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Jakob Molinder

Interregional Migration, Wages and Labor Market Policy

Essays on the Swedish Model in the Postwar Period



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Abstract

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The Swedish model is perceived as a successful framework for combining rapid labor market adjustment with low inequality. Formulated by Gösta Rehn and Rudolf Meidner and implemented from the 1950s, it has been associated with the peak in economic restructuring and interregional migration during the 1960s. However, there is little empirical evidence for this. This thesis consists of an introduction and four essays. It explores three aspects of the model from a long-run perspective: *interregional migration*, *wage dispersion* and *labor market policy*.

Essay I uses new data to track interregional migration rates in the postwar period (1945-1985). The results show that the responsiveness of interregional migration to local labor market conditions remained stable over time; it was neither higher during the 1960s nor lower when migration declined after 1970.

Essay II employs a regression-decomposition framework to analyze the evolution of wage dispersion. The results suggest that wage dispersion was stable from centralized bargaining's introduction in 1956 to the late 1960s. Afterwards, there was a rapid decline, likely because of solidaristic bargaining.

Essay III contrasts the implementation of the active labor market policy to regional policy. Following a decisive shift around 1970, the focus on north to south mobility was replaced with policies to stimulate northern employment. Declining rural support for the Social Democrats and electoral competition from the Center Party caused this shift.

Finally, *Essay IV* is a case study about mobility subsidy usage in Västernorrland County using sources on relocation allowances from 1965, 1970 and 1975. The results indicate that in the 1960s there was strong selection into the program by young persons with good labor market prospects. However, the program's use did not change after the regional policy shift in the early 1970s.

The collective results suggest that the policies associated with the Swedish model were minor for economic restructuring patterns. The migrations of the 1960s and the decline in regional disruptions after 1970 should instead be explained by studying the consequences of structural changes, how regions were progressively affected differently and the possible role that government policies played in directing demand for labor across space.

Keywords: Swedish model, postwar period, interregional migration, wages, labor market policy, regional restructuring, economic growth, structural change, solidaristic wage policy, relocation allowances, regional policy

Jakob Molinder, Department of Economic History, Box 513, Uppsala University, SE-75120 Uppsala, Sweden.

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Till mamma och pappa

List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

- I Local Labor Markets and Regional Mobility in Sweden: Evidence from New County Level Data, 1945–1985. *Submitted.*
- II Regional Wages, Economic Restructuring and the Solidaristic Wage Policy in Sweden. *Submitted.*
- III What Can the State Do for You? Relocation Allowances and Regional Subsidies in Postwar Sweden. *With Jan Ottosson, Lena Andersson-Skog & Lars Magnusson. (2017). Scandinavian Journal of History, 42(3): 273–298.*
- IV Implementing National Structural Change at the Local Level: The Case of Relocation Allowances in Västernorrland, 1965–1975. Unpublished manuscript, Department of Economic History, Uppsala University.

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Thank You!

When you are in the process of hand coding a gazillion data entries, it can feel solitary, but research is fundamentally a collaborative endeavor. And while I most likely have hand coded a gazillion data entries (see p. 1–241), there are many people I would like to thank. First of all, thanks to my head supervisor Jan Ottosson, for always encouraging me and sharing your extensive knowledge on all things economic history. Without your strong support throughout this process, this would not have been possible! As my assistant supervisor, Lars Magnusson has commented and given many suggestions that have improved the final result. I also want to thank Lena Andersson-Skog, who has been a great collaborator in the project. Thanks also to the Jan Wallanders och Tom Hedelius Stiftelse for providing financial support for the first three years of my doctoral studies.

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1. Introduction

The city that goes to sleep at night is different from the one that woke up that morning. Something has been built, and something has been torn down. Someone has been born, and someone has died. The changes go on without interruption, and what once was will never come again.

– Per Anders Fogelström. *In a City Transformed*.

Much of economic growth takes place through structural changes in the economy, when labor and capital move out of contracting industries and towards new and expanding activities. Since declining and expanding industries are concentrated in different geographical locations, the process of economic growth results in a movement of workers and capital between regions as economic activity relocates. This connection between structural changes, migration at the local level and aggregate economic growth has been increasingly noticed and theorized in the analysis of contemporary economies (Blanchard and Katz, 1992; Krugman, 1993; Moretti, 2011). Yet, from an economic-historic perspective these processes are well known but have not been studied to any great extent. Famous examples of such regional changes in Sweden are the decline of the sawmill industry along the northern coast during the interwar period and the closure of textile production in Sjuhäradsbygden in the southwest in the postwar period. These regions experienced a period of economic decline, while other regions experienced growth in population and incomes. To some extent, the story of Swedish economic growth since the onset of industrialization is one of a series of such regional booms and busts.¹

During the postwar period in Sweden the role of these regional shifts became especially prominent. The Swedish model, devised by the two trade union economists Gösta Rehn and Rudolf Meidner, was explicitly designed as a way to increase economic restructuring and growth through the movement of workers from industries and regions with declining employment to areas with expanding activity. This was to be achieved by the “solidaristic wage

¹ See, for example, Östlind (1945) for a discussion of quarrying, Gustafsson (1962) for studies of the sawmill industry and Berglund (2005) for textiles in Sjuhärad. See also the study by Lindberg (2002) of the political response to the decline of the pulp and paper industry in Söderhamn.

policy”, where the basic tenet was bargaining at the national level according to the principle of “equal pay for equal work” regardless of the region or sector where the worker was employed. Simultaneously, public policy would aid in the movement of workers who were released by this wage policy through expenditures on relocation allowances and retraining programs.

The heyday of the model also coincided with the peak in economic restructuring and interregional migration during the 1960s. Naturally, then, several authors have attributed these outcomes to the model (see, for example, Enflo and Rosés, 2015; Edin and Topel, 1997; Henrekson et al., 1996; Bengtsson and Johansson, 1993; Borgegård et al., 1995). Erixon (2010, p. 704) even speaks of a “golden age” of the model from 1956 to 1973. Consequently, the large outflow of migrants from rural communities in the north to the industrial regions in the southern parts of the country during this decade was not seen as a unfortunate coincidence but, rather, as the result of a deliberate government and union policy (Lundholm, 2007, p. 7–9). Not surprisingly, then, the policy was strongly opposed by people in northern and rural regions. The critique against what was perceived as a depletion of these regions, and the feeling that the model aided in this, has also been ascribed as a major reason for the introduction of regional subsidies in the late 1960s; this in turn has been seen as part of the downfall of the model (Henrekson et al., 1996; Olson, 1990).

While recent research seems to confirm the notion that the Swedish model was causing the patterns of large internal migration, rapid urbanization and fast economic growth that were observed for the 1960s, very little empirical evidence exists on the interaction of the three aspects that are said to have achieved this rapid structural change. These are: geographical mobility, regional wage differentials and active labor market policies. In this thesis, I explore and improve on the understanding of these processes. To do this, I will approach these questions in two ways. The first is to take a more detailed look at the specific aspects of the model and to collect and utilize previously unused empirical material. The second is to address these questions from a long-run perspective.

Three Puzzles

In the previous literature on the Swedish model, there is an implicit assumption about the factors that produced the rapid rate of economic restructuring of the 1960s. According to this literature, the solidaristic wage policy and active labor markets policies came together to produce a rapid labor market response, which was reflected in the high rate of regional migration during this decade. However, there are empirical puzzles for each of these building blocks that need to be examined comprehensively.

Starting with internal migration, knowledge about the patterns of interregional migration flows is narrower for the period before the 1960s than for later periods. While the decline in migration rates from the peak in the 1960s to the lower levels of the 1970s and 1980s is well studied in previous research, the 1960s is not necessarily the best point of reference. On the contrary, migration could have been exceptionally high during this decade making it a misleading reference. In addition, the fact that migration rates were higher does not automatically mean that the *responsiveness* of migration to local labor market conditions was stronger; it could simply have been the consequence of larger differences in employment opportunities across regional labor markets at this time, making internal migration more frequent. To understand what really happened, it is necessary to study how interregional migration developed over a longer time period. A span of time that includes periods both before and after the 1960s is preferable. Previous studies dealing with the decline in migration during the 1970s have only used data that go back to the early 1960s at best and have, therefore, not been able to analyze whether the responsiveness to migration actually shifted over time.

When it comes to the second aspect of the model, the active labor market policy, most authors have simply assumed that the mobility-oriented policies that were introduced on a large scale in the late 1950s were very decisive in the general orientation of economic policy. Consequently, these authors have tried to understand why Sweden adopted such mobility-friendly policies and what political-economy frameworks best explain them. These authors, however, have not taken into account another policy area that grew in prominence during the same period: regional policy. The first program of regional subsidies was introduced in Sweden already in 1965 and expanded from that point on. Thus, it is not entirely clear whether economic policy was ever so mobility oriented as previous research suggests. If this was the case, then the political-economic underpinnings of these policies would be different than the ones suggested by those authors focusing on mobility. Regional interests perhaps played a more significant role than previously thought. If this was true, it could have undermined the policies oriented towards restructuring and migration. To make sense of this, the active labor market policy should be contrasted to the regional policy.

The question of how the program of relocation allowances was actually implemented and worked in practice is related to this. To be effective, it should mainly have been used by persons who were otherwise not likely to move. It should also have been effective in shifting workers out of declining industries and towards expanding regions and industries. There was a reorientation of regional policy in the early 1970s that, among other things, was directed at keeping migrations within the counties, so it is also interesting to see whether this had a marked effect on the usage of the program. Previous studies of this program have focused on later periods and have not analyzed the role that the

program played during the large out-migrations from northern Sweden during the 1960s.

Finally, for the third aspect of the model, the solidaristic wage policy, there are similar gaps in the literature. The commonly agreed view is that centralized bargaining managed to shrink regional wage differentials from the time when it was initiated in 1956 onwards. However, very little is known about how wage differentials actually developed before the 1970s. Therefore, three important questions to answer are: whether regional wage differences did, in fact, decrease during the late 1950s and the 1960s; what the underlying factors were that explain the evolution of the wage distribution; and, what the central agreements actually entailed in terms of egalitarian leveling.

Aim, Contribution to Previous Research and Research Questions

The aim of this thesis is to improve on the understanding of three central aspects of the Swedish model: geographical mobility, regional wage differentials and active labor market policy. By doing this, I will be able to provide greater insight into the developments during a central period in postwar Swedish history. The empirical contributions are threefold.

First, by studying interregional migration over a longer period of time I will be able to put these processes into an appropriate context in order to answer the question of whether the responsiveness of regional migration to local labor market conditions was especially strong during the 1960s, or if the peak in migration during the decade was instead a consequence of larger differences across local labor markets. Second, a similar long-term perspective on the evolution of the regional wage structure will give a more detailed view on the role that the solidaristic wage policy played for migration patterns in particular and for structural change more broadly. Third, I will give a new perspective on what Swedish economic policy actually looked like during the golden years of the Swedish model by contrasting the active labor market policy to regional policy and by studying in detail how the program of relocation allowances was implemented in practice.

On this basis, in this thesis I will answer four questions related to these three areas. These are dealt with in each respective article:

INTERREGIONAL MIGRATION

- I. *How did the migration response to local labor market conditions develop before, during and after the golden years of the Swedish model?*

WAGES

- II. *What were the effects, if any, of the solidaristic wage policy on regional wages?*

LABOR MARKET POLICY

- III. *How could it be that Sweden, internationally proclaimed as a role model of mobility-oriented labor market policy, implemented a system of regional subsidies aimed at reducing regional labor flows?*
- IV. *What were the characteristics of those who moved with support from the program of relocation allowances and what can be revealed about the role that the program played for the large migrations during the 1960s and the subsequent decline in interregional migration?*

Outline of the Thesis

The next section provides an overview of the empirical patterns that form the background for the thesis and situates it within the three fields of research that each respective article addresses. This is followed by a discussion of the theories that frame the thesis. After this, I present the data material, followed by a discussion of methods and delimitations. Finally, I summarize each of the four essays before concluding in the final section with a discussion of the results.

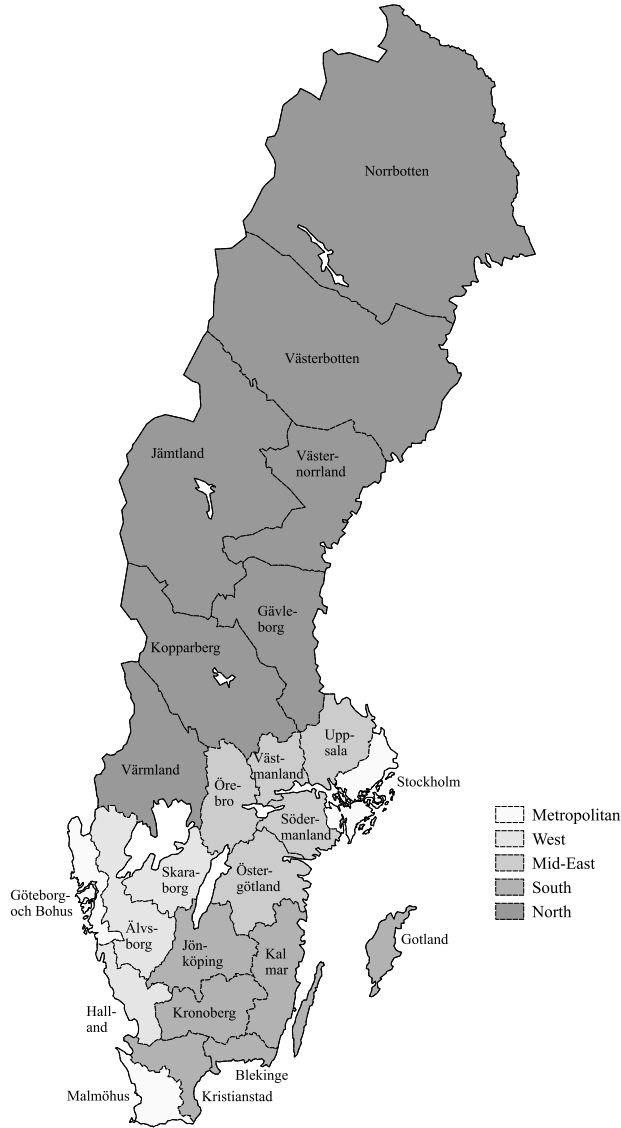
2. A Regional View on Structural Change: The Postwar Period in a Long-Run Perspective

This section gives an overview of regional development in Sweden and the issues that the thesis augments. The regional division that will be used to organize the discussion is presented in Figure 1.

Patterns of Regional Change

From the onset of industrialization, there has been a continuous movement of labor out of agriculture and towards the manufacturing and service sectors in Sweden. This shift also entailed a large spatial relocation of population and economic activity. In 1870, agriculture accounted for 72% of the work force; in 1980, the same figure was 5% (Lundmark and Malmberg, 1988, p. 195). One prominent characteristic of Swedish industrialization is the often-noted, relatively strong dispersion of manufacturing to rural communities. This has been linked to the composition of industry, where expanding industries were located in raw-material processing activities (Gårdlund, 1942, p. 38–40; Bäcklund, 1996). As a consequence, at the turn of the century the proportion of total manufacturing employment located in cities was less than 40%. However, there has been a tendency towards urban concentration throughout the early decades of the 20th century, mainly due to an expansion of the engineering industry. This evolution continued during the interwar years although at a slower pace (Berger et al., 2012).

Figure 1. Map of Swedish Counties with Division into Regions.



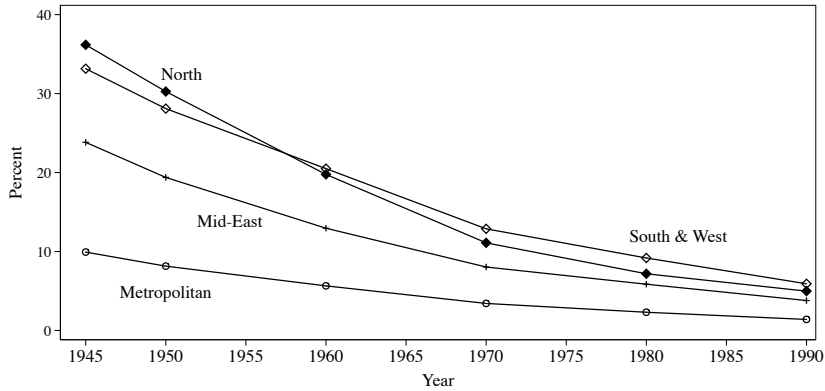
Note: Author-created map using GIS software. The map shows the Swedish counties as they existed until 1997 when Malmöhus- and Kristianstad counties were merged to form Skåne county. In 1998, the new county of Västergötland was also created through a merger of Göteborg- and Bohus-, Älvsborg- and Skaraborg counties.

During the postwar period, the main element of structural transformation was still the decline in the primary industries. In the north, this tendency was especially strong. This phenomenon was dubbed “the Flight from the countryside (*Flykten från landsbygden*)” (See, for example, Wallander, 1948 and Befolkningskommissionen, 1938). In 1947, the groundwork for the agricultural policy that would prevail in the postwar period was decided by parliament. The focus of the new policy was to elevate agricultural incomes to be in line with those of manufacturing workers; the instruments to achieve this were out-migration, mergers and mechanization. In line with this, structural change within agriculture took on a new character during the postwar period as compared to the first half of the 20th century. Previously, the decline in the active population had mainly taken place through a drop in the number crofters and cottars. From this time on, the decline affected all groups of employed and resulted in a decrease in total acreage. At the same time, there was an increase in the number of hectares per homestead as small farms declined and the number of larger entities increased through mergers (Bäcklund, 1988, p. 173–174).

In 1967, a new parliamentary bill confirmed and even strengthened the focus on rationalization. In the north, the growth in services could not balance out this loss and employment declined as a result (Flygare and Isacson, 2003, p. 235; Bäcklund, 1988, p. 173. ff.). Thus, the timing of the decline in agricultural employment was very different across regions. As evident from Figure 2, the share of employment in agriculture in the metropolitan counties was only 10% in 1945, while the same figure for the northern counties was still over 35%. While the employment share of agriculture was slightly higher in the northern than in the southern and western counties in 1945, the shift out of the primary sector was more rapid in the north. The data presented in Figure 2 only tells part of the story, however. Especially in the north, multi-activity farming was very common and farmer incomes were supplemented by other types of work in forestry, on sawmills and in construction. Therefore, the evolution of agriculture was tightly interconnected with the development in these sectors. Low unemployment and a strong expansion of employment opportunities in these sectors caused many small-scale farmers to sell off their land. As mechanization forged ahead and full-time work became the norm, the possibility to combine small-scale farming with supplementary work in these sectors decreased even further and the process of closing down was cumulative by the late 1960s (Bäcklund, 1988, p. 195–216).

In the beginning of the 1970s, the situation was reversed in some respects. A resource boom resulted in an expansion of industrial production, mainly concentrated to the Northern counties where manufacturing was still strongly resource based. In addition, the direction of public sector expansion started to shift towards activities more closely tied to the place where people were currently living, such as elder and child care. Therefore, the growth in public sector employment was more evenly distributed than during the 1960s (See,

Figure 2. Agriculture as Share of Total Employment, 1945–1990.



Note: The graph shows the percentage of people employed in agriculture as a share of total employment in the counties included in each region. The employment share is expressed in percent.

Source: Author's calculation from the Swedish Population and Housing Census (*Folk- och bostadsräkningen*) of 1945, 1950, 1960, 1970, 1980 and 1990.

for example, Bäcklund, 1999, p. 33 and ERU, 1978, p. 14–16). The economic crisis that hit Sweden in the middle of the 1970s also meant a structural break with the postwar economic development that had culminated in the 1960s. The Bretton-Woods system broke down and unemployment and inflation increased around the industrialized world as the two oil crises, OPEC 1 and OPEC 2, hit the world economy. The first crisis of 1973–74 was counteracted by the Swedish government through expansive fiscal policies that caused prices and wages to increase in excess of international trends. When the cost crises hit the Swedish economy in full force from 1975, industrial production fell for a number of years. The expansion of the public sector and measures to counteract unemployment meant that employment never fell markedly but this led instead to structural imbalances, highlighted by growing budget- and current-account deficits (Jonung, 1999, p. 121–123). With the structural crises came a shift away from heavy manufacturing towards services; the strong reliance on heavy industry meant that the challenges for these industries were especially problematic for the Swedish economy (Schön, 2007, p. 489–493). At the time, policy makers believed this was a temporary problem and government policy focused on “bridging” the downturn by subsidizing crisis-ridden industries (Bohlin, 2014, p. 128–129).

Interestingly, the northern counties fared comparatively better at this time. There were two parallel processes improving their relative position. First, the industries hit hardest by the structural crises were located mainly in the mid-eastern counties. Second, the metropolitan areas, in general, experienced a relative decline in employment growth, which affected those three counties

(see the evidence in Essay I). In addition, there was a shift in employment towards the northern counties throughout the 1970s (Molinder et al., 2017, p. 13–21). However, in this sense, the crisis only reinforced what had already started around 1970, when the labor market situation in the northern counties had started to improve relative to the rest of the country.

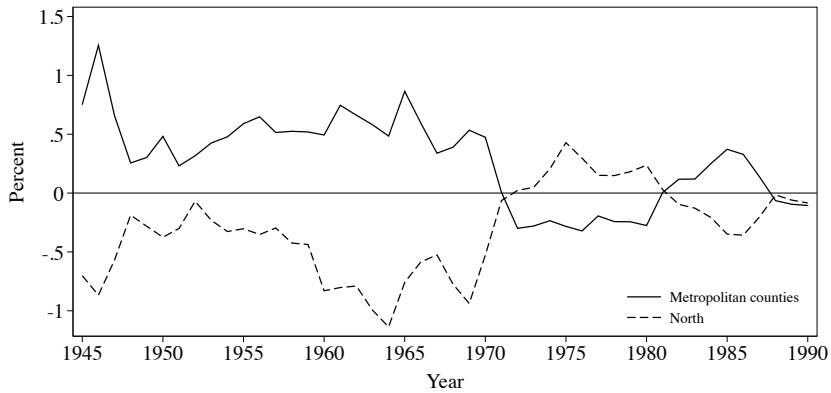
Internal Migration

Throughout the early part of the postwar period, regional migration went in the direction of urbanization. Only the major manufacturing- and service-intensive counties of Stockholm, Uppsala, Malmöhus and Göteborg and Bohuslän experienced positive net migration throughout this time. In the 1950s, the metropolitan areas received a third of all the migrants that left their home county (Jakobsson, 1969, p. 98 and Hofsten and Lundström, 1976, p. 142) and in the 1960s the metropolitan areas grew even faster (Borgegård et al., 1995, p. 37–38 and Lundholm, 2007, p. 7–8). In the early 1970s, the direction of regional migration shifted swiftly, and rather surprisingly, away from the metropolitan counties. Several simultaneous processes, such as the changing character of structural change, the rise of the public sector, dual-income families and regional policy, have been used to explain these changes (See, for example, Lundholm, 2007, p. 7–9 and Bengtsson and Johansson, 1993, p. 41–44).

The causes of the high migration rates in the 1960s and the subsequent decline during the 1970s and 1980s have been interpreted differently in the literature. Enflo and Rosés (2015) argue that the relocation allowances were important by aiding in worker migration, while Edin and Topel (1997) instead suggest that they can only explain the migration patterns to a limited extent and propose that the solidaristic wage policy was of greater importance. Bengtsson and Johansson (1994) similarly point to the role of wage formation. They argue that since low- and high-paying industries were geographically separated, the equalization of wages through the solidaristic wage policy led to population movement between these places as employment was destroyed in the low-wage industries. One of the arguments made by Rehn and Meidner in devising the model was that local labor market conditions were more important for migration than income differences. However, Lundh (2006) is somewhat skeptical about this and argues that the small wage differences could just as well have restricted migration by putting a cap on wages in high-wage industries.

That being said, earlier empirical studies seemed to confirm Rehn and Meidner's argument that unemployment and relative employment opportunities have been important drivers of regional migration while wage differences have not. For example, Westerlund (1997) uses data for 1970 to 1989 and argues that there was no relationship between the local

Figure 3. Net Migration Rate for Metropolitan Counties and the Northern Counties, 1945–1990.



Note: The graph shows net migration as a share of population in the middle of the year for the included counties. Net migration is calculated indirectly by deducting the natural population increase and the net effect of immigration from abroad from the total population change each year.

Sources: Author's calculation from "Vital Statistics" (*Befolkningsrörelsen*) 1945–1960, "Population Changes" (*Folkmängdens förändringar*) 1961–1966 and "Population Changes, part 3" (*Befolkningsförändringar, del 3*) 1967–1990 published by Statistics Sweden (*Statistiska centralbyrån: SCB*) on a yearly basis. The method for calculating net migration is explained in more detail in Essay I.

manufacturing wage and migration to and from Swedish counties. He finds instead that both the unemployment rate and the vacancy rate were important. Dahlberg and Holmlund (1978) study 70 labor market regions over the period from 1961 to 1970. They likewise do not find any effect of income differences on migration but instead a strong effect of the unemployment rate. Nevertheless, recent empirical work has questioned some of these findings. Svanlund (2009) analyzes migration between Finland and Sweden during the postwar period; he argues that after the introduction of a common Nordic labor market in 1954, the conditions were similar to those that applied to internal migration within Sweden. Svanlund finds that, besides the coincident of excess supply in Finland and excess demand in Sweden, differences in income were a strong driver of migration between the countries during the period. Furthermore, Gärtner (2014b) finds a positive effect of income differences by applying a different statistical method on the same data used by Westerlund (1995). Significant for this thesis is that none of these studies go further back than the 1960s. However, Nilsson (1989) points out that the 1960s is not necessary the best point of reference, since migration rates were probably especially high during this decade. To comprehend the role that local labor markets played in migration and if the responsiveness of migration

changed over time, it is necessary to take a long-term perspective on these issues.

Regional Wage Differentials and the Solidaristic Wage Policy

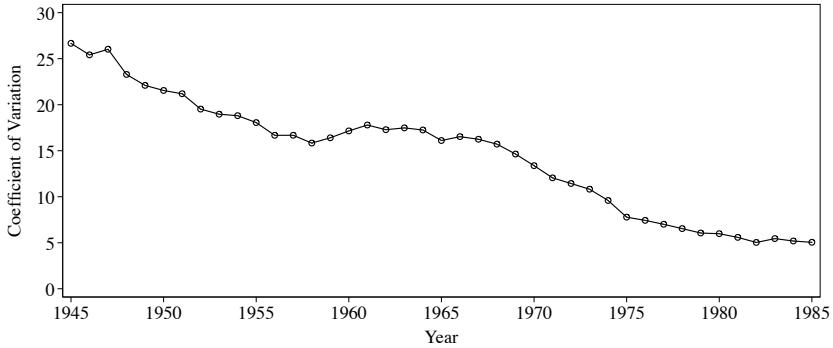
The solidaristic wage policy is suggested to have affected economic restructuring and regional migration through a mechanism of reducing nonobjective wage differences across industries, regions and firms, forcing persons employed in low-wage areas to move. Empirical studies of the Swedish wage structure in the early 1980s also seemed to confirm that noncompetitive wage differences were smaller in Sweden compared to, for example, the United States (Holmlund and Zetterberg, 1991; Edin and Zetterberg, 1992). Hibbs (1991) and Moene and Wallerstein (1995) went so far as to argue that the Swedish wage structure corresponded better to neoclassical norms than wages in the United States.

However, little is in fact known about how the wage structure evolved after 1956, when centralized bargaining was introduced. The general view seems to be that the solidaristic wage policy, as it was implemented in practice through peak bargaining between the Trade Union Confederation (*Landsorganisationen: LO*) and the Employers Association (*Svenska Arbetsgivareföreningen: SAF*), reduced regional wage differences and led to increased regional migration in the 1960s. Bengtsson and Johansson (1993) relate the high migration rates to the wage policy destroying employment in the northern regions. Enflo and Rosés (2015) argue that centrally negotiated wages led to labor market adjustment by eliminating employment in low-productivity regional industries but are careful to point out that they cannot put numbers on the exact extent that the wage policy affected restructuring.

Looking more specifically at the wage structure, Edin and Topel (1997) argue specifically that the solidaristic wage policy was more important than the other aspects of the Swedish model in explaining employment patterns across sectors. Hibbs and Locking (2000) and Moene and Wallerstein (1995) have also made the case—without much empirical backing—that wage equalization was strong during the 1960s. This is surprising since earlier writers were trying to explain the failure of the solidaristic wage policy during the period. Using data on wages at the national level, Ullenhag (1971) shows, for example, that there was little compression of interindustry wages during the 1950s and 1960s.

These studies all relate to the national level; the available information on regional wages is even less ample. Collin et al. (2016) is a recent exception. Collin et al. (2016, p. 70–72) present the coefficient of variation of average male manufacturing wages across counties for the post-1963 period and for a new benchmark in 1955. Between 1955 and 1963 the coefficient is stable, but

Figure 4. Employment-Weighted Coefficient of Variation for County Labor Income per Employed, 24 Counties.



Note: The graph shows the employment-weighted coefficient of variation of labor income per employed. The coefficient of variation is calculated by dividing the standard deviation of labor income per employed by the mean labor income per employed each year. Each county has been weighted by their share of total employment when calculating the standard deviation and the mean. The coefficient of variation has been multiplied by 100 in the graph.

Source: Author's calculation from tax assessments, censuses and labor force surveys (*Arbetskraftsundersökningen: AKU*) published by SCB. The data is presented in more detail in Essay II.

after 1963 it declines continuously until the early 1980s. They also formally test for the existence of wage convergence over the period 1963–1983 and rejects the null of no convergence (See also Collin, 2016). Enflo et al. (2014, p. 74) also present a measure of the coefficient of variation of regional GDP per capita calculated from wage data for agriculture, manufacturing and services for every 10th year. Their series indicates that the coefficient of variation was basically unchanged during the 1960s, decreased somewhat in the 1970s and then started to increase in the 1980s. Over the whole of the postwar period, the largest reduction took place during the 1940s and 1950s, highlighting the same pattern as the data presented in Figure 4, which shows the employment-weighted coefficient of variation for regional labor income per employed. Thus, if these indicators are right, there seems to have been a more egalitarian development in the 1970s than the 1960s. The difference between the pattern in Figure 4 and in Enflo et al. (2014), on the one hand, and the convergence in male manufacturing wages after 1963 found by Collin et al. (2016), on the other hand, suggests that manufacturing might have been different from other sectors. In addition, it might have been the case that the regular forces of neoclassical convergence were stronger in manufacturing, and not necessarily the consequence of the solidaristic wage policy.

The general development of regional GDP per capita differences, calculated by Enflo et al. (2014), quite closely follows the pattern in Figure 4. This makes it possible to compare these figures to the data presented in Enflo and Rosés

(2015, p. 199). They plot the Gini coefficient of regional GDP per capita for those countries with available historical data, i.e., Sweden, Italy, Belgium, France, Portugal, Spain and Britain. By 1950, Sweden registered the smallest Gini of these countries, held a steady position throughout the 1960s and 1970s and has continuously done so also in the period after 1980, when regional disparities were increasing in Sweden as well as in most other countries.

Another important development was the increase in female labor force participation, which rose rapidly during the 1970s but had been increasing steadily since at least the 1960s (Stanfors, 2003, p. 117–121).² The change in the 1970s can, in part, be explained by the expansion of the public sector and by economic and institutional changes. By the mid 1980s, female labor force participation in Sweden had risen to 80%, exceeding the rate in other places such as Germany, the UK, Norway and Finland (Gärtner, 2014a, p. 149–150 and Sundström and Stafford, 1992, p. 207). This high level of labor force participation among females and the set of policies, such as the paternal leave program, separate taxation and extensive day care, are in some aspects unique Swedish phenomena, and the change was strongest during this period. The increased labor force participation of women was likely an important factor in explaining why there was a drop in the Gini coefficient of earnings for women during the 1960s without any similar tendency within the male group. Since total earnings reflect not only the wage but also working hours, the increase in full-time labor force participation would work to push down earning inequality within the female group.

However, these broad measures only give partial information about the evolution of regional wage dispersion. The observed pattern could be driven by several underlying factors. For example, the wage dispersion caused by the skill premium might increase, while the wage dispersion due to different wage levels across regions decreases. If this was the case, overall wage inequality could have remained unchanged, while the underlying factors explaining the current level of inequality were very different. For that reason, it is necessary to use more fine-grained indicators that account for changes across regions, industries and skill levels in order to get a more nuanced picture of the effect of the solidaristic wage policy.

In addition, based on how the centrally negotiated frame agreements were actually formulated, wage dispersion is expected to decrease across all dimensions of inequality. This is the case since wage increases were specified as a pot of money for workers below a specified wage level and consequently, irrespective of the reason for the lower wage, the worker was given an extra wage increase. By performing this decomposition of wage inequality into its different components, it will be possible to see how much each factor contributed to wage dispersion and also to analyze how these factors changed over time.

² See also the figures on pages 217–218 in Lundh (2010).

Labor Market and Regional Policy

Several authors contend that labor market policy in Sweden has been particularly focused on mobility. They have pointed to the relocation allowances and retraining programs that expanded in the late 1950s, when the Rehn-Meidner plan was embraced by the Social Democratic government. Both employer- and employee-centered perspectives present separate explanations for this. Swenson (2002) argues that the solidaristic wage policy, while it generated an institutional equilibrium at the macro level, implied a distribution of wages that caused strong micro-economic disequilibrium. The introduction of active labor market policy should, therefore, be seen as a means to relieve the tendencies of “illicit wage drift” that came about as the result of an inability to pay the market wage that the solidaristic wage policy created. If this explanation is correct, the solidaristic wage policy should have been effective in bringing wage differences below competitive equilibrium already in the 1950s. This is unlikely given the fact that the discussion within the labor movement in the late 1960s, referenced in Ullenhag (1971), was about why the centralized wage negotiations had not led to a leveling of wages.

Other, more labor-centered analyses have underscored the interest of the labor movement in active labor market policies, since these could increase the bargaining position of the working class (Rothstein, 1987). However, this perspective cannot explain why the labor movement specifically supported active labor market policies, as passive measures could have served the same function. Other analyses, such as Pontusson (1992), have explored the conflict between the national and local levels and asked why the unions in Sweden adopted such a positive stance towards structural change. His answer is that the encompassing nature of LO, representing a large share of the blue-collar labor force and with strong ties to the government, made it necessary for the organization to take responsibility for the consequences of its actions. This is also the argument made by Olson (1990) when he suggests that the increased influence of narrower interests contributed to the decline in growth in Sweden during the 1970s.

As pointed out by Andersson-Skog (2001), the focus on the role of encompassing national organizations for Swedish economic policies have caused the role of regional interest groups in economic policy making to be underplayed. Therefore, these studies focusing on the national level have failed to evaluate the importance of the mobility-oriented programs in the overall orientation of policy. In order to understand the political economy of structural transformation in Sweden, it is necessary to analyze the active labor market policy and regional policy in combination.³ If labor

³ In Essay III, the localization subsidies are addressed. However, there were other programs of subsidies within regional policy such as the transport aid and development- and employment-subsidies (See Pettersson, 1999, for a discussion). In addition, other direct subsidies to

market interventions were not as mobility oriented as previous research has suggested, it is necessary to revise the understanding of some of the underlying political forces that explain the patterns of labor market policy in Sweden during the postwar period.

companies also had implications for certain regions, as they were directed at saving jobs in struggling industries. These general subsidies expanded in scope as part of the crisis management after 1976 (See Bohlin, 2014; Eliasson and Ysander, 1981).

3. The Swedish Model

In this section, I discuss the different definitions of the Swedish model from the literature and how the definition I use, equating the Swedish model with the Rehn-Meidner plan, relates to these. After this discussion, I describe in more detail how the Swedish model, defined in this way, was supposed to theoretically work by drawing on elaborations from the previous literature. Finally, I explain how each of the four essays in the thesis fits into this overarching framework.

In the research literature, the Swedish model has come to signify many different things depending on the specific context, such as a generous welfare state, industrial peace and corporatist bargaining (See, for example, the discussions in Andersson, 2003 and Magnusson and Ottosson, 2012).⁴ Karlson and Lindberg (2008) talk about two distinctive versions with the “classical” era from 1938 to 1970 turning into the “interventionist” era after 1970 when, they argue, the state stopped taking a neutral position and intervened on the behalf of unions (See Nycander, 2008, for a similar argument). At this time, they argue that a positive stance towards structural change was replaced by a will to preserve the existing economic structure. Lundh (2010) presents a chronology that draws on the structural periods in the Swedish economy and depicts a dividing line in 1975. Lundh discusses different labor market regimes from a power and an efficiency perspective and associates the Swedish model with the labor market regime centered around centralized bargaining. He argues that the model led to lower transaction costs for wage negotiations and contributed to efficiency during the 1950s and 1960s. Importantly, he also highlights the role that employers played in creating this centralized regime and in the development of the Swedish model.⁵ In a retrospective essay, Lundberg (1985) uses the narrower definition of the Swedish model that equates it to the Rehn-Meidner plan; he describes its “apex” as having been reached in the 1960s. Erixon (2003) uses the

⁴ Magnusson and Ottosson (2012) is an attempt to broaden the concept of the Swedish model which also discusses preexisting interpretations. Isacson (2007) draws an interesting parallel between the “Peoples home” (*Folkhemmet*), the Swedish model and the particular social structure of the communities that had existed around the Swedish ironworks (*bruk*). Many labor politicians had their background in this type of environment and the social cohesion associated with these communities was hailed as an ideal in the argument for the welfare state.

⁵ For general treatments of the Swedish model within the context of Swedish economic history see Magnusson (2010, p. 401ff) and Schön (2007, p. 366ff); and with a specific focus on the labor market see Lundh (2010, p. 145ff) and Nycander (2008, p. 131ff).

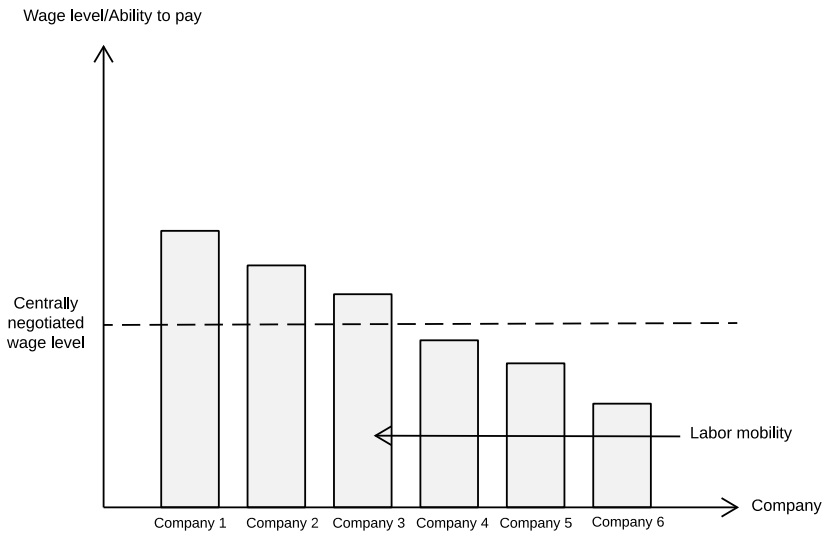
same definition and talks about a golden age of the model from the onset of centralized bargaining in 1956 until 1972. Thus, even when kept strictly to the labor market, there are several different interpretations of the Swedish model and they vary depending on periodization. The definition I will use here connects to the one used by, among others, Lundberg (1985) and Erixon (2003) that relates to the Swedish model as the Rehn and Meidner plan. Thus, this is a narrower definition than in many other treatments, even when strictly kept to the labor market, and it does not include welfare state policies.

Keeping this definition in mind, I elaborate on the workings of the model in subsequent sections. The focus is on explaining the theoretical foundations as they have been developed in later works by several authors. The original architects of the model never presented it in this way at the time; instead, it has been interpreted by others (Hedenborg and Meidner, 1984, is an important exception). However, there is a fairly large consensus in the literature on how the model was supposed to function (See, for example, Lundberg, 1985; Bergström, 1992; Erixon, 2003). This description naturally reflects the Swedish model at its peak as, for example, Lundberg (1985) defines it, which of course downplays the historical nuance in how the model evolved over time and how it worked in practice. This section is intended to provide a better idea of how each article fits into the existing literature and this simplification might be justified on that basis. I will use this elaboration to place the four essays within the broader context of the thesis and show how they are interrelated. The historical nuances were elaborated on in section 2; the discussion leading up to the government accepting the program in the late 1950s is described in detail in Essay III. The same is true for the way that the solidaristic wage policy was actually effectuated in the central frame agreements, explained in more detail in Essay II. How the relocation allowances worked is explored in Essay IV.

The main tenets of the model can be described in the following way. The basis of the model was the will to combine price stability, full employment, small wage gaps and fast real-wage growth. To achieve this, a rapid rate of structural change was necessary. When starting from a situation with excess demand for labor, fiscal policy was supposed to be restrictive in order to push down profit margins in the business sector generally. High profits were viewed as inflationary by spurring compensatory wage demands. The tight fiscal policy also had the additional objective of stimulating rationalization and structural change.

As a second step, the solidaristic wage policy had the role of creating a wage structure where the level of profits of individual companies would not factor in the relative wages of individuals. The goal was to achieve such a structure of wages that only relevant individual characteristics, such as skill, work content, responsibility and experience, would influence wages. This would cause a release of workers in less productive firms and excess demand

Figure 5. Stylized Description of the Swedish Model.



Note: The figure shows a stylized depiction of the Swedish model. For similar figures see, for example, Lundberg (1985), Erixon (2003) and Hedenborg and Meidner (1984).

in the most productive firms, which could not attract workers by raising wages. This relationship is presented in Figure 5.

The figure shows a stylized situation where there are a number of companies with different profit levels. To see the effect on economic restructuring, it is useful to think of these companies as existing in different industries and regions. Through centralized bargaining, the wage level is set at the same level for all companies. In a “free” market, wage levels would instead reflect company-specific profit levels. Firms with low profits would not be able to afford the centrally negotiated wage level and had to let go of workers, while companies with high profits wanted to expand but could not raise wages to attract workers.

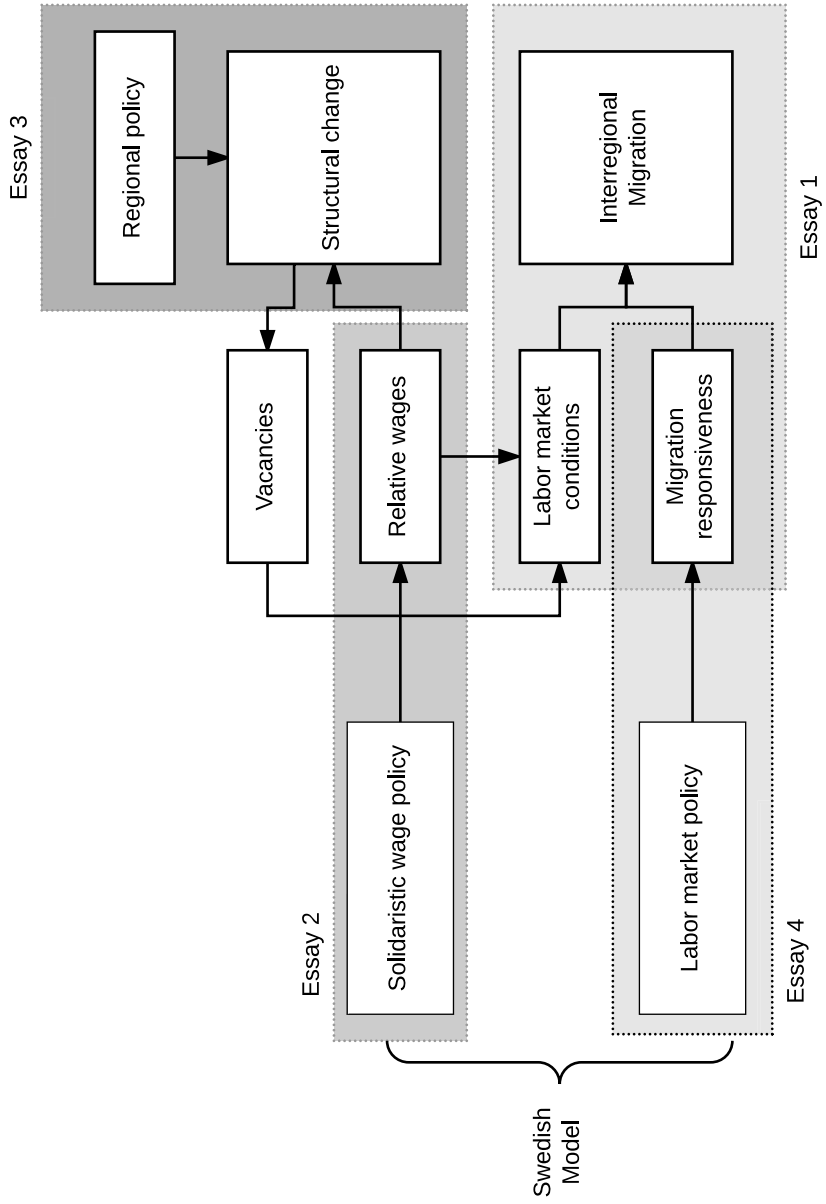
As these companies were disproportionately located in certain industries and regions, this would create unemployment in some local labor markets while in other places there would be excess demand. The role of labor market policy would, therefore, be to provide positive mobility stimulus through relocation allowances and retraining programs that would help workers relocate from less to more profitable companies and, as a consequence, from less to more productive industries and regions. Rehn and Meidner believed that labor mobility was more responsive to differences in unemployment than to differences in pay. Thus, allowing wages to vary by place and industry

would be a relatively inefficient allocation mechanism, risking spurring an inflationary spiral.

Each of the four essays will address some aspect of this overarching context. Figure 6 provides a description of how each essay fits into this framework. In Essay I, I test Rehn and Meidner's central proposition that regional migration was more responsive to available jobs than to wage differences by estimating the effect of the *relative vacancy rate* and *relative labor income per employed* on county net migration. By estimating the same model for different time spans over the period from 1945 to 1985, it is possible to see whether the relationship between local labor market conditions (measured as the relative vacancy rate and relative labor income per employed) and net-migration changed over time. The hypothesis is that the responsiveness was higher during the late 1950s and the 1960s, which is the period that has been characterized as the golden age of the model. As the chart in Figure 6 highlights, within the context of the model, interregional migration is the product of the *distribution* of labor market conditions across regions as well as of the *responsiveness* to those local labor market conditions. If relative wage differentials and differences in vacancy rates are larger, then the incentive to migrate is higher, with everything else equal. With a given distribution of such local conditions across regions, however, the extent of interregional migration also varies depending on how responsive regional migration is.

In Essay I, the vacancy rate and relative income per employed in each region is taken as exogenous. However, the solidaristic wage policy could have been important for observed migration patterns by affecting relative wages and by destroying employment in low-productivity activities as suggested in the stylized depiction in Figure 5. This is the topic of Essay II, where I detail the evolution of wage dispersion after the onset of centralized bargaining in 1956 with a special focus on interregional wage differentials. Figure 6 shows the relationships between the solidaristic wage policy and structural change. There are two such channels. By reducing the spread of relative wages, the central agreements would diminish the incentive to migrate if relative wages are a significant determinant of interregional migration. This is highlighted by the arrow running from "Relative wages" to "Labor market conditions". However, the wage policy would likewise affect structural change by changing the employment structure. This is then reflected in the distribution of vacancies across industries and regions, as the arrow from "Structural change" to "Vacancies" indicates. Rehn and Meidner believed that migration was more responsive to differences in job openings than to relative pay. Therefore, the effect of a change in the wage structure would generate more interregional migration than would have taken place if wages were allowed to vary more.

Figure 6. Outline of Thesis.



The subject of Essay III is regional policy, labor market policy as well as the way that these two programs contrasted. In the essay, we look at how these two programs were introduced and implemented. Within the framework of Figure 6, the regional policy could have had an effect on relative vacancy rates, thereby affecting structural change and interregional migration. This is highlighted by the arrow running from “Regional policy” to “Structural change”. This also underscores the reason why these programs were so contested. The objective of the regional policy ran contrary to the orientation of labor market policy.

Essay IV looks in greater detail at the implementation of the relocation allowances. The program had the important objective, within the context of the model, of facilitating migration from low- to high-demand areas. As highlighted in Figure 6 by the arrow going from “Labor market policy” to “Migration responsiveness”, the hope was that this would lead to a swifter labor market adjustment by increasing the responsiveness of regional migration to local labor market conditions.

Having presented how the four essays fit into the broader composition of the Swedish model, in the ensuing section the regional economics theory will be presented. This theory works as a unifying framework for thinking about local labor market, structural change, wages and interregional migration under the Swedish model. The section will also go deeper into the political economy of regional structural change.

4. Theoretical Framework

In this section, the theoretical framework that is used in the thesis is presented. To analyze the interaction between local labor markets, regional migration and national economic growth, I draw on the regional economics perspective that ties these factors together. This framework is expanded on by including a political component. The literature on the political economy of structural change is introduced and used as a way of understanding political processes relating to the interaction between local restructuring and national policy making. In relation to this, I discuss the previous studies that have focused on structural change as a national or sectorial phenomena and how my perspective can contribute to this literature.

Regional Economics

The regional economics perspective stipulates the way that local labor markets, regional migration and economic growth are interrelated. According to the framework, the national economy is made up of regions specialized in different products, resulting in diverse employment structures across space. Each region exports a bundle of goods to the rest of the country and these exports provide the basis for local service provision and other activities tied to people's current residency. Economic changes in one region then have ripple effects throughout the economy by affecting wages and inducing migration between places, as some regions expand and others contract (Moretti, 2011; Blanchard and Katz, 1992). Consequently, growth at the national level is contingent on factors of production responding as demand for a region's exports decline or expand. It is often shown in marked differences in growth rates between places. According to this framework, as Krugman (1993) has pointed out, regional integration does not automatically lead to convergence in economic structure and growth rates. The adjustment of wages in response to an adverse shock to employment will put some limit on the extent of regional divergence in employment growth. In the case of a smaller effect on wages, more of the adjustment has to take place through out-migration. How factors adjust to such regional changes is strongly influenced by national institutions. Regions within a country differ, for example, in fundamental ways from countries within some political area that share a currency, such as

the EMU.⁶ Within a country, both capital and labor move more rapidly. Labor is especially more mobile within a country than between countries.

The regional economics perspective ties together several of the issues addressed in this thesis. It points out why regional structural change is important for the overall economic growth process and also shows why there is a national interest in accelerating these adjustment processes. However, this framework has largely neglected the political aspect of the regional changes that it was designed to explain, which is an issue that I turn to now.

Political Economy of Structural Change

Several authors have explored the political economy of structural change at the macro level. One strand of this literature has explored which economic and political institutions have been especially conducive to economic growth. A second theme has been to analyze how governments have reacted to deindustrialization since the 1970s.

Within the first theme, it has been generally believed that fluid markets are conducive to growth. It therefore tries to explain how institutions that allow for such creative destruction emerge and how they are upheld. Within the context of the Swedish model, a central issue has been to understand why the labor movement adopted such a positive stance towards structural change in the postwar period. By drawing on the typology presented by Olson (1965, 1990) that distinguishes between narrow and encompassing interest organizations, Gråbacke (2002) studies industry-level unions and their response to disruptive innovations within their own sector. She concludes that the narrower interest of the respective unions was disciplined by LO centrally to a certain extent, although there was always pressure to introduce protectionist measures in response to structural change. These pressures increased during the 1970s and LO's disciplinary power weakened. Pontusson (1991) draws a similar conclusion. He argues that it was the inclusion of the labor movement in the process of designing policy that explains why it adopted this growth-friendly attitude. Hence, when the central trade union organization had to deal with the consequences of its own actions for the overall economy, its interest became aligned with national economic growth and labor mobility. Johansson and Magnusson (2012) make a similar argument by stressing that LO had to balance the interest of its own members with the interest of the general public. According to their argument, the Swedish model grew out of the need to balance these concerns.

⁶ A large interest within the regional economics literature has been to analyze differences in regional adjustment within the EU compared to the US, where the general conclusion is that labor migration is more responsive to local demand within the US (Decressin and Fatás, 1995). See, also, Fredriksson (1999) for an application of this framework to Sweden and Mäki-Arvela (2003) for Finland.

These studies relate to the action of interest groups at the national level, however. But, as the regional economics perspective underscores, structural change always takes place at the regional level. As pointed out by Andersson-Skog (2001), regional coalitions can easily form and provide the basis for narrow interest coalitions that undermine the effort of national actors. Since specialization is strong in certain geographic places, a decline in the dominating industry has strong negative effects on employment and welfare in that region while the benefit is more evenly spread throughout the country. As an example, Lindberg (2002) studies the decline in forest and pulp industry in Söderhamn, a city heavily dependent on the cluster based around those industries, and the political reactions that followed in its footsteps. He shows how the calls for government intervention became vocal as employment decreased and unemployment rose.

This carries over to the second theme in the literature on the ways that governments have reacted to structural changes. Iversen and Cusack (2000) argue that the expansion of the welfare state since the 1970s can best be explained by the timing of the decline in “primary” industries (in their case, agriculture and manufacturing) and the transition to a service economy. This has, according to their argument, created three typical reactions to this process that differs between Anglo-Saxon, Continental and Nordic welfare states. In the Nordic countries, with an institutionalized plea to the principle of full employment and low wage-inequality, this created a special circumstance for economic policy. According to Iversen and Cusack, it is impossible for the private service sector to create employment without allowing for large wage differences, which was politically unattainable in the Nordic countries. The strong focus on full employment, on the other hand, did not allow for rising unemployment as a consequence, as it did in the Continental countries. Instead, the solution was to bridge the gap by increasing public sector employment and expanding the welfare state.

This perspective likewise neglects the regional level. As such structural shifts and reductions in employment described by Iversen and Cusack take place in different regions at different points in time (see Figure 2), the political pressure to compensate varies according to where economic activity is currently declining. Furthermore, the regional effect of private services’ expansion is very different from that of public sector services. Public sector employment is more easily distributed in an equitable way across space, while private services locate where there is private demand.

The programs studied in the thesis can be inserted into this broader framework of political economy of structural change. From this perspective, the relocation allowances can be seen as a policy aimed at speeding up the process of adjustment in the face of regional decline and expansion. By the same token, regional subsidies are in effect a reallocation of resources from those places facing positive growth towards more distressed regions. This theoretical framework states that when demand for labor in a region

declines, adjustment has to occur through migration, lower wages or public employment creation (through a redistribution of resources). If it is politically undesirable to let wage differences increase, as was the case with the Swedish model, then migration has to adjust instead. However, it is likewise clear that voters in the affected regions then have a strong incentive to form coalitions and lobby for support from the central government. The success of different interest coalitions will depend on the way that they interact with national institutions.

5. Data

In the process of writing the individual essays, I have collected, processed and used several datasets. In this section, an overview of the data used in the thesis is presented and the processes involved in collecting them is described.

County-Level Demographic Data

In Essay I, data on population changes are collected to create a new dataset on county level net migration rates for all 24 Swedish counties over the period from 1945 to 1985. Deriving net-migration rates indirectly from population data has been widely used in both contemporary and historical studies of migration. While the method has some drawbacks, it is often used due to data availability in historical times and for longer time periods (see, for example, van der Woude et al., 1990).

There are two main drawbacks. The first is the uncertainty introduced when calculating net migration as a residual after accounting for observed population changes. The indirect calculation of net migration depends on the quality of the data from which the residual of migration is calculated. If, for example, the counting of the number of births and deaths is underreported while the total population change is correct, net migration will be overestimated since the larger residual will be attributed to this instead of births and deaths. However, in the case of Sweden and during the time period that is studied here, from 1945, there is little reason to believe that these problems are large. Sweden has consistently had high-quality population statistics.

The second problem is the lack of information about the direction of migration and the size of gross-migration flows. Since net migration is chosen as an indicator in most contexts because of its availability for long time periods, as in this case, it would have been preferable to use the type of data on the direction of gross-migration flows between each county that is available after 1963 for Sweden. However, given the lack of studies on regional migration for the period before 1963, this limitation in the data might be defended on this basis. Moreover, the level of net migration has been shown to be more related to the labor market situation than the gross flow to and from a region in previous studies. Given that the main interest in the essay is to study labor market related migration, the use of the net migration measure might be defended also on this basis. Taken together, the fact that I

can use the same consistent measure over such a long time period is unique in the literature.

To produce the dataset, I have hand coded data on population, live births, deaths, the number of immigrants from other countries and the number of emigrants to other countries for each county published by Statistics Sweden (*Statistiska centralbyrån: SCB*) in the publications “Vital Statistics” (*Befolkningsrörelsen*) 1945–1960, “Population Changes” (*Folkmängdens förändringar*) 1961–1966 and “Population Changes, part 3” (*Befolkningsförändringar, del 3*) 1967–1990. The figures on population, births and deaths are based on the parish registers compiled in every parish in the country, which was gathered from the notices sent in by the clergy to the province registration offices and then forwarded to Statistics Sweden. The emigration statistics are based on notices used in the civil registration. For the years up until 1964, the figures are divided between the countryside and the cities for each county in the tables. The information has, in all cases, been converted to the county level since there is no partition of the data for later periods. The same is true for *Stockholm's stad* and *Stockholm län*, which until 1966 were two different counties, but has been aggregated to *Stockholms län* for the whole period. After hand coding and processing the data I arrive at a dataset with a total of $24 * 40 = 960$ observations and since there are five variables: 4,800 individual data entries.

County Level Vacancy, Employment and Labor Income Data

A new and unique dataset on labor market conditions in all Swedish counties for the period from 1945–1985 has also been created for Essay I and Essay II. While many previous studies, both of Sweden and other countries, have used similar measures, this is the first study to do so consistently for such a long time period. This is especially true for the vacancy data. Just as in the case of net migration, the large number of observations that this gives increases the statistical power substantially and makes it possible to estimate long-run effects.

The data on labor market characteristics used to calculate the vacancy rate and labor income per employed consist of data on the number of employed persons, the number of vacancies and total labor income in each county in Sweden between 1945 and 1985. The vacancy data are created by compiling and linking two datasets from the Swedish public labor exchanges. For the period 1963–1985, the information was printed in the publication Labor Market Statistics (*Arbetsmarknadsstatistik*) published by the Labor Market Board (*Arbetsmarknadsstyrelsen: AMS*). Before 1963, the data were collected instead from the annual audits of AMS. For the period from 1945 to 1975, the data refer to the number of vacancies. From 1963 to 1985, the information refers to the number of remaining vacancies each month where the yearly

figures are a 12-month average. The two datasets have been linked using information from the period when they overlap, 1963–1975. The linking procedure is explained in more detail in Essay I.

The labor income data are derived from tax assessments published by SCB on an annual basis. The assessments are based on tax returns made by the taxpayers to local assessments boards. The definition of labor income is assessed income from employment and temporary earnings for physical persons, undivided estates and family trusts. In other words, it is the amount of income before any deductions or taxes paid at the local or state level. The published tables from SCB give this information for each county. The data on employment before 1970 are derived from the same source and refer to persons earning income from business and/or employment. The biggest change to the definition in the tax assessments took place in 1952 when jointly taxed spouses were no longer counted as belonging to the highest earner within the household but were instead reported individually.

To create the series for employment, the data on income earners have been linked to the Labor Force Survey (*Arbetskraftsundersökningen: AKU*) published by SCB using 1970 as the benchmark. Starting in 1970, the AKU was conducted on a monthly basis with employment figures presented at the county level. For each year until 1970, the change in the number of employed has been estimated from the tax assessments and linked to the number of employed in the censuses. The censuses were conducted in 1945, 1950, 1960, 1965 and 1970. The AKU figures for 1970 onwards have been scaled by the difference between the census figure in 1970 and the AKU figure in 1970. Labor income per employed person has been calculated by dividing labor income from the tax assessments by the linked employment series. The vacancy rate is calculated by dividing the number of vacancies by the number of employed. This linking procedure can be problematic when the number of linkage data points is small, and it is hard to assess whether the series is likely to be produced by the same underlying data-generating process. As the linking is only done using 1970 as a scaling benchmark, this series might have such problems. However, since the employment series is mainly used in the descriptive section and as a scaling factor for the vacancy rate and labor income per employed, these problems should be less critical. I have also cross-checked all my results by using population instead of employment as the scaling factor and the conclusions are the same.

Just as in the case of the county-level demographic data, after hand coding and processing the data, the resulting dataset has a total of $24 * 40 = 960$ observations. For each observation, there are three variables (vacancies, employment and labor income), in total $960 * 3 = 2,880$ data points.

Wages

For Essay II, new wage data from three sources, in addition to the data on county labor income per employed described above, have been collected. The first two sets of data refer to the 24 Swedish counties and the second-digit level manufacturing industries from the wage statistics for the period 1963–67 and the regional breakdown of the industry accounts 1968–89. The data from the wage statistics are published in the official publication *SOS Löner*. I have hand coded these from that publication. To the best of my knowledge, these data have not been used before. There is a similar quality for the regional breakdown of the industry accounts, which was published in separate reports and contains, besides wages, information on value added, energy use and the number of firms. These have also been excerpted. These data have not been readily available and I have only found one previous study that used them, and in that case it was the value-added data (Olsson Spjut, 2010).

In addition, I have also collected and hand coded primary material from the Engineering Employers Association (*Verkstadsföreningen: VF*) to analyze the wage structure within the engineering industry. These data consist of quarterly reports for each wage region and several cities reported separately. I have collected data for the second quarter for the years 1956, 1960, 1964, 1969, 1976 and 1980. Each regional report gives information on wages for each occupation- and skill-level pair. The occupations are grouped into 44 categories, and before 1969 there were two skill levels, “manual” and “skilled”, while after 1969 there were three: the “A”, “B” and “C” skill level. The final dataset includes data for Stockholm with suburbs, Gothenburg with suburbs, Södertälje, Eskilstuna, Malmö, Halmstad, Linköping and “Rest of country”, which is broadly consistent with “Region 3” in the wage division in the collective agreement of the 1960s but excludes the cities that are reported individually. These data give a unique insight into the wage structure of a very important industry during the period from the onset of centralized bargaining until its downfall in the 1980s. Data from the same source have previously been used by Olsson (1971) in a study of the regional wage differences within the engineering industry between 1913 and 1963 and by Olsson (1970) to study the wage structure of engineering workers in Gothenburg during the interwar period. Wage material from Engineering Employers Association has also been used recently by Collin (2016) and Collin et al. (2016) to create a regional wage benchmark for the 1910–1913 period. I use this source in a similar way but for a later period than these previous studies. I also use the wage material to decompose the source of the wage differences rather than taking county averages to create regional wages.

In terms of the number of observations, the data from the wage statistics for 1963 and 1967 consist of $22 * 2 = 44$ observations and 299 data entries. The regional manufacturing accounts contain 151 observations for each year, so for all years (1968–1989) there is a total of 3,322 observations. In addition

to the wage observation calculated from data on the total blue-collar wage bill and hours worked, for each county-industry-year there is one data entry for value added, horse power usage and number of firms; in total there are $151 * 22 * 5 = 16,610$ data entries.

Relocation Allowances and Registered Unemployed

In Essay IV, primary material from the County Labor Market Board of Västernorrland on persons granted relocation allowances in 1965, 1970 and 1975 was used as well as data on persons registered as unemployed at the local labor exchange office in November of 1965 and 1970. The lists from the local labor market board are printed as reports for every month and were sent in from each local labor exchange office. The reports on relocation allowances for 1965 give information for each person: the date of birth, occupational code before move, sex, sector of the new job and receiving county. In addition to this information, the lists for 1970 and 1975 also give accounts of the occupation after the move and the sector the person belonged to before the move. The raw tables were sent to the Royal Labor Market Board in Stockholm from each County Labor Market Board but have been culled from the central archive. Västernorrland appears to be the only county where they have been stored in the local archive, and this is likely the reason why they have not been used previously. These data are unique as they cover individuals and relate to a period before the 1970s.

I have hand coded these data into a computer-readable form. The number of entries on persons receiving relocation allowance that I have coded is 6,631 and the number of entries on unemployed persons is 3,920; in total, there are 10,551 observations. In sum, these data contain 124,284 individual data entries.

Regional Subsidies

In Essay III, we use data from the STINS database to calculate the amount of regional subsidies as a share of GDP between 1965 and 1980, as well as the amount of subsidies that went to different sectors in the Norrland and the Forest counties during the same period. The STINS database covers all decisions on regional subsidies taken between the time when the program was introduced in 1965 to 2000. The information was originally collected by VINNOVA and its predecessors and was made available to us from the National Archive (*Riksarkivet*). The data were stored in an old format, so an effort was made to rearrange the data to get them into a readable format and a modern data structure. The source gives rich information on the name, county, municipality, parish, sector, workplace number, parent company of the firm receiving support, as well as information on the type of decision and payout

Table 1. Summary of Data Sources Used in Each Essay.

Essay	Hand coded				Database
	Demographic	Vacancies and Labor Income	Wages	RA and Unemployed	Regional Subsidies
I: Regional Migration					
II: Solidaristic Wage Policy					
III: What can the State...					
IV: Relocation Allowances					
Number of observations	960	960	3,322	10,551	
Number of data entries	4,800	2,880	16,610	124,284	

Note: This table presents how the data sources has been used in the individual essays.

Demographic refers to the county-level demographic data used to calculate net migration rates, *Vacancies and labor income* to the county-level vacancy, employment and labor income data, *Wages* to the material from the wage statistics, the regional manufacturing accounts and the Engineering Employers Association and *RA and unemployed* to the information from the County Labor Market Board of Västernorrland on persons granted relocation allowances and those registered as unemployed at the local labor exchange office.

of grants and loans. Grants were given as a fixed payout without any need for repayment. The loans, meanwhile, were subsidized but expected to be repaid on a certain time interval. These repayments can be followed in the data, along with whether a company went bankrupt or otherwise was unable to pay. Since it contains all decisions, it can be used to assess the spatial and temporal allocation of the subsidies.

Summary of Data Sources and Source Criticism

Table 1 summarizes the use of the different sources in each essay. Essay I uses the demographic data and the data on vacancies and labor income by county. In Essay II, the labor income and employment data are used to calculate dispersion in regional income per employed in addition to the information on wages. In Essay III, we use the STINS database with information on regional subsidies. Finally, in Essay IV, demographic data was used to compare net migration from Västernorrland with the other Norrland counties and Metropolitan counties in addition to the primary material on persons receiving relocation allowances and those registered as unemployed at the public labor exchange.

A few comments can be made regarding the quality of the data. The data on manufacturing wages and employment originate from forms answered by individuals and companies and was collected from publications made by SCB, the official statistics agency in Sweden. In the case of surveys, there could be problems with incorrectly specified information from the respondents. There could also be an issue with low response rates from individuals and companies

in certain surveys. The wage statistics and the labor force survey that I use is based on such forms. The data on population changes, the tax assessments and vacancies were also collected from publications by SCB, but since it was based on information for the total population, issues of sample size are not relevant. There could, however, be issues with, for example, the information on income from assessments if tax evasion was widespread. There could also be some missing individuals in the population statistics; internal migrants especially might be undercounted.

The data on wages from the Engineering Employers Association differ from the SCB data. In this case, the data come from information on wages sent in by private companies to a private organization of which they were members. The VF data have been used in many previous studies, and the organization's effort of collecting wage data has a long history. However, the individual companies might have an interest in providing incorrect information if they are afraid that competitors would benefit from this information. Yet, as far as I can assess, the organization never published information on wages for individual member companies. Instead, they provided compilations for "wage regions" and certain cities, which are the data used in Essay II. A testimony to this is that they never published any compilation for the city of Västerås even though it was a large city in terms of employment in the engineering industry. This is probably because the company of ASEA constituted such a large part of this information that it would have been possible to infer that company's wages from it. This might have decreased the individual companies fear that their information could be used by competitors or union representatives as a weapon against them.

The data used in Essay IV also deserve special attention. These data are excerpted from primary material on persons receiving any form of relocation allowance. This information was originally collected for use within AMS and the forms were sent in from each local County Labor Market Board. While it was mainly meant for internal use, the forms are structured in such a way that interpreting the information is straightforward. The categorization followed the definition used in the laws regulating the operations of AMS or was otherwise possible to find in internal documents.

6. Methods and Delimitations

The four main methods used in the thesis are panel data regression, regression-based inequality decomposition, shift share analysis and multinomial regression. In addition to discussing them here, this section also presents the delimitations of the thesis.

Panel Data Regression

The main method used in Essay I is panel data regression. The method differs from regular cross-section and time-series regression, as it includes components of both these methods. In panel data, several cross-sections are followed over time. In my case, there are 24 counties over 45 years. This makes it possible to account both for cross-sectional and time-series variation. In practice, the panel model is estimated with the 24 counties using fixed effects for the cross-sections, thereby controlling for all time-constant differences across the counties such as demography and labor force participation. The relative vacancy rate and relative labor income are then entered as independent variables and an average (pooled) effect is estimated using all of the data for the 24 counties.

To assess how the response of net migration to the relative vacancy rate and relative labor income changed over time, three partly overlapping 20-year-long sample periods are used. They cover the periods 1945–65, 1955–75 and 1965–85, respectively, and the same model is estimated for each sample period. The long data series makes it possible to do this, while still retaining enough observations for the times-series component in the sequences to be precisely estimated. When studying migration, the time factor is very important; migration as a decision is likely to adapt slowly to economic changes. Hence, I am careful to take full account of this time dynamic when estimating the impact of local labor market conditions on regional migration, which is also made possible by the panel data structure.

One drawback of my approach is that partly overlapping periods have to be used, which makes it possible to only see whether the change in the migration response was big enough to be statistically significantly different. A number of robustness checks are used, however, to assess whether the results are sensitive to the specific choice of time periods and the inclusion of certain counties in the sample. In addition, the large amount of observations, both from the cross-sections and the time series, included in my data raises the statistical power of

the regressions. This makes it possible to generate more precise estimates and allows for the partitioning into time periods. Compared to previous studies on regional migration in Sweden, this is an improvement.

Inequality Calculation and Regression-Based Inequality Decomposition

In Essay II, wage dispersion is calculated using different inequality indices. In the essay, the focus is on the variance of logs of wages due to its unique features when it comes to decomposing the factors explaining inequality, but the Gini coefficient, the Theil index, the standard deviation of logs and the coefficient of variation are also calculated as robustness checks. The conclusion is that the correlation between the various indices is very high. Inequality indices are a useful tool for graphing and analyzing the evolution of inequality for a specific variable. The assumptions embedded in each inequality measure affect how inequality is viewed, however, and each index has been developed to serve a specific purpose. My approach is to cross-check the sensitivity of the inequality measure by comparing them, and it is reassuring that they give such a uniform picture.

The regression-based inequality decomposition is a method used to analyze what factors accounted for inequality at different times. It is based on the notion that income, or in my case wages, is generated by different characteristics such as skill, occupation and region. An income-generating equation is then estimated where the wage is determined by these factors. By calculating this association, it is possible to calculate how much each factor contributes to overall wage dispersion.

A counterfactual wage distribution, where the return (the coefficients in the regression) for different characteristics does not change but the allocation of those characteristics are allowed to change, is also calculated. This makes it possible to assess how much of the change in the wage dispersion is due to changing return to characteristics and how much is due to changes in the dispersion of those characteristics. This is a very effective tool for analyzing both the reasons for wage inequality at a specific point in time, and to understand what drove the changes over time.

Shift Share Analysis

In Essay III, we use shift share methodology to analyze and decompose employment growth for all Swedish counties during the 1965–1985 period. A shift share methodology makes it possible to decompose employment growth into its underlying components. In the essay, we break it down into three components: national growth, industrial structure and a regional shift. The national growth component captures the trend in employment that is shared

in the economy. The industrial structure component captures the growth that results from the national change in the industries that the county specializes in. Finally, the regional shift component, which is calculated as a residual after deducting the other two components, captures the shift in regional employment towards the county that is not due to either national growth trends or the industrial structure.

The shift share method is useful to get an idea of the elements that explain a region's overall employment experience. In the essay, we are interested in seeing whether the shift in regional policy during the early 1970s had anything to do with the positive employment trend in the Forest counties during that decade or if it could be better explained by national growth patterns or the industrial structure. By calculating the regional shift component in these counties' employment growth during the 1970s, we can get a good picture of the possible role that the policy may have played.

Multinomial Regression

In Essay IV, multinomial regression is used to disentangle the factors that influenced a migrant's decision of the sector and region to migrate to with the support of the program for relocation allowances. If there are multivariate differences in the choice of sector and region, such characteristics cannot be easily observed in cross tabulation. If the sample is split according to progressively smaller categories, the individual cells becomes very small. In order to assess the role that a specific variable has on the decision of the individual, while holding the other variables constant, multivariate regression is necessary.

In the case where the outcome variable is nominal, that is when there is no natural ranking of the choices, multinomial regression is appropriate. In linear regression, the dependent variable Y is assumed to be continuous; using it when estimating nominal outcomes would produce biased results. In multinomial regression, the probability of an individual making a specific choice relative to some baseline choice is modeled as the outcome of individual characteristics such as age, sex etc. Therefore, by examining the effect of a specific variable, I can assess how they affected the choice of the individual while holding constant all other variables. This makes it possible to account for demographic differences across, for example, occupational groups that influence the patterns observed in cross tabulation.

One drawback of using multinomial regression is that there is no average effect; instead, the effect of X on Y is dependent on the level of the other variables. There are several ways to deal with this depending on the research context. In the essay, I have chosen to hold all other variables at their mean in the sample. Thus, the marginal effect of a specific variable as presented

in the essay is true for a person with the mean characteristics of the whole population.

In the essay, multinomial regression is used to complement the results from cross tabulation. The regression analysis also allows me to see whether the probability of the different outcomes changed between 1965, 1970 and 1975, while holding all demographic characteristics constant. This is very useful for understanding if there was any general shift over time in the way that the relocation allowances were used.

Delimitations

The thesis will be limited both in time and in geographical scope. First, I will focus on the period from the end of the Second World War until 1990. There have, naturally, been several important developments of the issues treated in the thesis before and after that time. One such decisive event was the economic crisis in the early 1990s. This event shaped many of the changes in Swedish labor markets that have taken place since then (For example, Magnusson, 2004, has described these fundamental changes). The return to mass unemployment is one such change that affected power relations and working conditions. In the same way, my starting point is 1945. This, likewise, forces me to ignore important events, since several of the phenomena that are strongly associated with the Swedish model trace their origins to the interwar period. The study by Johansson (1989) shows, for example, how the Swedish system of consensus bargaining began with negotiations between representatives from LO and SAF in the 1920s. The same is true for the active labor market policy. Many of these measures, such as the relocation allowances and the retraining programs, were pioneered during the Second World War. In addition, Ullenhag (1971) has shown that the idea of a solidaristic wage policy originated in discussions within the labor movement during 1920s and 1930s. Consequently, by limiting the study to the postwar period it will not be possible to analyze these deeper historical roots.

Nonetheless, delimitation to the period from 1945 to 1990 was both on a practical and an analytical basis. To analyze developments during the interwar period, as well, would be too big of a task and would obscure the central question of interest here. While my belief is that the processes that I study must be analyzed in a longer perspective, a time period that is too long could likewise obscure the central themes that I am interested in. By including the early postwar period, I will still be able to study the events of the 1960s and 1970s from a much wider perspective than most previous studies, and it will be possible to place these events in a long-run context.

In addition to the delimitation in time, I will not apply a comparative perspective on the issues treated in the thesis. Such an approach could, of

course, have added important perspectives. A comparative study would, for example, have made it possible to put the Swedish experience of labor market and regional policy in the context of the development in other countries. However, most comparative studies of Swedish policy during the same period mainly relate to the national level. I will argue that these studies miss important forces that have been important in shaping the growth process in Sweden and the interconnected issue of political economy. In addition, focusing on the case of Sweden is warranted due to its very unique history of state intervention in the labor market. What makes Sweden special is not the introduction and expansion of regional subsidies in the later phase of the postwar period; instead, Sweden is uniquely the only country where policy has actively encouraged out-migration and structural change to such a large extent. Thus, a study of Swedish labor market policies in a longer perspective can hopefully give an important contribution to the discussion of these processes for comparative research.

7. Essay Summaries

This section provides a summary of each of the four essays. This is followed in the next section by a discussion of the results of the thesis and conclusions.

Essay I: Local Labor Markets and Regional Mobility in Sweden: Evidence from New County Level Data, 1945–1985

The relationship between local labor market conditions and regional migration has been much discussed within research. A rapid response of migration to local labor market conditions is generally believed to be very important in the growth process. In Sweden, this has been especially contended in light of the Swedish model and its stress on regional mobility. The model was built on the belief from the two architects, the trade union economists Rehn and Meidner, that migration was much more responsive to local labor demand than to income differences between regions. This provides a background to the design of the solidaristic wage policy. It was meant to force labor to move by destroying local employment while at the same time reducing the income differences across places and, therefore, indirectly the incentive to move in order to receive a higher wage.

Previous authors have attributed the decline of migration in the 1970s, compared to the 1960s, both to the downfall of the Swedish model and the success of it. Some authors have argued that steps away from the mobility-oriented policies, by the introduction of regional policy, increasing social transfers and the expansion of the public sector, explain the decline. Others have argued instead that the compression of wage differentials across places became so strong that there was no longer any incentive to move. To understand the importance of these factors, a longer historical perspective is necessary. It is not possible to look only at the change in migration between the 1960s and 1970s, without asking whether migration declined from an historically normal level in the 1960s or whether the 1960s was special in the broader context of the whole postwar period.

In this essay, previously unused information has been collected and a new dataset on net migration rates across Swedish counties has been created that is comparable for the whole of the postwar period starting in 1945. I have also collected new data on local labor market conditions and created two indicators,

also comparable for the whole period: county vacancy rates and average labor income per employed. Using these data, it is possible to test whether changes in the total level of migration at different times was due to different responses to local labor market conditions, or whether migration was higher at some points in time simply because labor demand and income were more unevenly spread across space. In other words, if migration becomes more responsive to the relative vacancy rate or to relative income, total migration increases as a result. In the same way, total migration can increase simply because the difference in the vacancy rates or the difference in relative income increases.

To examine the effect on net migration of the relative vacancy rate and relative labor income per employed, I estimate a time series cross-section model. This model makes it possible to use the information from the 24 counties when estimating the net migration equation. To analyze whether the responsiveness of net migration to the vacancy rate and labor income per employed changed over time, I estimate the same model for three partly overlapping sample periods: 1945–65, 1955–75 and 1965–85.

My results indicate that relative labor income per employed has not been a significant driver of net migration at any point in time. The relative vacancy rate, on the other hand, has been a significant factor for migration in all periods. Most importantly, however, there is no statistically significant difference in the response of net migration to the relative vacancy rate between the periods as far as I can estimate using these data.

These results lend support to Rehn and Meidner's idea of a stronger response of migration to local labor demand than to relative income differences. This also means that the decline in income dispersion across counties cannot explain the decline in migration in the 1970s. It is additionally not true that the economic policies in the 1970s made migration less responsive to local labor market conditions. Instead, the rate of migration at different times—high in the 1960s and much lower in the 1970s—seems to be the effect of how dispersed local labor market conditions were at different times. This could, in turn, be the result of exogenous structural change as well as changes in economic policy. Thus, by studying regional migration using a longer time period and with more statistical power than previous studies, I have been able to give a new perspective on the pattern of population movements in Sweden during the postwar period.

Essay II: Regional Wages, Economic Restructuring and the Solidaristic Wage Policy in Sweden

One of the central elements of the Swedish model was the solidaristic wage policy which sought to create a wage structure in line with the principle of “equal pay for equal work”, in order to reduce all nonobjective wage differences between branches and regions. The deliberate consequence would

be a release of workers in low productivity industries and regions. Between 1956 and 1983, frame agreements between the peak organizations on the Swedish labor market, LO and SAF, were negotiated with a varying degree of egalitarian content.

Several authors have also attributed the economic restructuring and regional migration that peaked in Sweden during the 1960s to this policy. However, there is little evidence on the actual evolution of regional wages and wage inequality during this period. Some authors have simply assumed that wage inequality declined in a similar way during the 1960s as in the 1970s. Likewise, previous studies of regional wages have mainly looked at incomes for benchmark years or an earlier and/or later time period.

It is, likewise, not clear whether the solidaristic wage policy was the actual driver behind the evolution of wage differences. Some authors have argued that regular market forces can go a long way in explaining the decline in wage dispersion. It has also been argued that the frame agreements at the national level only entailed large reductions in wage dispersion after 1964 and most intensely between 1969 and 1976, when migration rates had already started to decline

In this essay, the aim is therefore to reach a better understanding of the role of the solidaristic wage policy in the evolution of regional wages and economic restructuring in Sweden by asking two questions. First, when did regional wage differences decrease? And second, was this the effect of the solidaristic wage policy? To answer the first question, previously unutilized sources on regional labor income, manufacturing industry wages at the two-digit level and primary material on wages from the Engineering Employers Association are used. To answer the second question, a regression-decomposition framework is used to analyze the contribution of different factors to wage dispersion over time.

The regression-based inequality decomposition is a method used to analyze the factors that account for inequality at different times. The method is based on the notion that incomes or wages are generated by different characteristics such as skill, occupation and region. An income-generating equation is then estimated where the wage is determined by these factors. By calculating the association between these independent variables and wages, it is possible to calculate the degree to which each factor contributes to overall wage dispersion. By simulating a counterfactual wage distribution where the returns (the coefficients in the regression) to different characteristics are not allowed to change but the allocation of those characteristics among the population are allowed to change, it is also possible to assess how much of the change in wage dispersion was due to changing return to characteristics and how much was due to changes in the dispersion of characteristics.

The dispersion in labor income per employed shows a very stable pattern during the late 1950s and early 1960s, but 1968 is a clear breaking point. Between 1968 and 1976, the employment-weighted variance of logs of

labor income per employed decreases from 23 to 6, a drop by 74% in the span of nine years. The same basic pattern is also true for the dispersion of blue-collar wages across county-level, second-digit manufacturing industries, namely a fairly stable wage structure before 1968 and followed by a sharp decrease. This pattern turns out to be mainly driven by the inclusion of the Engineering industry. When this industry is excluded from the calculation, dispersion decreases much less and only between 1968 and 1971. A more detailed analysis of the evolution within the Engineering industry is, therefore, made using primary material from the Engineering Employers Association (*Verkstadsföreningen: VF*). Using this material, it is also possible to go back as far as to 1956. Within Engineering, wage dispersion is stable between 1956 and 1964 and decreases slightly between 1964 and 1969. Between 1969 and 1976, the decrease is massive, dropping from 13 to 5, a decline by 58% in the span of eight years.

The results from the decomposition show that the main explanation for the decline in wage dispersion in the regional manufacturing industry data after 1968 is the region effect. Within Engineering, the region effects explain the entire decline before 1969, while after 1969 the decrease is taking place across all three dimensions that are measured: region, occupation and skill. When decomposing the changes into a price and a composition effect, the results further indicate that a decrease in the return to the various characteristics explains most of the changes across the datasets and time periods. However, it is only after 1969 that the decline in dispersion takes place for all three factors, region, occupation and skill, suggesting that it was mainly during this period that the solidaristic wage policy was the main impetus for the changes in the wage structure.

These results give a new perspective on the wage structure in Sweden during the era of the solidaristic wage policy. While several authors have connected the peak in regional restructuring and migration during the 1960s to the solidaristic wage policy, this essay shows that the policy was most likely not important during the majority of this decade and that wage dispersion started to decrease significantly only later when regional migration had already started to decline.

Essay III: What Can the State Do for You? Relocation Allowances and Regional Subsidies in Postwar Sweden*

It has been suggested that Swedish policy during the early postwar period was strongly directed towards mobility-increasing expenditures—most notably relocation allowances—aimed at moving labor from north to south. While this view has dominated the academic discussion on labor market policy, there is little direct evidence on the actual importance of these measures in the overall policy mix.

In this essay, we study this by contrasting the implementation of the active labor market policy and the regional policy. The question we ask is: *How could it be that Sweden, internationally proclaimed as a role model of mobility-oriented labor market policy, implemented a system of regional subsidies aimed at reducing regional labor flows?*

We start by collecting and processing data on the expenditures on these two policy programs. From the STINS database gathered by VINNOVA, we have extracted information on all regional subsidies paid out to companies between 1965 and 1980. We have also collected data on the amount paid to persons who were granted relocation allowances. From these figures, we have then calculated the amount spent on each program as a percentage of GDP. It becomes clear that soon after the program of regional subsidies was introduced in 1965 it started to account for a larger share of public expenditures than the relocation allowances.

The result from our shift share analysis also suggests that this policy change had real consequences. During the 1970s, the fortunes of the Forest counties were reversed, and the employment decline of the 1960s was transformed into employment growth above the national average. The shift share also showed that this was largely the result of a “regional shift” of employment towards the Forest counties, especially the Norrland counties. This fact suggests that the regional subsidies, alongside other policies, introduced in the early 1970s and directed at conserving the regional population structure were successful. This went completely against the ideas behind the Rehn-Meidner plan and the relocation allowances. When they were introduced, the objective was to contribute to the movement of workers from the Forest counties to southern Sweden.

In our account, the background to the relocation allowances and the Swedish model was LO’s need to solve its internal organizational dilemma in the early postwar period. Unemployment fell to a record low in the early

* This article was co-authored by Jakob Molinder, Jan Ottosson, Lena Andersson-Skog and Lars Magnusson. The four authors framed the research question and planned the article together. The empirical research and calculations were done by main author Jakob Molinder and the drafting of the article by Jakob Molinder and Jan Ottosson. All four authors critically revised the paper before it was published.

postwar years and the inflationary pressure on wages and prices grew. This made Rehn and Meidner doubtful about the prospects of wage restraint as a way to maintain low inflation and export competitiveness. By merit of its large size and its alliance with the Social Democratic government, LO had agreed to a wage freeze in 1951, causing wages and prices to explode once wage negotiations were once again let free. Rehn and Meidner started to formulate an alternative path, which was first presented to the LO congress in 1951 and fully developed to the LO congress in 1961. This program was made into government policy in the late 1950s, and the relocation allowances were introduced in 1959.

LO was a standard case of an encompassing organization, meaning that its decisions affected the whole economy. LO organized a majority of all blue-collar workers and the centralization within the organization was far reaching. Hence, the decisions it made, both positive and negative, would affect the whole economy and, therefore, influence the welfare of its members. The reason for LO to engage in an encompassing strategy was further enhanced by its alliance with the governing party. The Social Democratic government saw this as a way to cater to the central leadership of the LO. There was no way that the LO leadership could pursue wage restraint without losing members. On the other hand, it would be blamed for the runaway inflation that would result from not doing so. The relocation allowances were thus used as a policy instrument in order to adhere to the Rehn-Meidner plan.

The regional subsidies, on the other hand, were pressured by firms and workers in regions with declining employment and those negatively impacted by restructuring. The introduction of regional subsidies in the 1960s was the result of rank-and-file demands from party members and voters in the Forest counties and fueled by the electoral competition from the Center Party. It is clear from our review of the political debate at the time that the Center Party had been against the Rehn-Meidner plan from the beginning and had been the main proponent of regional subsidies in parliament. The party also made large electoral gains throughout the 1960s and 1970s. The Social Democratic leadership took this a sign that change was needed. During the party congress in 1969, and most clearly with the government proposition in 1972, the stance on regional subsidies changed dramatically. The affiliation with the Rehn-Meidner plan became increasingly burdensome. The introduction of subsidies to the regions where labor was previously meant to move from was perceived as the only way to keep electoral support.

Several changes also took place that increased both the possibility and the necessity to pay more attention to local opinions calling for localization policy. After the constitutional change in 1970, the distribution of legislative power changed rapidly. Before the reform, the Second Chamber had held elections every four years and elections to the First Chamber only every eight years. With the new constitution, there was only one chamber with elections every three years. This, in combination with the close election

results after 1970, made the possible defection of a single member of any party very important for achieving majority. This created more opportunities for members of parliament to observe their local interest more directly. The national parties had to adjust their policies so that no lone member would be unable to defend the government's decision in their home region. Additionally in the new law, election to parliament and to the municipal council took place simultaneously. This increased the pressure on national policy makers to cater to the local opinion, especially if the local election was close.

Essay IV: Implementing National Structural Change at the Local Level: The Case of Relocation Allowances in Västernorrland, 1965–1975

Since the process of economic growth and structural change affects some regions positively and some regions negatively, it requires large migrations from places with a decline in jobs to those with growing employment. In the United States, this adjustment has taken place mainly by out-migration and lower wages, while in Continental Europe migration has played a lesser role, which has come at the cost of regional polarization in unemployment and labor force participation rates. In this context, the Swedish model has been seen as a possible third alternative to the US model of low unemployment at the cost of large income differences and to the European model with less inequality but at the cost of high unemployment because of low labor mobility. An important part of the Swedish model was the relocation allowances that were introduced on a large scale in the late 1950s. However, very little has been known about the actual implementation of this program, especially regarding what role it played during the large out-migrations from northern Sweden in the 1960s.

In this essay, the usage of the program is studied through a case study of the county of Västernorrland during the late 1960s and early 1970s. To study the implementation of the program, previously untapped material from the County Labor Market Board of Västernorrland on all persons receiving any form of relocation allowance in 1965, 1970 and 1975, is used as well as information on persons registered as unemployed at the public labor exchange in Västernorrland in November of 1965 and 1970 and information from the population and housing census.

This dataset has allowed me to track, at the micro level, who moved with an allowance and in what county and sector that they ended up after the move. I can observe this from the peak in out-migration in the mid-1960s to the turnaround of migration in the 1970s, when Västernorrland along with the other Norrland counties instead became net receivers of internal migrants. The information from both the relocation allowances and registered unemployed

at the labor exchange office gives a possibility to compare the groups at a disaggregated level.

In public policy, the emphasis on labor mobility through relocation allowances was most intense until the 1970s, but after 1970 there was a shift in government policies, reflecting a will to stop the outflow of migration from the north and to conserve the existing regional population structure. This took the form of an expansion of subsidies to regions with declining populations as well as a reorientation of the active labor market policies. After this reorientation, there was instead a will to direct the relocation allowances to movements within counties and to reduce the flow of migrants from north to south. In addition, the original motive of the program—to increase regional mobility—was gradually shifted towards a more redistributive aim.

In the debate during the 1960s and early 1970s, when interregional migration was at its peak, the relocation allowances were both praised as well as criticized for being an effective program for aiding in migration from north to south. Evaluations of the effectiveness of the program for later time periods in Sweden and for other countries have shown that there usually is a strong selection into these programs by young persons in sectors with already positive employment prospects. A question has, therefore, been whether the same pattern could be found for the 1960s or if the Swedish program at this time was more effective in targeting persons in declining sectors who were less mobile and often less likely to find a job on the local labor market. A related question was also whether the program became less insistent on interregional migration and more focused on intraregional migration in line with the will expressed by the government after 1970.

To examine the patterns of allowance migration in Västernorrland, two complementary approaches are used. The first is to examine the general patterns by cross tabulation for ages, sexes, industries and destination regions. This makes it possible to get a good overall view of the patterns and to compare the allowance migrants to the general workforce and to the unemployed. The second approach is to use multinomial regression. By using multinomial regression, I can relate the decision of the allowance migrants to several underlying variables (age, sex, occupation and year) instead of just a few such variables, as the case with cross tabulation.

The result from the cross tabulation indicates that the allowance migrants in Västernorrland were substantially younger than the unemployed. In fact, the age structure of allowance migrants follow very closely that of regular migrants, even though female allowance migrants were slightly older than regular female migrants. Thus, there was a clear discrepancy in terms of age between the characteristics of those registered as unemployed and those receiving relocation allowances, suggesting that the program was not very effective in targeting older unemployed persons. Instead, the general belief, referred to by Westerlund (1995), that the program was mostly used by young

people seems to be confirmed also for this earlier period. The large amount of newly examined students who used the program also underscored this point.

The same was true for sectors. It is clear from the cross tabulation that some sectors, such as engineering and other services, were overrepresented in the number of allowance migrants compared to the number of unemployed, while some sectors such as agriculture, construction and pulp and paper were underrepresented. Judging by the sectors that were over- versus underrepresented, it appears as if the employment situation in the sector outside of Västernorrland played a larger role than the unemployment situation in the initial sector within the county. Therefore, the policy does not seem to have been particularly effective in selectively migrating unemployed workers from declining sectors into expanding ones in other parts of Sweden. However, there could also be differences in composition of age and sex that affect these patterns across sectors.

Interestingly, from this analysis I can conclude that there was no difference between sexes after controlling for age and occupation. There was, however, an increase in the probability of staying in the county after age 50 and substantial differences between different occupations. In line with the policy reorientation during the early 1970s, the absolute number of allowance migrants as well as regular migrants from Västernorrland fell by about 20% between 1970 and 1975. In the regression analysis I test whether there was any change, after controlling for age, sex and occupation, in the probability of staying in Västernorrland and find that there was no such change. Therefore, judging from this evidence, the policy change was not successful in shifting more of the allowance migration within the county.

The main selection in the process of migration seems instead to have been when deciding whether to move or not in the first place. The share of all migrations that took place using the relocation allowances remained constant at 20%, and within the group of allowance migrants there was no change in the probability of moving away from the county. Taken together, this suggests that something other than the individual willingness to migrate was responsive for the decline in out-migration from Västernorrland in the 1970s. This could also speak to the broader question of the consequences of the general shift in regional policy around 1970. While there was a reorientation of policy towards conserving the regional population structure through subsidies, the responsiveness of migration to local labor market conditions does not seem to have changed. Instead, it was the improved labor market situation in the northern counties that stopped the out-migrations.

8. Discussion and Conclusions

In this section, a concluding discussion of the results of the four essays in relation to the aim of the thesis is presented. The aim was to improve on the understanding of three central aspects of the Swedish model: interregional migration, wages and labor market policy. In the beginning of the thesis, four questions were formulated that have guided each respective article.

The first question that related to the first theme of *interregional migration* was: *How did the migration response to local labor market conditions evolve before, during and after the golden years of the Swedish model?* In Essay I, the conclusion was that the proposition of Rehn and Meidner that regional migration was more responsive to local labor demand than to regional income differences is supported by my analysis. Most importantly, I found that the decline in interregional migration after 1970 could not be explained by a fall in the responsiveness of migration to local labor market conditions. Therefore, in contrast to much of the previous literature, I conclude that changes in economic policy during the 1970s do not explain the decline in migration during this decade. However, economic policy could well have played an important role for the patterns of migration that I observe but through another channel. This would be the effect that economic policy had on the dispersion of labor demand across space. The expansion of the public sector and of regional policy probably made labor market conditions more equalized across the country.

The second question, relating to the second theme of *wages*, was: *What were the effects, if any, of the solidaristic wage policy on regional wages?* In Essay II, this question was analyzed through a collection of previously unused data on regional wages from four sources: tax assessments, regional wage statistics, regional manufacturing accounts and wage material from the Engineering Employers Association. To analyze whether the solidaristic wage policy was actually the causal factor behind the evolution of the wage structure, the study then proceeded in two steps. First, wage dispersion from the datasets was calculated and its evolution over time was compared. The conclusion was that wage dispersion was fairly stable during the late 1950s and early 1960s but started to decline rapidly from the end of the 1960s. Second, wage inequality was decomposed into its different components. The conclusion from the calculation on the engineering data was that the small decrease in wage dispersion before 1969 was driven entirely by a decrease in the regional effect on wages. After that time, however, the decline was caused by a decrease in the effect of all the three factors that were measured:

region, skill and occupation. This suggests that the solidaristic wage policy was likely the causal driver of the change at this time. However, as is clear from the evolution of wage dispersion, the solidaristic wage policy cannot explain the peak in internal migration during the 1960s. When the frame agreements started to affect the wage structure in a major way from the late 1960s, migration had already started to decline. These results contrast previous research that has argued for a major role of the solidaristic wage policy in the rapid economic restructuring of the 1960s.

The third question, the first of two questions relating to the third and final theme of *labor market policy*, was: *How could it be that Sweden, internationally proclaimed as a role model of mobility-oriented labor market policy, implemented a system of regional subsidies aimed at reducing regional labor flows?* In Essay III, we study this by contrasting the implementation of the active labor market policy to the regional policy. It becomes clear that a decisive policy shift took place around 1970 replacing the previous focus on mobility from north to south towards policies directed at stimulating employment in those counties that had experienced employment losses.

We argue that the driving force behind the policy shift was the way that the voter-maximizing behavior of the Social Democratic government interacted with the changes in the political arena. The impetus for the relocation allowances was the encompassing nature of LO, a key ally of the Social Democratic government, and the need to retain export competitiveness through low inflation. The regional subsidies were later introduced as a response both to declining support in rural regions for the Social Democrats and the electoral competition from the Center Party. Importantly, the voter-maximizing strategy of the Social Democratic government interacted with the political and institutional environment. The new election law in 1970 and political competition from the Center Party pushed the Social Democrats to shift their policies on regional subsidies. By contrasting the active labor market policy and the regional policy, this study have been able to uncover new processes that have been largely ignored in the previous literature.

The fourth and final question, and the second question relating to the theme of *labor market policy*, was: *What were the characteristics of those who moved with support from the program of relocation allowances and what does it reveal about the role that the program played for the large migrations during the 1960s and the subsequent decline in interregional migration?*

To answer this question, I conducted a case study in Essay IV of the county of Västernorrland and compiled a unique dataset on persons granted relocation allowances in 1965, 1970 and 1975. This was also complemented by material with information on persons registered as unemployed at the public labor exchanges in November of 1965 and 1970. This dataset allowed me to track who moved with an allowance during those years and in what county and sector they ended up after the move. This could be observed from the peak in out-migration in the mid-1960s to the turnaround of migration in the 1970s,

when Västernorrland along with the other Norrland counties instead became net receivers of internal migrants. The analysis showed that the allowance migrants were substantially younger than the unemployed and that the age structure of allowance migrants followed very closely that of regular migrants. The same was true for sectors. Judging by the sectors that were over- versus underrepresented, it appeared as if the employment situation in the sector outside of Västernorrland played a larger role than the unemployment situation in the own sector within the county. Therefore, the policy does not seem to have been particularly effective in selectively migrating unemployed workers from declining sectors into expanding ones in other parts of Sweden, even during the 1960s.

In line with the policy reorientation during the early 1970s, the absolute number of allowance migrants as well as regular migrants from Västernorrland fell by about 20% between 1970 and 1975. However, there was no increase in the share of allowance migrants staying within the county, even after controlling for other characteristics, and the share of migrations that took place using the program remained unchanged at 20%. Therefore, while the policy reorientation appears to have been successful in decreasing total out-migration, there was no general change in the selection into the program or in the usage of it.

Taken together, the empirical results presented in this thesis bring a new perspective on the Swedish model. By closely examining the interaction between the aspects that have been said to have achieved the rapid regional restructuring of the 1960s and placing the events of this decade in a long-run perspective, I have been able to show that many previous perceptions need to be revised.

A first finding has been to describe and detail the extent of structural and regional change during different eras of the postwar period. The long-run perspective in the thesis on these issues makes it possible, for the first time, to see how the actual extent of regional restructuring changed over time. As the evidence in Essay I, as well as in Essay III, showed, the 1960s did see an unprecedented rate of uneven regional change as indicated by the relative employment trends across regions and in the rapid increase in the concentration of vacancies that the Hoover index revealed. These changes were of a much smaller magnitude both before and after the 1960s.

Starting from this knowledge of the actual patterns of structural change, it is possible to discuss the factors that might have influenced these developments. Beginning with the question of interregional migration, my results indicate that there was nothing particular about the golden age of the Swedish model in the way that internal migration responded to local labor markets. Neither was there any decisive shift in the responsiveness of net migration to local labor market conditions that can explain the decline in interregional migration after 1970. Thus, my results suggest that the searchlight should be pointed at the regional consequences of structural changes, how it affected regions

differently over time and to the role that government policies played in directing demand for labor across space.

What can explain the rapid structural change during the 1960s? Several authors have pointed to the solidaristic wage policy and the supposed leveling of wages that it entailed after centralized wage bargaining began in 1956. This is the question that I addressed in Essay II. My results showed that the wage structure during the peak of regional restructuring during the 1960s was, in fact, very stable. The only change that I could find evidence for was a decrease in dispersion across regions in the Engineering Employers Association wage material. There was no similar decrease in average earnings across regions during the same period. These results are very important since they suggest that the solidaristic wage policy is not the explanation for the high rate of structural change during the 1960s. In the late 1950s and early 1960s, the distributional profile in the frame agreements was much less radical than it later became, and the central organizations was unsuccessful in enforcing the distributional profile that the agreements did entail. Since the central agreements lacked mechanisms to enforce their suggested wage profiles, wage drift restored the relative pay scales. However, from the end of the 1960s, there was a rapid and dramatic decrease in dispersion across all dimensions of wage inequality that was measured in the essay. This is in line with what we expect if the solidaristic wage policy was actually the causal factor affecting wages, and it fits well with the way that the centralized wage agreements was actually formulated. At this time, the profile of the frame agreements implied much more equalization through the extension of the low-wage pots, and the earning-development guarantees made the enforcement of the distributional profile much more effective.

Also related to the question of why the rate of interregional migration was so high in the 1960s is the role that the third pillar of the Swedish model, labor market policy, played in creating a more rapid migration response. The results from the case study in Essay IV suggested that the selection into the program of relocation allowances was very strong also during the peak in out-migration from the northern counties during the 1960s. Persons using the program were very similar in age to regular migrants but deviated substantially from those registered as unemployed. The pattern across sectors also highlighted the skewness in the selection into the program. Within the group of allowance migrants, there was no decline in the propensity to out-migrate over time after controlling for age, sex and occupation, giving additional evidence that there was no general change in the way that the program worked. Since the share of all out-migrations that took place using the program remained stable at 20% it is likely that the overall decline in out-migration from Västernorrland after 1970 had more to do with the general improvement of labor markets in the northern counties at the time. Additionally, in Essay III we showed that the period when labor market policy was mobility oriented was very short. Our shift share analysis and examination of the patterns of regional subsidies

also gave an indication that the policy change was important in explaining the improved employment trajectories of the northern counties.

Taken together, while previous research has ascribed an important role for economic policy in explaining the high levels of structural change in the 1960s and for the decline in economic restructuring after 1970, my results qualifies these conclusions. Neither the mobility-oriented labor market policies nor the regional policies appears to have affected the adaptability to change in the economy. The role of public policy, according to my results, lies instead in the way that it affected the distribution of economic resources across space. In this sense, however, it might have been very influential.

While the focus in this thesis has been on the role of the Swedish model in explaining patterns of structural change, the results from studying the Swedish case can also shed some light on broader questions within the regional economics literature. One area that this thesis points to is the explanation for the drivers of the spatial distribution of economic activity at different points in time. The descriptive evidence presented in the thesis clearly showed that the pace and character of structural change varied widely over the postwar period. The 1960s stands out as a period of unprecedented levels of uneven regional growth and rapid rates of urbanization. In contrast, the 1970s and early 1980s is the only period during the postwar period when the patterns towards urbanization and growth of urban areas actually reversed.

Drawing on the regional economics framework, the expansion of the public sector is a likely important factor that could explain the distribution of economic activity reflected in a growth of urban areas during the 1960s and then a relative improvement in more sparsely populated places during the 1970s. According to the framework, when new jobs in the public sector are created people move to fill these jobs, but once this has taken place migration would decrease since the public sector now constitutes a larger share of economic activity and has a more even spatial distribution than private sector activity. It could also help to explain the temporary recess during the 1970s and early 1980s in the general tendency of growth in more densely populated places that was predominant over the postwar period. This suggests that the spatial implications of the growth of the public sector should be studied in greater detail and with attention to the temporary relationship between the distribution of resources and interregional migration. Furthermore, if public expenditure is allocated largely on the basis of the individual regardless of place, the expansion of the public sector will lead first to a dispersion of economic activity, but once this adjustment has taken place, the underlying tendency towards population concentration will be reinforced. The reason is that when people move towards urban areas, they take public resources with them, adding additional jobs in healthcare, childcare and infrastructure.

The results of the thesis, likewise, give some perspective on the general decline in interregional migration over the last couple of decades that has been common to the whole industrialized world. First, since my study is the

first to analyze the migration response to local labor market conditions over the whole postwar period, it can provide some insights for other countries. To the extent that the Swedish experience is relevant for other industrialized countries, my results show that the decline in interregional migration rates (which is a shared experience) should be related to the change in the character of structural change shifting the spatial dispersion of economic activity, rather than to institutions or demographics changing the responsiveness of migration. Second, the difference in the adjustment to regional shocks between the US and Europe, where the Nordic countries including Sweden follow the pattern of continental Europe, is often attributed to differences in institutions. However, from my results, it seems more likely that the way economies adjust to regional shocks does not change much over time, and that the differences between the US and Europe therefore might not be a consequence of policies that were introduced in large part after the 1960s. The dynamics of regional change in Europe compared to the US should accordingly be studied in a historical perspective, and the current focus on the last couple of decades should be redirected towards more long-run issues.

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