.[4,5] Strictly speaking, however, it is beyond the scope of this work to pursue any further comparison between the Swedes and the modern development of disequilibrium methods. This work does therefore not contain any assessment of the intrinsic value of the Swedish contribution to the development of dynamic method as such, and the main argument is not affected even if the Swedish contribution is considered to be of no value for this development, because the reconstruction is still considered to be a necessary basis for tackling the above mentioned questions within the history of economic thought.

Our original contribution is to have studied the Stockholm School from the viewpoint of the development of dynamic methods which makes it possible to analyse the above mentioned questions

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4 This has been conceded by Hicks himself:

> "For the moment, however, I got more from Sweden than I did from Cambridge. It was Myrdal's Monetary Equilibrium, which showed me the power of a short-period analysis in which expectations (certain or uncertain) are treated as data: and Lindahl ["Lindahl's influence was chiefly personal, as his writings were (then) mainly in Swedish. But he was himself in London rather often at that time" (ibid., p.309 n.2)] who showed me the usefulness of translating 'dynamic equilibrium' into 'macro' terms. Where I got with their aid is indicated by the paper "Wages and Interest: the Dynamic Problem" " (Hicks 1963, pp.308-309; cp. Hicks 1973, p.143).

5 This link is even more explicit in the case of J-P.Benassy, who was supervised by Debreu and Bent Hansen for his dissertation Disequilibrium Theory (cp. Benassy 1975, p.503,n.2). His ideas on disequilibrium seem to have emanated from Hansen (1951), and this work in its turn profited from Hansen's direct contact with Lindahl (cp. Hansen 1951, p.viii).

from a different and more appropriate angle. This work is therefore different from the other major works concerning the Stockholm School since they have dealt with the School from different viewpoints. Hence, Landgren and Steiger have concentrated on the Swedish contribution to macroeconomic theory and economic policy for the purpose of making a comparison with Keynes' General Theory, but do not analyse the dynamic method involved. Yohe, on the other hand, is closer to our own viewpoint since he draws the proper conclusion that "the extension of Wicksell's work by the Stockholm School has been more in the area of method than in theory" (Yohe 1959A, p.294). However, although his main purpose is to show "that a substantial share of the Wicksellian doctrine has survived and has permeated the works of the Stockholm School" (ibid., p.161), he has not traced explicitly the interrelated development of the dynamic method among the Swedes, and he has therefore missed the particular stage in the development of the Stockholm School where Wicksell's contribution was of a direct importance.[6]

2 - The idea of a reconstruction as an expository device.

In this work, the central arguments are erected using a procedure which is referred to as a 'reconstruction'. This procedure is a teleological exercise in the sense that the period under consideration is, with the advantage of hindsight, characterized by the stages it exhibits in the evolution of dynamic methods. It is important to stress that a later method is not just a fusion of earlier methods. On the contrary, the process is

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6 Yohe also has a tendency to interpret their models within a framework which gives them a flavour of mechanical dynamics instead of expectational dynamics (for an explanation of these terms cp. Ch. X Note 5 and 6). The most evident example of this type of interpretation is given by Yohe in his mathematical formulation of Lindahl's note of 1953 on the theory of the multiplier (cp. Yohe 1959B, pp.165-166).

such, that a subsequent method is partly constructed by elements which have been transposed in a critical way from earlier methods. The momentum of the development lies therefore in the attempt of each method to overcome some of the inherent limitations in earlier methods.

The method of a reconstruction has been adopted for three separate reasons. The first is the simple fact that the members of the Stockholm School very seldom referred in any detail to each other's works, and it is therefore necessary to find substantive evidence which can help to show the connection which existed between its individual members. Secondly, quite often a particular work contains an explicit analysis of the method to be used for solving certain problems, but our analysis shows in fact that the actual application of the method cannot give the results aimed at. For example, Lindahl used temporary equilibrium to explain forced savings, but from his explicit definition of this method it must follow that if temporary equilibrium rules, then such a phenomenon cannot even exist (cp. sect. IV:3:3:1). Another example is Myrdal's attempt to use his method of analysing tendencies at a point in time to explain a cumulative process, but his method is a single-period analysis and cannot therefore be used for developing a multi-period sequence like the cumulative process (cp. sect. VI:2:1). However, this type of contradiction between explicit method and its use provides a momentum for the development of the dynamic method itself, since it may serve as a catalyst for later attempts to develop the method in such a way that these shortcomings are superceded. The last reason stems from the fact that it is possible to utilize more recent developments in dynamic method to help to characterize the formal propositions and assumptions that will define a particular method. The more exact mathematical formulations of intertemporal equilibrium in the 1950's will thus help us to analyse the inconsistencies in Lindahl's formulations of 1929 (cp. sect. IV:2:3a:2).

The most important conclusion proved in this reconstruction is the existence of a unified theme - namely the search for a proper dynamic method - and its development by mutual influence among the

participants. The existence of a unified theme refutes the division of the Stockholm School into the 'neo-Wicksellians' (Ohlin, Myrdal, Lindahl) and those interested in sequence analysis (Hammarskjöld, Johansson, Lundberg, Svennilson) (cp. Palander 1941, pp.5-6; Steiger 1971, pp.41-42). It is obvious that Lindahl's and Myrdal's works of 1927-1932 are different from those which come later on. But our main point is to show that their works actually functioned as stepping-stones to the subsequent development. Furthermore, Lindahl's contribution of 1934 onwards is not only a stepping-stone to the development of sequence analysis but part and parcel of that very development. It seems likely that this mistaken dichotomy has arisen from a one-sided concentration on the macroeconomic propositions of the so-called 'neo-Wicksellians', so that their contributions to dynamic method have been overlooked.

Once we have been able to reconstruct the unified theme, then we can also give the rationale behind our decision to start our analysis in 1927 and end in 1937. With Myrdal's dissertation things started to move slowly, since it awakened interest in anticipations and dynamic methods; and after Lundberg's contribution to sequence analysis in 1937 there seem to be no fundamental changes in the dynamic method then existing. For example, Svennilson's dissertation may indeed show that he must be considered as a member of the Stockholm School, since he gives a more sophisticated analysis of certain elements within sequence analysis, in particular the role of anticipations and plans. However, his work does not form part of our reconstruction since it does not entail a revision of the inherited method or the production of a new one. On the other hand, when we reach Bent Hansen's dissertation of 1951, we find a level of sophistication which is more a matter of revision of the older methods than mere refinements. But Hansen's construction is not influenced only by the earlier contribution of the Stockholm School, since the works of Hicks, Lange and Samuelson also played a

role in his development.[7] Thus we are no longer able to speak of a fairly isolated development of dynamic method within the Stockholm School, which was one of the characteristics of our notion of a School, but we must now see the matter as an up-to-date attempt to fuse the Stockholm School with the subsequent development of dynamic method.[8]

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7 Bent Hansen gives the following account of the different methods which had influenced him:

> "The analytical equipment used is not new, but neither is it outmoded. It employs the terminology and technique of the Stockholm School, as presented by Erik Lindahl, and some of the lines of reasoning of that school of thought whose pioneer is J.R.Hicks [Samuelson and Lange can probably be included in this "school of thought"]. Naturally there are traces of influence from J.M.Keynes, but the analysis of this book can hardly be described as 'Keynesian'" (Hansen 1951, p.viii).

8 We can describe this problem by referring our aim to the picture given by Joan Robinson in her review of Myrdal's Monetary Equilibrium:

> "After the confluence of the 'Cambridge' and the 'Swedish' traditions of monetary theory, it is interesting to look back and see how the two streams were flowing while they were still divided by contours of language" (Robinson 1939, p.78).

Hence, our aim is to analyse how the Swedes came to form one School and how it was evolving before it started to mix with the Keynesian ideas in 1936-1937. Bent Hansen's contribution consequently came long after the two streams had started to flow together.

3 - An outline of the work.

This section is intended to provide a schematic outline of the work to provide the reader with an overview of the whole, before he has to plunge into the detailed analysis of the contribution of the different members of the Stockholm School.

The chapter on the analytical framework gives a classification of the different dynamic methods developed by the Swedes, and the analysis of these methods has been pursued from the perspective of sequence analysis. The aim is to give the meaning of the central categories used in the subsequent chapters.

It is possible to divide the period under consideration into four separate stages, where each stage is characterized by a specific dynamic method. The first stage is represented by Myrdal's dissertation, which shows how anticipations of an uncertain future are an independent part of the data which determines a 'long run' equilibrium position. The crucial factor for the further development of the Stockholm School was the treatment of anticipations and uncertainty as part and parcel of the theoretical core, and their placement on the same level as preferences, technical conditions and given resources.

Lindahl's construction of intertemporal equilibrium in 1929 constitutes the second stage. This concept grew out of a critique of comparative statics as a tool for handling dynamic problems, and its aim was to describe the traverse between two equilibrium positions. It seems that one of the reasons why Lindahl gave up this method was that he realized that it could not tackle imperfect foresight in a meaningful way. This weakness provided the rationale for the next stage, namely, temporary equilibrium, whose object was to analyse cumulative processes. The development of dynamic methods then became intertwined with Wicksell's savings-investment mechanism, i.e. the indirect relation between savings and investment via changes in the general price level. However, we will show that since it is an equilibrium approach, temporary equilibrium cannot really give a proper analysis of this mechanism. In fact intertemporal equilibrium as well as temporary equilibrium are examples of an

equilibrium approach, which means that they refer to situations where the plans are consistent over several periods or one period respectively, and they are formally represented by a system of simultaneous equations. Both Lundberg and Myrdal criticized this equilibrium approach, since the simultaneity could not explain the link between consecutive periods, i.e. the way in which the events in one period determine the outcome in the coming periods. Thus Lindahl was not really portraying a process over time.

The last stage culminates in 1937 with Lundberg's disequilibrium sequence analysis, but this notion is preceded by a long and protracted development, which in fact makes up the bulk of the work. Myrdal was once again the one who pushed the development in the right direction with the publication of Monetary Equilibrium (Swedish ed. 1932, German ed. 1933). This laid the foundation for the disequilibrium approach with the notions of ex ante and ex post, which made it possible to analyse a situation where the ex ante plans were incongruent while the ex post analysis showed which factors made up the ex post equality.

Hammarskjöld constructed some important elements for the coming sequence analysis. His idea of windfall profit as a link between periods gave the first, though incomplete, formal sketch of a sequence analysis. The discussion of the unit period where the length was coupled with the realization of unchanged plans later became a standard assumption within the Stockholm School.

It will be shown that Ohlin's work in 1932-1934 made no direct contribution to the development of dynamic method. But he furthered the macroeconomic analysis with his insistence that a disturbance could emanate from an autonomus change in consumption, and it did not have to come from the capital market as was generally assumed by Myrdal and Lindahl. Ohlin also stressed that changes in output and real income could be a part of the equilibrating mechanism between savings and investment.

Lindahl finally came back on the scene with two works in late 1934 and early 1935 respectively. Building on Myrdal and Hammarskjöld, Lindahl formulated the first proper algebraic expression of a

single-period analysis, which exhibits how incongruent ex ante plans lead to determinate ex post results. Lindahl also discussed the problems in building a sequence analysis, but his own construction is an equilibrium sequence analysis which assumes that there is equilibrium in each period. In this respect Lundberg went beyond Lindahl, since his sequence analysis builds on disequilibrium within the separate periods. However, there is still an equilibrium notion in Lundberg's analysis, namely, the assumption of constant response functions over the process.

The penultimate chapter examines the immediate Swedish reaction to the General Theory. The critique was mostly directed against Keynes' equilibrium constructions (i.e. his method) and as such it shows the complementary character of the Swedish contribution. However, if Keynes' method is taken for granted then the Swedish critique of Keynes' theoretical propositions is ill-founded. Furthermore, since the Swedes did not separate Keynes' method from his theory, they did not perceive the General Theory as an outright challenge to orthodox theory, and at the same time they did not see the possibility of fusing their own insights in dynamic methods with Keynes' theoretical propositions (cp. sect. 5 App. I).

The last chapter summarizes the result of the work.

The work finishes with an appendix which gives our definition of Keynes' principle of effective demand together with a sketch of how the Swedish method can be grafted on to Keynes' theory.

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Chapter 2

The Analytical Framework

The analytical framework is to a great extent dictated by the ideas belonging to the Stockholm School. This is most obvious from the fact that our examination of different dynamic methods uses 'sequence analysis' as the point of reference. The overriding aim has been to construct a classification which is fine enough to distinguish between the different dynamic 'methods' developed by the Swedes. Therefore it is no surprise if this classification is too coarse to catch the differences between the methods belonging to the current development of disequilibrium analysis.

1 - Sequence analysis as the point of reference.

The different dynamic methods are considered here as separate analytical attempts to tackle what is considered to be the economic reality. It is obvious that quite often there is a close relation between the idea of what the economic reality 'really is like', or what is supposed to be the pertinent feature of reality [1], and the method applied to analyse this reality, in the sense that the former gives the rationale for choosing a particular method. In what follows we will denote the notion of what the economic reality 'really is like' as the object for the economic analysis and each dynamic method will if possible be connected with its implicit object.

Our classification is based on the concepts developed by the Stockholm School for the purpose of

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1 This notion is akin to Schumpeters's vision, which is the preanalytical cognitive act preceding the economic analysis proper (cp. Schumpeter 1954, p.41). It can certainly include Hicks' idea of the existence and non-existence of different types of markets (cp. Hicks 1946, pp.135-140; Hicks 1956, pp.56-57; pp.73-75; pp.77-78).

sequence analysis.[2] Sequence analysis, which is just one type of dynamic method, is related to that particular economic object where the timing of economic events is of paramount importance.[3] A sequence signifies here a recursive model where the outcome at the end of period t, i.e. at the point of time t+1, is completely determined by the actions undertaken during the period, and the actions in their turn are derived from the plans formed at the beginning of the period, i.e. at the point of time t. Furthermore, the results of period t are linked in a derterminate way, fixed at the point of time t, with the plans for period t+1. Hence, following this procedure it is possible to determine the outcome for some periods ahead in time. The irreversibility of the sequence analysis refers to the fact that a unilateral dependence over time is used in this analysis in contrast to a mutual interdependence (cp.

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2 There is no common term for this process amongst the Stockholm School, Lundberg used 'sequence analysis' (cp. Lundberg 1937, p.51), Lindahl 'the general theory of development' (cp. Lindahl 1939B, p.51), Ohlin 'process analysis' (cp. Ohlin 1937A, p.58).

3 The importance of timing coupled with unilateral dependence are both characteristics of processes in real calendar time:

> "The modern sequence theory is not like the equilibrium theory directed towards a study of conditions of an economic system isolated from time but towards a study of <u>how in a time sequence one condition is developed from a subsequent one</u>" (Svennilson 1938, p.3).

It is for example interesting to see that the Swedes took great interest in working out each step involved in the adjustment process implied by the multiplier. Keynes, on the other hand, was mainly interested in determining the equilibrium level of output and employment and just mentioned that an adjustment process existed (cp. sect. 2 App. I).

Svennilson 1938, p.4).[4] However, even sequence analysis contains an equilibrium notion in the shape of constant expectation functions, which is a variant of our general notion of equilibrium:

> "It is the invariance of behaviour [routine behaviour] over a certain period which gives significance to the concept of equilibrium" (Hahn 1952, p.803).

The central idea in Swedish sequence analysis is the notion that a plan epitomizes economic behaviour, which means that all economic actions are directed towards fulfilment of plans based on expectations of the future and that the plans will be revised in the light of the actual results. This provides for the discontinuous character of sequence analysis, in the sense that the continous flow of actions, in realizations of plans made at an earlier stage, will sooner or later be interrupted because of incongruent plans, which will lead to the formation of new plans. Hence the crucial role of expectations, since they represent the connection between preceding events and the new plans.

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4 This is in conscious contrast to Hayek's construction of a watertight difference between equilibrium analysis and causal analysis:

> "an explanation in terms of causation which must necessarily be treated as a chain of historical sequences. What we find here is not mutual interdependence between all phenomena but a unilateral dependence of the succeeding event on the preceding one" (Hayek 1941, p.17).

Because we hold that sequence analysis contains a notion of equilibrium, i.e. constant expectation functions (cp. below sect. 5), and this notion could certainly be related to Hayek's own idea of 'equilibrium analysis', namely, "[a] logical analysis of the different plans existing at one moment" (Hayek 1941, p.18 n.1).