The Rise and the Fall of the Restricted Swedish Model

Svensson, Lars

2010

Lund Papers in Economic History

No. 116, 2010 *Education and the Labour Market*

The Rise and Fall of the Restricted Swedish Model

A Rational Choice Approach to Institutional Change in the Swedish Labour Market 1920-2000

Lars Svensson

DEPARTMENT OF ECONOMIC HISTORY, LUND UNIVERSITY

Lund Papers in Economic History
ISSN 1101-346X
ISRN LUSADG-SAEH-P--10/116--SE+38

Orders of printed single back issues (no. 1-65)
Department of Economic History, Lund University
Postal address: P.O. Box 7083, S-220 07 Lund, Sweden
Telephone: +46 46 2227475
Telefax: +46 46 131585

Full-text electronic issues (no. 58, 60, 61, 66--)
www.ekh.lu.se

The Rise and Fall of the Restricted Swedish Model

A Rational Choice Approach to Institutional Change in the Swedish Labour Market 1920-2000*

Lars Svensson

Abstract

The paper offers an interpretation of institutional change in the Swedish labour market 1920-2000 within a rational choice model, where institutional change is understood as an endogenous process linked to the long-term pattern of growth and transformation of the Swedish economy. The paper follows the rise and the fall of a set of rules, norms and beliefs labelled '*The Restricted Swedish Model*' and demonstrates that its construction as well as its dismantling may be interpreted as the rational response by employers and trade unions to conditions formed by prevailing institutions and two exogenous parameters, the nature of technological change and the level of foreign competition.

Introduction

Labour relations in Sweden during The Golden Age were part of a more general framework of institutional and organisational elements frequently referred to as The Swedish Model. A combination of high growth, low inflation, low unemployment, and wage equalisation rendered the model a reputation of successful realisation of pivotal political targets of the Swedish reformist labour movement. It has mainly been regarded as a combination of policy formulations provided by the political and trade union leaderships and

* This report is output from a project financed by the The Institute for Labour Market Policy Evaluation (IFAU grant 127/08).

policy theories supplied by professional economists (Edin & Holmlund 1995; Johansson & Magnusson 1998; Lundberg 1985). Such a policy discourse tends to emphasise the intentional efforts of a unified political movement and a capital-against-labour dichotomy. This may at least in part be explained by the fact that the period of consolidation of The Swedish Model was a time of sharp ideological confrontation between Social Democrats on the one side and conservative and liberal politicians and capital owners on the other, particularly on the issue of economy planning (Lewin 1967). In an analogous way the period when the model was dismantled – the 1980s - coincided with a similar confrontation over the issue of wage earners funds.

Scope and aim of the paper

This paper considers a restricted version of The Swedish Model. The analysis concerns labour market relations understood as institutions that constitute the constraints under which supply meets demand to determine prices and quantities in the labour market. De-coupling the formation of labour market institutions from the wider ideological and political context favours an analysis that links institutional change to economic development. It opens up for a comprehension of labour market institutions as endogenously shaped rules and habits that regulate wage determination. The paper is aimed at inquiring how far a rational choice model can go in explaining the nature and time pattern of labour market institutional change from around 1920 to 2000.

Analytical framework

Following Aoki (2001&2007) we regard labour relations as institutions that are socially constructed restrictions on the possibility of agents to maximise. They are understood as “common knowledge at equilibrium” and “shared behavioral beliefs” (Aoki 2007:7) and may be formal or informal (North 2005). Institutional change is the result of agents endeavor to overcome such institutional restrictions or to put restrictions on the behavior of other agents. Shifts in exogenous parameters cause institutional disequilibrium and open up for change.

Change in institutions as restrictions is thought of as an endogenous process. It is the response of rational actors to exogenous changes in environmental conditions that generate a state of disequilibrium. The environmental conditions are represented by a limited set of exogenous parameters that have not been deduced from theory but extracted from historical experience (cf. Greif 1998). It is important to introduce only a limited set of exogenous parameters in the model in order to understand how changes in their value determine institutional change.

The period of investigation is 1920-2000. The long-term pattern of change can be sketched as the rise and the fall of The Restricted Swedish Model (RSM). If the performance of RSM is evaluated by the criteria pointed out above (high growth, low inflation, low unemployment, and wage equalisation) its hey-day is dated to roughly the mid-1950s until the mid-1970s (Lundberg 1985:3).

I start out by identifying the institutional and organisational features, i.e. the set of relevant rules and norms, that regulated the labour market during this period. The purpose is to understand how the model evolved and eventually were dismantled.

A basic model that captures the essence of the central transaction, the determination of prices and quantities in the labour market, is first considered. I find it useful to think of transactions in the labour market as the outcome (payoffs) of actions performed by rational agents subject to given institutional constraints. The comparative statics framework strategy will demonstrate the outcome of such processes given different combinations of institutional features and different values of relevant exogenous parameters. Analysing the payoffs of different strategies under different institutional conditions may shed some light not only on the role of an institution but also on possible motivations for their establishment.

The Restricted Swedish Model at its apex

In 1968 the three major organisations in the Swedish labour market, the Swedish Employers' Confederation (SAF), the Swedish Trade Union Confederation (LO), and the Central Organisation of Salaried Employed (TCO), published a collaborative study of wage formation in Sweden between 1952 and 1968 (Edgren et al.).[2] The ultimate intention was to supply a normative model for wage formation within the wider framework of "The Swedish Model". Ironically enough, the foundations of the model were soon after eroded, and the normative function of the report became illusive. Instead it

[2] Soon renamed the EFO report after the initials of the three authors Edgren of TCO, Faxén of SAF and Odhner of LO.

provided a detailed description of wage formation in Sweden during a decade and a half (Faxén et al.).[3]

The report provided and analysis based on a two-sector model of the economy, with a competing and a sheltered sector, and stressed that wage formation was subject to different conditions in the two sectors. It was a basic postulation that the competing sector was a price taker in the international market, while pricing in the sheltered sector was mainly determined by the development of production costs. This had several implications.

Wage development in the competing sector was constrained by the necessity to stay competitive in foreign markets, i. e. to keep price increases within the limits set by the external rate of inflation. The room for real wage increases was the sum of productivity growth in the exposed sector and external inflation.

Wage development in the sheltered sector tended to parallel the development in the competing sector due to the fact that the latter was recognised as the leading sector in the wage formation process. This implied that differences in productivity growth would prompt deviations in prices between the two sectors. To the extent that productivity grew slower in the sheltered sector than in the competing sector, there would be a pressure on the inflation rate to increase beyond the limits set by external conditions. The inflationary pressure increased with the relative size of the sheltered sector.

The EFO report stated that "relationships with abroad, given fixed exchange rates, and the development of productivity in the competing sector have in fact controlled the determination of wages in the period studied, 1952-1968." (Edgren et al.:13) That is, the basic message of small open economy constraints had, according to the report, been received and understood. The very idea of a co-operative report also demonstrates that a broad consensus on the basic conditions for wage formation had been established among the major labour market organisations. It can be concluded that two norms had gained hegemonic status. First, it was recognised that wage formation in the economy at large had to be subordinated to conditions in the competing sector. Second, small open economy constraints implied that wage increases had to be subordinated to productivity growth. As a corollary the primacy of measures that increase productivity was acknowledged.

In sum, RSM can be depicted as composed of a set of rules, norms and expected behaviour. Three basic norms substantiated the model: acknowledgement of the competing sector as leading in the process of wage formation, the primacy of productivity growth, and solidarity in wage setting.

[3] Faxén et al. 1988:11 ff. was a follow-up of the EFO report.

These informal institutions were supported by a set of formal rules and organisational features, the core of which comprised central and nation-wide collective agreements, reached through centralised bargaining between the central bodies of the principal workers' and employers' organisations who also possessed the power to implement such agreements.

This set of institutions prevailed during a limited period of time; as a coherent arrangement roughly between the mid-1950s and the late 1970s. In order to identify its historical origin a basic model will be constructed, which allows for comparisons to be performed by repeating the analysis with variations in conditions for different sub-periods.

The basic model

The model is specified as the interactions between four *agents* representing two *sectors*:

- Employers' organisations in sectors exposed to foreign competition (K)
- Employers' organisations in sectors sheltered from foreign competition (S)
- Trade unions in sectors exposed to foreign competition
- Trade unions in sectors sheltered from foreign competition

Employers' organisations maximise profits defined as value of output less cost of inputs. All inputs except wages are regarded as fixed costs, i.e. employers minimise wage costs per unit produced.

Trade unions maximise real wages and employment. There is a trade off between the real wage and product demand, which in turn determines employment. Utility is maximised when the marginal utility of the real wage equals the marginal utility of employment.

Exogenous parameters

Two main, although strongly interrelated, exogenous parameters are introduced: the *mode of technological change* and the *level of foreign competition*. In both cases parameter values are dichotomised. The level of foreign competition is either high or low. The mode of technological change is either *transformation* or *rationalisation*.

The parameters are derived from historical experience, not deduced from a theoretical model.[4] The choice of parameters calls for a motivation, and particularly the way that technological change is understood requires to be elaborated at some length.

For the main part of the twentieth century Sweden may be characterised as a small open economy. The degree of openness and exposure to foreign competition, however, varied with both political and technological conditions. The period from the Great Depression to the Second World War was one of frequent restrictions on foreign trade, while trade gradually was liberalised from the end of the Second World War. Furthermore, a stabilising monetary system was launched as an important complement. GATT and Bretton-Woods promoted strong growth in world trade and consequently of foreign competition. Thus, political factors pushed up foreign competition, particularly between the mid-1950s and the mid-1970s.

Technological change is conceptualised as either *transformation* or *rationalisation*. This originates from a generalisation of Swedish economic development since early industrialisation developed by Lennart Schön: recurrent cycles are demarcated by structural crises at their endpoints. Between the crises, a cycle moves from an initial phase of transformation and renewal to a phase of rationalisation (Schön, 1998; 2000).

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' (Schön, 1998, p. 399). This implies a change in the direction of economic and industrial growth as new products and production techniques are introduced. Eventually, continued adaptation and diffusion of new technology, increasing commodity supply and decreasing elasticity of factor supply give rise to increased competition in all markets. The resulting profit squeeze prompts a redirection towards short-term, efficiency-increasing investments and the economy enters the rationalisation phase. This means '*concentration of resources* to the most productive units within the branches and measures to increase efficiency in the different lines of production' (Schön 1998, p. 399). As the limits of expansion within the established structure are reached, a structural crisis marks the transition to the next cycle. Three full cycles (approximately 1850-90, 1890-1933 and 1933-75), and an uncompleted one that began in the late 1970s, have been identified (Schön 1998).

[4] Although recent literature in the General Purpose Technology field introduces deductive models that show striking similarities with the inductive model referred to here (see e.g. Helpman & Trajtenberg 1998:82-83).

The links between physical capital and labour skills are critical to the process of growth and transformation. Demand for labour is understood as demand for labour with qualifications that are compatible with the technology currently employed. Technology-specific labour demand is matched with supply in the labour market. Thus, the ability of labour market institutions to contribute to the matching process is instrumental to the social capability to adopt new technologies.

Two qualifications of this statement must be made. First, new technology does not necessarily mean a more complex technology. To be sure, in the transformation phase new technologies are introduced whose productivity potential is yet to be exploited. Demand for skilled labour tends to grow. In contrast, technological change in the rationalisation phase signifies the standardisation of products and the simplification of production techniques. Relative demand for low-skilled labour tends to increase. Second, new technologies are not introduced evenly across sectors and industrial branches. There are leaders in the process, and there are followers and laggards. Their demands on labour market institutions differ (Svensson 2004:81-83).

The two parameters are strongly interrelated, theoretically as well as empirically. Market conditions are more competitive in rationalisation than in transformation. During phases of transformation, when new innovations provide the basis for new products and new production processes, advanced firms in leading sectors benefit from Schumpeterian monopolies. Only as innovations diffuse and products and processes become increasingly standardised and simplified, i.e. during the shift from transformation to rationalisation, will conditions approach those of a competitive market.

The shift from rationalisation to transformation that occurred with The Great Depression coincided with an international shift to protection in monetary as well as in trade policies. The successive implementation of liberal trade policies (GATT) and stability in international monetary relations (Bretton Woods) together with European economic integration brought gradually more competitive conditions in world markets from the 1950s. Finally, the dismantling of the Bretton Woods system in 1973 signifies a break with the movement towards increasingly flexible international relations that coincided with structural crisis and subsequent transformation of the Swedish economy.

This means that although it is important to analytically distinguish between the impact of technology and trade, we may restrict the number of parameter values to only two pairs: (high level of foreign competition; rationalisation) and (low level of foreign competition; transformation).

An additional connection between the two parameters is related to the key role played by the engineering industry. Empirical evidence suggests that this sector was the most important part of the competing sector but also played a leading role with regard to the development and implementation of new technology.

The bargaining process

Assume that labour markets are in equilibrium when bargaining starts. It is useful to think of the outcome of the bargaining process as a change in the wage level (Δw) in relation to change in productivity (Δp). In the process there are forces that work to move Δw away from Δp. For each player a range of acceptance can be identified. The outcome of the bargaining process is a wage change within the interval between the upper limit of the employers' range of acceptance and the lower limit of the union's range of acceptance.

The *upper limit* to the trade union's range is determined by the trade off between real wage and employment. Thus, it is the level of Δw at which the expected disutility of a decrease in employment offsets the expected utility of the wage change. This is in turn determined by second order determinants that include unemployment rate and elasticity of product demand. The *lower limit* is the lowest value of Δw which compensates for the disadvantage of not coming to an agreement.

The employers' organisation sets an *upper limit* at the level at which the value of Δw results in zero profit. This level is determined by the elasticity of product demand. The *lower limit* is the lowest level at which employers are able to attract a sufficient quantity of labour and thus determined by the elasticity of labour supply.

The range of acceptance of the trade unions and the employers' organisations must overlap – otherwise there would be no contract. The equilibrium outcome of the negotiation process is the rate of wage change that result from optimal rational behaviour by the players when considering relevant information about one's own and the other player's resources. Pay-offs vary according to combinations of parameter values and the set of institutions that constrain the bargaining process and may, if negotiations are decentralised, differ between the two sectors.

Comparative historical analysis

The basic model will be used to study the behaviour of agents and generate the outcome of the bargaining process in terms of payoff structures in four different historically appropriate combinations of exogenous parameter values. These correspond to the technological regimes that have been identified for four periods (see Schön 1998: 402-403; Schön 2004:290-291). These are

- From World War I to The Great Depression – a period mainly characterised by rationalisation and also openness and high degree of foreign competition.
- From recovery from The Great Depression until the late 1950s - a period mainly characterised by transformation and strong barriers to international trade.
- From the late 1950s until the crisis of the mid-1970s - a period mainly characterised by rationalisation, openness and favourable conditions for international trade.
- From around 1980 to the present - a period mainly characterised by transformation.

For each period we identify the relevant institutional constraints that the players have to face. In combination with the basic model and values of exogenous parameter they constitute the elements of a benchmark model, from which the payoffs of each player can be generated. Payoffs are evaluated in relation to prevailing institutions, and to the extent that players judge an institutional constraint as frustrating pressure for institutional change will occur. New institutions evolve in a process where alternative arrangements are selected from a bank of more or less elaborate ideas, proposals and recommendations that originate from earlier debates and reports but which have not come to fruition. Thus, in each period there are prevailing institutions but also a set of potential institutions that may eventually prevail as a result of pressure from one or more agents. Institutional change is a selection process. It is also a path dependent process. Even though rational choice is assumed to be the basis of behaviour, players are not totally free to shift to a new idea or norm even as values of exogenous parameters change and render it dysfunctional.

Since my purpose is to study how RSM evolved historically, the relevant institutions are understood as the presence or absence of the set of institutions that constitute the model. In a previous section of the paper the core norms and rules have been singled out as "the acknowledgement of the competing sector as leading in the process of wage formation, the primacy of productivity growth, and solidarity in wage setting complemented with central and nation-wide collective agreements, reached through centralised bargaining between the central bodies of the principal workers' and employers' organisations who also possessed the power to implement such agreements".

A critical feature of the institutional setting is to what extent the bargaining process is centralised. This is an endogenously shaped quasi-parameter[5] which is incorporated in the construction of benchmark models in the same way as the exogenous parameters. It is dichotomised and takes one of two values: centralised or decentralised, i.e. wages are negotiated either at peak level or for each sector separately. It may then be combined with pairs of exogenous parameters to form four combinations, which correspond to the periodization suggested by Schön:

- Decentralised bargaining during a period of rationalisation and high degree of foreign competition. This is labelled HRD.
- Decentralised bargaining during a period of transformation and strong barriers to international trade. This is labelled LTD.
- Centralised bargaining during a period of rationalisation and high degree of foreign competition. This is labelled HRC.
- Centralised bargaining during a period of transformation and strong barriers to international trade. This is labelled LTC.

From World War I to the Great Depression

Relevant institutional constraints

Collective bargaining had been practised in Sweden already before the turn of the Century 1900 and in 1919 collective agreements covered 56 per cent of the blue collar workers in the manufacturing industry. These were still mainly on local plant level. Only three out of more than 800 agreements that were concluded in 1919 were nation-wide, but these covered 24 per cent of the workers for whom agreements were made in that year (Sociala Meddelanden 1920:357-358).

The employers were organised by industrial sectors, while the trade union movement around 1920 was in the process of organisational homogenisation. Blue collar unions were traditionally of two kinds representing either workers in the same profession or workers employed in the same industrial sector. Under pressure from the employers the 1912 LO congress made a decision to organise along the lines of industrial sectors, and the

[5] Quasi-parameters "can gradually be altered by the implications of the institution under study and … their marginal change will not cause the behavior associated with that institution to change". They are therefore considered as parametric – exogenous and fixed – in the short run but as endogenous and variable in the long run (Greif & Laitin 2004:639).

process was to a large extent finalized during the 1920s. The major motivation was that employers were organised according to the industry principle and negotiations had long since been conducted per industrial sector (Lundh 2002:94-96). There was no coordination between bargaining in different sectors, and consequently no scope for solidarity in wage setting between sectors or any recognition of the competing sector as leading in the process of wage formation. Finally, measures to promote productivity growth through rationalisation were to say the least contested (Johansson 1985:99-111).

In sum, institutional features and exogenous parameter values between World War I and The great Depression corresponds to the conditions that have been labelled HRD and none of the elements that constituted RSM were present.

Bargaining in HRD

Wages are negotiated separately in the two sectors. Agents in the K sector are subjected to small open economy constraints. This means that if wage changes (Δw_k) move beyond productivity growth (Δp_k) firms will no longer be competitive in world markets. To the extent that this is common knowledge it will put an upper limit to the bids of the trade union as well as of the employers' organisations at the level of $\Delta w_k = \Delta p_k$. For the union the utility of a wage increase above that level would be offset by the resulting decrease in employment, so maximum utility for the union is $\Delta w_k = \Delta p_k$. The lower limit for the bid that the union can accept is where the marginal utility of the wage change equals the marginal utility of coming to an agreement at all.

Correspondingly, the upper limit for the bid that employers can accept is determined by elasticity of demand in world markets, so it is $\Delta w_k = \Delta p_k$. Competition for labour with employers in the sheltered sector is a factor which pushes Δw_k towards this limit. Although, as noted above, this is more important during transformation than during rationalisation when productivity differentials between workers with different skill levels are relatively small, it is not totally insignificant.

An agreement is concluded if this upper limit is above the lower limit of the workers and the wage change will be in the interval between these points. The exact level of Δw_k will be determined by a set of factors that mirror the relative power of the parties, e. g. access to conflict funds, union density and level of unemployment. In sum, the historical context of the period suggests a value of Δw_k that is considerably below Δp_k, that is $\Delta w_k = \Delta p_k - a$; $a > 0$.

In the S sector demand for wage increases is stronger than in the K sector and workers will demand a wage change above Δp_s, because workers know that employers are able to compensate themselves for increased wage costs by raising prices in a sheltered market. For the same reason employers' resistance to claims for wage increases is weak, although there is a limit to employers' readiness to accept high wage increases since elasticity of demand for S sector products is not infinitely elastic.

Since a wage increase which exceeds the growth in productivity can be compensated by price increases, this limit may well be above Δp_s. Thus the upper limit of the range of acceptance is determined by the elasticity of product demand in the domestic market. Provided that this is common knowledge the bargaining position of the union will be strong. To this may be added that each union not only controlled its own conflict funds but could to some extent rely on support from centrally managed funds of LO. Thus there are strong reasons to believe that the wage change will be set above productivity change in the sector, that is $\Delta w_s = \Delta p_s + b$; $b > 0$.

What consequences emerge from the combination of these outcomes in the two sectors? One conclusion is that only if $\Delta p_k > b$ can K sector workers avoid lagging behind S sector workers in wage development. This relation can not be theoretically determined, but there are good historical reasons to believe that b is likely to forge ahead of Δp_k. Since elasticity of demand for S sector products is the factor that restricts b upwards, we have to consider the nature of these commodities. A substantial share of the sheltered sector produced necessities such as food and housing that obviously had a relatively high elasticity of demand.

In addition the model produces clear incentives for S sector workers to increase the value of b even if this prompts inflation and thus has a negative feedback effect on the real wage, while the opposite is true for K sector workers. The argument is the following:

A wage increase in the S sector of $\Delta w_s = \Delta p_s + \mathbf{b}$; $\mathbf{b} > 0$ for which employers are fully compensated by price increases will result in an inflation rate of αb, where α is the share of S sector products in the basket of commodities. This means that the real wage change for S sector workers is $(\Delta p_s + b) - \alpha b$: $b > 0$ and for K sector workers $(\Delta p_k - a) - \alpha b$; $a \geq 0$. Consequently the real wage of S sector workers will increase with the value of b, while the opposite is true for K sector workers. This means that it is rational behaviour on the part of S sector unions to maximise b all the way up to the restriction set by a relatively high elasticity of demand for S sector products.

In sum, K sector agents can escape a decline in the relative wage, which for the workers results in downward pressure on the real wage and for the employers in a disadvantage in the competition for productive labour, only by changing the inequality Δp_k-**a** < Δp_s + **b** to Δp_k-**a** ≥ Δp_s + **b.** I have argued above that **a** under given conditions is small if not negligible, and it is difficult to see how Δp_s can be manipulated by K sector agents. The options that remain are to push Δp_k upwards and to reduce **b**, i.e. to promote productivity growth in the K sector and to hold back wage increases above productivity growth in the S sector.

Institutional change – the historical experience

To the extent that existing institutions put impede actions to accomplishing these targets we may expect K sector agents to push for institutional change. More specifically, the model predicts that K sector agents will act to repeal institutions that constraint productivity growth in the K sector and develop institutions that constraint wage determination in the S sector.

Attitudes towards rationalisation and productivity

Productivity growth is of course a general target of industrial activity, so there was no need for employers to change their attitudes and behaviour in this respect. The specific type of productivity enhancing technologies associated with the name of F. W. Taylor and *scientific management* were introduced in the Swedish industry during the 1910s. Taylorism was enthusiastically received by Swedish industrialists and spread quickly during the 1920s, particularly in the engineering and the textile industries. Firms in leading sectors managed to take advantage of new technologies, notably those associated with electrification, and shift to a more rational organisation of production (de Geer 1982; Johansson 1985:39-42; Schön 2000:312-314).

Workers have, however, at least since the days of the Luddites been ambivalent to productivity-enhancing technological change. The fear that the new technology will reduce jobs more than it will increase productivity and wages has often generated negative attitudes to labour-saving technological change.

Studies by De Geer (1978 and 1982) and Johansson (1985) demonstrate that some Swedish trade union leaders developed a positive attitude towards rationalisation quite early. Others were more hostile and articulated a strong resistance to the introduction of scientific management. The debate culminated in a “conference for industrial peace” organised by the government in 1928, which resulted in the formation of a “Delegation for industrial peace” with representatives from the trade unions (LO), the employers (SAF) and the government. The effects of rationalisation were a major issue in the debates and in the documents produced by the delegation. Johansson interprets the results of the work of the delegation as “consensus over a compromise”. Not all trade union leaders were convinced of the blessings of rationalisation. This is why the delegation used the rather curious expression of “rational rationalisation” to describe the technological shift it recommended all parties to support (Johansson 1985:75).

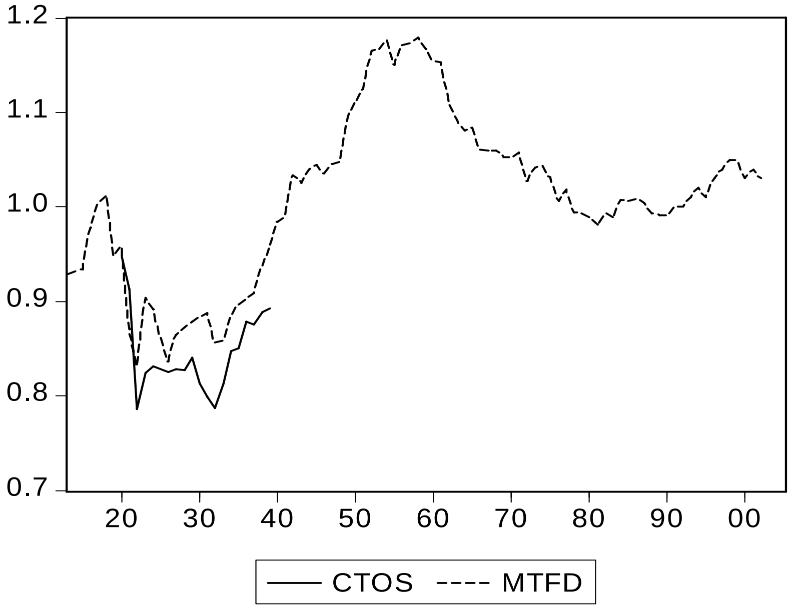
It is obvious that leading K sector agents, notably the Swedish Metal Workers’ Union and the Swedish Metal Trades Employers’ Association were active parts in the process that led to consensus (Johansson 1985:ch. 2-3). It is also clear that the compromise was a way of concealing obvious divergences in attitudes within LO. Some union leaders stressed the risks involved while others pointed to the possibilities of rationalisation and scientific management and argued for a more active role of the workers in the process. The Swedish Metal Workers’ Union played a leading role when taking the latter position (Karlbom 1955:242)

Solidarity

The actual development of relative wages during the interwar period corroborates the predictions derived from the model (Figure 1). In the turbulent years immediately following The Great War the competitive-to-sheltered sector relative wage in the manufacturing industry decreased from around parity down to around 80 per cent. This period was in Schön’s terminology a culmination crisis that opened for the subsequent rationalisation phase (Schön 2000:33). The wage differential then remained constant until a few years into 1930s, when Sweden started to recover from The Great Depression.

The fact that the wage gap remained constant until the early 1930s can be interpreted as a balance between a tendency to above-productivity wage shifts in the S sector and productivity growth in the technologically leading K sector. The high rate of bankruptcies in the metal and the engineering industries during the 1920s indicates a high level of foreign competition, but a sharp rise in the wage share of value added may also suggest that wage shifts in the K sector were close to Δp_k (Dahmén 1997:91; Schön 2000:26).

Figure 1. Ratio of male blue-collar wages in the competing sector to male blue-collar wages in the sheltered sector 1920-39 (CTOS) and ratio of male blue-collar wages in the metal trade industries to male blue-collar wages in the food and beverage industry 1913-2002 (MFTD).



Sources: Lönestatisitsk Arsbok (Statistical Yearbook of Wages) 1928-1951, Socialstyrelsen, Stockholm, SOS Löner (Official Statistics of Sweden, Wages) 1952-1960, Socialstyrelsen, Stockholm 1952-1960, Statistiska Centralbyrån, Stockholm 1961-1990.

Note: Separate wage data for S sector workers and C sector workers are available only for the period 1920-1939. For the rest of the period we have used wages for workers in the metal trades (manufacturing of fabricated metal products, machinery and equipment plus basic metal industries, i. e. SNI 37 plus SNI 38 and their previous equivalents) as a proxy for the C sector workers, and workers in the food and beverages industry (SNI 31 and its previous equivalent) as a proxy for S sector workers. *Figure 1* displays both series for 1920-1939. It demonstrates that the patterns of development were similar in the two series during that period. We have also experimented with other combinations. They all show a basically similar pattern.

Thus, K sector workers managed to stop the fall in the relative wage but not to shrink the wage gap. The unbalanced wage structure was a problem that attracted substantial attention. This is evident from debates both within the trade union movement and among employers but is also reflected in actions taken by K sector agents. The previous analysis showed that conditions during the rationalisation phase created incentives for K sector agents to influence wage determination in the S sector. In principle this could be realised by conviction and/or coercion. Conviction presumes a shift in informal institutions (ideology and policy formulations) while coercion would involve a change in formal institutions, in this case for example power structure and bargaining system. In fact, there are several examples that show how K sector agents initiated such changes during the 1920s.

A motion submitted by the Stockholm section of the Swedish Metal Workers' Union to the 1922 LO congress introduced an idea that eventually became a constituent element of RSM, the solidaristic wage policy. Although the expression "solidaristic wage policy" did not appear in the text the aim of the proposed policy was clear enough. The proposers of the motion urged LO to devote "all conceivable resources … in order to impart a comprehension of solidarity to the workers, which pays due attention to the interests of the whole working class, not only of one's own occupational group" (Svenska Metallindustriarbetarförbundet 1922). The final part of the motion demanded that the activities of LO should be "directed to improving the situation of the workers in the lowest position with respect to wages" (ibid.) and that "when decisions are taken on the issue of support by LO to groups of workers involved in conflicts, the wage standard of the group in question in relation to other groups of workers must be considered" and also that "the demands that have initiated the conflict must be examined in relation to the (demands for solidarity)" (ibid.).

The motivation for these proposals demonstrates a conception of the relations between S sector and K sector workers that are consistent with the analysis above: "To the extent that the wage increases of other groups of workers exceed those of the workers in the export industry, the wages of the latter will be further reduced, something which can hardly be in accordance with the demands of class solidarity." (ibid.) The argument was that price increases on products from sheltered industries, which were often "necessary also for the working class", directly reduced the real wage.

The metal workers repeated their claims at the 1926 congress and were supported by the Sawmill Workers Union (Ullenhag:28-29). The call for a wage policy based on "class solidarity" was now underpinned by proposals that would give the central organisation, LO, the power to accomplish wage agreements on the basis of solidarity and with the aim of equalising wages. It was proposed that the board of LO should be granted the authority to scrutinise all new agreements and, perhaps even more important, to control conflict funds.

In the debate within the trade union movement the issue of wage differentials between industrial sectors was from the outset closely related to the centralisation issue. According to the proponents of the solidaristic wage policy the implementation of such a policy required the power to use conflict weapons to be concentrated in the hands of the central organisation.

Proposals for centralisation of power within the organisation did not, however, lead to any concrete measures until much later. Only at the 1941 LO congress were decisions made that adapted the power structure of the organisation to centralised bargaining and central agreements. The congress granted the board of LO the authority to scrutinise negotiations and agreement proposals of member federations, and also the power to deny a member organisation the right to conflict support if the terms were not approved of by the central organisation.

Solidarism and centralisation among employers

Solidarity was not confined to the union side, however. As demonstrated by Peter Swenson, solidarity among employers was a featured idea within employers' organisations, notably in the metal trades, already in the early 1900s (Swenson 2002:78 ff.). It implied a common strategy in wage setting with the explicit purpose of preventing a cost-driving competition for labour. The link between wage policy and the pressure of competition is obvious.

Similar to the debate within the trade union movement the proponents of solidarity in wages among the employers argued for centralisation of power. Representatives of the engineering industry played a leading role. The Swedish Metal Trades Employers' Association (VF) did not join SAF until 1917. By virtue of its size, but also because it organised firms in the most advanced industrial sector, it soon became the leading member organisation (Törnqvist 1954). Sigfrid Edström, managing director of ASEA, a leading electro-technical firm, and chairman of VF since 1916, was elected chairman of SAF in 1931. He was a dedicated centralist and would play a major role in the further development of the organisation. (Treslow 1986:19 ff.).

However, his predecessor Hjalmar von Sydow had paved the way. At least from the early 1920s the authority of SAF was used as a means of controlling the wage policy of the confederate organisations (Faxén 1991:70). In the 1921 annual report from the board of SAF, von Sydow articulated a strong opinion in favour of central collective agreements. Moreover, in the 1924 report von Sydow also questioned the wage differentials that had developed in the early 1920s. He simply could not see any rational arguments why wages of workers in the sheltered sector should be higher than those in the competing sector. Just as in the simultaneous debate within LO and in the EFO report much later, von Sydow noted that prices in the competing sector were determined in international competitive markets, while wage increases in the sheltered sector could be compensated for by rising prices in the domestic market. According to von Sydow SAF had not managed to solve the problem that employers in the sheltered sector practised “the law of least resistance” instead of showing solidarity with their fellow employers in the competing sector (Faxén 1991:73-74).

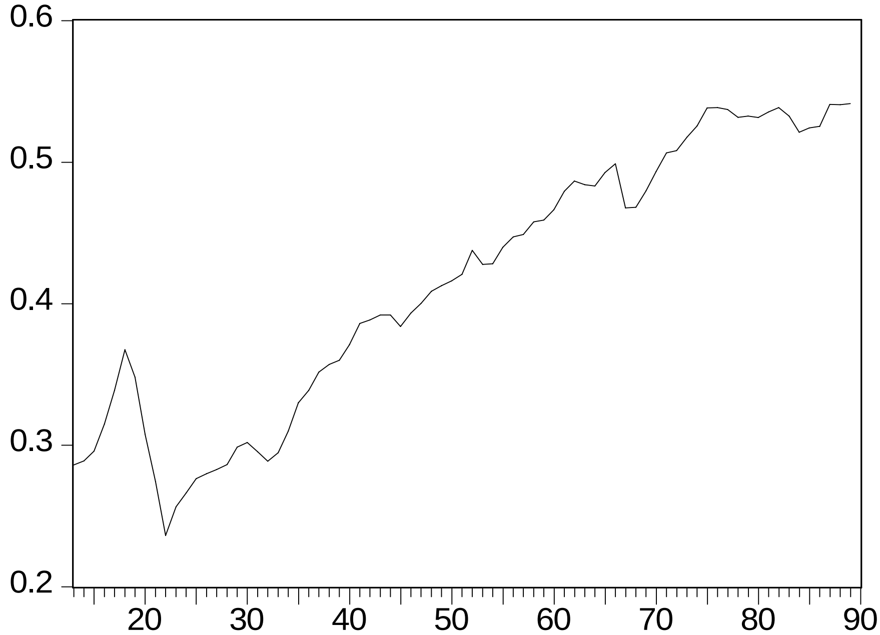
In sum, the historical records clearly meet the expectations generated by the theoretical analysis. K sector agents were expected to push for change in institutions in order to promote productivity growth in the K sector and to hold back wage increases in the S sector. We have seen how trade union leaders, notably in industries exposed to foreign competition, already during the 1920s adopted an attitude of support for programs for rationalisation of production. In the decentralised bargaining system K sector agents had to use either conviction or coercion to influence wage determination in the S sector. The historical record demonstrates that they opted for both. Solidarity in wage setting was increasingly emphasised by the SAF leadership during the 1920s. The launching of a wage policy of solidarity by the Swedish Metal Workers’ Union initiated a shift in informal institutions that eventually became an essential element of RSM. Finally, there are good reasons to interpret the drive to centralisation of power within SAF as well as within LO as an attempt to create the means of subordinating wage negotiations to the principle of solidarity.

From the Great Depression to the 1950s

Postponed institutional change

A major conflict in the building trades starting in 1933 caused the problem of wage differentials between sectors to come to a head. It prompted employers as well as workers in the K sector to fight eventually victorious internal battles against their S sector fellow members. At the turn of the decade, when the building trade conflict had come to an end, centralisation of power in the hands of K sector employers had come a long way both within SAF and LO (Swenson 1991:521 f.).

Figure 2. Number of workers in the metal trades industries (see note to Figure 1) as a proportion of the total number of workers in the manufacturing industry 1920-1920.



Sources: SOS Industri (Official Statistics of Sweden, Mining and Manufacturing) 1913-1990, 1913-1960 Kommerskollegium, Stockholm, 1961-1990 Statistiska Centralbyrån, Stockholm..

Thus, even though the unbalanced wage development during the years around 1920 had produced clear incentives for K sector agents to change the rules of wage determination and also set the direction of change, the process was only partly brought to fruition and with a considerable lag. To be sure, the ideological as well as the organisational prerequisites for a solidaristic wage policy were to a large degree at hand. Centralisation of power implied the transfer of control over conflict weapons to the leadership of the central organisations but did not yet comprise central or co-ordinated negotiations. Centralisation of power was accompanied by a growth of power of K sector agents within LO. K sector workers increased in absolute as well as relative terms (see Fig. 2). The resulting shift in power relations is indicated by the fact that the position of chairman of the organisation, which until then had been held by representatives of the sheltered sector, from the mid 1930s was set aside for trade union leaders from the competitive sector. No explicit policy of wage equalisation was, however, formulated by the central organisation until the 1950s and no wage agreements on the basis of such a policy were signed until the 1960s. Obviously, the process of institutional change was retarded, a fact which calls for an explanation.

The Great Depression constitutes the dividing line between a phase of rationalisation and one of transformation. Disintegration of the world markets together with monetary and exchange policies that were favourable to Swedish export industries relaxed small open constraints. These differences from the HRD combination of the previous period affect the two sectors differently. Also, with regard to relevant institutions it is worth noting that promotion of productivity growth, which was a constituting element of RSM, had gained acceptance not only among employers but also among workers in the K sector.

Wage formation in the LTD combination

Wages were negotiated separately in each sector. Conditions in sheltered sector were in many respects not much different from those in the 1920s. Since small open economy constraints did not apply, the change in world market conditions did not matter much. Nor did the diffusion of new technologies, a distinguishing feature of transformation, considerably affect industries in the S sector, since it was made up of mostly mature industries. Thus, the shift from HRD to LTD did not change the basic structure of the negotiation game in the S sector, so the equilibrium outcome in LTD equates the outcome in HRD, that is $\Delta w_s = (\Delta P_s + b)$; $b>0$.

In contrast, the situation in the K sector changed considerably. The relaxation of small open economy constraints meant that the upper limit for wage changes moved beyond productivity growth, that is the possibility of $\Delta w_k > \Delta p_k$ was not ruled out.

The transition from rationalisation to transformation was of equal importance. The engineering industry, an increasingly dominant part of the K sector, was technologically leading. This means that the effects of application of new technologies were strong in the K sector but influenced conditions in the S sector to a lesser extent. This implies that the skill bias of new technology triggered increased demand for skilled labour in the K sector but less so in the S sector, because the productivity effects of skills weaker. Also, under these circumstances the efficiency wage argument for employers to pay workers above the equilibrium wage applied to the K sector (Akerlof & Yellen 1986). As a consequence, the labour allocation effect of the wage structure gained in importance relative to the cost-reducing effect.

In sum, contrary to in the S sector conditions in the K sector changed with the move from HRD and LTD to an extent that affected the basic structure of the game.

In absence of small open economy constraints there is no reason for K sector unions to restrict their bid for wage increases to be below productivity growth in the sector. The bid will be $\Delta w_k > \Delta p_k$. On the same premise employers have moved the upper limit of their range of acceptance above the rate of productivity growth and thus do not strongly resist such claims. It seems reasonable to conclude that the equilibrium outcome will be $\Delta w_k = \Delta p_k + a$; $a>0$.

This means that the prerequisites of relative wage development in the two sectors have totally changed. The analysis suggests that the structure of payoffs in LTD under reasonable assumptions generates a wage premium for the K sector. The argument is the following:

Payoffs in the two sectors are $\Delta w_k = \Delta p_k + a$; $a>0$ and $\Delta w_s = \Delta p_s + b$; $b>0$. A wage premium in favour of the K sector, $\Delta w_k > \Delta w_s$, will emerge if $\Delta p_k - \Delta p_s > b-a$, that is if productivity growth in the K sector is stronger than in the S sector and if this is not offset by a greater positive difference between wage and productivity increase in the S sector. It may be argued that both conditions apply to the LTD combination.

Firstly, output and productivity growth was faster in the K sector than in the S sector from the Great Depression. (Schön 2000:Table 5.2-5.3).

Secondly, there is a positive feedback effect between productivity growth and high relative wages in the K sector. The logic behind is that technological change is biased towards high-skilled labour in the transformation phase (Svensson 2004). This means that the productivity effects of high skills are substantial. Given that the wage structure is sticky, firms with an ability to attract high-skilled labour will receive a temporary advantage in the competition for labour. Consequently, it may be rational behaviour of employers in the K sector to pay skilled workers above the equilibrium wage in order to increase future productivity at a rate that eventually makes productivity catch up with and possibly forge ahead of the wage. The result would be a new equilibrium wage at a higher level and presumably at a level that less technologically advanced S sector firms cannot match.

The reason why **b** had a positive while **a** had negative sign in HRD was simply because the K sector was subjected to small open economy constraints. Since this does not apply in LTD there is no reason to believe that the difference prevails.

The differences in payoff structure between LTD and HRD prompt differences in incentives to change institutions. K sector agents have no longer an interest in changing the existing rules of the game, since these generate payoffs that are beneficial to both unions and employers' organisations. In contrast, the distribution of payoffs creates clear incentives for S sector agents to promote institutions that would obstruct wage increases in the K sector. Thus, promotion of a solidaristic wage policy is in the interest of K sector agents in HRD, while it is rather in the interest of S sector agents in LTD. Not surprisingly the metalworkers' union, which had been the prime proponent of solidaristic wage policy eventually "lost passion for the cause" (Swenson 2002:127).

The conclusion helps explain the obvious slowdown of the institutional development and the delayed implementation of RSM. The actual development of relative wages demonstrates that a wage premium in favour of the K sector, as predicted, came up after The Great Depression. The gap to the S sector closed during World War II, and in the mid-1950s wages in the K sector had reached a level substantially above those in the S sector (see Figure 1).

From transformation to rationalization – from LTD to HRC

The end of World War II brought a wave of reforms that served to foster growth of world trade. Trade volumes increased by around 6 per cent per annum 1948-1960 and peaked at an annual growth of 8 per cent during the following 15 years (Kenwood & Lougheed 1992:348). This indicates a change of regime during the 1950s, which for Swedish K sector firms implied a move from low to high level of international competition. Partly as a reaction to the new situation measures were increasingly taken to increase competitiveness, notably to cut unit costs. The transformation phase that had started with the recovery from The Great Depression gradually turned into a phase of rationalisation towards the end of the 1950s. The interplay between competitive pressure and rationalisation generated an impressive productivity growth in manufacturing of 5.6 per cent per annum 1950-1975.

In many respects conditions were going to resemble the period that immediately followed The Great War. Both periods were characterised by fierce competition in world markets and a technological development directed towards rationalisation. Swedish economic historians have designated the 1920s and the 1960s as “two waves of industrial rationalisation” (Lundh 2002:148). There is, however, an important difference between the two periods. Around 1960 centralisation of power had come a long way within the two dominant organisations in the labour market, LO and SAF. During the 1950s the drive towards centralisation also became manifest in a gradual coordination of the wage bargaining system. A central agreement between LO and SAF in 1956 inaugurated an epoch of peak-level wage regulation that lasted for more than a quarter of a decade.

Relevant institutional constraints

The analysis of wage bargaining between The Great War and The Great Depression generated the prediction that K sector agents would act to repeal institutions that constraint productivity growth in the K sector and promote institutions that would help constraint wage determination in the S sector.

A centralised bargaining system could under favourable circumstances serve these purposes. We have noted that centralisation of power within LO and SAF brought a domination for employers and workers in the engineering industry. Thus, formal institutions had developed in way that made coercion a feasible alternative.

Resistance to productivity-enhancing rationalisation prevailed for a long time in the rank and file of the unions, while the leadership gradually seems to have adopted an affirmative attitude in the 1930s. This applied particularly to union leaders in the K sector (Johansson 1985:199-201).

There had been a continuous debate within LO about wage equalisation ever since the issue was raised by the Metal Workers’ Union in the early 1920s. Although their concern for the matter eventually declined it was under debate at every LO congress during the inter war years and wage equalisation seems to have attained a hegemonic ideological status within the organisation. But this also prompted a high degree of path dependency on the ideological level. Path dependent agents were tied to previous commitments when condition shifted and rational behaviour demanded changes in policy orientation. Resistance to the general idea of equality was simply outside the realm of trade unionist ideology. And as relative wages shifted new groups of relatively low-paid adopted the idea of solidarity. The interpretation of the concept was less evident, and the fact that a certain degree of vagueness was attached to it may have favoured its institutionalisation.

The solidaristic wage policy had gained hegemonic status, but the floor was open for players of the negotiation game to pick alternative interpretations. One such alternative, “equal pay for equal work”, was specified and incorporated into an elaborated model with the launching of the Rehn-Meidner model in 1951.

Wage formation in the HRC combination

Wage formation around 1960 meant peak-level level negotiations between central organisations, LO and SAF, dominated by their K sector members. The bargaining process was subordinated to small open economy constraints. This implies that the strategy from the previous period that rewarded K sector workers a wage premium, was not applicable. On the other hand, centralisation had deprived S sector agents of the possibility to repeat the game from the 1920s. So, what were the options that faced peak-level officials in LO and SAF?

Consider first the alternative that peak-level negotiations result in wage changes that are equal over sectors. This serves to stabilise the wage gap that had developed in favour of the K sector since the end of the war. Consequently it is not a manifestation of solidaristic wage policy. It rather means continued application of a norm that may be labelled “compensation in each sector according to economic strength”, since productivity differences between sectors were small during the period 1950-1975 (Schön 2000:Table 5.13, p. 420). This is an outcome, which keeps wage shifts within the limits of productivity change and thereby secures existing level of profits, so for S sector employers it is rational behaviour to accept. S sector unions, in contrast, have the incentive to reject it, since it preserves their status of low-paid.

The trouble for K sector agents is that this outcome does not help solve the problem of labour shortage. The issue is linked to the simultaneous and interrelated shifts in world market regime and direction of technological change, i.e. the move from LT to HR. Rationalisation is intensified as a means to reinforce competitiveness. In a parallel line scale effects are exploited as expansion is utilised to cut unit costs. This implies increased demand for labour, which in a phase of rationalisation primarily means low-skilled labour. Short supply of labour creates a serious dilemma, because a wage increase in order to attract labour threatens to offset the cost-reducing scale effect. Put in other words, there is an obvious risk that wage increases move beyond productivity increases to the detriment of competitive power in world markets. Thus, the outcome will jeopardise profits of K sector employers and employment opportunities of K sector workers.

But if K sector agents dominate the central organisations to the extent that they have the power to negotiate wages for the S sector, they may pick $\Delta w_k > \Delta w_s$, which would help solving the problem of labour shortage. This solution, however, presupposes that K sector agents have the power to stop wage drift. The peak-level collective agreements define in practise only the lower limit of the wage shift. It is difficult to see how S sector employers in a situation where $\Delta p_s > \Delta w_s$ could refrain from using the profit margin to bid up the wage in order to keep a sufficient number of workers.

Remains to apply the solidaristic wage policy norm "equal pay for equal work". This has to generate the payoff structure $\Delta w_k < \Delta w_s$, where $\Delta w_s = \Delta p_s + b$; $b > 0$, in order for the low-paid S sector workers to catch up with the K sector. The outcome satisfies unions but not necessarily employers in the S sector. Employers would face a situation where wages grow more than productivity. To push b towards zero is not an option, because the peak-level agreement defines a minimum level of Δw_s. This means they have to increase prices. Consequently, the upper limit of acceptance is determined by the elasticity of domestic demand for S sector commodities.

This is a situation that is largely analogous to the outcome in HRD and poses similar problems for the K sector. Just as in HRD promotion of productivity growth is one desirable and also feasible solution. But how can price-compensated wage increases in the S sector be treated in the actual institutional setting? As long as S sector employers can be compensated for above-productivity wage growth by increasing prices the problem of labour shortage in the K sector will remain and form an obstacle to the utilisation of scale effects.

Thus, it seems as if K sector agents even if they are more or less allowed to define the rules of game have difficulties finding an acceptable strategy when constrained by the norm "equal pay for equal work". Centralisation may be a necessary condition but is obviously not a sufficient one.

The analysis appoints elasticity of domestic demand to be a key factor in restricting wage growth in the S sector. Aggregate demand is of course crucial here. A low level of aggregate demand would seriously restrict the possibility of using commodity prices to compensate firms for wage costs that increase beyond productivity growth. Provided that aggregate demand is forced down, peak-level negotiations under the norm of "equal pay for equal work” is the core of an institutional setting that generates a satisfactory outcome for K sector agents. It would force S sector firms either to reach productivity levels sufficiently high to S sector workers attain “equal pay for equal work” or to close down. S sector employers who are not able to increase productivity will reject this outcome. S sector unions will accept, because productivity growth in surviving firms and employment opportunities in high productivity K sector firms will push up real wages. Public sector employers, who gained in importance during the period, will accept, because productivity growth will increase the tax base.

As noted above, there is a certain degree of vagueness attached to the concepts of solidarity and equality. “Equal pay for equal work” implies wage equalisation between sectors. A solidaristic wage policy may also signify equalisation between the low-skilled and the high-skilled within sectors. This is a policy that may help solve the problem of expanding scale without increasing wage costs per unit. In a context of increasingly fierce foreign competition firms expand scale in order to cut unit costs, which implies they demand more labour. There are clear signs that this may cause wage drift and thereby offset the cost-reducing scale effect. However, rationalisation implies a shift to production technologies that trigger demand for low-skilled labour. Wage agreements that reduce wage differentials between skill groups may then result in a higher proportion of low-skilled labour. Although low-skilled wages increase, total wage costs may decrease. The conclusion is that solidaristic wage policy defined as equalisation of wages between skill groups benefit the competitive power of K sector firms..

Small open economy constraints imply that wage shifts in the K sector have to be kept within the limit set by productivity growth. The theoretical analysis thus suggests that promotion of productivity growth is a target worth aiming at for the K sector agents that dominate the peak-level organisations. The analysis also demonstrates that they have good reasons to support and implement a solidaristic wage policy which includes between-sector solidarity, “equal pay for equal work”, as well as equalisation between low-skilled and high-skilled, provided that demand in the domestic market were restricted.

Institutional change – the historical experience

The theoretical analysis demonstrates that it was consistent with rational behaviour of the K sector agents who dominated LO and SAF to implement the core institutions that constituted RSM and the historical facts suggest that this is the path that was trodden. There existed a host of ideas, proposals and recommendations that had been articulated as a result of conditions in previous periods but for various reasons had not come to fruition. These were ready to be selected in order to form an institutional setting to facilitate for K sector employers to maximise profits and for K sector unions to reach an optimal combination of real wage and employment. The fact that K sector agents dominated peak-level organisations paved the way for an agenda for negotiations that subordinated wage formation to conditions in the competing sector. We have shown that K sector union leaders already during the inter-war period had recognised the positive real wage effects of rationalisation as exceeding the negative employment effects. After the Second World War this position gained gradual acceptance among the rank and file in the K sector.

At that time the solidaristic wage policy began to be seen as a means to productivity growth and competitiveness. It seems as if K sector union leaders were ready to accept a decline in the relative wage because they were aware of the potentially positive effects on labour supply to the K sector and, as a consequence, on competitiveness and real wages. As early as in 1948 Arne Geijer, the leader of the Metal Workers' Union and later chairman of LO between 1955 and 1973, formulated an argument for a solidaristic wage policy that primarily considered economic and real wage growth. At a meeting with the representative assembly of LO he argued for "compensation for neglected groups" in the following way: "Balance within the country is not enough to solve the economic problems that the government has to overcome. External balance is also indispensable and an increase in export is necessary to achieve that. This in turn is dependent upon increased production in exporting industries. --- The big problem at present for these industries is to attract labour" (quotation from Johansson & Magnusson 1998:83). It is obvious also from other contributions by Geijer to the debate that his primary concern was to secure the labour supply required for the engineering industry to expand, not wage equalisation (see e.g. Fackföreningsrörelsen 1949:257). As Geijer in 1955 shifted position from head of the Metal Workers' Union to the Trade Union Confederation a modified variant of these views formed the basis for the position of LO in the peak-level negotiations. This is consistent with the results of the theoretical analysis of wage formation in the HRC combination.

It is also consistent with the actual development of relative wages and employment. From the late 1950s the relative wage of K sector workers started to deteriorate at the same time as relative employment continued to increase at an unchanged pace.

The automotive industry provides a telling example of how relative wages, employment and real wages were related. Between 1960 and 1965 the female-to-male relative wage increased from 73 to 96 per cent and the proportion of female labour increased from 2 to 15 per cent from 1960 to 1975. The male wage as a percentage of the average male wage in manufacturing decreased from 122 to 105 per cent 1960-65. The real wage of these male workers, however, increased by 20 per cent. (Svensson 1995:134). Real wage growth carries great weight in the utility function of workers and this helps explaining why K sector workers were inclined accept the outcome of centralised wage bargaining that applied the norms of productivity growth and solidaristic wages.

These examples lend support to the view that the standpoint articulated by Arne Geijer in 1948 and 1949 were both consistent with rational behaviour and politically feasible. That also applies to the new perspectives on wages and employment expressed by the LO economists Rehn and Meidner in their report to the LO congress in 1951, which eventually exerted a strong influence on the debate on as well as the actual working of wage formation during two decades from the early 1950s (Landsorganisationen i Sverige 1951). So far rationalisation and productivity growth had mostly been seen as a means of increasing real income. One of the novelties of what eventually became known as *the Rehn-Meidner model* was to use solidaristic wage policy as a means to increase productivity. Solidarity defined as "equal pay for equal jobs", no matter in which sector or geographical location the job is performed, leaves low-productive firms with a choice between increasing productivity and giving in. Both would lead to an increase in average productivity.

The ideas and proposals behind the Rehn-Meidner model provided a set of potential institutions that helped the dominating K sector agents maximise utility, especially since a solution to the problem of restricting aggregate demand, which the theoretical analysis pointed out as essential, also was offered. A restrictive financial policy was a central element of the model, primarily because it would help keeping inflation in check (Erixon 1994:22-23). An additional but perhaps not entirely unintended consequence would be to decrease demand for S sector commodities, thereby holding wage drift back in the S sector and produce the desirable labour allocation effects.

There was no explicit and formal agreement between the parties in the labour market and the government about implementing the Rehn-Meidner model. However, evaluations show that the Swedish government took a financial policy during the 1960s and early 1970s, that was restrictive in international as well as intertemporal comparison (Erixon 1994:28-29). This served to remove a latent obstacle to the implementation of an "equal pay for equal work" interpretation of the solidaristic wage policy.

The theoretical analysis demonstrated that wage equalisation between skill groups within sectors had a positive effect on competitiveness of the K sector. This probably contributed to an augmentation of the vagueness of the solidarity concept, and thereby to opening the floor for an eventual shift of the central point from "equal pay for equal work" to wage equalisation in general.

From rationalisation to transformation

The deep and drawn-out crisis from the mid-1970s marked the end of a structural cycle that had begun with the recovery from The Great Depression. From around 1980 industrial activities were transformed on the basis of new technologies, particularly in the areas of electronics and biotech. In technologically leading sectors foreign competition became less fierce in due to the appearance of Schumpeterian monopolies. For traditional export industries conditions were rather aggravated with the break-down of the Bretton Woods system and a decelerating tendency in world trade.[6] The relative importance of traditional export industries declined, however. Shipyards closed down and steel works downsized, while technologically more advanced firms notably in the engineering and chemical industries were rejuvenated by the new technologies of the third industrial revolution. This was to a large extent a process where established firms moved into new generations of technologies as they augmented old products and processes as well as introduced new ones. These firms preserved a dominant position within trade unions as well as employers organisations in the K sector.

Relevant institutional constraints

The bargaining system was still at the start of period highly centralised, so the combination of exogenous parameter values and bargaining system changed from HRC to a LTC for the technologically leading industries.

The shift to transformation led to a different role of wage formation and wage structure. In the previous rationalisation phase firms in leading sectors

[6] International trade growth fell from an annual rate of 8 per cent 1950-1973 to 5 per cent 1973-1998 (Maddison 2001:362).

had a primary interest in the wage structure as a means to cut costs. In the transformation phase competitive power depends increasingly upon the ability to adopt new technologies rather than reducing costs. Firms consequently become more concerned with attracting and keeping workers, who possess the skills that are efficient in exploiting the full productivity potentials of these technologies. This brought a shift in the primary function of the wage structure from cost reduction to labour allocation, notably to firms in leading sectors. This also means that the K sector was no longer forced to attract more labour in order to expand scale.

On a general ideological level solidarism in wage setting had gained hegemonic status. The interpretation of solidarity had gradually moved towards wage equalisation, which a bit casually has been called from "equal pay for equal work" to "equal pay for all work" (Edin & Holmlund 1995). This was a process that coincided with a shift in member structure within LO. In 1978 The Swedish Municipal Workers' Union surpassed The Metal Workers' Union in terms of membership. It is obvious that representatives of the municipal workers more distinctly than S sector workers in the manufacturing industry articulated an opposition to the norm that assigned a leading role in wage formation to the K sector (Johansson & Magnusson 1998: 276). Public sector employers were not affiliated to SAF, so even if K sector employers maintained a dominant position in that organisation they had limited possibilities to control the entire employers' side. RSM was apparently in the line of fire, but the central elements, particularly peak-level negotiation, were not yet challenged. But the peak-level organisations were not as a matter of course dominated by K sector agents. Moreover, both sectors exhibited some degree of heterogeneity, particularly the S sector. This means that the analysis has to consider both public and private S sector agents.

Bargaining in LTC

The upper limit of acceptance for S sector employers in the private sector is determined by elasticity of demand for S sector commodities. The financial policy shifted from restrictive to expansive at the end of the 1970 s (Erixon 1994:33). These are conditions that give room for compensating price increases so the bid is $\Delta w_s = \Delta p_s + b; b > 0$. S sector unions have no reason to reject this so it will be the equilibrium outcome.

The upper limit to wage increases of the tax funded public sector is determined by the prospect of public funding, as an equivalent of elasticity of product demand in the private sector. Public sector employers create their own funds by taxing the citizens so wages in the public sector are in the final instance determined by political considerations. Provided that funds are sufficiently elastic $\Delta w_s = \Delta p_s + b$; $b > 0$ will be the equilibrium outcome.

The K sector is dominated by technologically advanced firms. As technologies are not yet fully exploited firms demand labour with skills that are compatible with the new technology in order to utilise their potentials. A firm that is able to attract adequate labour will increase its productivity and makes way for real wage growth. This means that they are prepared to offer a wage above the equilibrium wage and also above the wage paid in other sectors in order to attract labour with adequate skills. This is an offer that the trade unions have no reason to reject so the equilibrium payoff will be $\Delta w_k = \Delta p_k + a$; $a > 0$ and $\Delta w_k > \Delta w_s$.

This means that if neither K nor S sector agents dominate within employers' organisations and the trade unions there will be no equilibrium solution. S sector employers have no incentives to accept higher, i.e. more attractive, wages in the K sector as long as product demand and access to tax funds admits them to compete. And there is no reason for S sector unions to accept a wage premium for the K sector. So what are the options?

Consider first a situation when the bargaining game is played as in the previous period. The governing norm is the solidaristic wage policy, initially interpreted as "equal pay for equal work" but over time modified to become wage equalisation between skill groups. Since, as a result of the relative wage shifts during the previous period, there were no systematic differences in wage levels between the two sectors (Löner i Sverige 1982-1989: Table 1) and the wage structure was substantially compressed in all dimensions (Edin & Holmlund 1995) this would basically preserve status quo. For S sector agents that may be an acceptable outcome, but it does not meet any of the demands that K sector agents make on the wage structure. An institutional setting that includes a far-reaching interpretation of solidarity and negotiations between peak-level organisations that K sector agents no longer dominate simply cannot fulfil their requirements. Prevailing institutions put constraints on profit maximisation of employers as well as real wage maximisation of workers in the K sector. If the norm that assigns a leading role in wage formation to the K sector cannot be re-established the only acceptable solution seems to be to break with the centralised bargaining system and change the norms that governed wage formation.

The historical experience - K sector agents and the dismantling of RSM

Changes in parameter values (technology and trade) triggered changes in preferred actions of K sector agents, and brought an inconsistency between feasible and preferred outcome. The growth of services, particularly public services, had changed the balance of power in the labour market and increased the number of organisations involved in the peak-level negotiations (Lundberg 1985; Elvander 1988). This helps explain why K sector agents in the early 1980s actively opposed the model that they previously had so eagerly supported.

Most commentators seem to agree that the separate agreement signed in 1983 between The Swedish Engineering Employers' Association (VF) and The Swedish Metal Workers' Union (Metall) signalled a break with RSM. These organisations represented sectors that were leading in a process of economic change that at this point called for institutional renewal.

The productivity-enhancing motive of attracting workers with proper skills was reflected in formulations in the 1983 agreement between Metall and VF, which stated that wage increases gave stimulus to productivity growth (Elvander 1988:35). The agreement introduced a new wage tariff system, which allowed for a wider dispersion of wages. It was constructed as a wage development ladder consisting of four steps, where each step combined a wage premium with a certain level of competence and responsibility. From the firms' point of view this was a means of attracting skilled workers – short in supply - with a capacity to exploit the productivity potential of new technologies. An alternative solution that had frequently been practised was to transform qualified blue-collar positions to white-collar jobs (Nilsson 1988:79).

From the unions' point of view the new tariff system had at least two attractive features. First, it carried the possibility of increasing the total wage share of the union members in profit-generating firms. Second, it provided a solution to a problem that emerged with the introduction of new production technologies and which seriously threatened to decrease the bargaining power of the organisation. Blue-collar workers, who had acquired skills that were complementary with new technology, e.g. programming skills required to operate NC-machines, increasingly performed tasks not easily distinguished from those of engineers, who were members of the white-collar union SIF and received a higher rate of compensation (ibid.:89). The solidaristic wage policy in its mature variant formed an obstacle to increasing their wages to approach the salaries of engineers. This obviously inclined them to change their union affiliation and join the salaried employees' union SIF (ibid.:71 f.). The introduction of the four-step ladder offered a reasonably attractive alternative.[7]

The idea of additional wage increases as a result of skill and competence development, as well as of augmentation of tasks performed by the blue-collar workers, was a basic element of the four-part tariff system. The idea eventually became the foundation of a new ideological concept adopted by Metall during the remainder of the 1980s. In the preparations for the 1986 Congress of The Metal Workers' Union the concept of "The Good Work" was launched. The explicit dual purpose was to reduce the wage gap to supervisors and white-collar workers and to develop qualified work tasks for blue-collar workers (Metallarbetaren 1985, nr 21-22, 35 and 37). With the 1989 congress the ideological redirection was completed and got an apt rhetoric expression in the motto of the congress: "Solidaristic Work Policy for the Good Work" (see Svenska Metallindustriarbetare-förbundet 1989). It signified a shift from equalisation of wages to a wage policy that emphasised rewards to competence and skills. It derived its rhetoric strength from representing a continuity of arguments for a solidaristic policy for economic growth, which had obtained its explicit formulation with the Rehn-Meidner report in 1951. It had in fact been the lodestar of The Metal Workers' Union since the approval of Taylorist rationalisation in the 1920s. The growth component of the concept was the idea that a transformation of work tasks into "good work" involved an increase in labour productivity through the augmentation of skills and competence. Productivity growth would then create the basis of an increase in real wages to be distributed among workers according to each worker's contribution. The solidarity component was the idea that all workers would be offered the opportunity to develop their skills and competence and to take on new responsibilities (ibid.:7ff.).

The re-interpretation of solidarity by the Metal Workers' Union provides an example of a process where path dependent agents of change manage to combine continuity on an abstract ideological level with rational choice-driven change on a more concrete and material level.

---

[7] This is evident from several commentaries made after the agreement of 1983 had been signed. An editorial in Metallarbetaren stated that the new system "can contribute to reducing the gap to the white-collar workers" (Metallarbetaren 1983, nr 10). And in an interview Leif Blomberg, chairman of the Metal Workers' Union, announced that "the problem is not the relations to other LO groups – it is PTK." (PTK was a negotiating cartel formed by white-collar unions in the private sector.)

A summary interpretation

In this paper institutional change in the labour market is interpreted within a rational choice model. Labour market institutions are thought of as constraints on the process of wage formation and labour allocation. The paper follows the rise and the fall of the Restricted Swedish Model, which is composed of a set of rules, norms and beliefs. Solidaristic wage policy, promotion of productivity-enhancing technological change, a leading role of the competitive sector in wage formation, and centralised bargaining were the constituent parts of the model. It grew out of a process in which four agents representing workers and employers in sheltered and competitive industries aimed at creating optimal conditions for maximising utility. As institutions may promote or impede utility maximisation, they will be subject to defence or attack. The payoff distribution is conditioned on two exogenous parameters: the level of international competition and the state of technology, so incentives to alter institutions vary over time with parameter values.

The analysis demonstrates that the construction as well as the dismantling of RSM was initiated by workers and employers in the competitive sector, who in the beginning of the period were trapped in circumstances that generated a wage premium in favour of workers in the sheltered sector. In order to improve their situation competitive sector agents initiated a process that resulted in eventual shifts in formal as well as informal institutions. This was a drawn out process, because when the state of technology and level of international competition changed and the payoff distribution shifted, the incentives to implement institutional reforms fell off. Only as parameter values shifted back again and conditions in that respect from the late 1950s again resembled those of the 1920s, did competitive sector agents regain incentives to change institutions. In the meantime the combination of institutions and parameter values had made sheltered sector workers adopt the norms of RSM and a genuine consensus on the fundamental features of labour market institutions had emerged. The consensus originated in the combination of institutions and parameter values, which generated a payoff distribution that satisfied three out of four players. And the nature of the fourth one, sheltered sector employers, was changing so that public sector employers gained increasing significance. They were satisfied as long as labour market institutions promoted productivity growth, which increased the tax base..

As the state of technology once again shifted from rationalisation to transformation around 1980 and competition was alleviated RSM became an impediment to productivity and real wage growth in the competitive sector.

Consequently, competitive sector workers and employers broke out of the centralised model, redefined solidarity to become compatible with the high-skill bias of technological change in the transformation phase, and initiated the dismantling of RSM.

References

Akerlof, G. & J. Yellen (1986), *Efficiency Wage Models of the Labor Market*, Cambridge: Cambridge University Press

Aoki, M. (2001), *Toward a Comparative Institutional Analysis*, Cambridge: MIT Press

Aoki, M. (2007), 'Endogenizing institutions and institutional change', *Journal of Institutional Economics* **3**(1):1-31

Berman, E., J. Bound and S. Machin (1998), 'Implications of Skilled Biased Technological Change: International Evidence', *Quarterly Journal of Economics*, Vol. 113, pp. 1245-80.

Dahmén, E. (1950), *Svensk industriell företagarverksamhet,* Stockholm: IUI.

Dahmén, E. (1997), 'The interwar years: industry in transformation', in Jonung, L. and R. Ohlsson, *Economic Development of Sweden since 1870,* Lyme: Edward Elgar.

De Geer, H (1978), *Rationaliseringsrörelsen i Sverige*, Stockholm: SNS

De Geer, H (1982), *Job Studies and Industrial Relations, Ideas about efficiency and relations between the parties of the labour market in Sweden 1920-1950*. Stockholm: Almqvist & Wiksell International

Edgren, G, K-O Faxén, and C-E Odhner (1973), *Wage Formation and the Economy*, London: George Allen & Unwin

Edin, P. A. and B. Holmlund (1995), 'The Swedish Wage Structure: The Rise and Fall of Solidarity Wage Policy?', in R. Freeman and L. Katz (eds), *Differences and Changes in Wage Structures* (Chicago: University of Chicago Press).

Elvander, N. (1988), *Den svenska modellen: löneförhandlingar och inkomstpolitik 1982-1986*, Stockholm: Allmänna förlaget

Erixon, L. (1994), Rehn-Meidnermodellen. En tredje väg i den ekonomiska politiken, research Report Series No 4, 1994, Stockholm: The Swedish Center for Working Life

Faxén, K-O (1991), "Några kommentarer till SAF:s lönepolitiska uttalanden under 1920-talet." In *Vingarnas trygghet. Vänbok till Gösta Rhen*. Lund: Dialogos.

Fackföreningsrörelsen (Official organ of The Swedish Trade Union Confederation) 1948-1960

Fregert, K (1994), ”Relative Wage Struggles during the Inter-War Period, General equilibrium and the rise of the Swedish Model”, Scandinavian Economic Hisatory Review, Vol. XLII, No. 2, 1994, 173-186

Greif (1998), Historical and Comparative Institutional Analysis, *The American Economic Review*, Vol. 88, No. 2, 80-84

Helpman, E. & M. Trajtenberg (1998), “A time to Sow and a Time to Re: Growth Based on General Purpose Technologies”, in Helpman, E. (ed.) (1998), *General Purpose Technologies and Economic Growth*, Cambridge, MA: MIT Press

Johansson, A L (1985), *Tillväxt och klassamarbete, en studie av den svenska modellens uppkomst*, Stockholm: Tiden

Karlbom, T (1955), *Den svenska fackföreningsrörelsen*, Stockholm: Tiden

Lewin, L. (1967), Planhushållningsdebatten, Stockholm: Almqvist & Wiksell

Landsorganisationen (1951), *Fackföreningsrörelsen och den fulla sysselsättningen*, Malmö: Tiden

Lundberg, E. (1985), ‘The Rise and the Fall of the Swedish Model’, *Journal of Economic Literature*, Vol. XXIII (March), pp. 1-36.

Metallarbetaren (Official Organ of the Swedish Metal Workers’ Union) 1980-1989

Nilsson, T. (1988), *Arbetare eller tjänsteman? Ny teknik och fackliga gränsdragningsproblem i svensk verkstadsindustri*. Lund: Arkiv förlag

North, D. (1990), *Institutions, Institutional Change and Economic Performance* Cambridge: Cambridge University Press.

North, D. (2005), *Understanding the Process of Institutional Change*, Princeton, NJ: Princeton University Press

Ohlin, B. (1926), Lönenivåns söndersplittring. In *Verkstäderna*, Årg 22, nr 7, pp. 246-250

SCB (1991), Löner i Sverige. En redovisning av loner och löneutveckling för olika löntagargrupper, Stockholm: Statistics Sweden

Schön, L. (1998), ”Industrial Crises in a Model of Long Cycles: Sweden in an International Perspective. In Myllintaus, T. (ed.), *Crisis and Restructuring in Small Countries*. Berlin: Scripta Meracaturae.

Schön, L. (2000), *En modern svensk ekonomisk historia. Tillväxt och omvandling under två sekel.* Stockholm: SNS förlag.

SOS Industri (Official Statistics of Sweden, Manufacturing and Mining), Stockholm: Kommerskollegium (Swedish Board of Commerce) 1913-1960, Statistiska Centralbyrån (National Bureau of Statistics) 1961-1990.

SOS Löner (Official Statistics of Sweden, Wages), Stockholm: Socialstyrelsen (Social Welfare Board) 1952-1960, Statistiska Centralbyrån (National Bureau of Statistics) 1961-2002.

SOU 1976:34, *Arbetstidsförkortning – när? hur? (Shorter working hours – when? how?)* Stockholm: Liber Allmänna Förlaget.

Svenska Metallindustriarbetarförbundet (1922), Metall, avdelning 1, Kongressmotion, Arbetarrörelsens arkiv och bibliotek, Stockholm.

Svenska Metallindustriarbetarförbundet (1962), *Verksamhetsberättelse 1962* Stockholm: Tiden.

Svenska Metallindustriarbetarförbundet (1989), *Solidarisk arbetspolitik för det goda arbetet*, Stockholm: Metall

Swenson, P (1991), "Bringing Capital Back in, or Social Democracy Reconsidered", *World Politics* 43 (July 1991), 513-544

Swenson, P. (2002), *Capitalists against Markets* (New York: Oxford University Press).

Svensson, L. (1995), *Closing the Gender Gap. Determinants of Change in the Female-to-Male Wage Ratio of Blue Collar Workers in Swedish anufacturing 1913-1990.* Lund: Ekonomisk-historiska föreningen

Svensson, L. (2004), "Technology shifts, industrial dynamics and labour market institutions in Sweden 1920-1995", in Ljungberg, J. and J. P. Smits (ed.), Technology and human capital in historical perspective, Palgrave MacMillan, London

Treslow, K. (1986), *Verkstadsföreningen under 90 år*, Stockholm: VF

Törnqvist, L. (1954), Verkstadsindustrin, ett maktcentrum i svensk avtalspolitik, *Statsvetenskaplig tidskrift* 1954:3.

Ullenhag, J. (1971), *Den solidariska lönepolitiken i Sverige. Debatt och verklighet.* Stockholm: Scandinavian University Books.

Lund Papers in Economic History

2007

106 Ellen Hillbom, Security – A First Priority: The Strength of Communal Property Rights Systems Governing Water in Contemporary sub-Saharan Africa. /*Development Economics/*

107 Josef Taalbi, Arbetslöshet, arbetsmarknadsinstitutioner och investeringsmönster: En jämförelse mellan Sverige och Danmark (1976-2005). /*Education and the Labour Market/*

2008

108 Martin Klinthäll, Flyktingskap och återvandring: Exilen som temporärt tillstånd. */Population Economics/*

109 Fay Lundh Nilsson (red.), Folkhögskolans roll i yrkesutbildningen: Workshop den 5 december 2007 /*Education and the Labour Market/*

110 Mats R Persson, Pushed or Pulled to Self-Employment? Self-Employment among Immigrants in Sweden, 1985-2001 */Population Economics/*

2009

111 Lars Pettersson, Problems Facing Young People Entering the Labour Market – the Nordic Countries /*Education and the Labour Market/*

112 Neelambar Hatti, James Heimann & Mason C. Hoadley, Culture of Corruption: Some methodological considerations */General Issues/*

113 Håkan Lobell, Utländska växelkurser i Sverige 1804-1914: Nya månatliga observationer */General Issues/*

2010

114 Marin Dribe & Christer Lundh, Human Capital, Cultural Dissimilarity, and Intermarriage: A Longitudinal Study of Immigrants in Sweden 1990-2005 */Population Economics/*

115 Håkan Lobell, Market Capitalisation of Listed Companies: Data for Thirteen Western European Countries, U.S. and Canada 1975-1987 */General Issues/*

116 Lars Svensson, The Rise and fall of the Restricted Swedish Model: A Rational Choice Approach to Institutional Change in the Swedish Labour Market 1920-1990 */Education and the Labour Market*/

Lund Papers in Economic History are published by the Department of Economic History, Lund University, Sweden. This series replaces the former series under the title *Meddelande från ekonomisk-historiska institutionen, Lunds universitet*. The change of name reflects the orientation of the series towards an international readership. The series is multilingual, but the majority of the working papers appear in English.

Lund Papers in Economic History include papers in the following topic areas:

General Issues
Development Economics
Education and the Labour Market
Population Economics

Lund Papers in Economic History are published as occasion arises, not at fixed intervals. Printed issues are distributed to libraries. From 1999 and onwards, full-text electronic issues are also available on *www.ekh.lu.se.* Those who would be interested in receiving information by email on new issues of **Lund Papers in Economic History** are requested to send an email message to *Lund.Papers@ekh.lu.se.*

LUND
UNIVERSITY