

Development blocks, faulty investment and structural tensions – the Åkerman-Dahmén theory of the business cycle*

by

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(11 March 2009)

Johan Åkerman and Erik Dahmén's structural theory of economic fluctuations is a constructive alternative to traditional macroeconomic approaches and also to modern business-cycle models based on microeconomic concepts. There are similarities between Åkerman and Dahmén's theory and Schumpeter's theory in *Business Cycles*. Both theories underline the importance of progressive industries for the recovery or prosperity phase. However, by the notions of faulty investment, structural tensions and development blocks, Åkerman and Dahmén provided an original explanation of the turning points in the business cycle. An empirical study of the severely overheated Swedish economy in the 1980s and the following depression did not confirm the Åkerman-Dahmén theory. One weakness of the theory is that it downplays the independent role of financial-market conditions. Åkerman and Dahmén's theory is more valid for innovation-driven cycles such as the ICT boom in the late 1990s and the subsequent crisis.

Keywords: Development blocks, faulty investment, structural change, Juglar cycles, progressive industries.

JEL classification: B25, B52, E11, E32, G33, O31

*Revised version of a paper presented at the Swedish Economic-Historical Meeting in Stockholm, Sweden, 12-14 October 2007. I would like to thank the participators for valuable comments.

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1. Introduction

The abandoning of aggregate (Keynesian) notions in today's business cycle theory has favoured microeconomic models of utility maximization and market imperfections. Real business-cycle (RBC) and neo-Keynesian theorists have encountered the aggregation problem by an assumption of uniform production and utility functions, often heroically defined in terms of representative agents. However, these and other stylized assumptions make it difficult to explain actual swings in economic activity whether shocks are technological or demand-oriented. RBC and neo-Keynesian theories e.g. exclude reinforcing cumulative movements and endogenous turns in economic activity emphasized in business cycle theories of an earlier date. Not surprisingly, appliers of modern business cycle theories are enforced to pursue simulations and eventually use macroeconomic concepts (total investment, GDP, the rate of interest, etc).

A structural dimension is also missing in today's theory of the business cycle. The micro-to-macro perspective ignores changes in industrial composition and the definition of leading industries. There is an extensive empirical literature since the early 1980s on the importance of 'structural shifts' for fluctuations in unemployment. But such shifts are mostly analyzed today within the framework of microeconomic search models or RBC models. Political business-cycle theories are undisputable branches of modern economics. However proponents have endeavoured to integrate these theories with the RBC theory rather than to develop a structural theory of the business cycle. It may seem paradoxical that today's business cycle theory has been untouched by the growing

concern in growth and evolutionary economics for development paths, structural change, political institutions, power relations and psychology.

The structural business-cycle theory of the Swedish economists Johan Åkerman and Erik Dahmén provides an alternative to modern business cycle theory and also to traditional theories based completely on macroeconomic concepts. It is difficult to separate the contributions by Åkerman and Dahmén. First, Dahmén was strongly influenced by his mentor Åkerman on methodological issues. Second, Dahmén's theory of faulty investment (malinvestment) had a strong impact on Åkerman's theory of the business cycle. The description of the Åkerman-Dahmén theory below is primarily based on various works by Åkerman from the mid 1940s to the early 1960s and on Dahmén's dissertation from 1950.¹

Åkerman's 'causal analysis' departed from the deductive-axiomatic approach of the neoclassical tradition and its lack of references to cumulative historical processes. But studies in the Keynesian and Stockholm-school tradition of cumulative (disequilibrium) developments were not examples of causal analysis according to Åkerman – they ignore underlying institutional and economic-structural conditions and changes in industrial composition. Furthermore, by defining structural limits and basic driving forces Åkerman's (and Dahmén's) causal analysis went beyond a regression analysis aimed at distinguishing stable relationships between macroeconomic variables. However, by

¹ See Henriksson (1996) for an account of Dahmén's elaborate analysis of the business cycle in works before his dissertation. Future research must define the independent contributions by Åkerman and Dahmén and also distinguish the differences that, despite all, exist between their approaches.

emphasizing the importance of theoretical concepts and of exposing repetitive quantitative relations, causal analysis also deviated from pure historical analysis.²

Åkerman's methodological position is highly relevant in the epistemological discourse of social science (see Erixon, 2007; Mjøset, 2009).

Åkerman's and Dahmén's approach to the business cycle was institutional emphasizing the weight of industries, trade openness and financial-market conditions. They also pinpointed the political-institutional framework, for example the exchange-rate system, the election periods and the size of the public sector, and further the dominating groups during a certain period (the degree of trade-union organization, monopoly, etc). Åkerman and Dahmén's emphasis on time and country-specific driving forces and relations made them less inclined to distinguish regular long waves in economic life. They were primarily concerned with the common Juglar cycle (8-11 years). At the same time, by distinguishing characteristics and mechanisms shared by more than one cycle Åkerman and Dahmén wished to keep a distant to pure historical analysis. Åkerman's ambition was to devise a theory that was general enough to cover the period of industrialism in Western countries, at least from the middle of the 19th century, and simultaneously provide space for unique driving forces and relations in individual countries and periods.³

Åkerman and Dahmén posited that the recovery phase is shaped by investments in progressive industries and the prosperity phase by new establishments in these industries.

² Dahmén (1950: 6-7 och 1989: 18). Se också Åkerman (1944: kap I) and (1960: 183-203).

³ See Åkerman (1951: 142) and (1960: 147 and 290-291); Dahmén (1950: 397-398).

Many investments and establishments will in due course be considered by firm agents and external financiers as failures. One aspect of faulty investments in progressive (advanced) sectors is that investments in other industries cannot keep pace resulting in structural imbalances. Faulty investments will start a recession, directly or by compelling restrictive monetary policy measures by commercial and central banks.

Åkerman and Dahmén were followers of Veblen's and Schumpeter's methodology and business-cycle analysis. They were particularly inspired by Veblen's and Schumpeter's integrated analysis of economic progress and business cycles highlighting technology and innovations respectively as salient driving forces behind a recovery. The notion of faulty investment has equivalences in Veblen's and Schumpeter's work though Dahmén had Hayek's theory of malinvestment as a point of departure. Furthermore, Åkerman and Dahmén took account, as Veblen and Schumpeter, of reinforcing cumulative processes but they were critical, as Schumpeter in particular, to an analysis of business cycles in terms of macroeconomic concepts only. For example, as Veblen and Schumpeter, the two Swedish economists stressed the impact of reinforcing mass psychological factors. However, in their analysis of the business cycle, Åkerman and Dahmén put stronger emphasis than Veblen and Schumpeter on industry composition and the relation between industries and between companies.

Two business cycles in the Nordic countries since the early 1980s might have validated Åkerman and Dahmén's structural theory of the business cycle. During the second part of the 1980s, Sweden and Finland, and also Norway (although to a lesser degree),

experienced an exceptional boom for real estate (both for commercial buildings and dwellings), stocks and financial services. The Nordic boom during the second half of the 1980s is ranked by Charles Kindleberger as one of the ten biggest financial bubbles in history (Kindleberger, 2005: 9). There were also indications in this period of ‘overinvestment’ in Nordic export industries and private service sectors other than the financial sector. In the early 1990s, the Nordic countries experienced a more serious economic recession than other OECD countries. In the Swedish case, the crisis in the early 1990s was deeper in terms of GDP growth than in the 1930s depression. Moreover, the employment decline in Sweden in the early 1990s was more dramatic than during any other recession in the country since the mid 1900th century (Edvinsson, 2006: 253-255 and 260-262).

However, the following business cycle in the Nordic countries might offer an even better support for Åkerman and Dahmén’s theory emphasizing the importance of faulty investment in innovative industries and firms. The recovery during the second half of the 1990s was shaped by the ICT revolution in countries like Sweden and Finland. These countries have a strong telecommunication sector, especially through the importance of Ericsson and Nokia and their suppliers. It seems that the expansion of ICT industries in Sweden and Finland was too rapid in relation to the expansion of industries that were expected to demand the advanced products and services of the ICT sector. The recession in Sweden and Finland in the early 2000s was formed by the ICT crash leading to a high number of fallacies. Despite being profitable in the long run many investments in the ICT

sector were regarded by firms and banks as failures. However, the recession was much milder in the early 2000s than in the early 1990s.

This paper presents Åkerman and Dahmén's theory of the business cycle. It will first relate their theory to Schumpeter's approach in *Business Cycles*. This comparison demonstrates the similarities (Section 2) but also divergences (Section 3) between Åkerman-Dahmén and Schumpeter. The paper then sheds light on Åkerman and Dahmén's theory of the business cycle with a particular eye on its original contribution to the analysis of the turning points (Section 4). After that, the paper presents the results from an empirical study of the Swedish business cycle in the 1980s and early 1990s based on the Åkerman-Dahmén hypothesis of faulty investment (Section 5). The paper continues with a critical assessment of Åkerman and Dahmén's theory of the business cycle including a description of reasonable but excluded mechanisms (Section 6). Finally, the paper summarizes the Åkerman-Dahmén theory and the discussion of its uniqueness, validity and possible shortcomings (Section 7).

2. The influence of Schumpeter

Åkerman and Dahmén shared Schumpeter's supply-side view of innovations.

Furthermore, the two Swedish economists purported that the recovery phase of the business cycle is formed, as a rule, by new inventions and by firms' introduction of new products.⁴ The corresponding idea in Schumpeter's theory is that innovations are the basic driving forces in the prosperity phase. Moreover, Schumpeter, Åkerman and

⁴ Åkerman (1944: 43 and 238-239) and (1960: 150 and 189).

Dahmén agreed that initial innovations could facilitate new innovations; Schumpeter referred to innovation clusters and Åkerman-Dahmén to development blocks (see below).⁵ All of them embraced the hypothesis that an upswing is reinforced by mass psychology; Schumpeter referred to speculation about continuous price increases and Åkerman-Dahmén, following Veblen, to herd behaviour.⁶ Moreover, Åkerman, Dahmén and Schumpeter made common references to a multiplier-accelerator mechanism reinforcing a recovery and also a recession.⁷

Åkerman, Dahmén and Schumpeter's explanation of the turning point between boom and recession is similar when expressed in general terms. The downswing can be traced back to the expansion of progressive firms and industries during the upswing.⁸ The liquidation of firms that expanded in the boom second wave will also result in credit freezes (see Schumpeter, 1939: 134-150; Åkerman, 1960, pp. 143-144). Åkerman, Dahmén and Schumpeter had also a similar view of the departure from the lower turning point in the business cycle – endogenous reductions in wages, raw materials and interest rates might be necessary for escaping a depression.⁹ They unanimously made the qualification that departure from a trough is a selective (microeconomic) phenomenon – some industries and firms will pull the economy out of a depression characterized by a large spread of

⁵ Schumpeter (1939: 131 and 100-102); Dahmén (1991b/1942: 29); Åkerman (1951: 139 and 142-143).

⁶ Schumpeter (1939: 145-146); Åkerman (1944: 47-48 and 227-228).

⁷ Schumpeter (1939: 151-155 and 181); Åkerman (1944: 229-230 and 239).

⁸ Åkerman (1944: 222, 229-230 and 239); Schumpeter (1939: 134-135 and 145-149).

⁹ Dahmén (1991/1989: 139); Åkerman (1944: 49); Schumpeter (1939: 139, n1). However, the importance of cost reductions to overcome a depression was emphasized more by Åkerman than by Schumpeter (Åkerman, 1944: 232). On the other hand, in his discussion of endogenous factors ending a depression, Schumpeter emphasized the salience of built-in-stabilizers (Schumpeter, 1939: 153-157).

prices, costs and profits.¹⁰ In addition they emphasized that each trough (Åkerman-Dahmén) and ‘neighborhood of equilibrium’ before prosperity (Schumpeter) is uniquely determined by the history of economic progress.¹¹ However, neither Schumpeter, nor Åkerman-Dahmén assumed that recovery is the result of renewal and structural change in the preceding recession/depression (see Section 6).

3. Departures from Schumpeter

Schumpeter’s work had a major impact on Åkerman and Dahmén’s theory of the business cycle. (The Åkerman-Dahmén theory is surveyed in the appendix.) Yet, partly independently, partly by a critical review, Åkerman and Dahmén’s theory deviated from Schumpeter’s theory in *Business Cycles*. They generally criticized Schumpeter for making only a partial break with equilibrium theory and for failing ‘...to build a bridge between equilibrium theory and the structural change of economic development.’ (Åkerman, 1960: 136).

Åkerman and Dahmén opposed Schumpeter’s distinction between a revival shaped by adjustment forces in the preceding depression, and a prosperity phase started by innovative entrepreneurs in a ‘neighborhood of equilibrium’ (see Schumpeter 1939: 70-71). First, Åkerman and Dahmén saw the upswing as a continuous cumulative process where innovations might also characterize the early recovery phase, thus not only a

¹⁰ Schumpeter (1939: 153-155); Dahmén (1991b/1942: 29); Åkerman (1944: 48-49 and 222-223) and (1960: 144-145 and 190-191).

¹¹ Schumpeter (1939: 149 and 157); Åkerman (1944: 220-221).

specific prosperity phase as in Schumpeter's theory. Second, Åkerman and Dahmén rejected Schumpeter's idea that the business cycle is driven by exogenous innovation cycles, for example by recurring entrepreneurial reincarnations. They inferred that Schumpeter offered no real (endogenous) explanation of the recovery (Dahmén, 1991b/1942: 28-29).

Åkerman-Dahmén and Schumpeter had also different view about the agents of innovation. In *Business Cycles*, entrepreneurial new firms are the bearers of prosperity (Schumpeter, 1939: 93-95). Åkerman and Dahmén maintained that established firms and industries might be the engine of an upswing. The business revival is led by firms that use modern technologies, are cost effective and financially well equipped (Åkerman 1960: 142, 154 and 189). In the Åkerman-Dahmén theory, the expansion by some firms and industries in the recovery is not always based on new innovations.

Åkerman and Dahmén's analysis of faulty investment contains some unique features in relation to Schumpeter's corresponding analysis. In fact, Dahmén questioned that Schumpeter's theory of the business-cycle theory was really a theory of faulty investment. Dahmén's restrictive definition of faulty investment excluded (in contrast to Åkerman's notion) cases in which some firms, whatever their reaction, are hit by harder competition through innovations by other firms. Investments that become unprofitable because of (unexpected) innovations by other firms, or (unforeseen) changes in relative demand, cannot be regarded as faulty.¹² Schumpeter actually made a similar distinction in *Business Cycles* even if he provided room for the possibility that the reaction by old firms

¹² Dahmén (1950: 10-11, 50-52 and 394) and (1991b/1942: 32-33).

to innovations could be faulty (Schumpeter, 1939: 140). However, Schumpeter argued for not focusing on errors of any kind in the analysis of the business cycle.

Schumpeter did refer to 'cyclical clusters of errors' in *Business Cycles* (Schumpeter, 1939: 140, 146 and 148). Recklessness, fraud and excesses may characterize the primarily wave and especially the second wave of prosperity. However, Schumpeter downplayed the importance of errors. First, errors are not independent variables but consequences of the innovation and adoption process forming the primary wave. Second, in Schumpeter's theory, it is the ending of an innovation cycle, not the errors, that explains why the second wave of prosperity is petering out. The expansion of innovative industries and firms has some unsound, excessive and irrational aspects, but the recession is basically explained by the interruption, not the scope, of this expansion.

Åkerman and Dahmén's argument for using the concept of faulty investment in business-cycle studies challenged Schumpeter's two objections above. First, the distinction between faulty investment and innovation as a source of profit decline and bankruptcy is possible with Åkerman and Dahmén's differentiated view of a recovery – the driving forces of a recovery cannot entirely be reduced to a question of new innovations. Second, Åkerman and Dahmén made a broader definition of faulty investment than Schumpeter in *Business Cycles*. Their definition included investment in progressive industries that are profitable in the long run. This inclusion will enlarge the explanatory power of a theory saying that bankruptcies are caused by faulty investment and that recessions are determined by the preceding expansion of progressive industries and firms.

The diverging views of faulty investment in Schumpeter's and Åkerman-Dahmén's works are manifested in their analysis of the turn from boom to recession. In Åkerman and Dahmén's theory the upper turning point reflects that progressive industries and new firms had expanded too rapidly. In Schumpeter's theory, the downswing reflects that progressive industries and new firms had expanded *too little*; when innovations eventually cease in the primary wave, older firms are still hit by the competitive effects from previous innovations (price reductions), but they will not benefit anymore from the market-extending effects of new innovations.¹³

Schumpeter and Åkerman-Dahmén had also a deviating view on which firms are making faulty investments in the boom. In *Business Cycles* it is older firms that expand in the speculative secondary wave of prosperity on the basis of expectations of continuing price increases. Many of these firms will contract or vanish when the innovation process dies down. In the Åkerman-Dahmén theory, not only old but also new firms might overexpand at the end of the recovery. New firms are often poor imitators rather than successful innovators.

¹³ Schumpeter also mentioned that prices will fall as a consequence of 'autodeflation' in the late upswing (if money supply is kept constant). However, in Schumpeter's theory, autodeflation (primarily repayment of bank loans) is a reinforcing, not a basic, mechanism and further a consequence of the break in the innovation process (Schumpeter, 1939: 136-137).

4. The Åkerman-Dahménian theory of the business cycle

4.1. Recovery, faulty investment and crisis

Åkerman and Dahmén provided no precise definition of the industries that will escort the economy out of the recession/depression and throughout the recovery. Åkerman referred to capital-intensive industries such as power production and communication industries. These industries are favoured by long-run profit considerations and reinvestment by other industries. Åkerman also referred to industries with major innovations. However these industries might have been born during earlier cycles (Åkerman, 1944: 43 and 238-239).

We will define the leading sector in the Åkerman-Dahmén theory as one dominated by industries and firms that are progressive or whose expansion is a precondition for the growth of progressive industries and firms. Åkerman and Dahmén defined progressive (advanced) industries and firms as those on the positive side of the transformation process, thus as industries and firms that increase their share of total production over a longer period, thus from cycle to cycle.¹⁴

The recovery is reinforced in the Åkerman-Dahmén theory by the multiplier-accelerator and by herd behaviour turning the cycle from the micro to the macro sphere. In the Åkerman-Dahmén theory a recovery is characterized by rapid structural change. Thus, the increasing weight for progressive industries and firms is concentrated to the upswing

¹⁴ Cf. Dahmén (1991b/1942: 32-33); Åkerman (1951: 139) and (1960: 204-209).

periods. The building or extension of development blocks is one aspect of structural change, and also a possible source of reinforcing cumulative processes, in the recovery.

Dahmén defined a development block as a complementary relation between industries, firms and plants where innovations or investments are concerned. New technologies and products are not profitable without other innovations or they will stimulate, by price signals or informal networks, the further development of technologies and products. Moreover, investments in a specific plant, firm or industry are not profitable unless investments are made in other plants, firms and industries, the case of the input-output matrices.¹⁵ Viable development blocks might be destroyed by the liquidation of firms and closure of plants with faulty investments.

Faulty investment will appear through the rapid expansion of progressive firms and industries in the recovery. Managers and owners are governed by ‘overconfidence’, an established concept in today’s psychological literature (see Erixon, 2007: 334-336). In particular, progressive firms and industries are more optimistic, e.g. because of higher actual profits, and have also lower subjective discount rates than other firms and industries.¹⁶ Their expansion leads to ‘structural tensions’ (imbalances) in the economy in the short run since it is not matched by corresponding investments by other firms and industries. Therefore, in later recovery periods, progressive industries and firms will

¹⁵ Dahmén (1991a, 1991b/1942: 30) and (1991c/1989: 136).

¹⁶ The lengthening (shortening) of time perspectives in recoveries (recession) is a central notion in Åkerman and Dahmén’s theory of the business cycle. This notion, however, is replaced above by the concepts of subjective discount rates and profit expectations.

experience an actual profit decline or at least, lower profits than expected. As a consequence, their subjective discount rate will increase and the expectations about industrial profits, by both firms and banks, will be adjusted downward. Investments are considered as faulty despite the fact that they have a big chance of being profitable in the long run.¹⁷

Åkerman and Dahmén's definition of faulty investment also includes investments that have no chance of being profitable in the long run (see Schumpeter's notion of errors). Overconfidence and herd drift, particularly in later stages of the recovery, will lead to investments based on incompetence, low experience and neglect of available information. Such investments are made in all parts of the economy, but especially in progressive industries and often by new firms. One example is the use of high-cost plants under cover of price increases during the recovery. The adjustment of wages, material prices and interest rates to price increases is delayed, a necessary condition for many faulty investments of the second type. Inefficient and mismanaged firms, often newly formed, are particularly hit by higher wages and material prices, and also by higher interest rates, in a boom.¹⁸

In the Åkerman-Dahmén theory faulty investment plays a strategic role when the economy turns from boom to crisis. Indications of faulty investment will result in general

¹⁷ Åkerman (1944: 41-44; Dahmén (1950: 50-52).

¹⁸ Åkerman (1944: 227-229) and (1960: 143 and 150); Dahmén (1950: 51). Schumpeter assumed that surges in producer prices and factor prices (including the rate of interest) are proportional in prosperity (Schumpeter, 1939: 131-132).

credit restriction by commercial or central banks. Also firms that are profitable in the long run will face increasing difficulties to raise credits for their survival or further expansion.¹⁹ The macroeconomic nature of the downturn does not exclude that the retardation and death of firms with faulty investment might contribute significantly to a vicious production circle.²⁰

Åkerman and Dahmén also suggested that faulty investment, which are more frequent in progressive industries, would generate a recession without an initial general restriction of credits. In this case, the recognition of faulty investment is entirely based on firms' subjective discount rates and expectations. In some works, Åkerman and Dahmén assumed that firms with faulty investment would also experience increasing difficulties to raise external funds. For example, banks are particularly anxious to restrict credits for firms that run a high risk of bankruptcy.²¹ With this interpretation of the Åkerman and Dahmén's theory, a vicious circle starts through the retardation and exit of industries and firms with faulty investment. Here, general credit restriction is a possible delayed (reinforcing) deflationary force.

¹⁹ Åkerman maintained that general credit restriction can be triggered by the insolvency and illiquidity of some companies but also by seasonal increases in credit demand or by specific stock-exchange and bank crises (see Åkerman, 1944: 47-48 and 242-243) and (1960: 143-144).

²⁰ Åkerman (1944: 238-239), (1951: 142) and (1960: 143, 175 and 190).

²¹ Åkerman (1944: 229 and 239), (1951: 139-140) and (1960: 150 and 189-190); Dahmén (1950: 51-52 and 394-397), (1991b/1942: 33-34) and (1991c/1989: 145-146).

4.2. Recession, depression and completion of development blocks

In the Åkerman-Dahmén theory the recession is characterized by a dismantling of faulty investments and by a general reduction in actual and expected profits. The deepening of the recession (through herd behaviour and the multiplier-accelerator) will not prevent, however, a gradual differentiation of the business cycle, thus the cycle turns from the macro to the micro sphere. The deepening of a recession leads e.g. to a larger spread of prices, costs and profits between industries and between firms.

According to Åkerman and Dahmén, the composition of the business sector will be consolidated during the recession/depression. Obsolete firms and plants are eliminated and inefficient managers are dismissed. The business sector will now be constituted by surviving industries, firms and plants that were new during the preceding recovery and by the industrial structure inherited from earlier cycles. In Åkerman and Dahmén's theory the recession/depression is not characterized by structural change.²²

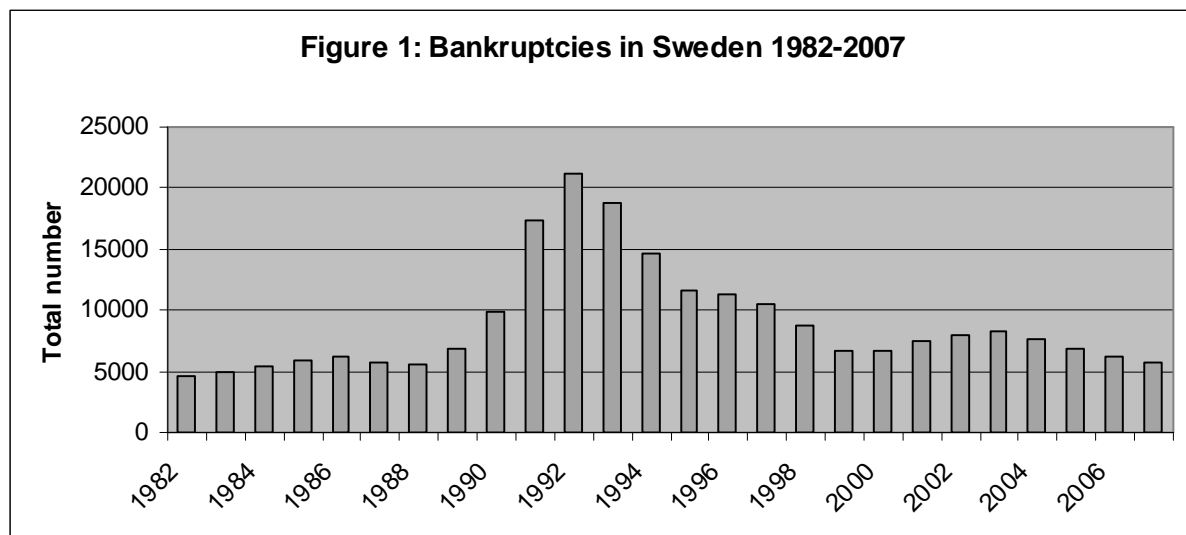
Åkerman, and Dahmén also offered a unique explanation of the turning point between recession/depression and recovery – structural imbalances encourage the completion of development blocks. An incomplete development block may reflect structural tensions through malinvestment in the preceding boom – investment in progressive industries and firms were not matched by investments in affiliated sectors. In the recession/depression, entrepreneurs, possibly recruited from the group of established managers/owners, are able

²² Åkerman (1944: 45-46 and (1960, pp. 189-190). By claiming that the recovery is the true period of structural change, Åkerman and Dahmén were more radical than Schumpeter. Schumpeter assumed that innovations in prosperity might be spread and improved in a recession leading e.g. to new investment opportunities (Schumpeter 1939: 143).

to put these development blocks together by new investments. Development blocks are e.g. completed (or extended) through investment by individual firms or by mergers and collaboration between independent producers.²³ However, in some works, Åkerman and Dahmén seemed to lean to the conclusion that development blocks could first be completed after a positive demand shock or a looser capital market favouring progressive firms and industries in particular.²⁴

5. Testing the theory of faulty investment

In the business cycle 1983-1993, Sweden passed from extreme overheating to depression. The frequency of bankruptcies in Sweden rose to record levels in the early 1990s (see figure 1).



Source: Ackordscentralen, Sweden.

²³ Åkerman (1960: 150); Dahmén (1991b: 29-31).

²⁴ Cf. Åkerman (1960: 209); Dahmén (1991b/1942: 31 n20), (1950: 395-396) and (1991c/1989: 139-140).

A follower of the rational-expectation theory would have emphasized that Sweden was exposed for strong positive demand shocks (and expansionary fiscal policy) in the 1980s and consequently for strong deflationary forces in the early 1990s bringing the economy back to macroeconomic equilibrium. A rational-expectation theorist might also have added that adjustment to positive demand shocks in the 1980s led to overshooting and therefore to actual unemployment rates above the natural rate in Sweden in the early 1990s. In Hayek's theory, overinvestment appears in the recovery through delays in interest-rate adjustments. From this theoretical perspective, the Swedish recession in the early 1990s reflected increasing interest rates and decreasing money supply re-establishing the equality between actual and natural rates of interest.

Overinvestment is also important in an Åkerman-Dahménian explanation of the Swedish crisis in the early 1990s. However, in contrast to Hayek's approach, Åkerman and Dahmén's theory has an industry-structural dimension. In the latter theory, Swedish depression in the early 1990s reflected extensive faulty investment by overconfident actors in progressive (or better: leading) industries and herd behaviour (particularly in progressive industries).

Our regression study focused on the importance of faulty investment for the frequency of bankruptcies. The Åkerman-Dahmén theory was supposed to be confirmed if bankruptcies in the early 1990s (1991-1993) were more frequent in industries that had expanded most in the 1980s (1983-1990). The validity of the Åkerman-Dahmén hypothesis was tested for the Swedish business cycle 1983-1993 with panel data for 75

industries in Swedish manufacturing. The frequency of bankruptcies in each industry was defined by the ratio between the total number of bankruptcies and the total number of plants. The study considered industrial growth rates as a determinant of bankruptcies but also a number of control variables – the age of the market-leading firm (to reflect learning effects), patent concentration (to measure the importance of knowledge exclusion), R&D intensity (high R&D intensity was assumed to decrease the risk of bankruptcies), capital costs (financial entry barriers were expected to decrease the risk of bankruptcies) and a measure of increasing returns to scale (having ambiguous effects on bankruptcies). The study also included indicators of the degree of competition (firm concentration and international competition) to consider Dahmén's distinction between stronger competition and faulty investment as a source of bankruptcies. In fact a positive relation between growth and bankruptcies during the period under review might not have reflected faulty investment but stronger competition through a larger inflow of new firms.²⁵

The regression analysis did not confirm the Åkerman-Dahmén theory. On the contrary, the frequency of bankruptcies in Swedish manufacturing in the early 1990s was lesser in industries that had expanded most in the 1980s. Thus, it seems that the risk of bankruptcies in the 1990s depression was higher in declining industries. The weaknesses of the study must, however, be noticed, for example the concentration on manufacturing. The investment boom in the 1980s was more accentuated outside manufacturing (construction and the private service sector). Furthermore, the study focused on one

²⁵ The regression model and results from the study have only been presented in a Swedish publication. The interested reader can acquire the estimates by contacting the author.

aspect of the Åkerman-Dahmén theory – the tendency to extensive business failures through faulty investment in industries that had expanded most during the recovery.²⁶ There are indications, however, that theories of overinvestment other than the Åkerman-Dahmén theory provide better explanations of the deep economic crisis in Sweden in the early 1990s.

6. Some reflections on the Åkerman-Dahmén theory

Åkerman and Dahmén' great achievement was their integrated analysis of business cycles and economic progress stressing the role of overinvestment in advanced industries, structural tensions and development blocks for the turning points in the business cycle. The Åkerman-Dahmén theory of structural tensions and faulty investment was indeed an innovation in comparison to Schumpeter's analysis. This is not to say that there are some weaknesses in Åkerman and Dahmén's theory. Some ambiguities in their theory, however, can be explained by the wish to keep it open enough to provide room in each cycle for specific political-institutional and economic-structural conditions.

The Åkerman-Dahmén theory of the business cycle was primarily developed for large industrialized countries, thus not for small open countries like Sweden. Åkerman and Dahmén's focus on large countries clashed in fact with their emphasis on export shares

²⁶ A possible objection to the econometric study above is that bankruptcies in the Åkerman-Dahmén theory are not necessarily more frequent in industries which had expanded most in the recovery. Åkerman and Dahmén posited that other industries are hit by credit restraint and by multiplier-accelerator effects as a consequence of faulty investment. Their theory only suggests that bankruptcies are more common in fast-growing industries after an adjustment for induced macroeconomic effects.

when defining the structural objects of causal analysis.²⁷ For example, as emphasized in (Dahmén, 1950), Swedish business cycles since the late 19th century have been driven by changes in foreign demand for raw materials goods and for engineering products, many of them based on domestic innovations at the turn of the century. In the postwar period Swedish recoveries, including that in the early 1980s, were initiated by foreign demand and also by expansionary economic-policy measures (especially devaluations).

Macroeconomic conditions and economic policies have no status as prime driving forces in Åkerman and Dahmén's theory of economic development. The multiplier-accelerator mechanism is a reinforcing, not an initiating, force behind a recovery or a recession.

Åkerman and Dahmén provided more room for macroeconomic shocks and economic policies in their analysis of the recoveries from the early 1930s. However, they underlined the role of these factors for the expansion of progressive industries. For example, in Sweden, depreciations of the SEK and expansionary monetary policy in the early 1930s speeded up the expansion of dynamic (home market) companies and industries in manufacturing, e.g. by increasing the competitive strength and financial capacity to introduce new technologies and products (Dahmén, 1950: 41-44 and 396).

It seems that an explanation of the deep economic crisis in Sweden in the early 1990s must, in contrast to the Åkerman-Dahmén theory, put strong emphasis on positive demand shocks and economic policies, primarily devaluations, in the recovery underpinning an established industrial structure. Business-cycle upswings in Sweden during the postwar period have generally benefited traditional export sectors. Thus

²⁷ Dahmén (1950: 40-43); Åkerman (1960: 186).

Swedish recoveries might arguable be analyzed from the perspective of a given or a cemented industrial structure.

Åkerman and Dahmén were unambiguous where structural change in the business cycle is concerned. Structural change is speeded up, not delayed, in a recovery. What is more, economic development in later recovery periods bolsters a structural pattern from earlier phases of the recovery (Åkerman, 1944: 47). Thus, progressive industries (or industries that are conditional for the expansion of progressive industries) will increase their share of total production even in the macroeconomic phase of the recovery (cf. Åkerman, 1960: 247).

Consequently, the Åkerman-Dahmén theory does not incorporate the idea that the innovation process and structural change are speeded up in a recession or depression. There is no hypothesis that firms (whether they are new or established) would pull themselves together when profits fall by intensifying their search for new markets or by increasing their willingness or capacity to introduce new products, technologies and organizations. Thus, in the Åkerman-Dahmén theory, there is no industrial renewal in the downswing period as in the theory of transformation pressure (see Erixon, 2007: 340-342). Furthermore, Åkerman and Dahmén avoided a conclusion that the freeing of resources would speed up structural change already in the recession/depression. Instead, Dahmén maintained that surviving firms with faulty investment would delay structural change by tying up production resources (Dahmén 1991b/1942: 34-35; Henriksson, 1996: 10).

The Åkerman-Dahmén theory is hardly compatible with an argument that productivity is stimulated by a recession or depression. They did suggest that inefficient firms and plants are liquidated during early phases of the recession. Productivity is e.g. enhanced by the elimination of firms with faulty investments. However Åkerman and Dahmén implicitly postulated that both labour and total factor productivity move procyclically. Through the expansion of progressive industries the recovery is the time of innovation and structural change. Åkerman and Dahmén also put weak emphasis on enforced innovations and rationalization in a recession/depression. References by Åkerman and Dahmén to endogenous productivity increases in a recession/depression, e.g. through the elimination of firms with faulty investment, are too few to be seen as basic features of their theory of the business cycle.

Thus, from the Åkerman-Dahmén perspective, the downswing will not lay the ground for the subsequent recovery by making firms and industries more innovative or efficient.²⁸ Dahmén claimed that the elimination of faulty investment in a recession/depression would facilitate the following recovery. It seems however that he primarily referred to the consequential freeing of capital.

A possible objection to the Åkerman- Dahmén theory is that development blocks, either in themselves or in combination with looser capital markets or (selective) demand

²⁸ Correspondingly, despite some references to rationalization in a recession, Schumpeter denied that prosperity could be explained by the preceding recession (Schumpeter, 1939: 139, 143, 150 and 155).

shocks, offer a too specific explanation of a revival.²⁹ In fact Åkerman also referred to selective reinvestment (including restocking) and to (equally selective) external stimuli such as seasonal recoveries in trade, construction and agriculture or improvements of market conditions (for example, primary increases for primary products and semi-finished goods).³⁰ Development blocks are constructive notions in the analysis of a revival. But a benevolent interpretation of Åkerman and Dahmén's theory must emphasize that the lower turning point might also be explained by other industry-specific conditions (see Schumpeter's approach).

Another possible objection to the Åkerman-Dahmén theory is that it tones down the importance of financial conditions. These conditions are in fact strategic in Åkerman and Dahmén's analysis of actual swings in economic activity. However, the Åkerman-Dahmén theory is not a theory of financial bubbles. The expansion of progressive industries is facilitated by abundant credits and a crisis may be unleashed by events on the financial market. But financial conditions are not driving forces behind the recovery or the downturn in themselves. Thus, in Åkerman and Dahmén's general theory financial conditions are only secondary factors and catalysts (see Åkerman, 1960: 143-144).

However a plausible explanation of, for example, Swedish depression in the early 1990s

²⁹ Furthermore, Åkerman and Dahmén's criticism of Schumpeter's equilibrium concept in *Business Cycles* was somewhat unfair. They made similar references to external shocks (e.g. inventions), adjustment forces (endogenous changes in prices and factor costs), and to quasi-balances (quasi-stationary or quasi-stable states) of an equilibrium type. For example Åkerman referred to a specific peak period – the plateau of prosperity – in which the recovery reaches an 'apparent equilibrium' (Åkerman, 1944: 220-223 and 226-229) and (1960: 142 and 145).

³⁰ Åkerman (1944: 47-48, 231, 238 and 242-243) and (1960: 190). In fact, Ragnar Frisch made objections to Åkerman's reference to seasonal variations as a source of a recovery (see Åkerman, 1928).

must put stronger weight on financial-market conditions than on the expansion of progressive industries. The investment boom during the second 1980s was fueled by a radical deregulation of credit markets stimulating (in combination with a distorted tax system) borrowing by firms and households. It is likely that the Åkerman-Dahménian theory of faulty investment and structural tensions provides a better explanation of the U.S. depression in the early 1930s (originating in the 1920s through e.g. electrification and the expansion of automobile industries and tele-communication systems) and of the ICT recession in the U.S. and the Nordic countries in the early 2000s.

7. Summary

Johan Åkerman and Erik Dahmén are the most prominent representatives of a Swedish structural-analytical school in economics (see Erixon, 2005). Åkerman and Dahmén's analysis of economic development was, through its industry-structural and institutional perspective, distinct from that in the neoclassical theory and the Keynesian-Stockholm school. This paper has focused on Åkerman and Dahmén's theory of the business cycle, an original contribution to economics. Åkerman and Dahmén shared Schumpeter's idea in *Business Cycles* that the recovery is driven by progressive industries. However, their explanation of the turning points in terms of faulty investment, development blocks and structural tensions was a step forward in relation to Schumpeter's approach.

In the 1980s, the Nordic countries experienced an extraordinary investment boom in both financial and real markets. A study of bankruptcies in Swedish manufacturing in the early 1990s did not confirm the Åkerman-Dahmén theory – bankruptcies were in fact less

frequent in industries that had expanded most in the 1980s. Åkerman and Dahmén's theory is more valid for innovation-driven cycles such as the ICT bubble in the late 1990s. The subsequent crash in the 2000s probably reflected a too fast expansion of the ICT sector in relation to other sectors, an explanation in line with Åkerman and Dahmén's theory of faulty investment and structural tensions. Schumpeter's hypothesis that the ICT crash reflected an interruption of the innovation process is less sensible.

Åkerman and Dahmén were skeptical to monetary theories in which financial bubbles could emerge without the expansion of progressive industries. In addition, Åkerman and Dahmén concluded, as Schumpeter's in *Business Cycles*, that innovations and structural change in the recession (or depression) will not lay the foundation for economic progress during the following recovery. These exclusions can be seen as weaknesses in the Åkerman-Dahmén theory, but at the same time, they facilitate a comparison between the Åkerman-Dahmén theory and other theories of the business cycle. For example, an empirical study could scrutinize whether innovations and productivity move procyclically as in the Åkerman-Dahmén theory or countercyclically as in the theory of transformation pressure (see e.g. Malley and Muscatelli, 1999).

Today's economic literature refers, at most, to Åkerman's elaborate studies of swings in economic activity under industrialism, but not to his (and Dahmén's) underpinning theory. This theory, however, is still of great interest from a methodological viewpoint and also for the design of a qualified analysis of the business cycle.

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