

Swedish Industrial Growth and Crises in the 20th Century

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In the long-term perspective, growth is a dominating phenomenon of Swedish industrial development during the last 150 years. The annual increase in production volume has been nearly 4 percent. This growth has to a large extent been achieved through rising labour productivity, which has increased by roughly 3 percent annually since 1890 – attained through rather equal contributions from increased capital equipment and total factor productivity growth. The last decades of the 20th century are, however, characterised by a slowdown in growth of production¹ while frequent crises have occurred.

Crisis has however been a recurrent feature of the growth process. In this paper I will present a perspective on crisis as an integrated part of the growth process and as a form of solving contradictions in that process – primarily between needs of structural transformation and of stability. Growth is dependent on investments that require stability in institutions and in market conditions, but growth also produces change that undermines stability. Crisis may be seen as a reaction and a solution to that contradiction - which is not the only contradiction involved.

A long-term perspective is important since crisis - in contrast to the ordinary business cycle downswing - is connected with changes in long term or structural conditions. Thus, a crisis is built up during a rather long period of time and it effects behaviour during a long period to come. Every crisis is certainly also connected with dramatic short-term events, that may even appear truly exogenous to the functioning of the economy. In this paper I will, however, discuss crises mainly from a long-term perspective and endogenous to the growth process itself.

A chronology of crises

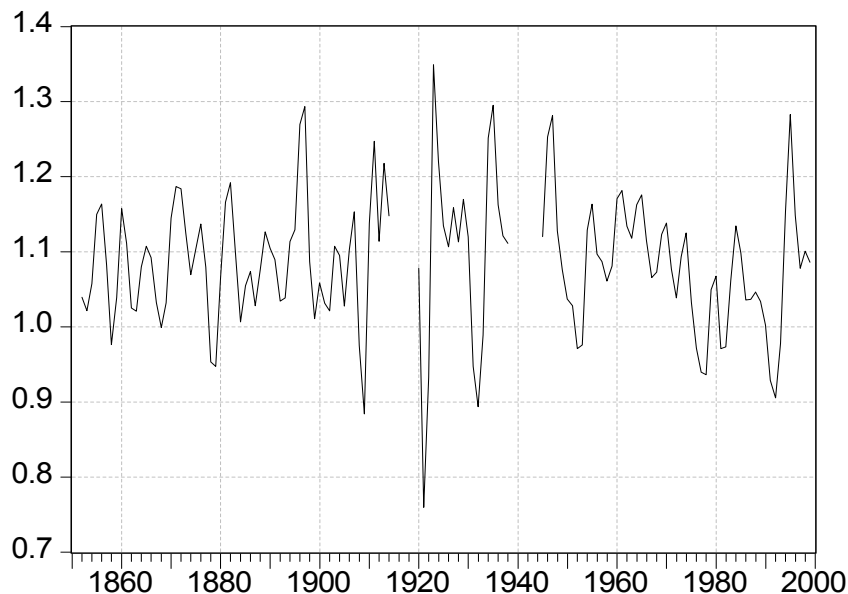
Short-term fluctuations in the form of business cycles are very well documented phenomena. Since 1850 Swedish industry has run through more than 35 business cycles with an average length of 4 years. If we only count cycles with absolute downswings with negative growth rates, the number is reduced to 15. That would make an average length of ten years, i.e. the length of the classical Juglar cycle, but the variation is great – there were very long spans of only positive growth up to 25 years during the breakthrough of modern industrialisation from the early 1890s onwards and during the post-war period from the early 1950s.

Every downturn in activity does not, however, merit the denomination of a crisis. We can apply some simple quantitative criteria of depth and length of the downswing to identify a crisis. A smaller number of crises is identified with the criteria that the downswing meant a

¹ Labour productivity and total factor productivity have however followed long term trends from the 1890s.

loss of more than 5 percent of production and that it took two years or more to reach the pre-crisis level of production. Excluding the periods of the First and Second World Wars, we are left with seven crises since 1850 – most of them well known to the historian.

Fig 1. Growth rates in Swedish industry 1850-1999; t upon $t-2$. Period of First and Second World War excluded.



Sources: Schön 1988, 1990, 1994; National Accounts.

The years of industrial crisis are 1878-79; 1908-09; 1921-22; 1931-33; 1952-53; 1976-78; 1990-93.

In the following sections we will discuss those crises from the perspective of their roles in the long-term structural development of industry.

Transformation, rationalisation and crisis in a long term pattern²

As one central feature of this paper, I will provide evidence of crises being parts of a long-term cyclical pattern in Swedish industry in the period 1850-1995. These evidences will be presented and summarised in a general model of crisis and restructuring as part of structural

² This section and the next is mainly from Schön (1998).

cycles. The model is based on a Swedish schumpeterian tradition of transformation analysis that has been further elaborated in economic-historical research in Lund.³

Two behaviours behind the growth process may be seen as fundamental to structural periods and cycles. To improve utilisation of human resources in relation to human needs you have basically two possibilities - either you become more efficient in your old career and decrease your resource utilisation or you do something new and different that better fits to resources and needs. In a wider economic context, these possibilities of behaviour are two distinct processes that we may call rationalisation and transformation.

Transformation means *changes of industrial structures*, where resources are reallocated between industries, and *diffusion of basic innovations* within industry that provides new bases for such reallocation.

Rationalisation means *concentration of resources* to the most productive units within the branches and *measures to increase efficiency* in the different lines of production.

There are differences in the investment behaviour involved in the processes of transformation and rationalisation. In transformation, investments are generally directed to increased capacity in new areas of production. Those investments are of a long-term character and in the short run they are rather resource demanding. Their immediate effect on e.g. productivity is limited. In rationalisation, on the other hand, investments are directed to reduced costs in existing capacity. They are short term in character and resource saving and have a more direct effect upon productivity, growth and real income.

Rationalisation and transformation are certainly processes that to a large extent take place simultaneously in an economy. If one actor rationalises and reduces his need of resources, another actor may find scope for long-term, capacity increasing investments. It is a commonplace, though, that capacity-increasing and cost-reducing activities are unevenly distributed over the ordinary business cycle. It is however the argument of this paper that trends of behaviour in industry shift between transformation and rationalisation and that there, accordingly, have been long term shifts of such emphasis. These shifts in behaviour are in turn related to properties of complementarity and inertia in the economy and society. Blocks of mutually reinforcing factors are created that over time have considerable expansion force as well as resistance to change. It is furthermore the argument, that these shifts between

³ The schumpeterian analysis of industrial dynamics in Sweden was primarily developed by Dahmén (1950) and Svenilsson (1954). Early versions of the structural model are presented in Nilsson/Schön (1978), Schön (1982) and Krantz/Schön (1983). Further elaborated models, that are closer to the one in this paper, appear in Schön (1991, 1994).

transformation and rationalisation have occurred with considerable regularity within a long structural cycle of approximately 40 years characterised of some 25 years of emphasis on transformation and some 15 years of emphasis on rationalisation. Crises have formed particular sequences in these long cycles.

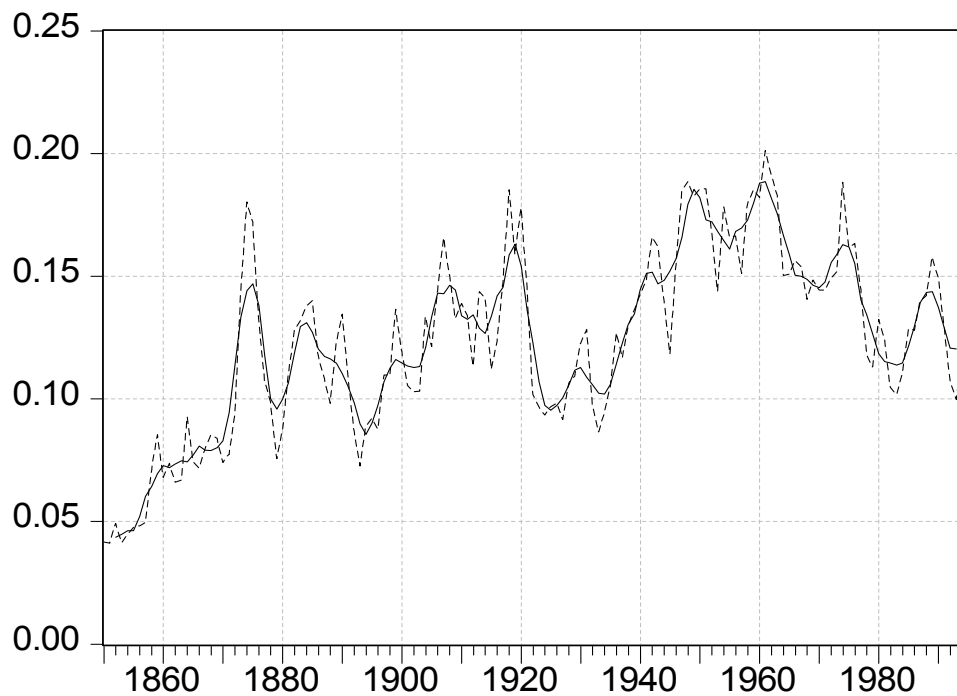
One more point should be emphasised. A crisis clearly has a negative as well as a positive side. There are agents as well as victims of change. An individual enterprise or a particular branch may clearly be on one of these sides or it may stay rather neutral, only affected by secondary effects of the crisis. That goes for the small country as well. Their industries may be hit very severely by a crisis or only lightly, indirectly, by the general drop of demand while being on the advancing side in a more long-term perspective.

The investment ratio and the structural cycle.

The investment ratio in Swedish industry (i.e. investment in fixed capital in relation to value added in industry in fixed prices) expresses distinctly the ordinary business cycle all through the long period 1850-1995. (Figure 2) Since investments are cyclically very sensitive, the ratio rises in upswings and falls in downswings of the business cycle. There is, however, also a pronounced long-term cyclical pattern with low points in the early 1890s, early 1930s and early 1980s. These lower turning points coincide with international crises - actually, the start of this data series is preceded by an international crisis in the late 1840s. From these crises followed periods of roughly 25-30 years with a rising investment ratio to culminations in the mid-1870s, the late 1910s and the early 1960s. Then followed some 15 years of falling ratio to the troughs in the years of crisis.

This is a Swedish pattern that without doubt corresponds strongly to international trends. Of course, there are some particularities in the timing and in the course out of the crises. In the 1930s, Sweden was largely on the positive side of the crisis and fared better than most countries. Swedish industry went quite rapidly from crisis to new expansion. In the last period, Sweden was more in the opposite corner when crisis occurred. The international crisis appeared in the mid-1970s but it was delayed and prolonged a few years in Sweden. The fixed capital investment ratio gives, however, a certain bias since part of the reaction to the crisis was a shift from material to immaterial investments (in R&D). R&D rose from an equivalent of 20 up to 50 percent of material investments between 1975 and 1985. If R&D are included in investments, the investment ratio had its trough in the late 1970s. Thus, we can date the crisis and the turning point in investment behaviour to the period 1975/80.

Figure 2. The ratio of investments to value added in Swedish industry 1850-1995. Fixed prices. Annual and five-year moving averages.



Source: Schön 1994: National accounts.

The investment ratio gives a periodisation of Swedish industrial development in cycles of 40-50 years running from crisis to crisis between 1845/50 - 1890/95 - 1930/35 - 1975/80.

The two phases of the long investment cycle reflect different behaviour that corresponds to the concepts of transformation and rationalisation. In the phase of rising ratio, investments have been relatively long term in character and thus had a longer time lag in their impact on production. Investments have been directed towards increasing the *development power* of industry. In the phase of declining ratio, the reverse has been the case with more short-term investments directed towards a more efficient use of existing capacity. Investments have been directed towards increasing the *competitive power* of industry.⁴

It ought to be emphasised that these trend shifts in investment ratio and investment behaviour generally do not show up in the aggregate growth rates of industry or of the GDP. The shifts indicate a weakening of long term growth forces that may even be accompanied by a short-term acceleration of growth.

⁴ On these concepts, see Dahmén (1988) and Schön (1991).

Behind this periodisation with a long-cyclical pattern of crisis-transformation-rationalisation, there have been marked changes in the direction of growth appearing after the crises. Not only did the investment ratio rise and turn over to long term investments after the crises, but new growth branches and new development blocks appeared as well. Thus, Swedish industrial development can be periodised and characterised from point of view of these development blocks centred on basic innovations, particularly in the fields of power and communication.

The upswing of industrial, as well as infrastructural, investments from the 1850s was linked to the breakthrough of mechanised factories in Sweden, the modernisation of steel processes and the construction of railways. It was also a period of increased utilisation of Swedish natural resources for an expanding export trade.

From the 1890s, the modern industrial society had its breakthrough. Investments went increasingly to a more sophisticated urban industry in machinery as well as new consumption goods. In the centre of development, there was a diffusion of new motors, electrical or combustion engines, with a widening scope for mechanisation within industry. In Sweden, electricity got a particularly important position due to factors such as energy-intensive industry, shortage of fuel and abundance of hydropower.

From the 1930s, and still more marked after the Second World War, new development blocks were created around a widening of electrification and the diffusion of automobiles. In both cases, there were waves of investments around the development of an infrastructure from the basic innovations of the preceding cycle. In case of electricity, a much broader spectrum of applications was created ranging from the processing of electrosteel to small motors in handicraft and household. In combination with the diffusion of the motorcar, new styles in living and consumption developed in the cycle.

From the mid-1970s electronics, especially with the appearance of the microprocessor, became the centre in new development blocks. The use of knowledge and information in production of goods and services advanced with leaps, marking new directions of growth.

With this periodisation and characterisation of a turnover from crisis to transformation, the crises of the 1890s, 1930s and 1970s really deserve the epithet *structural crises*. The description of the industrial and economic development may also convey the impression that basic innovations are the cause of structural crises and even of the regularity in their

appearance - i.e. that there is a regular discontinuity in innovative activity with crisis as a phase of creative destruction at the appearance of such clusters. That impression is, however, not correct.

The crises and the structural cycle

Two of the seven crises identified in the first section were structural crises in the sense that investment behaviour turned from rationalisation within an old structure into transformation with long-term investments in new directions, i.e. those of the early 1930s and mid-1970s. The structural crisis of the early 1890s was different, however. The international Baring crisis was felt in the Swedish financial market with more restricted credit policies that mainly hit old interests in iron industry and textile industry, but the surge upwards of production in new enterprises was strong. Investments turned strongly out of the crisis from the rationalisations prevalent during the 1880s into the establishment of new industries. However, there was no strong absolute fall in production volume during the years marked as structural crises. There was only a minor setback in 1892.

Furthermore, two of the seven crises occurred at the upper turning points of the structural cycle when business climate changed suddenly and the trend of investments turned from long-term creation of new plants into short-term rationalisation of existing establishments. Thus, the severe crises of 1878-79 and 1921-22 both meant the culmination of long investment increases – both were preceded by rising prices and strong speculation about future profits but were followed by falling profits and rationalisation of the 1880s and 1920s. Hence, they may be called *culmination crises*.

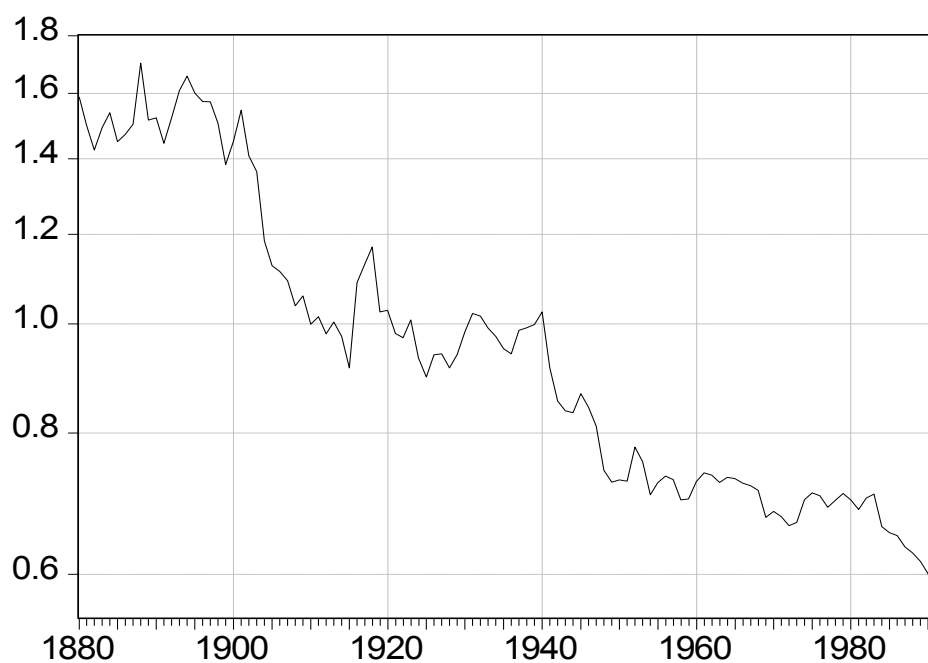
The culmination of long-term investments in the early 1960s signified an equally strong reorientation of investments towards more rationalisation in the 1960s and early 1970s. But there was no crisis, only an ordinary business-cycle downswing with lower growth rates. That may be due to the situation on the financial market. The regulation of the credit market as well as the implementation of Keynesian policies put an obstacle to speculative booms and may have stabilised the change-over to more efficiency-raising investments within the existing structure of growth. (One may note, though, that Keynesian policies were toothless in the following structural crises in which needs arose of new growth directions.)

There still remain three crises that occurred roughly 15-20 years after the structural crises but circa 10 years before the culmination of the structural cycle, namely the crises of 1908-09, 1952-53 and 1990-93. In the following section these crises will be discussed in relation to the diffusion process of innovations after the structural crises.

The impact of basic innovations on industry - a time-pattern over the cycle⁵

When innovations first appear, they are generally expensive to implement and have a narrow range of application. The availability of efficient capital equipment at reasonable prices is of utmost importance for new development blocks to be formed around the innovations and for their ability to cause crisis in old structures as well as expansion in new investments. Thus, a broad impact and a broad diffusion require that the new technology becomes competitive within a wide range. It is, furthermore, quite reasonable that the impact of basic innovations is felt primarily in the construction of machinery and then successively on the output side of that machinery. Accordingly, the price of machinery equipment in relation to the price of industrial consumer goods may indicate whether there has been any discontinuous effect from basic innovations or technological pushes.⁶

Figure 3. Price index of machinery in industry in relation to price index of industrial consumption goods in Sweden 1880-1991. 1910=1.



Source: Schön 1994.

⁵ This section is based upon Schön (1998)

⁶ The calculation is presented in Schön (1994). The price-indicis are the respective deflators in the national accounts, prior to 1950 constructed in Schön (1988) with individual price-series constructed by Ljungberg, (1990).

One can make the following generalisation: A structural crisis (that has been preceded by an early development of basic innovations) has put an end to old directions of investments mainly in rationalisation of the existing industrial structure and given rise to investments in and development of new technology that after one decade (the length of the classical Juglar cycle of machinery investments) has created a new generation of economically competitive machinery equipment.

The relation between the price of machinery and the price of industrial consumption goods shows a characteristic long-term pattern. (Fig 3) Since 1880, the relative price of machinery has fallen close to one percent annually. This long-term price fall is however concentrated to three decades of discontinuous drops in the level - namely to the 1900s, the 1940s and the 1980s! The price fall has occurred with an interval of 40 years, approximately 10 years after the structural crisis or after the beginning of the new rise in the investment ratio.

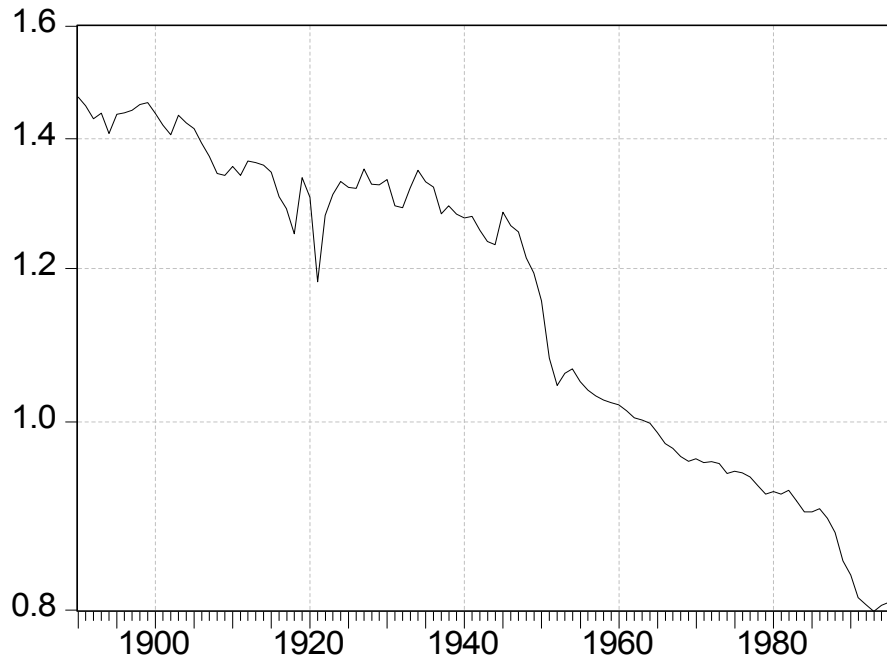
The largely stable price relationship between machinery and industrial consumption goods for the periods of three decades 1910-1940 and 1950-1980 does not mean that innovative activity should have disappeared from the industrial sector. The stability rather means that focus of the innovate activity has shifted from the introduction of new equipment to increased efficiency in the use of that equipment which is the aim of the rationalisation process. In that process, innovations can appear that at a later stage, after a structural crisis, prove to be basic within new development blocks in new structures.

The main conclusion to be drawn from this study of the relative price of machinery is that the strong impact on industry from innovations and new technology has come approximately 10 years *after* the structural crisis. Hence, those crises can not be seen as a consequence of "a creative destruction" caused by innovations. But what about the effect of the economic breakthrough of the new technology on the industrial structure? Is there more meaning to the Schumpeterian expression in that sequence?

One way of analysing that impact is through a study of the allocation of labour. In figure 4, the impact of reallocation of labour on labour productivity is indicated by a *structural index of labour*. The index show the relation between the actual amount of labour used each year in industry and the amount that would have been needed to produce the same volume, if the branch structure had remained unchanged from base years. The reallocation of labour to branches with a relatively high labour productivity has not occurred evenly through time and not even evenly during the decades of transformation. That is evident from the index in the

figure. Reallocation has been highly concentrated to the years 1905/09, 1948/53, 1988/93. Thus, the rapid reallocation of labour has occurred a few years after the relative price-fall of machinery and approximately 15-20 years after the structural crises.

Figure 4. A structural index for labour in Swedish industry 1890-1996. 1970=1.



Note: The index show the relation between the amount of labour used each year and the amount that would have been needed to produce the same volume, if the branch structure had remained unchanged from the base years 1893/94, 1910/11, 1935/36, 1953/54, 1969/70.

Source: Schön 1994.

Then the time-pattern may be summarised as follows: A structural crisis (that is not caused by innovations) gives way to increasing investments in new areas that after 10 years release a new generation of machinery equipment forming new development blocks that in a few years time have a fundamental impact on the allocation of labour and on growth rates in industry. This sequence of events spans over 20 years.

The closing years - 1905/09, 1848/53, 1988/93 - have even more cyclical characteristics in common. They all represent years of peak and downswing of building cycles in Sweden. In fact, the rhythm in the transformation of industry is shaped in an interaction with building cycles or *long swings*. In this interaction, we may generalise the following sequence:

After a rather cautious expansion during the first business cycle out of the structural crisis, the economic breakthrough of the new machinery leads to widening and greater expansion power of the development blocks. Rising investments in plants leads to increasing residential constructions around the nuclei of new expansion. A general rise of demand stimulates both new and old enterprises, particularly the old since it takes time to become efficient in supplying new products or using new processes and equipment - i.e. there is a time lag in the output effect of investments while the stimulation of demand from those investments is more direct (leading also to inflation pressure). New technological-commercial possibilities and rising demand lead to frenetic optimism (the war 1939-1945 restrained that frenzy considerably economically but not technologically). When labour and capital markets become tight in the peak years, profit levels fall and less productive units become strained. Output effects of investments increase, leading to a wider relative price fall and further reduction of profitability. Investment declines and demand is rapidly reduced, driving less productive old units as well as debt-burdened new ones out of production (and with equity deflation, financial crisis follows suit). A crisis under a strong impact from the "creative-destructive" power of the new technology takes place.⁷

From the perspective of the 40-year structural cycle, one can talk about a 20-year-crisis of the new structure (around 1910, 1950 and 1990) or a *transformation crisis*. This crisis is different from the others in the sense that it does not involve trendbreaks between transformation and rationalisation. It involves, however, wider questions than making room for new growth forces within industry. The transformation crisis makes acute the problem of establishing new institutions as a basis of stability and integration for a capitalist economy that has transformed fundamentally during the preceding two decades, i.e. since the structural crisis (this implies that the Swedish time-pattern is internationally relevant). When such a basis has been formed, investments have culminated and the economy has expanded on a wider scale.

A typology of industrial crises

The results lend themselves to a typology of crises that differentiate between three types of crises at different stages of the structural cycle, namely structural crises, transformation crises and culmination crises as follows:

| Structural crises | transformation crises | culmination crises |
|-------------------|-----------------------|--------------------|
| (1891-93) | 1908-09 | 1878-79 1921-22 |

⁷ This drawn-out process fits to the understanding of "creative destruction" not as a particular instant but as an "Einordnungsprozess" of innovations in a new structure.

1931-33
1976-78

1952-53
1990-93

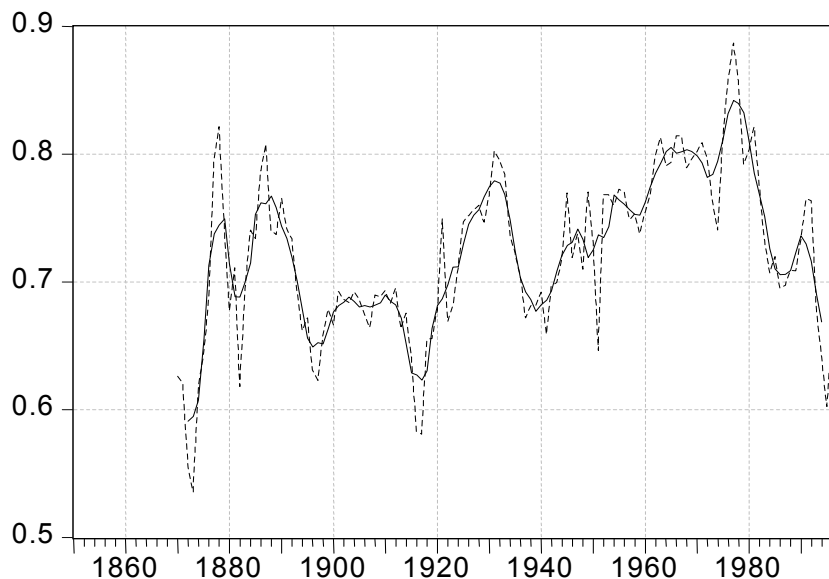
(1963-64)

Thus, all seven major crises in Swedish industrial growth are related to typical sequences of the structural cycle. The depth of the crises differs however and in some instances trendbreaks occurred without open crises. In the case of structural crises the severity has been dependent upon the strength of old and new forces within industry. The crises have become increasingly difficult to overcome. The severity of the transformation and culmination crises has been more dependent upon the role of the financial market and the amount of speculation that has preceded the crises. Industrially they have been less concerned with changing direction of growth but rather of rationalising enterprises and branch structures.

The share of profits and wages

In this reasoning structural crises are not caused by basic innovations. Structural crises rather cause such innovations to diffuse. The road up to the structural crises will in this section be discussed from the distribution of income between profits and wages. The wage share of the value added in industry, which is the inverse of the gross profit share, shows significant fluctuations that correspond to the structural cycles. (Figure 5) The wage share is low at the start of the expansion in the investment cycles and culminates in the crisis. The alterations in income distribution have been particularly dramatic around the structural crises with very high wage share (or low profit share) in the early 1890s, early 1930s and mid 1970s.

Figure 5. The wage share in Swedish industry 1870-1996. Annual and fiveyear moving averages.



Source: Schön 1994; National Accounts.

These movements in the wage share indicate that the profit level in general was very low in the structural crisis while there probably was dispersion of profit levels in the transformation and culmination crises creating more scope for growth to continue by rationalisation and by concentration of resources to the more profitable areas.

Another question is of course what might occasion the fluctuations in the wage share. For instance, what is behind the rising wage share and the squeeze of the profit share through the cycle up to the structural crises? It seems reasonable that this squeezing of profits reflects developments both on the markets of goods and on the labour market, that places industry in circumstances of more fierce competition and that interact with the changeover in investment behaviour from transformation to cost-reducing rationalisation.

With the diffusion of innovations competition on markets increases. The diffusion is facilitated by continuing adaptations of the new technology to different areas and conditions, and that is accomplished in a combined process of standardisation and specialisation. The process is further strengthened through a geographical widening of markets and a diffusion of industrialisation to new countries.

The diffusion to new countries plays a particular role up to the structural crisis. When the basic infrastructure of the industrialised country is accomplished and productivity and real income increases while investments stagnate, the flow of capital increase to new industrialising countries with higher growth rates as well as rising investment ratios. Thereby high overall growth rates are sustained. But the ensuing debt-ties become important in the emerging structural crises. Successively, new debt-burdened countries have to restrict their demand and increase exports. If they succeed in their export efforts, structural crises of the industrial countries are aggravated. If they fail, the financial system is put under pressure and an international debt crisis emerges. The structural crises have had both features.⁸

Thus, a downward pressure on prices is one component in the change in income distribution in industry up to the structural crises. The other pressure comes from the labour market when wages do not follow the overall income development of industry. Two questions will be posed here: Primarily, why have wages not been flexible downwards and, secondly, what role have wages played in the structural crises and in the pressure towards transformation.

⁸ This feature of the structural cycle is more elaborated in Schön (1989).

One answer to the first question could be that wages have been sluggish in downward price movements due to "money illusion". The falling wage-share in the onset of investment cycles has been generated by measures that have raised the price of industrial goods (devaluations or tariffs or inflationary pushes from exports) rather than reduced the wages. Another approach can be taken from the fact that the wage-share has risen in the latter part of the structural cycle. One can assume that resistance to wage-cuts has grown over the cycle due to e.g. a stronger organised labour interest in the more stable circumstances that prevail in the later part of the cycle, in spite of the very different institutional frameworks of the wage-bargaining process in the 1880s, 1920s and 1960s.

The wage share could have risen also since growth during the cycle has given rise to increased competition for labour from other sectors or areas. Thus, the service sector has grown in relation to industry in all these decades of rationalisation. That in turn may be due to the generation of complementarities between the infrastructure and industry, on one hand, and the service sector, on the other hand, and the fulfilment of these complementarities may have contributed to the rationalisation of industry as well as to raising the demand for labour in services. Shifts in consumer demand towards services, due to increases in income and inelasticities in demand for industrial goods, may also have augmented demand for labour in that sector.⁹

This situation of widening markets, rising consumer demand and profit squeeze in industry have had a double function in the structural development. On one hand, cost-reducing rationalisation has been reinforced leading ultimately to structural crises. On the other hand, new market conditions have been created for the ensuing cycle. This applies to markets for both consumer goods and machinery. Thus, the shift of income distribution to consumers in combination with accelerated growth of real income per capita leads to a more rapid transformation of every day life and of consumption patterns; i.e. when the industrial structure is stabilised and rationalised, the social environment of industry is transformed. The 1880s, the 1920s and the 1960s share these characteristics. New products appear that to a large extent may be a fruition of the earlier basic innovations but also entail elements of new technology. Furthermore, in the hunt for cost-reducing rationalisation innovations are introduced within the existing industrial structure that at a later stage prove to have wider potentials of their own. The widening of markets and the arrival of new competitors mean, at last, shifts in the price- and cost-structures that give new prerequisites for further growth.

⁹ Increased international movements of labour have influenced this process by raising the wage share in the 1880s and probably lowering it in the 1960s and early 1970s.

The role of labour resisting wage-cuts in the period before the structural crises should be emphasised in a long-term perspective of structural change. Had, e.g., wages been flexible enough to preserve profitability in industry, old interest would have been able to withstand the pressure towards transformation longer, while market conditions for new industrial enterprises would have been less favourable. After the crises, however, relative wage-cuts have played another role.

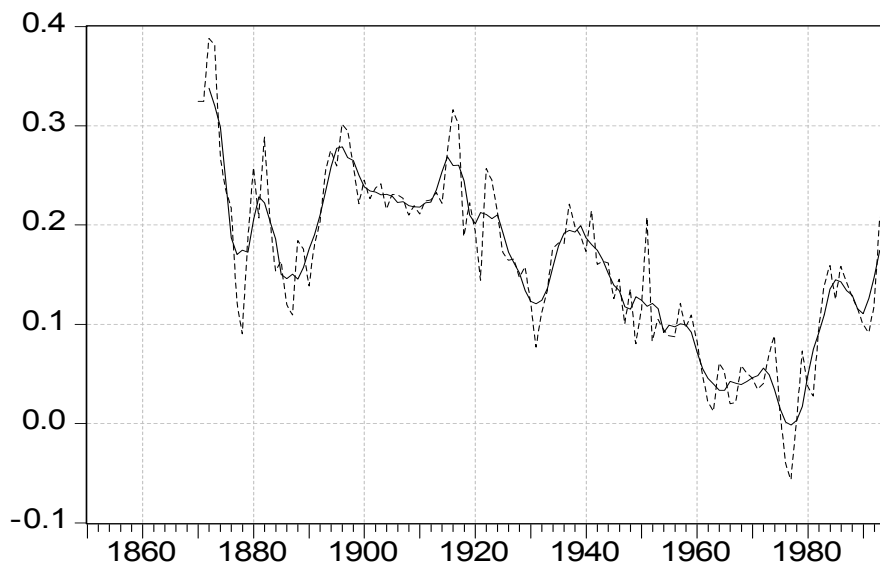
The structural crises have very drastically released the negative pressure and restored profitability in industry. One way of bringing this about is of course through the elimination of the most unprofitable units. Thereby the industrial income distribution has changed directly while the shock of the crisis also has had a more lasting effect on wage negotiations. Another means has been the political reactions that have been motivated by the crisis. Devaluation has been particularly important as a measure to provide scope for restructuring industry. Although this measure raises profitability in industry generally, changes in the market conditions favour new combinations of the factors of production - notably a more intensive development of those innovations of the preceding decades that have a greater potential than only of rationalising old establishments.

Perspectives on the structural crisis of the 1970s

The 1970s were not only a structural crises changing the direction of industrial growth but also a crises that ended a very long period of fast industrial growth and the beginning of a period of more sluggish growth. From the 1970s, crises became more prolonged than before which might be an indication of weaker growth forces. It may also indicate that a more profound transformation process started in the late 1970s that have characterised the 1980s and 1990s.

The need for a more profound transformation may be seen from a new angle when we combine the figures on fixed investments and wages in relation to value added. In figure 6 such a calculation shows what was left to the capitalists when these outlays are deducted from value added. The figure shows a long-term decrease of surplus over fixed investments and wages that have a strong Marxian flavour of the falling rate of profits. The surplus has been particularly low in the structural crises but each crisis has served to restore profitability and liquidity within industry. That has been eroded however in the following upswing of investments and the ensuing increase in the wage share. This erosion was particularly strong during the 1960s and 1970s leaving Swedish industrial capitalism in a deplorable state at the end of that decade. In the 1980s and 1990s, however, the situation changed remarkably and new profits and new life was infused into the system.

Fig 6. Gross profits minus fixed investments as share of value added in Swedish industry 1870-1995. Annual and fiveyear moving averages.



Note: Gross profits are value added minus wage sum.

Sources: See figure 2 and 5.

In this concluding part I will only point at some possible explanations to this turn of events that should be investigated further.

The very low profit rates in the 1960s and 1970s indicate that there were overinvestments in Swedish industry that may have been induced by rigidities on the capital market as well as by an economic policy that favoured investments in fixed capital. Rising wages and rising wage taxes, apart from the sharpened international competition and stagnation of demand of course aggravated the situation in the 1970s.

The shift in income distribution and the rising surplus from the 1980s show, firstly, that liquidity was rapidly restored after the crises with the heavy devaluation of the Swedish currency. The rise continued, however, and according to the present calculation this surplus over wages and fixed investments had by the mid-1990s reached levels of the late 19th century. That is an indication of a new profitability that involves not only another distribution between profits and wages but also a structural transformation with scrapping of old units and development of new growth forces. The rise is however the consequence of gross profits rising much faster than fixed investments, which maybe interpreted in at least two different ways.

One interpretation is that short-term profitability differs markedly from the perceived long term one. Hence, running profits are to a large extent invested in other areas than in Swedish industry. One such area is the increasing foreign investments of large-scale Swedish companies that during the last decades have become more global in character. During the 1980s Swedish companies also increased investments within the EU because of the uncertain official policy. Another area to attract investments from the industrial sector maybe service companies within the new ICT growth sector of the 1990s.

Another interpretation is that immaterial investments have become more important. To fully explain the rising surplus over wages and fixed investments, the building up of immaterial resources should however lead neither to a rising wage sum nor to any increase in material equipment. A more intricate version of this interpretation is, though, that complementarity between company-specific knowledge, new technology and a more competent workforce increases productivity particularly of capital and that a higher profitability of capital is needed in a more globalised economy – i.e. in an economy that supplied capital in rich countries with more opportunities than in the Keynesian world prior to the crisis of the 1970s. However, according to the model presented here such specific knowledge should become more generally available over a couple of decades. Hence, competition will once again put pressure on profits in the decade to come to the detriment of shareholders but to favour wage-earners. The opening years of the new decade have very much concurred with this model.

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