Building a path of equality to economic progress and macroeconomic stability  
- the economic theory of the Swedish model*

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Abstract

The Swedish Rehn-Meidner model is a unique economic- and wage-policy program for the simultaneous achievement of full employment, price stability, growth and equality. This article presents, specifies and develops the model’s underlying macroeconomic theory. The Rehn-Meidner theory is a synthesis between a flex-price Kaldorian model of profit margins and a Kaleckian model where profit margins are squeezed under full-employment conditions. The theory deviates from both Kaldorian and Kaleckian models by stressing the importance of low profit margins for productivity growth. The Rehn-Meidner theory and policy deserve a prominent place in macroeconomics even in the age of globalization and financialization. However, some weaknesses of the model make it necessary to modify the arguments for and partly the composition of its policy program.

Key words: Rehn-Meidner model, labor market policy, wage policy of solidarity, structural change, productivity growth, inflation


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1. Introduction

Social scientists mostly associate the Nordic (or Scandinavian) model with universal welfare programs, generous social insurance systems, redistributive tax policies, corporate arrangements, strong trade unions, regulated labor markets and interventionist economic policies. Evaluations of the model often focus on the economic performance of the Nordic countries, that is, of Denmark, Finland, Norway and Sweden and also of Iceland, especially since the financial crises in 2008.¹ From a benevolent viewpoint, the Nordic model has shown a high capacity to adapt to new external circumstances, specifically, to recover from the deep homegrown recessions of the early 1990s and to navigate smoothly through the Great Recession (Gylfason et al. 2010; Dølvik et al. 2014). However, economists skeptical to the ‘old’ model claim that the indications of a Nordic economic success since the mid-1990s rather reflected a determined departure from an idiosyncratic social model (see, inter alia, The Economist 2013).

Foreign observers generally make few or brief references only to the macroeconomic theory underlying the Nordic model. However, there is a growing interest in this theory, especially among heterodox economists who regard the Nordic countries as examples of wage-led economies (Pollin 2012; Storm & Naastepad 2012). Studies of the Nordic model are complicated by the fact that the Nordic label may be assigned to several macroeconomic theories. Three Nordic models can be distinguished in the postwar period, the Swedish model of macroeconomic stability and industrial transformation from the 1950s, that is, the Rehn-Meidner model, the Norwegian (Scandinavian) inflation model from the 1960s, that is, the Aukrust model, and the Danish flexicurity model from the 1990s.²

The Swedish and Norwegian models provide a theory about the functioning of the Nordic economies, but also a set of normative rules for wage policy (the Norwegian model) and for wage and economic policy in conjunction (the Swedish model). The Danish flexicurity model is rather a compilation (made by politicians and researchers) of the employment policies, social-insurance provisions and industrial relations in the 1990s and 2000s responsible for a successful macroeconomic development (Madsen 2003; Andersen 2011, pp. 135-136). Like the Swedish model the Danish flexicurity model emphasizes the mobility-enhancing role of generous unemployment benefits and active labor market policies (ALMPs). The priority provided to employment security (primarily by extensive ALMP programs) rather than to job security is another similarity between the Danish and Swedish models although the programmatic nature of the Swedish (Rehn-Meidner) policy model must be taken into account. On the other hand, the Danish flexicurity model challenges the emphasis on income equality in the Rehn-Meidner model. In Denmark, there has been a gradual decentralization of collective wage bargaining to the work-place level (see Ibsen 2011) albeit a similar

¹ Iceland and Norway are outside the European Union. However, by the signing of the EEA Agreement in 1992, both countries belong to the EU Single Market.

² It is also possible to define a postwar Icelandic-Finnish model shedding light on a repetitive devaluation cycle (Mjøset 1987, pp. 426, 447).
decentralization also took place in Sweden. Besides, the orientation of fiscal and monetary policies is not specified in the literature on the Danish flexicurity model but generally cautious in the Swedish model. The Swedish and Norwegian models alike stress the pivotal role of sectoral wage leadership and of coordinated (collective) wage negotiations. But the Norwegian model (labelled as the EFO model in Sweden) regards wage centralization as a necessary condition for a constant profit share, not for wage equalization as the Rehn-Meidner model (Aukrust 1970). Moreover, productivity changes are given in the Norwegian model, not enforced by economic and wage policies as in the Rehn-Meidner model.3

This article focuses on the Swedish model, or more precisely, on the theory underlying the Rehn-Meidner model, in which macroeconomic stability, productivity growth and structural change are obtained by a high wage share of GDP and an equalization of labor incomes. The prime aim of this article is to give a more detailed (and formalized) picture of the macroeconomic theory underpinning the Rehn-Meidner model.4 The article elaborates the model’s view of a demand- and profit-led economic development and also of a wage-led, although demand-curtailling, strategy in line with the Rehn-Meidner policy program. The Rehn-Meidner theory is then compared with the theories of (functional) income distribution and growth in the Kaldor-Kaleckian tradition. There are some striking similarities, but also dissimilarities, between the Rehn-Meidner theory and the macroeconomic theories under review. The article finally surveys the strengths and weaknesses of the Rehn-Meidner theory and the ways of updating it in light of reasonable objections and new economic circumstances. The summary is followed by an appendix attempting to formalize the multifaceted and dynamic Rehn-Meidner theory.

The notion of the Rehn-Meidner model is used throughout this article to define either a particular set of policy instruments or a specific theory of growth, inflation and employment. It will be stated explicitly or hopefully clear from the context as to whether the policy program or the underlying theory is at stake. Furthermore, it will hopefully be obvious as to whether the elaboration of the Rehn-Meidner model after the sketch presentation in the next section is built on an independent or a literal interpretation. The model was the product of creative thinking, grounded intuition, participant observation and selective economic reading.

The Rehn-Meidner model is a pioneering, although largely neglected, economic and wage policy program in macroeconomics. The underlying theory did not only anticipate but also

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3 There is no consensus among social scientists and politicians that the Nordic or Swedish growth model is synonymous with the Rehn-Meidner model. It is possible, especially in the Swedish case, to refer to an innovation system for a small open country were multinational companies are strategic transmitters and creators of new knowledge (Erixon 1997). I will lean on a policy-oriented definition of the Nordic (and Swedish) growth model. But I will not use the narrative arguments in the literature on the Nordic model that full employment and ALMP measures have increased the acceptance by wage earners of technological change or that labor-peace conditions under central-wage agreements have been favorable to private investment (Rehn, 1984, pp. 160-161) even in times of more decentralized wage bargaining (Vartiainen 2014).

influence the literature on the Phillips and Beveridge curves (Erixon 2013). There is a clear line between the disequilibrium analysis of heterogeneous labor and product markets in the Rehn-Meidner model and the analysis of inflation and unemployment in Hansen & Rehn (1956), Hansen (1970) and Tobin (1972). And mainstream economists have recently adopted (although without any references) the Rehn-Meidner idea that innovation, productivity and structural change can be stimulated by recessions, high minimum wages and income equality (see Acemoglu 2010). However, the Rehn-Meidner model is a coherent macroeconomic theory and policy program based, inter alia, on the hypothesis that low profit margins are positive for price stability and growth. The Rehn-Meidner macroeconomic approach was swept away by the DSGE models and the theories of rational expectations and NAIRU. The ultimate aim of this article is to convince the reader that macroeconomics can be enriched by the inclusion of the Rehn-Meidner model.

2. The Rehn-Meidner model

2.1 Growth by transformation pressure

The Rehn-Meidner model was developed in the early postwar years by two Swedish economists, Gösta Rehn (1913-1996) and Rudolf Meidner (1914-2005). Rehn and Meidner were then employed by the LO, the Swedish Trade Union Confederation (for blue-collar workers). They presented their new economic ideas in an expert report to the LO Congress in 1951. The Rehn-Meidner policy program was targeted against a Keynesian strategy where domestic-demand stimuli to achieve full employment were combined with incomes policy measures to control inflation including price and investment controls and wage moderation by central trade unions.

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5 The Rehn-Meidner analysis was certainly influenced by Marshall’s static partial-equilibrium theory of structural change (Erixon 2011, pp. 106-108). Rehn and Meidner may also have been influenced by Gustav Cassel’s and Gösta Bagge’s analysis of the wage policy of solidarity showing that this policy can have positive effects on structural change and productivity (Cassel 1902; Bagge 1917, 1931; Erixon 2011). At the same time, Rehn and Meidner were under the influence of Keynes’s *The General Theory* emphasizing the decisive role of aggregate demand for employment and the endogeneity of nominal wages (see Rehn 1980, p. 299). Rehn and Meidner were pupils of and had close contacts with leading representatives for the Stockholm School of Economics, especially Erik Lundberg and Gunnar Myrdal. However, despite the Stockholm-School connection, Rehn and Meidner did not build on or formulate a theory of reinforcing cumulative processes. Despite the difficulty of establishing a direct link, the disequilibrium notion of excess demand in the Rehn-Meidner theory is similar to that in Bent Hansen’s dissertation (1951). Hansen (who was a pupil to Erik Lindahl), in turn, retrieved the concept from Hicks (1974 [1946]). The theory of inflation and critical view of incomes policy including the Beveridge plan in Singer (1947) had probably a strong impact on the Rehn-Meidner model (Erixon 2011, pp. 110-112).

6 Compulsory incomes policy in the form of legislation or government statutes and directives is excluded in Sweden by the so-called Saltsjöbaden Agreement (1938). In the early postwar era, Sweden was here an outlier, even in comparison with other Nordic countries. However, today, all Nordic countries have incomes-policy arrangements where central agreements in the exposed (manufacturing) sector are wage leading without any direct government intervention (Dølvik et al. 2014).
In their criticism of the Keynesian strategy, Rehn and Meidner did not discriminate between a consumption-led and an investment-led economic development. They maintained that demand-induced (or productivity-induced) increases in profit margins in some industries and firms would lead to wage drift, that is, to wage increases outside the central wage agreements (at local and individual levels). In the Rehn-Meidner model, extensive wage drift is the ultimate source of inflation. It will in due course create an upward wage-wage-price spiral, especially near full employment. Wage earners in sectors and occupations with modest wage drift seek to attain similar pay increases or compensation for price increases provoking the ‘wage drifters’ to demand pay increases aimed at restoring the initial relative incomes (LO 1953 [1951], pp. 83-87; Rehn, 1987, p. 69, 1969b, p. 163). Wage-wage races are a threat to price stability, but also, by reducing the price competitiveness of domestic companies or by calling forth a restrictive macroeconomic policy, to full employment (LO 1953 [1951], pp. 84, 89; Rehn 1953, p. 82). Rehn and Meidner underlined that wage drift cannot be prevented by collective wage restraint. Besides, in periods of extensive wage drift, individual trade unions have strong incentives to stay outside coordinated actions of wage moderation.

In the Rehn-Meidner theory, high profit margins are not only inflationary (and a threat to full employment) but also harmful to productivity and structural change (see below). Furthermore, productivity in the business sector is obstructed by high employment rates. Full-employment conditions, especially when they are achieved by high aggregate demand (‘over-full’ employment), are associated with excess labor turnover, high rates of absenteeism and work accidents and with less occupational training. These phenomena will result in lower total factor-productivity (TFP) and labor-productivity growth (per hour or per employee) and even in absolute reductions of productivity. Moreover, Rehn and Meidner thought that price controls would lead to distortions in production and hit the most efficient and dynamic firms leading to lower productivity growth and slower structural change (Meidner 1952 [1948], pp. 21, 25-26; Rehn 1952a [1948], pp. 36-39, 1969b, pp. 163-164; 1984, p. 161; 1987, p. 62; LO 1953 [1951], pp. 81-86, 92).

The objective of the Rehn-Meidner model is to combine full employment with price stability and income equality with economic growth. The original Rehn-Meidner policy program encompassed an active labor market policy (ALMP), a wage policy of solidarity and a fiscal or monetary policy that is counter-cyclical although restrictive in the medium term. Works by Rehn and Meidner after the 1951 LO report make it legitimate to include currency appreciation (as a possible substitute for fiscal and monetary restraint), generous unemployment benefits and marginal employment subsidies in their original model (Rehn 1977a, p. 125, 1977b, p. 223). I will only provide a brief description of these additions to the model.

Meidner (1952 [1948], pp. 22-23); Rehn (1952a [1948], pp. 35-36); LO (1953 [1951], pp. 37-47, 81-82). The 1951 LO report emphasized that excessive labor turnover will lead to distortions in production, higher recruitment costs and also to more accidents when the companies hired people with low work experience.
The model is based on the premises of a steady increase in productivity over time because of technological progress. But Rehn and Meidner reckoned that TFP and labor-productivity growth may be stimulated by wage and economic policy. The wage policy of solidarity can drive structural change and also enhance productivity in individual firms. With Rehn and Meidner’s definition of solidarity wages employees are rewarded the same pay for similar jobs regardless of the (value) labor productivity of the firm or industry. By speeding up the convergence of wages to the mean for similar jobs, in a particular industry and the economy at large, the solidarity wage policy is a source of creative destruction (although Rehn and Meidner never used the concept). Firms (and industries) with low labor productivity are threatened by closure if they have to pay the same wage as other firms (and industries). Low-productive firms living under the pressure of the wage policy of solidarity can possibly avoid closure by rationalization, labor substitution (having a positive impact on labor productivity) and by labor-saving (capacity-augmenting) new technologies (Rehn 1952a [1948], pp. 43-44; LO 1953 [1951], pp. 24-25, 34-35, 96-97; Meidner 1974, pp. 62-63).

Rehn and Meidner suggested that the wage policy of solidarity would promote economic growth not only by creative destruction but also by *widening the profitability gaps* between firms and between industries (Rehn 1952b [1950], p. 77; 1953, p. 280; Meidner, 1969, pp. 193-194). This policy will not only impose an additional cost burden on unproductive firms. It will also counteract the tendency to wage increases in productive firms (Rehn 1953, pp. 280-284, 1977b, p. 214). The larger profit differentials would reinforce the incentives for reallocating resources to expanding industries and firms. In addition, the ‘wage subsidy’ to successful firms, that is, to firms that could have paid more than the wages of solidarity, would facilitate their ability to self-finance internal expansion and take overs.

The wage policy of solidarity of the Rehn–Meidner model is *not* synonymous with wage compression in general. The 1951 LO report suggested that the determination of a ‘fair’ wage structure at the initiative of the central trade unions should be based on an objective evaluation and comparison of jobs rewarding difficult, dangerous and unpleasant work while maintaining the wage incentive for education. But the Rehn–Meidner program strives to prevent the emergence of pay inequalities not only for similar jobs but also for dissimilar jobs not grounded on differences in work content (Rehn 1952a [1948], pp. 43-44; LO 1953 [1951], pp. 34, 94-99).

Rehn and Meidner’s analysis of wage solidarity illustrates the interactions between the instruments in their model. When trade unions pursue a wage policy of solidarity ALMP measures to improve labor-market mobility are needed to assure that labor is reallocated to dynamic industries and firms and that wages for similar work will really converge (Rehn 1952a [1950], pp. 45-47, 1953, p. 283; LO 1953 [1951], pp. 96-97; Meidner 1969, pp. 192-195). Moreover, to implement this wage policy, not only a coordination of collective wage bargaining, but also a policy for full employment, strengthening the position of labor, is required (Meidner 1952 [1948], p. 17, Rehn 1952a [1948], pp. 32, 40-41, 47, 1977b, p. 212, 1987, 67; LO 1953 [1951], pp. 64, 90-91, 99; Meidner 1969, pp. 190, 192). What is more, one aim of the restrictive macroeconomic policies and the ALMPs sustaining full employment is
to prevent that the profit pressure on low-productive firms by the wage policy of solidarity is offset by high profit margins in general (Rehn 1952b, p. 77, 1969b, p. 163).

In the Rehn-Meidner model, a general decline in profit margins would also give an impetus to firms’ productivity independently of the wage policy of solidarity. Rehn and Meidner posited that a reduction in average profits makes firms more efficient and also more eager to introduce new technologies and products. The restrictive macroeconomic policy was intended, in conjunction with the policy for full employment, to squeeze profit margins. However, to prevent a strong decline in company saving, possibly having a negative effect on private investment, the Rehn-Meidner model recommends a constant profit margin in the long run (in contrast to the medium term). In this time perspective, voluntary incomes policy made possible by central wage coordination should guarantee, although together with the lower profit margins and the norm of solidarity, that increases in the overall wage rate will eventually accord with the development of (value) labor productivity on average (Meidner 1952 [1948], p. 29; Rehn 1952a [1948], pp. 36, 49, 1977b, p. 215; LO 1953 [1951], pp. 34, 90-91, 94-95, 99).

However, the prime goal of squeezing profit margins in the medium term in the Rehn-Meidner model is not to raise productivity growth but to control wage inflation (Rehn 1952a [1948], pp. 30-31, 49, 52; LO 1953 [1951], pp. 92-93). Rehn and Meidner thought that lower profit margins would decrease the firms’ demand for scarce labor and their willingness to offer undeserved wage increases. They also expected that a decline in profit margin would refrain employees (and their trade unions) from making high wage claims. Thus, in the Rehn-Meidner policy program, wage-wage-price spirals are to be prevented by an economic policy squeezing profit margins although in interaction with the wage policy of solidarity. Wage drift is expected to be modest in the firms and industries favored by this wage policy (see the argument about the widening of profitability gaps above) but only if macroeconomic policy is tight. Besides, Rehn and Meidner hoped that the ‘fair’ wage differentials determined by coordinated collective wage negotiations would be accepted by all wage-earners and trade unions and hence put an end (or at least mitigate) leapfrogging wage claims. But once again, fiscal and monetary restraint is conditional for the positive relationship between the wage policy of solidarity and price stability (Rehn 1952b [1950], p. 75, 1977b, p. 216; LO 1953 [1951], pp. 89-90, 94; Meidner 1974, p. 15).

In the Rehn-Meidner model, the mobility-enhancing ALMP measures shall contribute to price stability. Furthermore, the ALMP programs are the means par excellence to achieve full employment (Rehn 1952a [1948], pp. 33-34, 46-47, 1952b [1950], p. 74, 76-77, 1977b, p. 213, 1987, p. 69; LO 1953 [1951], pp. 80, 90, 92-93). To avoid inflation, the last step towards full employment (that is, to achieve 2-3 percent open unemployment) should be taken by ‘selective’ economic-policy means, not by stimuli of aggregate demand. Rehn and Meidner

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8 Surprisingly, this inference from the Rehn-Meidner model was not drawn by the founders until the 1960s (Rehn 1969a, pp. 151-152, 157, 1969b, pp. 169, 170).

9 When illustrating the evil of inflation, Rehn and Meidner focused on the negative effects on income and wealth distribution and international competitiveness (LO 1953 [1951], pp. 80-82, Rehn 1988 [1957], pp. 137, 142-144).
thought that their austerity policy would result in ‘islands’ of unemployment (Rehn 1952a [1950], p. 34, 1969b, p. 164; LO 1953 [1951], p. 92). In fact, ALMP programs are required to prevent not only deficit-demand unemployment in the aftermath of the tight macroeconomic policy, but also structural unemployment through the wage policy of solidarity. ALMP measures can be demand-oriented although with the qualification that the positive effects on aggregate demand must be limited (public orders and financial support to sheltered employment or to specific firms, industries and regions). They can also be supply- and matching-oriented (public information services, labor-market training, support to occupational and regional mobility, etc.). In this article, all ALMP programs are labeled as ‘selective’ notwithstanding that the term is more valid for the demand-oriented measures.

Rehn and Meidner gave priority, particularly in the 1960s, to supply- and matching-oriented ALMP measures. Furthermore, in the Rehn-Meidner model, high unemployment benefits are means to encourage wage earners to take the risk of switching job. Rehn and Meidner also expected that the policy of full employment would encourage labor mobility per se. Rehn favored policy measures increasing the ‘security by wings’ rather than the ‘security under shells’ like legislation on job security (Rehn 1977a, p. 125, 1984, p. 150, 1987, p. 70).

In the 1970s, Rehn added an employment-policy instrument to his model aimed at giving a direct contribution to the fight against inflation. He came to argue for marginal employment subsidies, that is, for tax reliefs and transfers to firms upholding or increasing their workforce. Rehn thought that these subsidies, conventionally included in the expenditures for ALMP programs, would provide an incentive to price reductions whether the firms act on competitive markets or set their prices as a markup over marginal costs (Rehn 1982).

In the Rehn-Meidner model, the ALMPs are salient means not only to sustain full employment after a decline in profit margins but also to contribute to such a decline. ALMP measures aimed at speeding up labor mobility are supposed to hold down wages for expanding firms. However, the ALMP programs are generally expected to keep up the wage rate by institutionalizing a state of labor scarcity, Open unemployment is avoided by the selective stimulus to labor demand and by training- and other ALMP programs temporarily withdrawing people from the labor market. The associated strengthening of labor (both individually and collectively) results in higher nominal wages in general and downward wage rigidity in particular. Wage rigidity is a guarantee that the restrictive monetary and fiscal policy (or currency revaluation in an open economy with fixed exchange rates) will generate a reduction in profit margins at the aggregate level (Rehn 1952a [1948], p. 49; LO 1953 [1951], pp. 93, 99).

Rehn and Meidner admitted that productivity growth may fall and inflation rise in a full-employment economy whether full employment is obtained by general (Keynesian) or selective economic-policy (employment) measures. But they saw full employment as a restriction on economic policy (which they endorsed) and put the trust on the profit-margin squeeze to sustain productivity growth and avoid inflation. And they highlighted the negative productivity effects of an economic policy where employment for the ‘last’ employee is obtained by high aggregate demand. In fact, by reference to production distortions, Rehn and Meidner redefined full employment ‘... as the optimal rate of employment from the
point of view of production.’ (LO, 1953 [1951], p. 37). Low open unemployment is sustained in the Rehn-Meidner model by extensive ALMP programs, not by high aggregate demand.

However, a Rehn-Meidner model 2.0 developed by Rehn in the 1980s provided room for a positive relationship between aggregate demand and productivity growth, thus, for the Kaldor-Verdoorn Law. The modified model was based on Rehn’s portrayal of an economy with low capacity utilization and mass unemployment. To return to full employment, Rehn recommended an expansionary fiscal and monetary policy for the OECD countries in the aftermath of the OPEC I and OPEC II recessions. The original Rehn-Meidner model had not excluded an expansionary macroeconomic policy in a recession, especially in a deep recession (Rehn 1952a [1948], p. 52, 1952b, p. 76). However, in the 1980s, Rehn referred to the possibility of a positive relationship between capacity utilization and productivity growth because of static and dynamic economies of scale (Rehn 1982, pp. 4-5, 1987, p. 78). The original Rehn-Meidner model made no references to variations in firms’ capacity utilization.

But elements of the original Rehn-Meidner model reappeared in the 2.0 version. An expansionary macroeconomic policy is combined with wage policy of solidarity, mobility-raising ALMPs and with marginal employment subsidies, inter alia, to intensify competition between firms counter-balancing the tendency to higher profit margins (Rehn 1982, pp. 1-2, 18, 25, 32, 1987, pp. 64, 67, 72). Furthermore, the Rehn-Meidner model 2.0 also makes clear that voluntary or statutory wage moderation might be needed at the end of the day to control inflation near full employment. But Rehn still contended that incomes policy cannot be successful if expansionary macroeconomic policy is the sole instrument to obtain full employment (Rehn 1982, pp. 2, 8).

2.2 The strong and weak version of the Swedish growth theory

There is actually a strong and a weak version of the Rehn-Meidner growth theory. In their early writings (including the 1951 LO report), Rehn and Meidner leaned towards the weak version – income equalization is not necessary for economic progress, but it is compatible with growth and preferable in terms of macroeconomic stability and equity (LO 1953 [1951], 73). The founders of the Rehn-Meidner model saw their (original) program as an alternative to a growth strategy based on large wage differentials and high profits. They did not question that wage differentials could foster structural change. Rehn and Meidner primarily regarded wage policy of solidarity, albeit in conjunction with mobility-oriented ALMPs, as a desirable alternative to a Marshallian mechanism, where labor moves from stagnating to expanding sectors and from low-paid to high-paid occupations by the incentives of wage differentials. But they thought that the Marshallian mechanism has larger social costs in terms of income inequality and inflation (Rehn, 1952a [1948], pp. 44-46, 1969b, p. 165, 1984, p. 157; LO, 1953 [1951], pp. 64, 95-96; Meidner 1969, 194). Furthermore, Rehn and Meidner did not doubt that growth could be stimulated by high profits. But they added that a profit-led growth path has unwarranted effects on inflation and income distribution and further that it can be difficult to maintain, especially with the political restriction of full employment. A profit boom will elicit extensive wage increases and advance the position of labor (by the reduction in unemployment) preventing a sustainable increase in the profit share and profitability. Rehn and Meidner also put doubt on the possibility to establish sufficiently large
wage gaps to achieve labor mobility – there are various obstacles to wage reductions even in labor markets without their policy program.

However, especially in the 1960s and 1970s, Rehn and Meidner argued for a strong version of their growth theory – an economic and wage policy leading to a decline in profit margins and an equalization of labor incomes will stimulate productivity and structural change (Rehn 1977b, pp. 214-215). Solidaristic wage policy and ALMP programs are, inter alia, superior to a ‘free’ market mechanism in speeding up the reallocation of labor (Rehn 1952a [1948], pp. 45-46, 1969b, p. 165, 1987, pp. 76-77). The following sections are based on the original Rehn-Meidner policy model and on the strong version of the underpinning growth theory. However, the priority given to the strong version shall not obscure the model’s ambition to achieve not only high growth but also equality, price stability and full employment.

3. A demand- and profit-led economic development

Rehn and Meidner founded their policy recommendations on an analysis (and critique) of a demand- and profit-led economic development. They focused here on a national economy where the recoveries are led by some strategic firms and industries. The Rehn-Meidner model can arguably be associated with an economy driven by the sector with the newest technology (see the model’s focus on structural change). However, Rehn and Meidner had the construction sector and particularly the export sector in mind. In the early postwar years, thus, when the Rehn-Meidner model was formulated, Sweden experienced an export-driven economic boom. The country’s economic policy was simultaneously governed by the ideas of Keynes and the Stockholm School of Economics in which expansionary fiscal and monetary policies are the main instruments to obtain low rates of unemployment. Rehn and Meidner called attention to the high profit margins in this economy, particularly in the leading sector. The economic development without their policy program can be classified as demand- and profit-led considering that (i) recoveries start with demand-induced increases in profit margins possibly reinforced by expansionary fiscal and monetary policies, (ii) higher (lower) profit margins will expand (diminish) output in the economy and (iii) profit margins are the most important determinant of investment.

Rehn and Meidner did not provide a theory of the business cycle which is largely explained by the openness of Swedish economy. Accordingly, their works contain no theory of turning points in the business cycle despite the references to the possibility that wage-wage-spirals, appearing when the economy approaches macroeconomic balance, could increase unemployment by the negative impact on international competitiveness. Furthermore, Rehn and Meidner did not discuss the possibility that the capacity-enlarging effects of investment will eventually be stronger than the associated aggregate-demand effects. They mentioned that low-productive firms and industries with limited mark-up possibilities will only survive

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10 Rehn and Meidner sometimes integrated the two versions - their policy is both more rational and more human than a strategy based on large wage differentials and open unemployment (Rehn 1969b, 168).

11 Furthermore, Rehn sometimes used an ‘efficiency-wage’ argument saying that work morale and thus labor efforts are negatively affected by high profit shares of GDP and by wage reductions in declining sectors (Rehn 1987, pp. 73-76).
when profit margins are generally high in the economy. But they did not add that the related overcapacity in the economy can be the source of a recession.

A sensitive conclusion is that profit margins move pro-cyclically in the Rehn-Meidner model. Prices are highly flexible in the model. Fluctuations in export demand and world-market prices are the most important driving force of the Swedish business cycle. In the model, pro-cyclical prices can also reflect that individual industries and firms are approaching or departing from full capacity after a change in product demand. According to the underlying disequilibrium view, at a certain date, some product markets are in balance while others are characterized by excess supply or excess demand. A rise in product demand favoring one or several strategic industries and firms will lead to higher prices in the economy if it creates or exacerbates excess-demand conditions (Meidner 1952 [1948], pp. 19-20; Rehn 1952b [1950], 78; LO 1953 [1951], p. 80). Higher product demand can also result in price increases if nominal wages react directly to the aggravation (or creation) of excess-demand conditions in labor markets (cf. LO, 1953 [1951], 92). In the Rehn-Meidner model, both prices and nominal wages move pro-cyclically. Higher aggregate demand will, inter alia, reduce the number of labor markets with excess supply. Rehn and Meidner referred here to ‘labor strength’ notwithstanding that they emphasized the importance of labor scarcity per se rather than the related increase in trade-union militancy and labor power.

In the Rehn-Meidner analysis, the sector driving the economy is also wage leading. As a reaction to demand-induced wage drift in key industries and firms, wages (or rather the pace of wage increases) will eventually increase in other industries and firms through the multiplier and the competition for scarce labor. Wages will also increase in the latter industries and firms by the fact that higher employment will strengthen the position of trade unions and individual wage earners, increasing, inter alia, their possibility to satisfy relative-wage preferences. Some firms and industries will suffer even in a demand- and profit-led recovery. The open Rehn-Meidner model does not exclude the possibility of markup pricing in industries and firms outside the leading sector, but rather that this possibility is general. Many industries and firms will experience a decrease in average profit margins and face a threat to their survival (at least if they are not favored by the multiplier). Wage increases is also a threat to their survival of firms in dynamic industries if they have low productivity. Their profit margins will be suppressed by wage increases when technology leaders try to recruit labor or by price reductions when the superior (price leading) firms endeavors to get rid of competitors (see section 4.1). An elimination of low-productive industries and firms with limited markup possibilities can only temporarily be avoided by high aggregate demand leading to high profit margins in general.

12 Sweden is specialized (even today) in raw materials and semi-finished products, that is, in world markets with highly flexible prices. The assumptions of pro-cyclical profit shares and counter-cyclical real wages in the Rehn-Meidner model are supported by the fact that price changes in the leading Swedish export industries have a weak effect on domestic consumer prices. There is evidence that real wages in open OECD countries have been weakly pro-cyclical or even counter-cyclical in line with the Rehn-Meidner model. In fact, wages in Swedish manufacturing turn from pro-cyclical to counter-cyclical when moving from consumer to producer wages (Messina et al. 2009, see also Lindbeck 1993, pp. 96-98).
With my interpretation of the Rehn-Meidner theory endogenous wage changes cannot prevent that profit margins move pro-cyclically, especially in the leading sector. Wage increases will only slow down the increase in profit margins in the late phase of a recovery (inter alia, as a consequence of wage leadership) and perhaps also reinforce the following recession. The conclusion that profit margins show a pro-cyclical pattern in the Rehn-Meidner model is based on the assumption by Rehn and Meidner that nominal wages react slower to changes in product demand than prices. Thus, in the Rehn-Meidner model, pro-cyclical prices and counter-cyclical real wages (or rather product real wages) are not the consequence of declining physical productivity. Rehn and Meidner did assume, inter alia, by reference to high labor turnover rates and absenteeism, that productivity in the private sector is hampered by high employment. But they highlighted the importance of forced saving – nominal wages are stickier than prices, particularly in the leading sector. In the recovery, the slow reaction of wages reflects the ubiquity (though not the supremacy) of collective bargaining and of basic labor-market inertia such as protracted wage bidding by companies competing for scarce labor.

The pro-cyclicality of profit margins is reinforced in the Rehn-Meidner model by (absolute) downward nominal-wage rigidity even in an economy without their policy program. Rehn and Meidner made an independent contribution to the literature on wage rigidity by shedding light on the importance of asymmetric wage drift (Hansen, 1958 [1955], 350, 369). Excess demand for scarce labor in expanding industries and firms has a stronger effect on wages than a corresponding deficit demand in other industries and firms and for other wage-earner groups. Accordingly, the rise in (average) wages after an increase in aggregate demand is stronger than the fall in wage after a decline in aggregate demand (LO 1953 [1951], pp. 80, 93; Erixon 2013, p. 77). Thus, a plausible interpretation of the Rehn-Meidner view of a demand- and profit-led economy is that wages will increase on average even if excess demand in some labor markets (vacancies) is completely offset by excess supply (unemployment) in others, reflecting some wage rigidity downward by institutional or firm-related reasons (Rehn 1953, p. 284, 1987, pp. 69, 76). Thus, the average wage rate will increase even if the expansion of individual industries and firms merely mirrors a shift in relative product demand.

In Rehn and Meidner’s analysis of an economy without their policy program, demand-induced changes in actual profit margins have a central role when wages, output and investment are determined. The profit margin of the firm is conventionally measured by relating the difference between total sales and variable costs to total sales. The model is based on a gross notion of profit margins thus, profit taxes and depreciations are included in the surplus. Rehn and Meidner rejected a focus on net profit margins by the argument that a reduction in profit taxes might have modest effects on company expenditure because of various tax allowances (LO 1953 [1951], p. 93; Rehn 1969b, p. 164, 1977b, p. 204, 1987, p. 68). Provided that all other production costs than wages are neglected and all labor is variable, the gross profit margin in the business sector is equal to the gross profit share in this sector (current prices).
Rehn and Meidner emphasized (especially in their early writings) that high profit margins are the prime source of wage drift. High actual profit margins because of excess demand in product markets lead to wage drift by intensifying the competition between firms for scarce labor (Rehn 1952a [1948], pp. 30, 33, 1952b [1950], p. 77, 1977b, p. 214, 1987, p. 68; LO 1953 [1951], pp. 87, 93). However, they suggested that an increase in current profit margins may increase wages (both wage drift and central wages) even without a growing shortage of labor. Rehn often referred to the psychology of wage earners and trade-union leaders. A higher profit share, for instance through a rise in (average) labor productivity or a strengthening of monopoly conditions, will generate higher wage claims on equity grounds (Rehn 1987, pp. 65, 71). And firms are more willing to accept ‘X-inefficient’ wage increases in times of high profit margins (Rehn 1987, p. 68; Hansen & Rehn 1956, p. 89). A Rehn-Meidner theory of a positive relationship between profit margins (independent variable) and nominal wages can be formulated where the rate of wage increases in the economy is ultimately determined by disequilibrium forces in product markets but also by (average) labor-productivity growth and by changes in the labor force, the efficiency of labor markets, the degree of competition, the industrial composition and the production coefficients. It is assumed that factor substitution is only possible ex ante in the Rehn-Meidner model.\(^\text{13}\)

In the Rehn-Meidner theory, higher profit margins will stimulate investment in sectors facing excess demand. Flexible profit margins are an indicator in the Rehn-Meidner theory not only of excess-demand conditions in product markets but also of the need for investment to increase output. Rehn and Meidner downplayed the possibility that firms and industries are able to increase output as long as they have free capacity. Industries and firms expand output by capacity-enlarging investment provided that labor is abundant (although they may have to increase wages to attract workers). If the economy is booming, higher demand can still yield higher production in the leading sector if the sector manages to attract labor from other sectors or persuade employees to work more (by paying them higher wages).

The level of actual profit margins is not only included in the Rehn-Meidner investment equation by being an indicator of the requirement for investment to expand output. It is also a possible argument in the firms’ present-value function, both per se and as a determinant of expected operating profitability. However, it seems that Rehn and Meidner emphasized that higher actual profit margins have a positive effect on investment regardless of the effect on the marginal profit of capital (see LO 1953 [1951], p. 92). According to a reasonable interpretation of model, higher average profit margins will increase firms’ investment, primarily in the leading sector, by the importance of retained earnings (Meidner 1952 [1948], p. 25, Rehn 1952a [1948], p. 39; Erixon 2004, p. 84).\(^\text{14}\)

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\(^{13}\) Notwithstanding the Marshallian roots, my interpretation of the Rehn-Meidner model is not based as Hansen & Rehn (1956) on the marginal productivity theory. Thus, I will not assume that firms will increase their demand for labor when prices become higher than marginal costs (provided that the elasticity of product demand is constant).

\(^{14}\) At the time of the formulation of their model, Rehn and Meidner made no explicit distinction between marginal and average profits.
Rehn and Meidner implicitly assumed that the increase in investment through higher profit margins would have a stronger positive effect on actual output growth than on production-capacity growth in the short run. Thus, they took for granted that higher investment would reinforce excess-demand conditions in product markets. However, output growth will eventually slowdown in the Rehn-Meidner model because of profit-induced productivity changes. The average profit margin is a salient determinant of productivity growth in Rehn and Meidner’s theory. TFP growth is supposed to be hampered by high actual profit margins holding back the willingness of firms to rationalize or engage in other activities (for example, R&D investment) to increase productivity growth. Thus, a tendency to higher profit margins is counter-balanced by a reduction in productivity growth. Productivity growth is low in a boom because of the weak pressure on firms to be efficient but also because of the high employment rate. However, average profit margins still show a pro-cyclical pattern in my interpretation of Rehn-Meidner model. Hence, despite counter-cyclical (labor) productivity growth, counter-cyclical product real wages are still decisive for changes in functional income distribution over the business cycle. But the endogeneity of productivity and nominal wages reduces the room for a cumulative economic development. The increase in actual profit margins in a recovery will gradually diminish resulting in a slowdown in output growth.

Rehn and Meidner wanted to replace or at least control a demand- and profit-led economic development by a strategy that can be classified as wage-led and demand-restricting. In the original Rehn-Meidner model, growth and price stability are attained by wage equalization (at least for similar work) and by the combination of tight macroeconomic policies and selective employment policies in order to reduce the profit share in the medium term and to keep this share on a low level. However, the wage-led and demand-restricting strategy of the Rehn-Meidner model includes an ambitious target of full employment - any tendency to open unemployment should be met by extensive ALMP programs. The next section elaborates the effects of the Rehn-Meidner policy means. The ambition is to provide a theoretical anchor for the inferences drawn by Rehn and Meidner and further to discuss the macroeconomic implications and generality of their analysis. Notwithstanding the interrelationships between the means, a separation will be made between the wage-policy and economic-policy components of the Rehn-Meidner model.

4. A wage-led and demand-curtiling economic strategy

4.1 The wage policy of solidarity

The actual profit margin is a strategic variable in the Rehn-Meidner model, inter alia, by the model’s vintage approach to the wage policy of solidarity. Rehn and Meidner assumed (actually without any reference to age) that firms operate under different technical conditions. Some firms earn ‘intra-marginal’ profits (quasi-rents) by the exclusive access to superior technologies. The notion of various degrees of (product) competition is neatly fitted into the Rehn-Meidner theoretical framework.15 Firms may use a technological advantage (which can be temporary) to exert a downward price and profit-margin pressure on other

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15 Already in the 1951 LO report, Rehn and Meidner highlighted the importance of monopoly power and argued for policy actions to reduce it (LO 1953 [1951], 79, 97).
firms. However, the Rehn-Meidner model emphasizes that profit-margin pressure on firms with older technologies will emerge in a profit- and demand-led economy through nominal wage increases at the initiative of the innovative firms. In any case, firms are eliminated (or choose to voluntarily leave the market) when their intra-marginal profits have fallen to zero. The wage policy of solidarity is primarily a mean to speed up structural change in the Rehn-Meidner model by aggravating the profit pressure on ‘marginal’ firms and plants.

**Figure 1** pinpoints the impact of the wage policy of solidarity on profit margins and firm structure. Labor is assumed to be the only variable cost (depreciation is, inter alia, ignored) and homogenous in the sense that all wage earners have the same skill. Firms are supposed to have different average labor-productivity levels reflecting that they have invested in technologies that are more or less modern (embodied technological progress). Producer prices are determined either by world markets, on competitive product markets or by firms with superior technologies. Figure 1 excludes the possibility (actually discussed by Rehn and Meidner) that firms with older technologies facing higher nominal wages (reflecting the application of the wage policy of solidarity or the rise in labor demand by firms with the newest technologies) can escape closure by price increases or substitution of real capital for labor ex post.

**Figure 1**: Wage policy of solidarity, profit margins and firm exit in the Rehn-Meidner model

The firms are listed by their profit margins (PM), that is, by the gap between the price and the variable unit labor cost. In the interest of simplicity, I assume that the profit-margin structure can be described in linear terms. The extent of solidarity wages is shown by the angle of the profit-margin lines. The flatter PM(0) line represents a state where wages are more in accordance with firms’ ability to pay determined by their labor-productivity levels. There is a weak propensity (and opportunity) here for wage policy of solidarity or a weak
tendency to uniform wages through labor mobility and wage competition between firms. The steeper PM(1) line represents the cases where wage formation follows the principle of solidarity more closely or where wages are more uniform because of a better functioning of the labor market. The wage of solidarity is assumed to be equal to the wage paid by the medium firm (m) whether the wage policy is radical or modest. The solid vertical line represents an initial state where all existing firms can survive (100%) since their wages have adjusted fully to their value productivity level. The profit margins are zero for all firms in this case (see the solid horizontal line in the figure).

The vintage structure and the size of the intra-marginal profits depend on the scope of the wage policy of solidarity. The dotted lines at A and B show the number of firms above the point of break-even (0), that is, where prices are equal to unit (variable) wage cost, with modest solidarity policy, see the PM(0) line, and with radical solidarity policy, see the PM(1) line. A smaller number of firms will survive when solidarity wage policy is more ambitious (A lies to the left of B in the figure). Furthermore, firms which can afford higher wages than the medium wage have larger profit margins when the solidaristic wage policy is more radical. The hatched area in the figure marks the difference in intra-marginal profits for the highly productive firms between the cases of radical and modest wage policies of solidarity. (We assume here that labor markets are equally flexible in the two cases.)

Let us temporarily abandon the separation between wage and economic policy in the analysis of the Rehn-Meidner model. To create a pressure on low-productive firms the model underlines the need to combine the wage policy of solidarity with a policy squeezing the profit margins in general in the medium term. In Figure 1, the Rehn-Meidner austerity policy, resulting in a reduction in prices and in the price-wage ratio for all firms, shifts the profit-margin line downward from PM(1) to PM(2) when the wage policy of solidarity is radical. (A similar shift of PM(0) will take place if the wage policy of solidarity is modest.) More firms will fall below the 0 line, the point of break-even (see C in the figure), unless they have the opportunity or proficiency to increase productivity. Thus, the pressure from the wage policy of solidarity is felt more by the low-productive firms if the profit margins have fallen for all firms. The restrictive economic policy has also reduced the intra-marginal profits of firms favored by the wage policy of solidarity.

In the long run, a competitive labor-market model will generate wage equality (if labor markets work smoothly) and a vintage and profit-margin structure similar to those of the wage policy of solidarity.\(^{16}\) If labor markets are perfectly competitive firms which would have benefited from the wage policy of solidarity have to offer higher wages to attract labor. But firms with the newest technologies will still earn intra-marginal profits and wage competition will still lead to the elimination of marginal firms. It is not certain that wage pressure will be stronger and the number of surviving firms smaller with a wage policy of solidarity than with

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\(^{16}\) Rehn in particular often claimed that the wage policy of solidarity anticipated a perfect labor market in the long run where wages are equal for similar jobs and wage differentials do not reflect temporary labor market imbalances or historical and institutional injustices (LO 1953 [1951], pp. 35, 99; Rehn 1987, p. 69). At the same time, both Rehn and Meidner were conscious of the fact that the ‘objective’ evaluation and comparison of jobs was a radical intrusion into a ‘free’ labor market.
a competitive labor market – labor scarcity may generate a strong wage pressure on firms with low productivity levels.

However, according to the strong version of the Rehn-Meidner model, growth will be higher with the wage policy of solidarity than with the real market alternatives. The tendency towards a uniform wage for similar jobs in a ‘free’ market, putting a wage pressure on firms with older vintages, is often a lengthy and defective process, inter alia, disturbed by new external circumstances. What is more, the threat of unemployment from the wage policy of solidarity may increase the number and search intensity of job applicants. The policy may also increase the number of vacancies in the favored firms (Erixon 2004, pp. 98-99, cf. Acemoglu 2001).

The Rehn-Meidner conclusion that a more radical wage policy of solidarity will increase the number of firm exits provided that profit margins are generally low in the economy seems reasonable. But the interaction between solidarity wages and profit margins on average has an ambiguous effect on exits. It is likely that the number of firms with positive profit margins is larger when the wage policy of solidarity is modest or absent (see figure 1). Many of these firms will close down after a reduction in aggregate demand resulting in lower prices and profit margins in general. Thus, from an ‘equilibrium’ perspective, the decline in output in a recession through exits will be stronger with less wage solidarity. However, if the wage policy of solidarity is (more) radical, there are probably more firms in the economy that are in a disequilibrium state of excess supply. Many of these firms may not leave the market until a fall in aggregate demand. Thus, the effect of the wage policy of solidarity on exits in a recession is uncertain. A similar conclusion can be drawn for a recovery. Despite this ambiguity, the Rehn-Meidner model will be associated with the reasonable hypothesis that wage policy of solidarity will cause a larger number of exits (though not necessarily a higher exit rate) in a recession. However, when assessing the importance of the wage policy of solidarity for aggregate output the effects on productivity growth must be accounted for.

The importance of the wage policy of solidarity for productivity growth through exits, (external) structural change and actions taken by firm actors under pressure was developed in a satisfactory way in the 1951 LO report (see section 2.1). The elimination of low-productive industries and firms (and plants) will increase overall TFP growth per se, but also by freeing resources to the benefit of expanding industries and firms. The wage policy of solidarity was also expected by Rehn and Meidner to increase the incentives for structural change (see the widening of profitability differentials between industries and between firms). The transfer of resources (assured by mobility-enhancing ALMPs) will boost overall productivity growth if the favored firms and industries have higher productivity levels or higher productivity growth than other firms and industries. Firms living under the threat of the wage policy of solidarity may also increase national TFP growth by rationalization and investment. Firms are perhaps impelled to make investment embodying new technologies and products which in fact may also boost TFP growth by reinforcing the wage pressure on other ‘marginal’ firms. The wage policy of solidarity will give incentives to use labor-saving (capacity-enlarging) technologies, particularly if the policy is synonymous with a compression of wages for skilled and unskilled labor. Firms disfavored by solidarity wages may also meet...
the threat toward their existence by simply making the production process more capital intensive having a positive effect on labor-productivity growth (this option is possible ex ante with my representation of the Rehn-Meidner ideas).

In the Rehn-Meidner model, wage policy of solidarity may also have a positive impact on TFP growth by stimulating investment by the favored firms. The higher intra-marginal profits of this policy can enlarge the opportunities for self-financing and also increase the marginal rate of return on investment. The subsequent expansion of the favored firms may be associated with scale advantages or embodied technical change. A necessary condition for a positive relationship between wage policy of solidarity and investment by the favored firms is that their wage subsidy is not offset by the Rehn-Meidner economic policy of squeezing profit margins in general.

Moreover, the wage policy of solidarity can promote TFP and labor-productivity growth in the economy by having a positive effect on entry of new firms in dynamic markets or the business sector at large. Entry by domestic or foreign firms with a technological advantage is a possible source of changes in the vintage and market structure and the productivity performance of incumbent firms. Entry has a positive effect on productivity growth in the economy per se if new firms have higher productivity levels or higher productivity growth than established firms. The entrance of new firms may also have a positive effect on the productivity of established firms through knowledge spillovers effects and the rejuvenating effects of harder competitive pressure. Rehn and Meidner did not explicitly refer to firm entry. But this phenomenon can easily be incorporated in their analysis of the wage policy of solidarity. Investment embodying new technologies or new products may be encouraged by the wage policy of solidarity by the simple fact that the intra-marginal profits for newer vintages (or the temporary profits of new products) will then be higher. But the wage policy of solidarity can stimulate entry and the expansion of new firms with a productivity advantage whether new technologies are embodied or not. It must be assumed in both cases that expectations are based on current labor costs and that the positive effect of solidarity wages on the (expected) profits of new firms is not offset by a restrictive macroeconomic policy leading to a general decline in profit margins. However, the positive relation between wage policy of solidarity on the one hand and entry and the expansion of newly founded firms on the other hand is not obvious. The formation and expansion of new firms will be obstructed by solidarity wages if these firms have low productivity levels to begin with and their investment plans are formed by the initial labor costs or hindered by imperfect capital markets.

Rehn and Meidner did not discuss the impact of the wage policy of solidarity on the business cycle. A plausible conclusion is that the wage policy of solidarity will amplify fluctuations in profit margins and thereby also in output. The weaker upward pressure on wages will reinforce the increase in profit margins and output in a recovery given the reasonable assumption that the favored firms are overrepresented in the group of firms that wish to expand when aggregate demand is high. Moreover, in the Rehn-Meidner model, the number of eliminated firms will be lower in a recovery if wages follow the principle of solidarity more
closely (see above). Analogously, the wage policy of solidarity will reinforce the decrease in profit margins and output in a recession provided that the disfavored firms are overrepresented in the group of retarding firms when aggregate demand is low. Besides, in the Rehn-Meidner model, the number of eliminated firms will be larger in a recession if the wage policy is more solidaristic.

4.2 The Rehn-Meidner economic policy

The Rehn-Meidner model recommends a predominantly restrictive fiscal or monetary policy over the business cycle (the Juglar cycle). Rehn and Meidner assumed in the 1951 LO report, that macroeconomic policy is tightened in an imaginary initial state of full employment. They excluded that the restrictive macroeconomic policy and the ‘selective’ policy for full employment in order to push down profit margins would cause a cumulative vicious process. First, the Rehn-Meidner model advocates a mild tightening only of macroeconomic policy. Second, endogenous wage reductions, possibly leading to expectations of further wage decreases starting a deflation process, is excluded in the model by the wage-floor function of the ALMP programs.

The restrictive fiscal and monetary policy of the Rehn-Meidner model is a mean to reduce excess demand in product and labor markets leading to inflation. The austerity policy should primarily hit firms and industries that will only expand or can only survive when full employment is achieved by high aggregate demand. The policy has the object, inter alia, to eliminate firms using older vintages of technology. Rehn and Meidner expected that output and profit margins would be reduced by the restrictive fiscal and monetary policy. But it must be added that the fall in output and profit margins is mitigated in their theory by productivity increases. The lower rate of employment will lead to less labor turnover, absenteeism, etc. and the lower profit margins will force the firms to rationalize and take other measures to boost productivity. The higher productivity may, inter alia, improve the international competitiveness of the open sector.

However, profit margins and output will certainly fall as a result of the restrictive macroeconomic policy of the Rehn-Meidner model. By institutionalizing labor scarcity, the ALMP measures for full employment prevent that the profit-depressing effect of monetary and fiscal austerity is offset by a reduction in the pace of wage increases. The ALMPs set as a permanent wage floor in the economy. On the other hand, the ALMP programs are expected in the Rehn-Meidner model to have a wage moderating effect by their contribution to labor-market flexibility. A reasonable interpretation of the Rehn-Meidner model is that the positive wage effect of ALMP programs on wages dominates over the business cycle while the negative wage effect is decisive in a boom (Erixon 2004, pp. 78-79).

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17 The wage policy of solidarity may also reinforce a counter-cyclical productivity pattern reflecting that rationalization and structural change are stimulated in times of falling profits. For example, the tendency to less rationalization in a recovery will be reinforced by solidarity wages under the reasonable assumption that favored firms are overrepresented in the group of expanding firms.

18 The Rehn-Meidner model assumes that ALMP measures to sustain full employment such as regional policy and people’s participation in training programs have a weak effect, or no effect at all, on aggregate demand.
By the wage floor function, the ALMPs programs may be sufficient means to squeeze profits’ share of GDP (and reduce output) over the business cycle (cf. Rehn 1977b, p. 212). Thus, the restrictive macroeconomic policy is not really needed to reduce profit margins. By contributing to labor scarcity, the ALMPs put an upward pressure on nominal wages in the medium and long term. Price-leading firms (leaning, for example, on a productivity advantage) may accept a wage-driven decline in profit margins reinforcing the threat to the survival of ‘marginal’ firms. Moreover, the higher nominal wages will reduce profit margins for firms that have to accept that prices are exogenous in an open economy. However, a salient object of the restrictive monetary and fiscal policy of the Rehn-Meidner model is to prevent price increases emanating from full employment itself. Thus, in the model, restrictive macroeconomic policy may not be necessary to keep down profit margins but to control inflation.

In the Rehn-Meidner model, the ALMPs will stimulate firms’ productivity in the medium and long term by their positive effect on labor quality and their contribution to decline in average profit margins which is assumed to stimulate the development and use of new technologies, products and organizations. The ALMPs have also a positive effect on productivity through structural change. The mobility-enhancing ALMPs will speed up the movement of resources to expanding firms and industries per se but also in interaction with the wage pressure on low-productive firms. This wage pressure is in turn a function of the interaction between the wage policy of solidarity and the squeeze of profit-margins in general which is partly the result of the ALMP programs.

Rehn and Meidner provided a theory of the product and labor market but not of the capital market. However, their policy program implies a shift in the distribution of saving. The decline in profit margins in the medium term will deteriorate the ability of companies to finance investment by retained earnings. In the Rehn-Meidner model, the decline in corporate saving can be offset by a restrictive fiscal policy generating a public budget surplus in the medium term (Rehn 1952a [1948], 51-54, 1952b [1950], 78, 1987, p. 68). The restrictive fiscal policy may also increase the share of public saving at the expense of household saving - in the Rehn-Meidner model the public budget surplus is primarily built up by VAT increases. The decline in household saving is accentuated if taxes and transfers are used to compensate low-income households for the VAT increases (cf. Rehn 1952, p. 50). Such redistributive measures will probably hit income groups with high saving propensities. If the economy is tightened by a restrictive monetary policy, a decline in company saving is matched by higher household saving or by higher saving within the financial business sector.

In the Rehn-Meidner model, profit margins in the business sector should be kept constant in the long run. However, the Rehn-Meidner policy may cause a tendency toward a higher profit share. The ALMPs are expected to increase labor-productivity growth in the long run by their positive effect on labor quality. Furthermore, the decline in profit margins in the medium term may elicit investment in R&D or, directly, in new technologies, products and organizations. The profit fall may thus have a positive effect on investment and productivity growth and also a long-lasting positive impact on the capability and willingness of firm actors
to innovate, introduce new technologies and even to rationalize. Productivity growth in the business sector may also be stimulated by the wage policy of solidarity, both by forced responses by individual firms and by structural change. In the Rehn-Meidner model, any tendency to higher profit margins in the long run is expected to be offset by wage increases reflecting the political guarantee of full employment.

On the other hand, by the Rehn-Meidner policy program for full employment, the economy can display a tendency toward a decline in the profit share in the long run. The fall in profit margins in the medium term may be associated with lower total investment in the business sector if the profit margins pass a critical threshold level where the companies do not longer accept external saving as a source of investment. Although skeptical to incomes policy, to neutralize a tendency toward wage overshooting, Rehn and Meidner finally provided room for collective wage restraint in general.

5. The Rehn-Meidner model in a Keynesian perspective

5.1. Keynesian theories of flexible prices and profit margins

In *The General Theory*, Keynes portrayed an economy in which prices move pro-cyclically and real wages counter-cyclically exactly as in the Rehn-Meidner model (my interpretation). Keynes leaned towards a static version of the marginal productivity theory. An increase in aggregate demand is associated with higher prices and lower real wages at constant nominal wages because of a falling (physical) marginal productivity of labor given the stock of real capital (and the degree of competition). Rehn and Meidner expected that nominal wages would react to changes in aggregate demand although at a slower speed than prices. The pace of wage increases will start to increase when some labor markets enter a state of excess demand. And prices will begin to rise in the economy when some industries and firms reach their capacity ceiling (it is ignored here that price changes are closely related to the export-driven business cycle in the Rehn-Meidner analysis).

Keynes did mention in *The General Theory* that prices can increase because of inelastic supply in some product markets, thus, before full capacity utilization has been achieved at the aggregate level. Moreover, Keynes, and later Joan Robinson, did not exclude that nominal wages can begin to increase before full employment (Keynes 1973 [1936], pp. 300-303; Robinson 1937, pp. 6-7). But Keynes and Robinson did not emphasize, as Rehn and Meidner, that such wage increases are the result of labor shortage, that is, of excess demand in some labor markets. Besides, excess-demand conditions in some product or labor markets are no special cases in the Rehn-Meidner model. Changes in prices and wages at the aggregate level at a particular date are the result of new excess demand- and supply conditions in heterogeneous product and labor markets.¹⁹

¹⁹ By the emphasis on endogenous prices, wages and profit margins the Rehn-Meidner analysis is actually more akin to that in Keynes’s *A Treatise on Money*.
By assuming that unemployment and unused production capacity are disequilibrium phenomena, the two Swedish economists avoided Keynes’s static-equilibrium approach in *The General Theory*. Rehn and Meidner certainly agreed with Keynes that unemployment is a negative function of effective demand. And they took ‘the Keynes effect’ for granted - a general reduction in nominal wages will not necessary stimulate output and employment considering the effects on the interest rate and expectations. But despite the assumption of relative wage preferences, Rehn and Meidner did not provide a theory of ‘involuntary unemployment’. In *The General Theory* wage earners concern for relative wages makes them willing to accept real-wage reductions unleashed by increases in consumer prices. In the Rehn-Meidner model, price increases in the expanding sector are accepted by the employees in this sector since the subsequent increase in nominal wages is associated with higher relative wages. Relative wage preferences are also a possible source of wage increases in sectors and for wage-earners not favored by higher product and labor demand.

Rehn-Meidner and Keynes unanimously assumed that nominal wages are rigid downward. And none of them put the blame on militant unions and radical wage policies in the first place. However, Keynes referred here to relative wage preferences and the lack of institutions for uniform changes in nominal wages while Rehn and Meidner rather underlined the interests of employers in an economy without their policy program (Rehn 1987, 69, 76). Rehn and Meidner’s approach to (downward) wage rigidity explains, together with their sectoral approach to relative-wage preferences, the absence of any references in their works to Keynes’s notion of involuntary unemployment.

Rehn and Meidner’s analysis of a demand- and profit-led economy is compatible in many respects with Nicholas Kaldor’s theory of functional income distribution and growth. The presentation of the Kaldorian model(-s) below is based on Kaldor (1957), (1959), (1970a [1956]), (1970b), (1971 [1966]), Kaldor & Mirrlees (1970 [1962]) and on the Goodwin-Kaldor model in Skott (1989, 2015) and Arnim & Barrales (2015). As in the Rehn-Meidner model, prices and profit margins are flexible in Kaldorian models (see, for example, Arnim & Barrales 2015, pp. 353-354). There is a striking similarity between the Rehn-Meidner and Kaldorian description of the underlying mechanism. In Kaldorian models, price flexibility assures that an unexpected increase in product demand will lead to higher profits margins having a positive effect on employment and output growth. Price increases are needed to keep the economy in equilibrium in the very short run. The profit-margin level is an indicator of the state of excess demand in the economy if prices are fully flexible. Furthermore, like Rehn and Meidner, Kaldor came to assume in later works that excess demand (and also labor bottlenecks) will emerge in some sectors of the economy (Kaldor, 1970b, p. 4). Kaldor also

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20 Skott (1989, pp. 235-236, 242-243), (2015, pp. 375-376); Arnim & Barrales (2015, pp. 356-358). In Skott’s Kaldor-Goodwin model, the price and profit margin in the short-run equilibrium (beyond the very short run) are a function of marginal cost conditions and the elasticity of demand. However, the Kaldorian assumption of exogenous wages and productivity led Skott to assume that marginal costs are constant.
expected, in accordance with my interpretation of the Rehn-Meidner model, that profit margins show a pro-cyclical pattern (Kaldor 1970b, p. 5).

In Kaldorian models, output growth is not only a function of profit margins (positively), but also, exactly as in the Rehn-Meidner model, of the employment rate (negatively). The Kaldorian literature refers along the lines of the Rehn-Meidner model to high labor turnover rates and other distortions in production (Kaldor 1970b, p. 4; Skott 1989, p. 236). Moreover, by considering embodied technological progress and price competition based on technological superiority, Kaldor shared the vintage approach with Rehn and Meidner. Like Rehn and Meidner, Kaldor maintained that a recovery with high profit margins will prolong the life of the oldest plants (Kaldor 1957, pp. 595-596, 1959 I, p. 221, 1970b, p. 5, Kaldor & Mirrlees 1970 [1962], pp. 343-346).

The Kaldorian models assumes in harmony with the Rehn-Meidner model that capacity-enlarging investment is promoted (hampered) by high (low) profit margins. Let us ignore here that Kaldor’s investment-behavior function only sheds light on the importance of high current profits for expectations, thus ignoring the pivotal role of retained earnings (Kaldor, 1957, 600-601; Skott 1989, p. 237). Kaldor did stress in his growth theory that the saving share of GDP is a positive function of the profit share because of the high saving propensity of companies and the importance of profits for company saving (Kaldor 1959 I, p. 215, 1970a [1956], p. 83 n. 4, 1971 [1966], pp. 297-298); Kaldor & Mirrlees 1970 [1962], p. 359, Skott 1989, pp. 233-234).

In Kaldorian models, the economic development is demand- and profit-led in the sense that a rise (decline) in profit margins has a stronger effect on output growth than on capacity growth. Rehn and Meidner implicitly made a similar assumption in their analysis of an economy without their program (they did not explicitly refer to the capacity-enlarging effect of investment). Typical of their time, Rehn, Meidner and Kaldor alike downplayed the possibility of cumulative secular processes. In Kaldor’s theory, firms’ investment to enlarge the production capacity (the warranted growth rate) will adjust to labor-supply and productivity growth (the natural growth rate) by changes in the profit share (see, inter alia, Kaldor 1957, 597-598, 1970b, p. 6). Kaldor specified some restrictions on the profit share that must be satisfied to rule out a state of stagnation (Kaldor 1957, p. 607, 1970a, pp. 87-90). There is still room in Kaldor’s model for a Harrodian destabilizing processes if the profit share is a positive function of capacity utilization. In fact, Harrodian instability is needed to create a cumulative cyclical movement in a Kaldorian model where prices are fully flexible (Arnim & Barrales, 2015, 354-360; 1989, pp. 235-236, 2015, p. 379). However, in his dynamic analysis,

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21 I ignore here the argument in Kaldor (1957, pp. 621-622) and Kaldor (1970, pp. 86 and 90-91) that profit margins and real wages are rigid in the business cycle. I also ignore that some economists using the Kaldor-Goodwin approach have accepted evidence of a clockwise relation between capacity utilization and profit share in large OECD countries. However, when explaining the observed clockwise cycle they make the Kaldorian assumption that the fall in profit shares at higher rates of capacity utilization is not the result of higher nominal wages at higher employment rates or even of stronger labor (see further above). The decline in profit margins in the late recovery is instead explained by changes in the relation between excess demand, prices and profit margins (Skott 2015, pp. 379-380).
Kaldor toned down the importance of a long-lasting destabilizing process. Kaldor referred to the empirical fact that not only the profit share (and the rate of profit) but also the warranted and natural growth rates showed a long-term constancy (Kaldor 1957, pp. 591-593, 1970a [1956], pp. 90-91; Harrod 1970 [1939], pp. 52-55). In the Rehn-Meidner model, secular processes are counter-balanced by counter-cyclical productivity (through variations in the employment rate and the profit pressure) and pro-cyclical nominal wages.  

Kaldor formulated in contrast to Rehn and Meidner a stylized macroeconomic theory, including a general theory of the business cycle, based on income identities and explicit assumptions about the saving propensities of households, firms and rentiers. For example, he offered in contrast to Rehn and Meidner a theory of turning points in the business sector. Capital accumulation by firms in a recovery will, together with a decline in output growth, eventually lead to overcapacity having a negative effect on investment (Kaldor 1970a [1956], p. 86, 1970b, p. 5; Skott 1989, pp.242-244).

22 The Rehn-Meidner model does not assume that capacity utilization has a positive effect on profit margins contributing to a cyclical or long-run process of increasing profit margins, thus to a Harrodian cumulative development. Thus, the model excludes that $f_{CU} - c_{CU} > 0$ where $f_{CU}$ stands for the positive effect of higher capacity utilization on production growth and $c_{CU}$ represents the positive effects of higher capacity utilization on production-capacity growth.

23 A recovery starts when production growth exceeds capacity growth leading to a rise in capacity utilization (see Skott 1989, pp. 242-243).
similar to Kaldor’s original Cambridge (Kaldor-Pasinetti) theory where the economy is in a state of full employment, or rather of full capacity utilization, to begin with (see below).

The relation between profit margins and investment is a source of division between the Kaldorian models and the Rehn-Meidner model. In the former models, investments are exogenous in relation to profit margins. The adjustment of profit shares to the investment share of GDP is actually the very core of the Cambridge theory of distribution and growth. In Kaldor’s full-capacity economy, a rise in the investment share of GDP will result in higher prices and profit margins and lower real consumption (Kaldor 1957, pp. 593-594, 1959, p. 215, 1970a [1956], p. 84; Kaldor & Mirrlees 1970 [1962], p. 344). A reasonable interpretation of Kaldor is that an increase in investment ex ante (in relation to GDP) will lead to an increase in profit margins since private savings must increase to realize the desired rate of investment (see Kaldor 1970b). In Kaldor’s analysis of an economy with unused production capacity, the independent status of investments in relation to profit margins is not obvious (cf. Kaldor 1970b, p. 5). However, in some Kaldorian models, higher investment demand as a consequence of higher capacity utilization results in higher prices and profit margins at the initial output level. Thus, the impact of the profit margin on output growth and investment can sequentially be traced back to a change in investment demand (Skott 1989, 242-243). In the Rehn-Meidner model, profit margins are unambiguously the independent variable in relation to investment. Higher profit margins are here an indication of higher product demand whatever its origin, a signal to the firms that they can only expand output by investment and a source of extended self-financing capabilities.

There are some flaws in the Kaldor’s model in comparison with the Rehn-Meidner model. Kaldor made no references to public saving, a possible financial source of private investment in the Rehn-Meidner program. But more importantly, it is difficult to find any references in the Kaldorian literature to the possibility of forced productivity increases within firms. Thus, there is hardly any parallel here to the negative relationship between profit margins (independent variable) and TFP growth at the firm level in the Rehn-Meidner model. 24 Furthermore, the insensitivity of nominal wages to labor scarcity is a limitation of the Kaldorian models. In his eagerness to depart from neoclassical economics, Kaldor denied the possibility of endogenous wages. His criticism of neoclassical theory stemmed from a static interpretation of the marginal productivity theory – higher labor demand will instantaneously result in higher nominal wages (unless labor supply is infinitely elastic). Kaldor thus excluded the possibility that the slowdown in output growth because of labor shortages (bottlenecks) in individual firms would bring forth an increase in nominal wages in due course (cf. Kaldor 1970b, p. 4). In the Rehn-Meidner model, demand-induced increases in average profit

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24 Kaldor assumed that the tendency to capital deeping is absent or weak in periods of increasing profit shares (see Kaldor 1970b, p. 5). But he never modeled the idea that the incentives to increase TFP growth will be weakened in these periods (see, inter alia, Kaldor 1959, II, p. 291). At a conference in Stockholm in the mid-1960s, Kaldor perceived the novelty of the Rehn-Meidner theory that profit-margin squeezes would stimulate productivity growth by structural change (Kaldor 1969, p. 159).
Margins lead not only to higher output and employment but also to higher nominal wages although with a delay.\(^{25}\)

When determining nominal wages, Kaldor did refer like Rehn and Meidner to the bargaining strength of labor. He also came close to the Rehn-Meidner view by claiming that the general pace of wage increases is largely determined by wage drift in leading industries prompt by high actual profits as a result of increases in product demand or productivity. But Kaldor disputed the ultimate importance of labor scarcity and even of variation in employment for nominal wages.\(^{26}\) By the assumption that wages are unresponsive to labor-market conditions, (post)-Keynesian economists including Kaldor provide larger room for incomes policy than Rehn and Meidner did.

5.2. The Rehn-Meidner model in a Kaleckian perspective

In some respects, the Rehn-Meidner model is more similar to theories in the Kaleckian tradition than to the Kaldorian models. My interpretation of the Kaleckian theories of income distribution, investment and growth is based on Michal Kalecki’s own work and on the neo-Kaleckian literature (see, inter alia, Barbosa-Filho & Taylor 2006 and Arnim & Barrales 2015).\(^{27}\) The most important similarity between the Rehn-Meidner and the Kaleckian theories is their ‘non-Kaldorian’ assumption that variation in labor strength makes nominal wages a positive function of the employment rate. In Kalecki’s theory, the profit share will fall when trade unions become stronger near full employment; product-market competition makes it difficult to mark up the higher wage claims (Kalecki 1965 [1954], pp. 17-18 and 30-31, 1971, pp. 5-6, cf. Rehn, 1987, p. 65, 67). Kalecki’s emphasis on both labor strength and monopoly conditions (together determining ‘the degree of monopoly’) in his theory of income distribution is in agreement with the Rehn-Meidner model; the hypothesis about the pivotal role of labor strength for the profit share is particularly valid for a small open economy like the Swedish one. Both Kalecki and Rehn-Meidner associated full-employment conditions with a profit-margin squeeze. Furthermore, the Kaleckian and Rehn-Meidner approaches are very similar by the proposition in the neo-Kaleckian literature that labor strength, and thus the rate of nominal-wage changes is a positive function of labor-market pressure primarily reflecting the state of aggregate demand (Arnim & Barrales 2015, pp. 360, 363).

In accordance with the Rehn-Meidner model corporate saving is a paramount variable in Kalecki’s investment function (Kalecki 1965 [1954], pp. 97-99, 105-106, 1968, pp. 268-269). As the Rehn-Meidner model, investment is a function of innovations in Kalecki’s theory (see

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\(^{25}\) When formulating his Goodwin-Kaldorian model Peter Skott did not exclude that nominal wages react to prices with a delay. But he made the simplifying assumption that the nominal wage rate is given (Skott 1989, p. 235).

\(^{26}\) Kaldor (1959, pp. 292-297). Kaldor only referred to the possibility of wage-price spirals as a consequence of reductions in real wages when the economy has reached full employment (Kaldor 1970a [1956], pp. 90-91).

\(^{27}\) The neo-Kaleckian literature is also inspired by the works of Josef Steindl. Kalecki’s and Steindl’s theories of secular economic growth and stagnation are compared in Erixon (1987, pp. 72-80, 107-112).
the notion of embodied technological progress). In Kalecki’s dynamic theory, a recovery starts with an increase in gross investment in relation to gross capital, mainly as a result of an increase in the rate of innovation. In fact, in Kalecki’s integrated short-run and long-run analysis, trends in profitability and production can be derived from changes in investment reflecting variation in the rate of innovation (Kalecki 1965, pp. 145-151, 1968). The Rehn-Meidner model is associated with the hypothesis that a recovery may be initiated by the innovative sector. Kalecki also took account of the possibility, underscored by Rehn and Meidner, that changes in aggregate demand can be triggered by a change in the export surplus or the public-budget balance (see, for example, Kalecki 1965, p. 159). Furthermore, in his later writings, Kalecki added a vintage-structural argument to his aggregate investment function – the profits for new vintages (with high productivities) have a positive impact on investment per se (Kalecki 1968, pp. 266-267). In the Rehn-Meidner model, the wage policy of solidarity has a positive effect on investment in new technologies by widening the gap in ‘intra-marginal’ profits between vintages.

The Kaleckian theories deviate from the experience-based Rehn-Meidner theory by being based (as the Kaldorian theories) on national-income identities and stylized assumptions about capitalist and wage-earner saving (although Kalecki’s equations are more sequential than Kaldor’s). Kalecki developed a business-cycle theory where investment will rapidly lead to higher aggregate demand but be depressed in due course by capital accumulation (Kalecki 1965, pp. 97-99). As aforementioned, Rehn and Meidner had no ambition to formulate a general theory of growth and the business cycle even for a small economy. Moreover, Kalecki’s analysis of a secular process (and the neo-Kaleckian analysis of Harrodian instability), where the long-run outcomes are the result of short-run configurations by the multiplier-accelerator, has no parallel in works by Rehn and Meidner.28

The prominent role of the accelerator in the Kaleckian models is a clear departure from the Rehn-Meidner model. Changes in profits are a determinant of investment in Kalecki’s theory but only by being a measure of the demand pressure in the economy (Kalecki 1965 [1954], pp. 97-99, 1968, pp. 266-269). In his depiction of, for example, a virtuous cumulative process beginning with an increase in gross investment (in relation to gross capital), endogenous increases in actual profits will result in new investment. The profit variable in Kalecki’s investment equation can easily be replaced by a capacity-utilization variable.

The salience of variation in capacity utilization for investment and output growth at a given profit share makes Kaleckian models distinct to the Rehn-Meidner theory and also to the Kaldorian flex-price theory where output growth is concerned. In Kalecki’s theory, a restrictive macroeconomic policy will reduce output in itself, thus, not by the associated decrease in profit margins as in the Rehn-Meidner model. The Goodwin-Kalecki models assume in line with Kalecki’s theory that higher (lower) aggregate demand may stimulate (impede) output expansion and investment without the transmission of increasing (decreasing) profit margins (Barbosa-Filho & Taylor 2006, p. 396).

28 Kalecki (1968) actually contains an endogenous growth theory where innovations are based on past economic, social and technological developments.
In the Kaleckian economy, markup pricing is the rule. Kalecki's notion of 'the degree of monopoly' provides room for a relationship between labor strength and markups (see above). But he and his followers presumed that the companies under normal conditions set their prices as a markup over unit variable costs although with an eye on the prices of other companies (Kalecki 1965 [1954], pp. 12-14, 1968, p. 265). The Rehn-Meidner model does not preclude markup pricing. But the model stresses that prices are a function of excess-demand conditions in product markets (or set by world markets or firms with a technological advantage). Kalecki did refer to the case with no excess capacity when '...prices are determined by demand, and the functions f/the mark-up functions/ become defunct' (Kalecki 1971, p. 8). However, the possibility of real wage flexibility at full capacity is a special case in Kalecki's model. And he assumed in this case that there is still unused capacity in the investment-good sector (Kalecki 1965 [1954], pp. 47-48, n. 1).

The importance of capacity utilization for output growth and investment is one indication that profit margins play a less important role in the Kaleckian theories than in the Rehn-Meidner theory for a demand- and profit-led economy. I disregard here that Kalecki included a company-saving variable in his investment equation. (Note also that Kalecki only added a profit variable to indicate the state of aggregate demand.) More importantly, Kalecki generally assumed a neutral relationship between profit margins and total profits (or the aggregate rate of profit). If wage-earner saving is insignificant, a change in markups has no effect on investment. The rise in profits through a higher markup is fully compensated by a fall in profits through the associated reduction in aggregate demand. Accordingly, there is, for example, no positive relationship between profit margins and retained earnings in Kalecki's model as in the Rehn-Meidner model.

In the Goodwin-Kalecki models, functional income distribution does matter for profitability and therefore for GDP growth and investment together with capacity utilization. A recovery is profit-led in the sense that a higher profit share will stimulate investment and output and also have a positive effect on capacity utilization in the economy (Barbosa-Filho & Taylor 2006, pp. 392-399). However, the neo-Kaleckian models under discussion depart from the Rehn-Meidner analysis of a demand- and profit-led economy (and also from the Kaldorian theories) by assuming that the profit share will increase in the early recovery by demand-induced increases in productivity growth, not by higher producer prices. The neo-Kaleckian literature refers to a Kaldor-Verdoorn mechanism – high capacity utilization makes it possible to raise productivity growth by the importance of static and dynamic scale advantages. In Kalecki’s works, productivity growth varies positively with aggregate demand through labor hoarding, scale effects and embodied technological progress (Barbosa-Filho & Taylor 2006, p. 398).  


There is no productivity argument in Kalecki’s (or in Richard Goodwin’s) theory of functional income distribution. Kalecki emphasized the decisive role of ‘the degree of monopoly’.
Notwithstanding the Kaldor-Verdoorn mechanism, the profit share does not show a pro-cyclical pattern in the Kaleckian models as in the Rehn-Meidner model. A tendency to pro-cyclical profit shares will appear in Kalecki’s theory through a counter-cyclical change in unit variable costs or in fixed costs in relation to variable costs (labor hoarding). Furthermore, Kalecki made some references to ‘cut-throat’ competition in depressions. Yet, the markup generally moves counter-cyclically in his theory because of variation in labor strength (Kalecki 1965 [1954], pp. 17-18, 30-31). Many neo-Kaleckian models have had the ambition to explain the counter-clockwise movement in the labor share in large OECD countries (Barbosa-Filho & Taylor 2006). They generally emphasize that profit margins (and output growth) will decline in the late recovery because of the rising nominal wages (outweighing the positive effects on labor productivity) sawing the seeds of the following recession. In Rehn and Meidner’s analysis of an economy without their own program demand-induced changes in nominal wages exclude the possibility of a profit-margin squeeze in the late recovery.

Some neo-Kaleckian (Stendlian) economists endorse not only the Kaldor-Verdoorn Law but also the hypothesis that higher wage shares have a positive effect on output growth despite any negative effect on profits (Dutt 1984; Storm & Naastepad 2012, ch. 3; Hein 2015, ch. 4). Advocates of a wage-led economic development make the ‘post-Keynesian’ (that is, the Cambridge-Kaleckian) assumption that wage earners save less than capital owners and hence that a higher wage share of GDP will spur private consumption (see, inter alia, Lavoie & Hein 2015, p. 7; Stockhammer 2015, p. 5). It must be underlined that the Rehn-Meidner policy program, which can be classified as wage-led in many respects, does not recommend a higher wage share to stimulate aggregate demand. An important intermediate goal of the original Rehn-Meidner model was actually to restrain private consumption, primarily by VATs, and, generally, to create a deflationary tendency in the medium term in order to obtain price stability and high productivity growth. The 2.0 version of the Rehn-Meidner model incorporates the Kaldor-Verdoorn Law. But the model still keeps a distant to the ‘post-Keynesian’ recommendation of a higher wage share to stimulate aggregate demand. A higher wage share through labor militancy and unconditional expansionary macroeconomic policy measures would threaten price stability and deteriorate international competitiveness. Rehn maintained in the 2.0 version that a reduction in unemployment, strengthening the bargaining position of labor, must be the joint product of expansionary macroeconomic policies, incomes policy and extensive ALMP programs including marginal employment

31 A tendency to pro-cyclical profit shares can also emerge in Kalecki’s theory through a pro-cyclical change in material costs in relation to wage costs. However, this ratio can be neglected for a closed economy.

32 In the 1980s, Rehn gave hints that he supported a neo-Kaleckian conclusion that delayed nominal wages in the recovery could be the source of the subsequent recession (Rehn 1982, p. 25). He probably had in mind here that companies were tied up by long wage contracts in periods when they were no longer favored by high product demand and prices.

33 The 1951 LO report criticized the underconsumptionist approach of Labour’s Postwar Programme developed in Sweden in the mid-1940s (LO 1953 [1951], p. 75). Rehn had actually been a coordinator and co-author of this program. The program resembled the Beveridge plan, an important component of the Keynesian economic-policy regime that Rehn and Meidner came to oppose in the early postwar period. However, by the criticism of, inter alia, the policy of Léon Blum’s Popular Front government in 1936, Rehn had kept a distant to the ‘post-Keynesian’ underconsumptionist theory already in his youth (Rehn 1939).
subsidies. The main argument in the 2.0 version for a higher wage share is, as in the original Rehn-Meidner model, to prevent wage-wage-price races, not to stimulate private consumption and output growth (Rehn 1982, 18, 44).

There are few references in the Kaleckian literature to the Rehn-Meidner (Kaldorian) hypothesis that output growth is restricted by high employment rates leading to disruptions in production (see, however, Arnim & Barrales 2015). Nor are there equivalents in this literature to the Rehn-Meiner hypothesis about forced productivity improvements. Some Kaleckian economists mention that productivity can be stimulated by a higher labor share. A reduction in the rate of profit will lead firms to adopt labor-augmenting (Harrod-neutral) innovations (Barbosa-Filho & Taylor 2006, p. 398). In similar terms, other economists in the Kaleckian tradition have underlined, by references to the ‘Marx-Hicks hypothesis’, that high wages will stimulate the search for, use and development of labor-saving techniques (Storm & Naastepad 2012, pp. 15, 29). However, the Kaleckian literature under discussion highlights (as the neoclassical literature) the character of technological progress, not the positive effects of fierce external pressure on the efficiency, flexibility and innovativeness of firms. In the Rehn-Meidner model, higher wages and wage shares will, as a decline in aggregate demand, stimulate productivity growth and innovations by the associated decline in profit margins. This hypothesis is peripheral in the Kaleckian tradition, inter alia, by the central role of the Kaldor-Verdoorn relation.

There is also a disparity between the Kaleckian and Rehn-Meidner views on wage formation. In the Rehn-Meidner model, nominal wages are mainly driven by market forces providing a lesser room than the Kaleckian models for wage-push factors in the business cycle. This discord between the models decreases on account of the Kaleckian models where nominal wages are a positive function of capacity utilization because of endogenous changes in excess-labor conditions. But some neo-Kaleckians underline that higher capacity utilization will increase the wage rate by strengthening the collective-bargaining position of insiders, not by tightening the labor market favoring the position of outsiders (Arnim & Barrales 2015, p. 369). Moreover, the Rehn-Meidner theory diverges from the aggregate Kaleckian perspective by the perception of heterogeneous labor and product market, turning the spotlight on structural change and labor mobility. Finally, in an economy where the Rehn-Meidner policy has been applied, labor strength is a structural condition contributing to a decline in the profit share in the medium term. Here, movements in the profit share over the business cycle are not affected by fluctuations in labor strength. The profit share will decrease in the aftermath of a restrictive fiscal or monetary policy since wages will be kept up by the guarantee of full employment. In the Kaleckian theories, the profit share (the markup in Kalecki’s theory) will actually increase after a reduction in aggregate demand leading to lower capacity utilization. Here, nominal wages react stronger to worse labor-market conditions (higher unemployment) than prices to worse product-market conditions.

\[34\] Some neo-Kaleckian models (with Goodwinian elements) suggest, in conflict with the Rehn-Meidner model, that nominal wages (and also real wages) will decrease in periods of increasing profit shares because of the associated weakening of labor (Barbosa-Filho & Taylor 2006, p. 398).
6. The pros and cons of the Rehn-Meidner theory

It is easy to be impressed by the interactions, the multifold tasks of the policy instruments and the original mix between market-conforming and market-intervening measures in the Rehn-Meidner model. The underlying theory is probably an appropriate tool for analyzing macroeconomic stability and growth. It uncovers the salience of profit margins, especially in dynamic sectors, for nominal wages (wage drift) and the central role of labor shortage when this relationship is to be explained. Moreover, the Rehn-Meidner theory draws attention to the importance of wage leadership by dynamic sectors and of wage drift for the pace of central wage increases. The Rehn-Meidner model was actually a forerunner of the Scandinavian inflation model (the Aukrust/EFO model) where wage increases in the exposed sector, reflecting a superior productivity performance (in value terms), are spread to the ‘sheltered’ sector (Erixon 2004, 85-88). This view of wage formation is still confirmed by empirical studies of the Nordic countries. The Rehn-Meidner theory of a positive relation between wage drift and collective wages may not be valid for non-Nordic countries. However, the dynamic Rehn-Meidner analysis departs in an advantageous manner from the static bargaining analysis of wage formation in both post-Keynesian and mainstream economics.

The Rehn-Meidner view of full employment as a state institutionalizing labor scarcity, making labor strength a structural condition rather than a variable, is also a fruitful perspective when analyzing, for example, the mechanisms of the decrease in profit shares in most OECD countries in the early postwar period (Erixon 1987, 59, 200). Furthermore, the separation between marginal and average profit margins in the Rehn-Meidner theory is highly relevant in macroeconomics. Rehn and Meidner’s vintage approach and hypothesis about forced productivity improvement opened their eyes for a distinction between marginal and average profits. A general reduction in profit margins is compatible with a rise in profit margins for dynamic companies, for example, the companies that under the harder external pressure succeed in increasing their productivity. The distinction between marginal and average can lead to a recommendation of employment subsidies or reductions in payroll taxes at ‘the margin’ (thus for firms making investment or increasing employment) in combination with tax increases reducing profit margins on average (see Rehn 1987, p. 68). Leaning on the Rehn-Meidner theory we can expect that the profit squeeze would increase firms’ productivity and reduce their financial capability to contribute to inflation (especially by restricting the room for wage drift).

By the emphasis on creative destruction and forced productivity changes at the firm level Rehn and Meidner added a Schumpeterian element to their basically Keynesian analysis of inflation and employment.35 Besides, they stressed as Schumpeter (1939) the importance of some industries and firms for the recovery and the wage development in other industries and firms. The ‘structural’ (disequilibrium) concept of profits in the Rehn-Meidner analysis of

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35 The Rehn-Meidner hypothesis that innovations and productivity in established firms are stimulated in recessions has a correspondence in works by the ‘orthodox’ Schumpeterian economists rather than in the major works by Schumpeter himself (see Erixon 2016).
a wage-led economy is similar to Schumpeter’s and in fact also to that in Kalecki (1968) – high actual profits are a temporary reward for superior economic performance, not an important driving force for innovations and economic progress in and of themselves. The Rehn-Meidner model makes an exception here for the firms receiving a ‘subsidy’ through the wage policy of solidarity. These firms are actually rewarded for their productivity performance in the past. In any case, the Schumpeterian features strengthen the arguments for that the Rehn-Meidner model makes a valuable contribution to macroeconomics.

These merits shall not hide that the Rehn-Meidner theory and policy have had their opponents throughout the years. I will focus on the more principle objections, thus avoiding a discussion of the validity of the Rehn-Meidner model in light of the empirical literature. More precisely, I will focus on what I regard to be the most serious objections to the model.

An early criticism of the Rehn-Meidner program was that the policy to squeeze profit margins would run the risk of harming investment by the negative effects on retained earnings and profit expectations (Lundberg 1952 [1950], p. 67, 1985, p. 19). It can be added that the gross notion of profit margins in the Rehn-Meidner model is not beyond question. To provide room for an analysis of self-financing and monetary policy, it would have been better to use a net concept of profit margins (where interest-rate payments have been subtracted from gross profits). Moreover, by placing monetary and fiscal restraint on equal footing, the Rehn-Meidner investment function should have included a interest-rate variable.

Sceptics maintain that the Rehn-Meidner policy has hampered the formation and expansion of new firms in Sweden, especially if they had low productivity levels to begin with. In the Rehn-Meidner model, new firms may actually be hit both by the economic policy reducing profit margins in general and by the wage policy of solidarity. Solidarity wages may also contribute to market concentration by the ‘wage subsidy’ to historically profitable firms and the increased opportunities for them to use scale advantages and finance takeovers (Davis & Henrekson 1997, p. 354; Bergh 2014, p. 32). A critique of the wage policy of solidarity for having preserved an obsolete industrial structure can be based on an argument used by Erik Lundberg admitting that there is some ground for the Rehn-Meidner resistance to high company saving – the remuneration of firms with high historical profits may lead to industrial locking-in effects (Lundberg ibid.). Moreover, following the logic of the Rehn-Meidner model, solidarity wages will lessen the pressure on the favored firms to increase productivity growth and remain innovate.

The most popular argument against the Rehn-Meidner model today, even among Swedish trade unionists, is that globalization and financialization have reduced the possibilities to pursue an economic and wage policy reducing profit margins at the national level. Profitability is given for a small open country like Sweden (LO 2015, 157, 196-197). A related

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36 The Rehn-Meidner model, arguing for equal wage for similar jobs, is not challenged by theories emphasizing that wage compression will reduce the incentives for education. The tournament theory and some versions of the efficiency-wage theory, arguing that labor productivity is enhanced by larger wage gaps for workers in the same occupations, are more critical for the Rehn-Meidner model (Lazear & Rosen 1981; Levine 1992). But these theories are not based on an explicit critique of the Rehn-Meidner model and their merits in relation to the model can only be determined by empirical studies.
argument is that flexible exchange rates together with international capital markets make it difficult to establish a domestic profit-margin squeeze, not only by exchange-rate policy but also by fiscal policy (see the Mundell-Fleming model).

A possible reply to the criticism of the Rehn-Meidner policy program for being hostile to profits is that the program recommends a constant profit share in the long term (in contrast to the medium term) to prevent a strong decrease in companies’ self-financing capacity. The Rehn-Meidner model further refers to the need to squeeze average rather than marginal profits. Dynamic firms are favored by the ALMPs, for example, by training programs and marginal employment subsidies, and possibly also, using a broad definition of the wage policy of solidarity, by relatively low wages for skilled labor. Thus, companies may have incentives to invest in a country despite a profit decline in general. The argument that the combination of global financial markets and flexible exchange rates have limited the possibilities of establishing a profit-margin squeeze by fiscal policy is challenged by empirical studies – movements in the Swedish exchange-rate since the early 1990s (when the country abandoned a fixed exchange-rate regime) have been governed by speculation and monetary policy (Alexius & Post 2008). The Swedish krona (the SEK) was strengthened in periods of restrictive monetary policy (in line with the Mundell-Fleming model), thus establishing a profit-margin pressure on firms in line with the Rehn-Meidner model. And the SEK was not weakened in times of a restrictive fiscal policy.

There are, however, some theoretical inconsistencies in the Rehn-Meidner model that, together with some of the objections above, require a modification of its policy composition or at least a shift in the focus when defending the model. First, there are tensions in the Rehn-Meidner model between the endeavors to give a favor to profitable firms by solidarity wages and to squeeze profit margins in general to combat inflation. The effect of the Rehn-Meidner policy on the profit margins of the most successful firms and industries is ambiguous. Second, there is a tension between in the Rehn-Meidner theory the ideas that wage policy of solidarity creates a ‘wage subsidy’ for some companies and that nominal wages are determined by profit margins. Critics have claimed, often by reference to the Rehn-Meidner wage theory itself, that higher profits will inevitable foster a rise in nominal wages in sectors favored by the wage policy of solidarity (or by marginal employment subsidies). When profits are high in some sectors, it may be tempting for wage earners in these sectors to accept generous wage offers and for their trade unions to object the principle of solidarity wages (Martin 1981). Some economists claim that the wages of solidarity is a wage floor (leading to higher average wages in the economy) rather than a source of profit differentials (Cassel, 1902; Bagge 1931; Hansen 1958 [1955], p. 369; Erixon

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37 In fact, the high profitability in Swedish manufacturing, primarily through devaluations of the Swedish krona (the SEK), was an important reason why the Swedish Metal Worker’s Union, which had to accept wage moderation when the LO pursued a wage policy of solidarity, came to abandon coordinated (LO) wage negotiations for blue-collar workers in the mid-1980s (Erixon 2010).
Thus, critics associate the policy with solidarity profits and wage differentials rather than vice versa.  

7. The renewal of the Rehn-Meidner model

A defender of the Rehn-Meidner model has to accept that the policy of squeezing profit margins in general to fight inflation (and increase productivity growth) will also hit firms and industries that are expected to benefit from the wage policy of solidarity. If profits are allowed to rise significantly in these industries and firms (by lax macroeconomic policies), followers of Rehn and Meidner can only rely on the ability of extensive mobility-enhancing ALMPs to control inflation. To achieve high growth in this case, the defenders of the Rehn-Meidner model have to pin their hopes on the high profits of firms and industries benefitting from the wage policy of solidarity and on the associated widening of profit differentials between industries and between firms. If profits in expanding industries and firms are substantially depressed by a general decline in profit margins (primarily to obtain price stability), adherents of the Rehn-Meidner growth model can stress that the wage policy of solidarity will still promote firm productivity and (external) structural change by creative destruction and the increase in profit differentials. It may be useful to define an optimal Rehn-Meidner level of profit margins where both inflation and growth is concerned. However, it can be wiser to give priority to the general profit-squeeze policy of the Rehn-Meidner model and accordingly to downplay the argument that solidarity wage policy will stimulate growth by providing a wage favor to the most profitable firms.

Followers of the Rehn-Meidner program must further admit that the low wages of solidarity in the most profitable (productive) firms may be temporary given the underpinning theory that nominal wages are a positive function of profit margins. They have to stress that the solidarity policy must be sustainable and combined with mobility-enhancing ALMP measures.  

However, the argument that the wage policy of solidarity will maintain an antiquated industrial structure by supporting historically profitable firms and industries must be taken

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38 Another argument against the Rehn-Meidner model is that solidarity wages might reinforce rather than dampen wage-wage-price spirals (Uddén-Jondal 1993, ch. 5). ‘Wage drifters’ may endeavor to reestablish the wage gap before the equalizing central agreements.

39 The strong convergences of wages in the 1960s and first half of the 1970s, in Sweden as in other Nordic countries (with a delay in Finland), confirms that solidarity wage policy can influence the wage structure. It also confirms that central wage coordination and full employment are prerequisites for the wage policy solidarity (Erixon 2008, ch. 3).

40 Meidner was conscious of the risk of substantial wage drift when trade unions were following the principle of wage solidarity. A basic argument for his proposal of collective wage earner funds in the mid-1970s was to support the wage policy of solidarity by ‘expropriating’ excess profits in some firms and industries (Meidner 1978 [1976], pp. 33-34).
seriously. Defenders of the Rehn-Meidner model may have to accept and even take over the argument about industrial locking-in effects that can be used against the wage policy of solidarity. They shall perhaps put less emphasis not only on the positive growth effects of the wage favor to historically successful firms but also on the importance of structural change per se. Thus, supporters of the Rehn-Meidner model shall focus on the productivity and innovative performance of established firms. Decomposition of national growth shows that changes within firms are generally more important for TFP and labor-productivity growth in advanced industrialized countries than structural changes including entries and exits (Bartelsman et al. 2004; Brown & Earle 2008; Giannangeli & Gómez-Salvador 2008). The theory of transformation pressure developed in Sweden in the 1990s elaborates the psychology of a negative relationship between profits and productivity growth at the firm level (Erixon 2016). The theory also maintains, as the Rehn-Meidner model, that economic progress is the result of a combination of ‘pressure’ and ‘opportunity’ factors. The common emphasis on both positive and negative driving forces in the analysis of growth and international competitiveness facilitates a rapprochement between the Rehn-Meidner theory and the theory of national innovation systems (Porter 1990; Lundvall 1992).

When arguing that the same wage for similar jobs will speed up structural change it can be more relevant today to give precedence to wage equality at the expense of wage equalization. Wage earners will probably accept a phasing out of jobs in stagnating high-wage sectors if wages are almost as high in other sectors. Rehn used this argument in the 1980s to explain why the dismantling of the shipbuilding industry, a typical high-wage industry, was faster in Sweden than in other OECD countries – the closing down of the shipyards in the 1980s was facilitated in Sweden by the small wage differentials between industries (Rehn 1987, pp. 76-77). A similar argument for solidarity wages can be used today for the most developed countries (Erixon 2015b, pp. 60-66). Minor wage differentials between industries make it easier to recruit people to expanding ‘Baumolian’ low-wage sectors (health, elderly and child care, education, retail trade, restaurants, protection services, etc.).

Furthermore, the emphasis in the Rehn-Meidner growth theory may have to shift from the principle of equal pay for equal jobs to that about equal pay for dissimilar jobs. The extended use of cheap skilled labor may increase the innovation capability of firms (with the reservation that wage compression in general policy may lead to demand-induced wage increases and lower supply of skilled labor). Wage compression in general may also intensify demand for labor-saving technologies inducing new inventions and the development of industries and firms specialized in the production of labor-saving products and services. There is evidence that the relatively high wages for unskilled labor in Sweden have contributed to the country’s specialization in labor-saving production and export.41

The renewal of the Rehn-Meidner model may also imply a shift in the institutional basis and composition of its policy program. Notwithstanding the stimulus of marginal profit there is a

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41 However, the hypothesis was not unambiguously confirmed by a study of export specialization based on data for nine OECD countries including Sweden (Erixon 2015b, pp. 57-60).
risk that companies experiencing a fall in intra-marginal profits at the national level will move to other countries, especially if their production is not based on natural resources. A profit-squeezing policy along the Rehn-Meidner lines must probably, as an all-embracing wage policy of solidarity, be implemented at the supra-national level, for example, by the EU. Furthermore, high and rising unemployment in many EU-countries since the 1970s, reflecting stagnation and hysteresis tendencies, makes it legitimate to use profit taxes rather than restrictive macroeconomic measures to squeeze average profit margins. There are strong arguments for pursuing an expansionary fiscal policy in several EU countries which is certainly in accordance with the 2.0 Rehn-Meidner model but also with the original model. The use of profit taxes makes it easier to avoid serious goal conflicts in economic policy.

Moreover, new firms unable to bear solidarity wages must be supported by industrial policy, that is, by R&D grants and provision of risk capital to new firms, etc. as emphasized by Meidner in particular (Meidner 1969, pp. 195-198). Thus, the wage policy of the Rehn-Meidner model requires the use of other selective policy measures than ALMPs. To incorporate life-long learning and solidarity wages tantamount to a reduction in wage gaps between skilled and unskilled labor it is obvious that the Rehn-Meidner model must encompass general education policies. Finally, a renewed model has to include restrictive fiscal measures targeted at expanding sectors, for example the banking sector. The original model was actually founded on a critique of using selective measures to cool down the economy. However the pragmatic founders of the model were aware of that economic policy in a specific situation can seldom materialize a specific strategy or economic doctrine in a pure form (LO 1953 [1951], p. 80).

8. The economic theory of the Swedish model - a summary

The Rehn-Meidner model is a policy program where fiscal and monetary restraint in the medium term, selective employment policy (primarily ALMPs) and solidarity wage policy are the major means of simultaneously achieving full employment, price stability, growth and income equality. The original model provides room for counter-cyclical macroeconomic policies in a recession. But the wage-led and a demand-curtailling Rehn-Meidner strategy was formed by the experience of an overheated economy. By the inclusion of a Kaldor-Verdoorn relation, the 2.0 version of the Rehn-Meidner model strengthened the arguments for an expansionary macroeconomic policy.

The golden age of the original Rehn-Meidner model in Sweden began in the late 1950s and ended in the early 1970. ALMP programs were introduced on a large scale by social-democratic governments and the wage policy of solidarity was a guiding star for central wage negotiations. Furthermore, in line with the model, profits’ share of GDP fell from the late 1950s to the early 1970s, a decline that was substantial in an international perspective. Sweden was able during the golden age of the Rehn-Meidner model to attain not only high growth, low unemployment and low inflation (the country was not exceptional here), but also high degree of income equality (for both similar and dissimilar jobs). Notwithstanding the continued importance of ALMP measures, from the mid-1970s, there were clear departures from the original Rehn-Meidner policy under governments of different colors
Since the mid-1990s, the economic development in Sweden has mainly been export-, technology- and profit-led (Erixon 2015a). Economic and welfare policies in all Nordic countries have largely been governed by the new (neoclassical) consensus in macroeconomics and moved into a neoliberal and EU-conforming direction. However, the Nordic economic models of today have some common reminiscences of the ‘old’ models, especially extensive ALMP programs and incomes-policy arrangements at the industrial level to maintain international cost competitiveness. There has been a clear tendency to larger gaps in disposable incomes, especially in Sweden since the mid-1980s. But the Nordic countries are still in the group of OECD countries with the smallest income differentials, especially where wage distribution is concerned.

Despite the uneasy and partial application of the Rehn-Meidner policy, even during the model’s golden age, there is evidence for Sweden of the validity of the underlying theory (Erixon 2008). My presentation of the Rehn-Meidner theory in this article was primarily based on works by its founders. But it had also the ambition to make some clarifications and additions although in consistency with the other parts of the theory.

In the Rehn-Meidner theory for a demand- and profit-led economy prices and profit margins are flexible reflecting varying excess-demand conditions in heterogeneous product markets. Profit-induced increases in wages, particularly in dynamic industries, are the origin of inflation since they are supposed to end up in wage-wage-price spirals. An intermediate goal of the Rehn-Meidner program is to reduce profit margins in order to combat inflation. High profit margins are also assumed to be destructive for productivity growth. A squeeze of profit margins, particularly for companies with low wage-paying abilities, would enable growth, especially by structural change.

It is possible to distinguish a weak and strong version of the Rehn-Meidner growth theory. The weak version accords with the idea of multiple equilibria – high growth can be achieved along several growth trajectories, but the recommended policy program is associated with lower social costs in terms of inflation and income differentials. The strong version of the Rehn-Meidner growth theory says that growth will be higher in countries following the model’s program rather than a profit- and demand-led strategy. A reasonable but not obvious conclusion is that the wage policy of solidarity is growth-enhancing by accelerating the elimination of low-productive firms, stimulating the productivity development in both the favored and the disfavored firms and by speeding up the transfer of resources between established firms. Solidarity wages will only exert a profit pressure on low-productive firms in interaction with a macroeconomic policy squeezing profit margins in general.

An extended Rehn-Meidner theory maintains that wage policy of solidarity will increase productivity growth by stimulating entry, but only under some specific conditions. The extended theory further specifies the conditions under which the ALMP programs will generate a profit-margin squeeze together with the restrictive macroeconomic policy. A complication in the Rehn-Meidner model is that the labor-mobility, labor-competence and labor-scarcity aspects of the ALMPs move the profit margins in opposite directions. The
labor-scarcity effect of the ALMPs – they will secure full employment - have to be decisive in the medium term in order to achieve the desired decline in profit margins.

The original Rehn-Meidner model was akin to (and anticipated) the Kaldorian models of functional income distribution and growth. Both models highlight that prices and profit margins are flexible and that high employment rates have a negative impact on output by various distortions in production. However, the Rehn-Meidner theory departs from the Kaldorian models by assuming that nominal wages are a function of labor shortage. In Kaleckian models, nominal wages vary, as in the Rehn-Meidner, with the rate of employment because of changes in labor strength. And Kaleckian economists attribute a profit-margin squeeze to full-employment conditions in line with the Rehn-Meidner model. However, in the latter model, the profit squeeze is not the result of high aggregate demand as in the Kaleckian theories. It is deliberately obtained by an employment policy institutionalizing a state of labor scarcity. Moreover, neither the Kaleckian nor the Kaldorian economists devote attention to the possibility highlighted in the Rehn-Meidner model that high profit margins are detrimental to firms’ productivity performance. What is more, both Kaldorian and Kaleckian models refer to the accelerator, an alien notion in the Rehn-Meidner theory emphasizing that firms will not invest until they have approached full capacity utilization. Finally, the hypothesis in the Kaleckian (post-Keynesian) literature that higher wage shares will stimulate growth by the positive effect on aggregate demand is not a component even of the 2.0 version of the Rehn-Meidner model.

The comprehensive and holistic wage- and economic-policy program of the original Rehn-Meidner model is a unique contribution to macroeconomics. Furthermore, the architects’ disaggregate disequilibrium approach is a constructive point of departure for studies even today of wages and inflation and also of secular economic developments. However, Rehn and Meidner emphasized the stabilizing role of endogenous changes in wages and productivity and they never took the opportunity to analyze the possibility of destabilizing processes on capital markets.

The Rehn-Meidner model is also unique and still relevant through her underpinning theory shedding light on the importance of actual profit margins for nominal wages by the impact on labor scarcity. The model’s distinction between average and marginal profits is fruitful in economic-policymaking. Measures squeezing average profit margins can be combined with tax reductions or subsidies favoring firms and industries that invest or increase employment. The Rehn-Meidner model further adds a Schumpeterian dimension to macroeconomics by her emphasis on creative destruction, forced productivity gains and the wage leading role of industries and firms functioning as the prime engines of a recovery. In contrast to neoclassical (and Kaleckian) economics the Rehn-Meidner model does not only emphasize the relative factor-price aspect and character of induced technological changes. A central hypothesis in the Rehn-Meidner theory (with parallels in the literature on X-inefficiencies) is that profit-margin squeezes have a vitalizing effect on innovations and the use and development of new technologies. This hypothesis does not deny that technological progress may have a labor-saving bias if the profit decline is the result of wage pressure.
This positive view of the Rehn-Meidner model above shall not hide the existence of some theoretical inconsistencies in the model. The increase in profit margins for firms favored by the wage policy of solidarity may vanish through market-conditioned wage increases in line with the Rehn-Meidner theory itself or through the macroeconomic austerity measures of the original model. A renewed Rehn-Meidner theory can emphasize more strongly that the downward pressure on profit margins is positive for the productivity performance of established firms. It may also stress that growth is stimulated by wage equality rather than wage equalization and by wage compression in general, thus not only for similar jobs. Moreover, a modified Rehn-Meidner policy program should encompass the use of profit taxes to squeeze profit margins increasing the degree of freedom in economic policy. Furthermore, notwithstanding the support to expanding firms and industries and the sought constancy of the profit share in the long run, the Rehn-Meidner program must perhaps be applied on supra-national levels to avoid capital flight.

Today, the Rehn-Meidner model has not only a peripheral but also unclear position in macroeconomics. Post-Keynesian economists are intimidated by the model’s restrictive macroeconomic policy and skepticism towards incomes policy. At the same time, the post-Keynesians have been attracted by the Rehn-Meidner idea that small wage gaps and low profits have a positive effect on productivity growth and innovations. Mainstream economists have had difficulties in defining the status of Rehn and Meidner in relation to the great economists in the Stockholm-School tradition. They are certainly attracted by the ‘sound’ macroeconomic policy of the original Rehn-Meidner model and by the model’s emphasis on structural reforms to improve the functioning of labor and product markets. But followers of the new consensus in macroeconomics are probably repelled by the model’s priority to public saving and by her reliance on profit-margin squeezes to boost economic growth. What is more, with no assumption of forward-looking rational agents, the Rehn-Meidner model takes for granted, despite the assumption of pro-cyclical wages and counter-cyclical productivity, that a trade-off exists between unemployment and inflation.

The attitudes to the Rehn-Meidner model in macroeconomics are sometimes based on incomplete knowledge of the model, especially about its comprehensive nature. The aim of the article was to provide a representative and detailed picture of the theory developed by two brilliant Swedish economists in the early postwar years. The empirical validity and political relevance of the Rehn-Meidner theory and program respectively have received less attention in the article. Despite this, the article has hopefully given enough reasons for macroeconomists to pay more attention to the economic theory behind the Swedish model.
Appendix

The formalization of the Rehn-Meidner model is based on the original model, thus, not on the 2.0 version. Furthermore, it is built on the strong version of the Rehn-Meidner growth theory – productivity growth and structural change will not only be feasible but also be higher with the Rehn-Meidner policy. All equations are defined for the business sector as a whole. The formalization of the Rehn-Meidner theory is based on a distinction between within-firm and structural effects. The specification of the within-firm effects comprises the Rehn-Meidner theory of output growth, investment, labor-productivity growth and profit margins at the firm level. These variables are defined by taking the natural logarithms of value added, real capital and the number of employees in the business sector. The within-firm effects are defined both for an economy without the Rehn-Meidner policy program and for an economy formed by this program. The explicit assumption is made throughout the appendix that labor substitution in production is possible ex ante but not ex post.

The formalization of the Rehn-Meidner theory will not be based on the distinction between an open and a closed economy. This distinction is of secondary importance in this theory. The section on the structural effects will only consider the effects of the Rehn-Meidner policy on overall TFP growth. Unemployment benefits and marginal employment subsidies are not considered in any of the equations. The Rehn-Meidner theories of nominal wages and inflation are not formalized below. A Rehn-Meidner wage-growth function should have included both an index indicating the labor-market situation, a (lagged) profit-margin argument considering the impact of psychological and social factors (on both the employer and the employee side) wholly unrelated to the extent of labor scarcity and an autonomous productivity variable. A Rehn-Meidner wage function might also have included a variable indicating the degree of wage policy of solidarity (cf. equation 4'). An inflation equation for the Rehn-Meidner model should have taken account of the possibility of markup pricing. But producer prices are primarily determined in the Rehn-Meidner model by world markets, price-leading firms with superior technologies and by excess demand at full capacity utilization.

The within-firm effects

Output growth in the business sector at time t ($Y_t$) in a country without the Rehn-Meidner policy program is determined by the following equation:

$$
\dot{Y}_t = f(\Pi_{t-m}, e, a_t, a_{t-n})
$$

(1)

The first derivatives are $f'_{\Pi_{t-m}} > 0$, $f'_{e,t} < 0$, $f'_{a_t} > 0$ and $f'_{a_{t-n}} > 0$.

$\dot{Y}$ is total value-added growth and $\Pi$ the (absolute) gross profit margin, that is, profits before taxes and dividends as a ratio of value added (current prices). For convenience, imported material and energy from abroad and economic depreciation are ignored. $e$ is the employment rate, that is total employment in relation to the total labor force. $a$ is
autonomous growth in (average) labor productivity (value added in relation to employment, logarithmic values).

Higher profits margins have a positive effect on output with a lag, see ($\Pi_{t-m}$). An unexpected increase in product demand, primarily in the leading sector, will immediately lead to a rise in prices and profit margins (inventories are ignored). Higher (lower) profit margins will increase (decrease) investment demand. The delayed relationship between profit margins and output reflects the existence of production lags. But it also reflects that profit margins affect output through the multiplier and induced changes in labor productivity. By the multiplier, higher profit margins in the leading sector will generate output expansion also in other sectors with a lag. The positive impact of higher profit margins on output is weakened, though not neutralized, by the negative effect on labor productivity.

The negative relationship between $e_t$ and $\bar{Y}_t$ in equation (1) (see) represents the Rehn-Meidner hypothesis that high employment rates in the business sector will obstruct labor productivity (see the effects, inter alia, on labor turnover and absenteeism). The employment rate is determined by aggregate demand but also by demographic factors. Distortions in production are, inter alia, detrimental to international competitiveness. Finally, technological progress is assumed to have a positive effect on output growth, immediately and with a lag – it can lead to investments or improvements in international competitiveness by other reasons (see $a_t$ and $a_{t-n}$). Technological progress may promote output growth by its impact on profit margins, thus, $n$ can be larger than $m$.

Rehn and Meidner’s investment function in an economy without their own program can be expressed as follows:

$$\bar{K}_t = g (\Pi_{t-l}, a_{t-n})$$  \hspace{1cm} (2)

where $g'_{\Pi_{t-l}} > 0$ and $g'_{a_{t-n}} > 0$.

$\bar{K}_t$ is the growth rate of the capital stock enlarging the production capacity in the business sector thus $\bar{K}_t = (I/K)_t$, ignoring depreciation, where $I_t$ is real investment and $K$ the real capital stock at date $t$. Equation (2) is set up for total physical investment thus not only for investment in new technologies, products and organizations.

Investment in the business sector is stimulated by higher profit margins, see $\Pi_{t-l}$, and by (autonomous) embodied technological progress, see $a_{t-n}$ (there is no accelerator term in the Rehn-Meidner theory of investment). The relation between exogenous technological progress and investment is assumed to be lagged only (see $a_{t-n}$).

Higher profit margins have a positive effect on investment through their positive impact on expectations and retained earnings. Profit margins are also indicators of excess demand on product markets unveiling the need for investment to increase output. In the Rehn-Meidner model, the positive nexus between profit margins and capacity-enlarging investment is supposed to be weakened but not abrogated by the fact that high profit margins will reduce the incentives to increase productivity by investment. Higher profit margins have an
ambiguous impact on \( Y/K \) in the identity \( I/K = (Y/Y)(Y/K) \) where \( (Y/K) = (Y/N)/(K/N) \). GDP \( Y \), employment \( N \) and thus labor productivity \( (Y/N) \) are defined at full capacity utilization. In a hypothetical situation where \( K/N \) is constant (technological progress is Hicks-neutral) higher profit margins will, ceteris paribus, obstruct capacity-enlarging investment by the weaker pressure on firms to increase labor productivity.

The determination of labor-productivity growth \( (\partial \text{LP}_{t}) \) in an economy without the Rehn-Meidner policy program is shown by the following equation:

\[
\text{LP}_{t} = k(e_t, \mu_t, a_t, a_{t-1}) \tag{3}
\]

The first derivatives are \( k_{e_t} < 0, k_{\mu_t} < 0, k_{a_t} > 0 \) and \( k_{a_{t-1}} > 0 \).

Labor productivity is obstructed (as output) by a higher employment rate (see \( e_t \)) and with a time lag by an increase in profit margins, see \( \mu_t \). A reduction in profit margins is expected to call forth greater efforts by firm actors to diminish production slacks and possibly also to increase investment in new technologies, products and organizations. Thus, the productivity-enhancing effects of higher profit margins through investment (possibly associated with new technologies or scale advantages) are not assumed to be decisive at the aggregate level. Autonomous technical progress is assumed to have a positive effect on labor productivity, immediately or with a time lag notwithstanding the positive effect on profit margins. Labor hoarding is not accounted for in the Rehn-Meidner model and will thus be neglected in equation (3).

Gross profit margins in the business sector before the introduction of the recommended policy program are determined in the Rehn-Meidner model by the following equation:

\[
\text{TT}_{t} = r(\text{EP}_{t}, e_t, \mu_t, a_t, a_{t-1}) \tag{4}
\]

The first derivatives are \( r_{\text{EP}_{t}} > 0, g_{e_t} < 0, r_{\mu_t} < 0, r_{a_t} > 0 \) and \( r_{a_{t-1}} > 0 \).

\( \text{EP} \) is a product-market index, namely, the weighted sum of excess demand and excess supply in the business sector. \( \mu \) is an index for the labor market indicated, for example, by the stock of unfilled vacancies in relation to total employment. \( \mu \) is the degree of competition.

The product-market index \( \text{EP}_{t} \) is included in equation (4) to indicate the tendency to demand-induced changes in producer prices. A higher index is associated with higher prices and profit margins. The index is intended to capture the direct impact of demand shocks and macroeconomic policy on profit margins. The contemporaneous positive relationship between \( \text{EP}_{t} \) and \( \text{TT}_{t} \) is reciprocal - investment demand is stimulated by a rise in actual profit margins.

By being harmful for labor productivity, the employment rate \( e_t \) (strongly correlated to \( \text{EP}_{t} \)) has an instant negative effect on profit margins. Excess-demand conditions in the labor market (see \( \mu_t \)) have a negative effect on profit margins - labor scarcity will boost nominal wages. This effect can be instant but it can also emerge through endogenous increases (decreases) in producer prices leading to losses (gains) of market shares in an open economy.
if world market prices are given. Nominal wages are determined by labor-supply shocks or by product-market conditions with a lag. Furthermore, profit margins can be reduced (increased) by stronger (weaker) competition (see \( \mu \)). They can also be stimulated by autonomous technological process, immediately or with a lag (see \( a_t \) and \( a_{t-q} \)).

Equation 1-4 will be modified by the introduction of ALMP measures, solidarity wages and public saving. The output equation (1) is then replaced by the following equation:

\[
\dot{Y}_t = h[e_o, ALMP_{t,p}, ALMP_{t,o}, \Pi_t, m, a_t, (WPS/\Pi)_{h,m}, WPS_{t,m}] \tag{1'}
\]

where \( h'_{e,t} < 0 \), \( h'_{ALMP,t-p} > 0 \), \( h'_{WPS,t-o} > 0 \), \( h'_{a,t} > 0 \), \( h'_{WPS/\Pi, t-m} > 0 \) and \( h'_{WPS,t-m} > 0 \). WPS defines the scope of wage policy of solidarity. The assumptions are made that \( o > p \), \( o > m \) and \( p \geq m \).

The ALMPs will expand output by the stimuli of labor market mobility (ALMP_{t,p}) and with a longer delay by the upgrading of labor competence having a positive effect on labor productivity (see ALMP_{t,o}). Higher labor mobility can stimulate firm output directly but also by mitigating wage competition between firms having a positive effect on profit margins. Higher labor competence is only output-enhancing through its positive effect on profit margins. ALMP programs have an ambiguous effect on profit margins, see equation 4’ below. However, the negative effect on output of the ALMP measures leading to a reduction in profit margins (see the ‘labor scarcity effect’) will be weakened by the associated stimulus of productivity.

Output is promoted by higher profit margins (see \( \Pi_t, m \)) although the relation is weaker in equation 1’ than in equation 1 or even absent (see the importance of public saving in the Rehn-Meidner model). However, at a critical minimum value \( \Pi^* \), the \( h'_{\Pi_t, m} \geq 0 \) of equation (1’) turns to the \( f'_{\Pi_t, m} > 0 \) of equation (1).

The wage policy of solidarity (a policy instrumental variable) is supposed to stimulate firm output with a delay by the positive effect on labor productivity. Low-productive firms paying the same wage for similar jobs as high-productive firms are forced to rationalize, substitute real capital for labor or introduce/develop new technologies (particularly with a labor-saving bias), new products and organizations. However, these firms will only be exposed for an external pressure from the wage policy of solidarity if profit margins are low in general in the economy, see the \( (WPS/\Pi) \) term. The time lag between \( WPS/\Pi \) and \( \dot{Y} \) is supposed to be the same as that between \( \Pi \) and \( \dot{Y} \) before the implementation of the Rehn-Meidner policy. Equation (1’) excludes the interaction variable WPS-\( \Pi \). This variable would have captured the possibility in the Rehn-Meidner model that firms favored by the wage policy of solidarity will increase investment resulting in higher labor productivity (provided that their wage favor is not neutralized by a general squeeze of profit margins).

The last WPS variable is included in equation (1’) to cover the possibility that output can expand if the establishment of ‘fair’ wage structure implies a smaller wage gap between skilled and unskilled labor. The stronger incentives to use skilled labor may have a positive
effect on the innovation ability of the companies. Higher relative wages for unskilled labor are also an incentive for companies to introduce labor-saving technologies (increasing output if their production capacity is enlarged). The time lag between $\bar{Y}$ and SWP is assumed to be the same as that between $\bar{Y}$ and WPS/$\Pi$.

The investment function after the application of the Rehn-Meidner policy has the following characteristics:

$$\bar{K}_t = s[\Pi_{t,1} (\text{WPS}/\Pi)_{t,1} WPS_{t,1}, a_{t,n}]$$

(2')

where $s'_{\Pi,1} > 0$, $s'_{\text{WPS}/\Pi,1} > 0$, and $s'_{\Pi,t} > 0$.

The relation between $\Pi$ and $\bar{K}$ is weaker in (2') than in (2), see the importance of public saving. At a critical value $\Pi^*$, $s'_{\Pi,1} > 0$ turns to $f'_{\Pi,1} > 0$. However, a reduction in profit margins through the Rehn-Meidner policy can increase the quality (productivity) of investment having a positive effect ceteris paribus on capacity-enlarging investment.

The pressure from wage policy of solidarity (equal pay for equal jobs) is expected (in interaction with low profit margins in general) to promote investment in the disfavored firms, see (WPS/$\Pi$)$_{t,1}$. The inclusion of a separate SWP variable is justified by the possibility that investment can be promoted by wage compression in general. A higher relative price of unskilled labor may end up in investment by stimulating the innovation abilities and the incentives of firms to introduce labor-saving technologies, see also equation (1'). The delay in the relationship between WPS (possibly in interaction with $\Pi$) and $\bar{K}$ in equation (2') is assumed to be the same as that between $\Pi$ and $\bar{K}$ in equation (2).

The labor-productivity function with the Rehn-Meidner policy has the following form:

$$\bar{ALP}_t = \nu[e_{t,1}, \Pi_{t,m}, a_{t,n}, \text{ALMP}_{t,1}, \text{ALMP}_{t,2}, \text{ALMP}_{t,3}, (\text{WPS}/\Pi)_{t,m}, \text{WPS}_{t,m}]$$

(3')

where $\nu'_{e,t} < 0$, $\nu'_{\Pi,1} < 0$, $\nu'_{a,t} > 0$, $\nu'_{\text{ALMP},t} > 0$, $\nu'_{\text{ALMP},t,0} > 0$, $\nu'_{\text{WPS}/\Pi,1} > 0$ and $\nu'_{\text{WPS},t} > 0$. The assumption is made that $o > j, o > m$ and $j \geq m$.

The relation between $\Pi$ and $\bar{ALP}$ is stronger in (3') than in (3). The positive effect of higher profit margins on productivity-enhancing investment is mitigated by the importance of public saving for investment. But at a critical minimum value $\Pi^*$, $\nu'_{\Pi,1} < 0$ turns to $f'_{\Pi,1} < 0$.

The ALMPs have a positive effect on labor productivity with a delay reflecting their contribution to a profit-margin decline (see ALMP$_{t,1}$) and their stimulation of labor competence (see ALMP$_{t,0}$). The ‘competence effect’ of the ALMPs on productivity is assumed to be more delayed than the ‘pressure effect’. Furthermore, similar pay for similar jobs will put pressure on disfavored firms to become more productive, but only in interaction with low profit margins in general, see the (WPS/$\Pi$)$_{t,m}$ term. In particular, the wage pressure on ‘marginal’ firms will increase their incentives to introduce labor-saving technologies (including the possibility of ‘pure’ labor substitution ex ante). Another argument for the inclusion of the (WPS/$\Pi$) variable in equation (3') is that the wage policy of solidarity may
increase entry leading to enforced productivity increases in incumbent firms through the associated increase in the degree of competition.

Labor productivity may also be stimulated by similar pay for dissimilar jobs (a possibility that was excluded by Rehn and Meidner’s definition of wage policy of solidarity). Innovations can be enhanced by a larger stock of skilled labor or by an increase in the incentive to introduce (unskilled) labor-saving technologies (see the WPS term.) As in equation (1') and (2'), the interaction term WPS-T is excluded in equation (3') thus, any positive effect on labor productivity of the ‘wage subsidy’ to firms benefiting from the policy of solidarity is neglected.

The profit margin in the business sector is determined in the Rehn-Meidner policy model by the following equation:

\[ \Pi_t = z(EP_t, e_t, EL_t, \{r(ALMP)_{i,t}\}, EL_t, u(ALMP)_{k,t}, ALMP_{c,t}, \mu_t, \{EP-WPS\}_t, WPS_{c,t}, a_t, a_{t,n}) \]  

(4')

The first derivatives are \( z'(EP_t) > 0, z'(e_t) < 0, z'(EL_t) < 0, r'_{ALMP,t,j} < 0, z'_{EL,t-y} < 0, u'_{ALMP,t,y} > 0, z'_{ALMP,t-d} < 0, z'_d < 0, z'_{EP,WPS,t} > 0, z'_{WPS,t} > 0, z'_{a,t} > 0 \) and \( z'_{a,t,n} > 0 \). It is assumed that \( d > j, d \geq y \) and \( y > j \).

Mobility-enhancing ALMP measures are expected to keep down wage increases when expanding firms try to recruit labor having a positive effect on profit margins (see the \( EL_t, \{r(ALMP)_{c,t}\} \) term). The ALMPs are also supposed to increase profit margins by the upgrading of labor (see \( ALMP_{c,d} \)). But ALMP measures to sustain full employment are also assumed to exacerbate labor-scarcity conditions having a positive effect on nominal wages (see the \( EL_t, y[u(ALMP)_{c,y}] \) variable). It is ignored here that the ALMP measures to sustain low rates of unemployment are also important conditions in the Rehn-Meidner model for the implementation of the wage policy of solidarity.

A complication in the ALMP case is that the wage-floor function on the one hand and the labor-mobility and labor-competence functions on the other influence the profit margin in opposite directions. With my interpretation of the model the wage-floor effect dominates in the medium term and in all phases of the business cycle except the boom. In equation (4') the two mechanisms in the short- and medium term have been attributed to two different dates, \( t-j \) and \( t-y \) (the ‘competence effect’ is neglected here despite the possibility that \( d = y \)). The following assumption is made about the relationship between the profit margins and the ALMPs in the medium term:

\[ \sum_{t=j}^{y} z'_{ALMP,t} < 0 \]

Thus, the ALMPs are expected to have a negative effect on profit margins in the medium term. However, the wage-increasing role of the ALMP measures is primarily a structural condition in the Rehn-Meidner model. The ALMP programs will expand when open
unemployment tends to increase because of worse product-market conditions (see the EP variable) or the wage policy of solidarity. Accordingly, the negative effects on profit margins of a restrictive macroeconomic policy or negative demand shock are not offset by wage reductions.

The wage policy of solidarity is supposed to reinforce the relationship between aggregate demand and profit margins, see the \((\text{EP} \cdot \text{WPS})\) term in equation \((4')\). The policy will hold back wage increases in a recovery and reinforce wage rigidity in a recession. In addition, the wage policy of solidarity is presumed to have a (lagged) positive effect on profit margins per se (see the \(\text{WPS}_{t-1}\) term). A possible objection to the inclusion of the \(\text{WPS}_{t-1}\) variable in equation \(4'\) is that the positive and negative effects of the wage policy of solidity on profits will cancel out at the aggregate level. The stronger pressure on low-productive firms when labor receives the same pay for similar jobs is matched by a weaker wage pressure on high-productive firms. Furthermore, when the wage policy of solidarity means wage compression in general (see the principle of equal pay for unequal jobs), the negative effect on profit margins in the economy (through the higher wages for unskilled labor) are arguably neutralized at the aggregate level by the wage subsidy to firms employing skilled labor. What is more, as emphasized in my interpretation of the Rehn-Meidner model, the wage policy of solidarity can reduce profit margins in general - it may increase the degree of competition by the positive effect on firm entry. Solidarity wages can also reinforce relative-wage preferences (as actually in the Aukrust/EFO model) having a negative effect on profit margins in the wage-wage-price process. However, equation \((4')\) subsumes the original Rehn-Meidner arguments for a positive relation between WPS and \(\Pi\). A ‘fair’ wage structure is expected to mitigate wage-wage races which may have a positive effect on profit margins, especially in sectors where prices are set by the world market. Wage compression in general may also have a positive impact on profit margins by the proposed stimulation of productivity growth, see equation \((3')\). Finally, the Rehn-Meidner model is associated with the hypothesis that solidarity wages have a positive effect on profit margins by subduing wage increases needed to recruit labor. The stronger threat of unemployment may increase the number of job applicants and the search for new jobs by people working in low-productive firms or having low skill. In this case, the positive effect of solidarity wages on profit margins appears through a reduction in the tightness of the labor market (see the \(\text{EL}_{t,\Pi}\) term).

The structural effects

The effect of (industrial) structural change on overall TFP growth can be decomposed into an exit, entry and composition effect. The structural effect on TFP growth is ideally measured on the plant level. But the focus below is on exit and entry of firms and the share of heterogeneous established firms in total output (see the composition effect).

Exit will automatically prompt a rise in TFP growth at the aggregate level if eliminated firms have lower TFP levels than surviving firms. The exit effect on TFP growth \(\ddot{\text{TFP}}_{\text{ext}}\) in the Rehn-Meidner model can be defined at a certain date \(t\) as follows:

\[
\ddot{\text{TFP}}_{\text{ext},t} = f \left(\frac{\text{WPS}}{\Pi} \right)_{t-\tau}, \Pi_{t-\tau} \right) 
\]

\[\text{(5')}\]
The first derivatives are \( f'_{WPS/\Pi, t-n} > 0 \) and \( f'_{\Pi, t-n} < 0 \).

TFP growth by exit depends on the wage policy of solidarity (WPS) in interaction with the average profit margins in the business sector (\( \Pi \)). Thus, the wage policy of policy will not lead to (many) exits if profit margins are high on average in the economy. Furthermore, profit margins have a negative effect on firm exit independently of the wage policy of solidarity. The lagged relations in equation (5') – which are assumed to be of the same length - exclude the possibility that changes in the exit rate will affect the average profit margin in the business sector.

Entry will increase TFP growth (per definition) if new firms have a higher TFP level than established firms. A Rehn-Meidner theory about the effect of entry on TFP growth (\( \text{TPF}_{\text{entry}} \)) can be formalized as follows:

\[
\text{TPF}_{\text{entry}, t} = g \left( (\Pi \cdot WPS)_{t-n}, \Pi_{t-n} \right)
\] (6')

The first derivatives are \( g'_{\Pi \cdot WPS, t-n} > 0 \) and \( g'_{\Pi, t-n} > 0 \).

According to equation (6'), entry is promoted by the wage policy of solidarity with a lag. The policy may increase the (expected) profit margins of superior technologies particularly favoring new firms with a productivity advantage. However, the positive effect of solidarity wages on entry must not be offset by the general squeeze of profit margins in the Rehn-Meidner model (see the interaction term \( \Pi \cdot WPS \)). Profit margins have also a positive effect on entry regardless of their interaction with the wage policy of solidarity (see the \( \Pi \) term). Thus, entry is hampered by the general decline in profit margins in the Rehn-Meidner model (the lag is assumed to be the same for both relations). Equation (6') excludes that solidarity wages would reduce entry if new firms have low TFP levels to begin. The ‘wage tax’ on newcomers may have a negative effect on their expected profits.

Overall TFP growth is stimulated by a change in industrial composition if firms with high TFP levels or high TFP growth are increasing their share of total output. The Rehn-Meidner equation for the composition effect is more complicated than the equations for the rate of exit and entry above. The transfer of resources to expanding firms depends, inter alia, on the rate of exit. Furthermore, TFP growth at the aggregate level may be affected by changes in the share of new firms in the economy.

The composition effect on TFP growth (\( \text{TPF}_{\text{com}} \)) at date \( t \) in the Rehn-Meidner model can be formalized as follows:

\[
\text{TPF}_{\text{com}, t} = h \left( \text{var}(\Pi)_{t-o}, q(WPS)_{t-o}, \text{ALMP}_{t-o}, \text{ALMP} \cdot (WPS/\Pi)_{t-o} \right)
\] (7')

The first derivatives are \( h'_{\text{var}(\Pi), t-o} > 0 \), \( q'_{WPS, t-o} > 0 \), \( h'_{\text{ALMP}, t-o} > 0 \) and \( h'_{a, t-o} > 0 \) where \( a \) is \( \text{ALMP} \cdot (WPS/\Pi) \). The abbreviation \( \text{var}(\Pi) \) is a coefficient measuring the variation in profitability between firms in the economy (equation (7') focuses on the variance of profit margins). All effects on TFP growth are assumed to appear with the same delay (t-o).
The wage policy of solidarity (WPS) is supposed to increase TFP growth by the fact that the incentives for structural change are stimulated by a widening of profit differences between firms (see the first term on the right-hand side of the equality sign). The ALMPs have an independent positive effect on ‘structural’ TFP growth through the expected stimuli of labor mobility (see \( ALMP_{t_o} \)). The ALMPs to increase flexibility are also conditional for the transfer of resources between firms when ‘marginal’ firms are eliminated by the wage policy of solidarity in combination with the general fall in profit margins, see \( (WPS/\Pi)_{t-o} \) term. Furthermore, the ALMP measures have a positive composition effect on TFP growth by their contribution to the profit-margin squeeze.

The Rehn-Meidner model can increase aggregate TFP growth through a composition effect if it leads to a larger share of new firms in the economy. New firms may have higher TFP growth, contribute more to technological spillovers or create a stronger (productivity-enhancing) competitive pressure in the economy than incumbent firms. However, equation (7′) excludes that new firms may have a positive composition effect on TFP growth. Thus, it does not include the \( \Pi \cdot WPS \) term of equation (6′). Despite all, entry has a peripheral role in the writings of Rehn and Meidner and the entry effects of wage policy of solidarity are ambiguous.

**Literature**


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