Growth and decline in rural Sweden
Geographical distribution of employment and population
1960–2010

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Abstract

This thesis investigates the combination of changes in the population and employment into sectors in rural Sweden for the period 1960-2010. The aim is to describe and analyze the demographic changes together with the labour market changes, and to account for the spatial outcome of these changes by considering the heterogeneity of rural areas. The analysis departs from the framework of rural restructuring, where changes in employment and population in rural Sweden are interpreted as local products of the global processes of technological development, social modernization and globalization. Empirically, the analysis is based on a combination of longitudinal censuses and register data on the Swedish population covering the period 1960-2010.

The first part of the aim is achieved by applying a life-course perspective and exploiting the longitudinal nature of the data. The life-course perspective distinguishes between historical time and the age of individuals, making it possible to situate changes in employment and migration on the individual level. The second part of the aim is achieved through developing a typology of rural Sweden by doing a cluster analysis on SAMS-areas.

The results show that rural change after 1980 was characterized by de-industrialization and the rise of the urban service sector. The period was also characterized by regional urbanization rather than local urbanization. Peripheral urban and rural areas based on industrial employment found themselves with a declining economic motor, which meant that people had to find their source of income elsewhere. The migration stream in this period was thus increasingly directed towards metropolitan or large city centers, and their rural surroundings within commuting distance. However, the more fine-tuned spatial typology reveals that also a few areas in the rural periphery have experienced growth, these areas are mainly attractive places based on various kinds of tourism. It can thus be concluded that different rural areas have experienced, and will continue to experience, the shift from manufacturing to services differently, where some areas have grown in both demographic and employment terms while others have declined. In this sense the heterogeneity of rural areas are a product of both growth and decline – of old development paths that is reaching their end and of new development paths that will continue into the future.
Sammanfattning på svenska

Svensk landsbygd, i likhet med landsbygden i andra Europeiska länder, har under de senaste decennierna genomgått omfattande förändringar. Många väljer att lämna landsbygden och bosätta sig i större städer, och befolkningen har minskat på många platser trots att Sveriges befolkning som helhet ökat. Denna omflyttnings tendens kan kopplas till en rad problem för de platser som upplever en minskande befolkning, inte minst då det främst är ungdomar och personer i arbetsför ålder som väljer att flytta. Några problem är t.ex. tomma hus som förfaller, överdimensionerad infrastruktur, minskande skatteintäkter och en oproportionerligt stor andel äldre i behov av vård. Anledningen till att människor väljer att flytta från landsbygden kan variera från individ till individ, men en utgångspunkt för den här avhandlingen är att försörjning och arbete utgör en viktig del av det övergripande bosättningsmönstret: där människor väljer att bo måste det också finnas arbete inom pendlingsavstånd.

Syftet med den här avhandlingen är att undersöka hur arbete och befolkning har förändrats på svensk landsbygd 1960-2010 och hur denna förändring tagit sig till uttryck mellan olika platser på landsbygden. Betoningen är här på just kombinationen av arbete och befolkning snarare än att dessa två undersöks var för sig.


städer. Huvuddelen (53%) bodde i mer perifera områden där tillverknings-
industri utgjorde en viktig källa till arbete, dessa områden är
huvudsakligen belägna i södra halvan av landet. Endast en mindre del av
landsbygdsbefolkningen (12%) bodde på den perifera landsbygden där
utvinning av naturresurser utgjorde en viktig källa till arbete. När det
kommer till befolkningsförändringar har den stadsnära landsbygden runt
större städer ökat medan den avlägsna landsbygden minskat. Här återfinns
dock ett par intressanta undantag som består i avlägsen landsbygd som
ökat sin befolkning. Detta handlar om områden där näringsbasen grundar
sig på turism (t.ex. Åre och Hemavan) och fritidshusområden som är
attraktiva att flytta till på äldre dar (t.ex. Österlen och Stockholms
Skärgård).

Sammantaget visar avhandlingen att Sveriges landsbygd förändrats genom
övergången från ett industrisamhälle till ett servicesamhälle. Dessa
förändringar har tagit sig olika uttryck på olika platser. Medan vissa
områden upplever tillväxt så befinner sig andra i nedgång. Denna nedgång
måste samtidigt förstås som en strukturell kris för dessa orter, en kris som
inte enkelt kan lösas eller kanske inte ens kan lösas. En utgångspunkt för
avhandlingen var att boende och arbete måste följas åt då människor inte
can leva utan en försörjning. Samtidigt har ekonomin förändrats och de
platser som tillhandahöll en försörjning för 50 år sedan kanske inte gör det
idag. Ur ett historiskt perspektiv har bosättningsmönster och ekonomiska
aktiviteter befunnit sig i ständig förändring. Av den anledningen är det
svårt bevara ett bosättningsmönster som tillkommit under en annan
ekonomisk ordning.
Introduction

Similar to other European countries, rural areas in Sweden face several problems related to population decline and ageing, and to a declining demand for labor. Furthermore, the shrinking population is connected to a range of other problems, such as oversized infrastructure and empty industrial and housing units (Sousa and Pinho 2015, Wiechmann and Pallagst 2012), lower tax revenues from labor (Haase et al. 2012, Hollander 2011), and the selective out-migration of individuals with high human capital (Weck and Beißwenger 2014). As a response to these problems, many peripheral municipalities have formulated goals and strategies for turning the population decline into growth and creating new jobs (Syssner 2016). On the other hand, “rural is not synonymous with decline”, as the OECD (2006, 31) puts it, as there also are rural areas that are experiencing growth, in both economic and demographic terms.

This thesis examines these processes of change in rural Sweden, focusing on demographic and employment changes. The aim is to describe and analyze the demographic changes together with the labor market changes in rural Sweden in the period 1960-2010, and to account for the spatial outcome of these changes by considering the heterogeneity of rural areas. In furthering this aim it is important that rural areas are defined in non-essentialist terms, recognizing them as places “where wider processes manifest themselves” (Lovering 1989, 213) rather than as a closed social system. In this sense, this thesis also implicitly examines how urban areas have changed – as the social and economic processes driving demographic and employment changes cut right across any rural-urban division (Hoggart 1988). Another point of departure is to consider demographic changes together with changes in economic activities, a common perspective in the structural approach to societal change (Andersson 1987). Empirically, this is partly achieved by applying a life-course perspective (Elder Jr 1994) on societal change, situating employment in different sectors and urban-to-rural migration on the individual level.

In order to apprehend demographic changes together with employment changes, this thesis departs from a multidimensional theoretical framework in which rural change is seen as the interrelated consequences of larger technological, economic and social changes on a global scale; a perspective that has come to be known under the term “rural restructuring” (Hoggart and Paniagua 2001b, Ilbery 1998, Marsden, Lowe and Whatmore
1990, Marsden et al. 1993, Pettersson 2002, Woods 2005, Woods 2010). The idea of rural restructuring is to view rural change as a multifaceted and interdependent phenomenon, not limited to only a few aspects of reality. In a sense, rural restructuring applies a holistic view on rural change, whereby everything is seen as related to everything else, which blurs the boundaries between different dimensions (Pettersson 2002). This view on rural and, by extension, societal change has much in common with the perspective of Fernand Braudel and the Annales School of historiography, in which the importance of large but isolated events is downplayed in favor of slower changes in broader societal structures (Braudel 1958, Braudel 1982b, Nordin 1989).

Partly related to the framework of rural restructuring is the discourse of post-productivism, which has received a great deal of attention in rural geographic research. Post-productivism stresses the importance of changes in agriculture and other natural resource sectors, while manufacturing is at best given a peripheral role (Evans, Morris and Winter 2002, Ilbery 1998, Mather, Hill and Nijnik 2006, Shucksmith 1993, Woods 2005, Woods 2010). Within this discourse, a common point of departure is that contemporary rural change is characterized by a shift from primary natural resource sectors towards tertiary service sectors, especially the tourism sector. It is furthermore argued that agriculture has undergone a post-productive transition in market logics, whereby farming increasingly entails the small-scale production of high-quality products, and that this is a central aspect of contemporary rural change (Evans et al. 2002, Ilbery and Bowler 1998, Mather et al. 2006, OECD 2006, Shucksmith 1993, Ward 1993, Wilson 2001). Along with this “post-productive” economic change, it has been proposed that the migration streams have changed from urbanization towards counterurbanization, with rural areas being “gentrified” by the urban middle class (Boyle and Halfacree 1998, Phillips 2002, Phillips 2005, Phillips 2009, Urry 1995, Woods 2005).

However, this description of rural change, which arguably comprises the dominant discourse in contemporary research, has not been sufficiently supported. Empirical studies find little evidence of a large-scale post-productive transformation of the agricultural sector (Almstedt et al. 2014, Brouder, Karlsson and Lundmark 2015, Evans et al. 2002, Wilson 2001), of urbanization being replaced by counterurbanization (Amcoff 2000, Amcoff 2003, Amcoff 2006), or of a repopulation of the rural periphery by the urban middle class (Amcoff 2000, Hjort and Malmberg 2006). Instead,
the evidence for the existence of agricultural post-productivism and rural gentrification stems mostly from case studies (Evans et al. 2002, Phillips 2005). In the case of counterurbanization, Amcoff (2006) makes a solid case for understanding the migration patterns in Sweden during the 1990s as urban sprawl and suburbanization rather than counterurbanization and a new “green wave”. In light of the contested status of the post-productive discourse, it is argued here that there is a need for an open approach that examines contemporary demographic and labor market change in rural areas. Empirically, the approach of this thesis is therefore open and descriptive rather than hypothesis-testing.

Despite the discourses of counterurbanization, rural gentrification and post-productivism, it is widely acknowledged in academic research and public debate that rural areas are declining, both economically and demographically. In the 1970s and 1980s, during the heydays of the debate on how to define rural areas, the perception that contemporary rural areas in developed countries are declining was so taken-for-granted that Cloke (1977) and Cloke & Edwards (1986) included indicators of decline in the very definition of the concept of rural. However, these two contrasting images of the rural – the rural idyll that is invaded by the middle class on the one hand, and the rural periphery that is declining on the other – are not mutually exclusive, since rural areas are heterogeneous. The evidence speaking for rural gentrification, for example, stems primarily from case studies on areas close to larger cities (Ghose 2004, Phillips 2002, Phillips 2005, Phillips 2009), while the evidence against rural gentrification also covers more peripheral rural areas (Amcoff 2000, Hjort and Malmberg 2006). Therefore, when accounting for the recent rural change, it is also necessary to account for the geography and not assume a homogenous rural landscape. In this respect, it should also be noted that there are structural and institutional differences between different countries, where for example Sweden is relatively less densely populated than many other Western countries.

**Research questions**

As mentioned, the aim of this thesis is to describe and analyze the demographic changes together with the labour market changes in rural Sweden in the period 1960-2010, and to account for the spatial outcome of these changes by considering the heterogeneity of rural areas. The description and analysis are based on three separate empirical papers, each of which corresponds to specific research questions but that, taken
together, give a picture of long-term demographic and labor market change in rural areas. The empirical articles are built on longitudinal data covering the entire Swedish population, and the time span covered by the data stretches from 1960 to 2010. The research questions corresponding to the three papers are:

1. How did the structural changes in the economy in general, and in the agricultural sector in particular, translate into the employment trajectories of men and women working in agriculture? (Article I)
2. How did employment in different sectors and rural-urban migration change in rural Sweden between 1965 and 2010? How does this local change relate to larger processes and general societal change? (Article II)
3. To what extent are rural areas in Sweden heterogeneous in regard to their socioeconomic and demographic structure? (Article III)

The first paper compares the employment trajectories of two cohorts of agricultural workers, the first born in 1943-45 and the second in 1958-60, in order to estimate how the employment conditions in agriculture changed during this period of rationalization and intensification of the sector.

The second paper investigates both the migration and employment trajectories of three cohorts of male and female youths living in a rural or urban area at age 15. The cohorts, born in 1945, 1960 and 1980, were investigated when they were 20, 25 and 30 years old. By comparing the cohorts with each other, the article shows how the migration and employment patterns changed between 1960 and 2010.

The third paper develops a spatial typology of rural Sweden by mapping differences between rural areas on a range of economic and demographic variables using data from 2008. The paper focuses on the heterogeneity between rural areas and their spatial distribution.

**The concept of rural in this thesis**

The definition of rural areas has been the subject of a long academic debate and numerous academic articles (Amcoff 2000, Cloke and Edwards 1986, Cloke 1977, Halfacree 1995, Hoggart 1988, Hoggart 1990, Lavesson 2017,
Mormont 1990, Pahl 1966, Wirth 1938). Among other things, it was discussed whether rural should refer to geographic areas or certain mentalities or people, whether the concept should be seen as a continuum or a dichotomy, whether it should be defined locally or regionally, and whether agriculture or the extraction of natural resources should be seen as a necessary condition for an area to be deemed rural.

The debate on how rural should be defined did not result in any consensus. The simple reason for this is that the concept of rural is elusive, since it can refer to different things (Amcoff 2000). When one is faced with an elusive concept, there are three options: the first is to settle on a global definition once and for all, as was the goal of many participants in the debate on how to define rural areas; the second is to abandon the concept altogether, as was suggested by Hoggart (1988, 1990); and the third is to accept that there is no global or absolute definition of the concept, but that it can be used anyway as long as its content is specified in each case (Westholm 2008). Obviously, the third option is much more fruitful than the first two, since it allows for research to be conducted instead of getting stuck in endless discussions on how to define concepts.

The debate on how to define the concept of rural in any absolute sense has silenced. Instead, a research practice has developed whereby the concept is defined based on sparsity of population, infrastructure and/or housing (rather than on employment in agriculture or similar work-related criteria). These are very reasonable criteria that, as Halfacree (1995) has shown, also correspond to how most people understand the concept of rural. In contemporary research, the concept is more ambiguous when it comes to the geographic scale on which to measure sparsity. The classification of a town located in a sparse region varies depending on, for example, whether rural is defined regionally or locally. However, this does not have to be a problem as long as the method of operationalization is clearly stated and the analysis acknowledges the areas to which the results correspond. Rather, depending on the research question, one can be interested in both sparse regions and local sparsity, and it would not be fruitful to rule out either of the perspectives (Du Plessis et al. 2001). To be fair, this was also Hoggart’s (1988) point; namely, that there is a continuous reality out there which can be studied in its own right, no matter how researchers define certain concepts.
In this thesis, rural is operationalized in different ways between Papers II and III. Paper II has a regional view on rural areas since it is interested in the labor market aspects of sparse social structures. In contrast, Paper III applies a local definition of rural whereby all urban localities with a population over 1,000 are classified as urban while the rest of Sweden is classified as rural. Since Paper III maps rural heterogeneity and develops a typology of rural areas, the local operationalization is more appropriate in that paper. In Article I, which looks at employment trajectories for agricultural workers, rural is not defined explicitly; instead agriculture is looked upon as a rural sector. As the discussion above suggests, this does not mean that agriculture is a defining characteristic of rural, only that agriculture mainly takes place in rural areas.
Rural restructuring

This chapter presents the framework of rural restructuring, and argues for the necessity to connect rural change in Sweden to the larger historical processes of technological development, social modernization and globalization. From this perspective, rural change should thus be viewed as the local products of global processes.

The perspective of rural restructuring aims at analyzing the multifaceted and interdependent nature of rural change. Instead of analyzing one type of change in isolation from others, the aim is to describe the interconnectedness between different types of change. At its core also lies the realization that local change is largely a part of regional and global processes, and that it should therefore be analyzed in a larger context.

However, exactly what is meant by rural restructuring varies between different studies, and the concept is often only vaguely defined. The temporal perspective of rural restructuring also varies between studies; some consider the whole post-war period, whereas others begin with the economic crisis that affected the Western world in the 1970s (Pettersson 2002). It was in light of this situation that Hoggart & Paniagua (2001b) argued that rural restructuring as a theoretical approach has been used too flippantly, resulting in a devalued concept. Therefore, changes in, for example, migration patterns or the agricultural sector should not be seen as restructuring when isolated from other dimensions; instead, in Hoggart and Paniagua’s (2001b) view, restructuring “involves fundamental readjustments in a variety of spheres of life, where processes of change are causally linked” (42). In their empirical study on the restructuring of rural Spain, Hoggart and Paniagua (2001a) subsequently concluded that rural Spain had not experienced restructuring even though large interconnected changes had taken place; in their view, the changes were not sufficiently profound.

On the other hand, instead of debating exactly how large or small changes must be in order to qualify as restructuring, there is another approach to rural restructuring that could be more fruitful. In this approach, rural restructuring is used as a perspective of departure rather than an outcome to be confirmed or falsified (Pettersson 2002). As previously mentioned, this use of the term rural restructuring has many similarities with the longue durée and the Annales School of historiography (Braudel 1958,
Braudel 1982b, Braudel 1995, Nordin 1989). In this view on rural restructuring, Woods (2005, 41) argued that phenomena such as agricultural change can “be interpreted as the local expression of inter-connected processes of rural restructuring.”

The perspective of rural restructuring links back to the restructuring debate in geography of the 1970s and 1980s (Pettersson 2002). This debate was a response to the economic downturn that had begun in the 1960s, in which many old manufacturing industries went bankrupt or had to rationalize and/or relocate production. Drawing on Marxist theory, proponents of the restructuring approach predicted, or interpreted, fundamental shifts in the spatial distribution of production, in the organization of labor, and, ultimately, in the spatial distribution of capital accumulation (Lovering 1989). Some authors went so far as to suggest that the structural crisis of the 1970s was merely a precursor to a new world order, or even the beginning of the end of the capitalist world system itself (Wallerstein 1974, Wallerstein 2010). A central aspect of these shifts, it was argued, was the rapid deindustrialization of the industrialized countries in the West and Japan, and the rapid industrialization in other parts of the world, including China (Anderson, Duncan and Hudson 1983, Fröbel, Heinrichs and Kreye 1978, Hobsbawm 1981).

While the restructuring debate of the 1970s is seldom used as a starting point in discussions on rural restructuring, perhaps due to the perceived urbanity of the manufacturing sector, there are concepts from the debate that could be valuable for understanding changes in rural areas as well. Here the focus is on two key concepts from the restructuring approach that, it is argued, are of particular relevance for rural restructuring: “the spatial division of labor” and “layers of investment” (Massey 1979, Massey 1984). The concept of the spatial division of labor refers to its geographical distribution – both horizontally, between sectors (as in agriculture or manufacturing), and vertically, within sectors (as in production and executive functions). The spatial division of labor is furthermore subject to redistributive pressures from new layers of investment, whereby profitability determines the location for capital investment. In this sense, the economic activities in an area may be the product of both new and old

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1 While Massey (1995) primarily focused on the spatial division of labor within sectors, the concept is used here to refer to both regional and sectoral specialization. It is, however, not uncommon that these overlap.
layers of investments, which form separate paths of development (Massey 1978). Thus, economic decline in an area, and thereby the redistribution of the spatial division of labor, is related to the decline of new investments, whereby one or several paths of local development decline due to a relative decrease in the profitability of local investment (Lovering 1989). In turn, the redistribution of the spatial division of labor leads to changes in the migration pattern, which ultimately lead to a redistribution of the aggregate settlement pattern (Fielding 1989).

This depiction is complicated by the inertia and the constraints that especially labor is subjected to. While capital is also subject to inertia and constraints (for example due to physical investments or regulations), it is relatively more mobile compared to labor, and this mismatch between capital and labor may create structural imbalances in periods of great economic change. The reason for this is that the individuals comprising the local labor force are bound by their training and skills, which makes it hard (but not impossible) to switch occupations, should their industry of occupation shut down. Individuals are also bound by geography to a certain extent. While they can migrate or even emigrate, there is a cost connected to this (Lovering 1989). Both these types of immobility of labor – occupational and geographical – increase with the age of the individual (see discussion on the life-course perspective in the Methods section).

The local outcome of the dynamic depicted above relates to the concept in economic geography of “regional portfolios”: economically diverse regions, often larger urban areas, are characterized by many separate layers of investment meshed on top of each other, while economically conforming regions, often smaller peripheral areas, are characterized by one or a few layers of investment. In periods of restructuring, it has been hypothesized and also shown empirically, that regions with a diverse economic portfolio are more resilient to changes than those with a conform portfolio (Brown and Pheasant 1985, Chiang 2009, Markowitz 1991, Neffke, Henning and Boschma 2011).

While the number of possible changes to the spatial division of labor that can arise from the dynamic of layers of investment is very large, not to say endless (Lovering 1989), it can still serve a purpose to consider a few ideal types. Therefore, four stylized examples of how layers of investment can relate to labor demand are considered in Figure 1, where each box represents a local labor market. It should be emphasized that these four
examples are in no way exclusive. The top left box in Figure 1 shows the rise and decline of one layer of investment, but as the first layer of investment declines a second layer takes off and is able to absorb the unemployed labor from the first layer. The top left box could thus be seen as a stylized example of the process of creative destruction, whereby the labor force of declining industries is freed in order to contribute to growing industries (Bartelsman, Haltiwanger and Scarpetta 2004). The top right box shows a similar dynamic, but in contrast to the top left box the labor force of the declining first layer of investment lacks the appropriate skills to be absorbed into the second layer. Thus, a new labor force with the appropriate skills is needed. One example of this dynamic may be the growth of the tourism sector in the Swedish mountain range, which largely depends on a non-local labor force, presumably due to a mismatch between the local labor force and the service-oriented skills required in the tourism sector (Lundmark 2005). The bottom left box exemplifies the rise and decline of a local labor market, whereby the declining layer of investment is not replaced by a new layer. Typical examples of these labor markets are one-company towns, in many cases built around mining activities or large factories, where the enterprise shuts down without being replaced by other activities. The bottom right box, finally, represents a more diverse labor market with many layers of investments that are meshed on top of each other. This box reflects a local labor market with a more diverse economic portfolio that is often found in larger urban areas.
Figure 1: Four stylized examples of the dynamics between layers of investments and the local labor market
Apart from adding a deeper theoretical understanding to the rural restructuring approach, the concepts of “spatial division of labor” and “layers of investment” may also delineate the relevant focus of the approach. While the rural restructuring perspective explicitly strives for holism, for a complete description of many dimensions of change (cultural, social, political, economic, demographical, etc.) in both the temporal and spatial dimensions, research must by necessity be delimited to a manageable number of factors, and this is also the case for research from a rural restructuring perspective. By focusing on the redistribution of the spatial division of labor, the approach is delimited to the spatial redistribution of the population, the spatial redistribution of economic activities, and the broader factors that affect the propensity for local investment.

Woods’ (2005) division of rural restructuring into global drivers and local outcomes can be applied here, with the redistribution of the population and of economic activities sorted under the category of local outcomes, and the broader factors affecting the local outcomes sorted under global drivers. According to Woods (2005), local rural change is driven by the processes of technological development, social modernization and globalization. However, the division into global drivers and local outcomes is primarily a schematic one, made in order to aid comprehension, which omits many complexities of the real world. Technological innovations are, for example, local products that are historically dependent on previous local outcomes, which, in a sense, makes them endogenous to the process of economic change rather than exogenous (Warsh 2007). On the other hand, treating technological development as an exogenous factor can aid the comprehension of economic change (Dicken 2003, Schumpeter 1943, Solow 1956, Woods 2005). A similar argument can be made for the schematic division between technological development, globalization and social modernization. While these processes are interrelated, for example with development in transportation technology being an important part of both globalization and modernization, it fits the purpose here to present them separately.

**Technological development**

Technological development played a central role in the Industrial Revolution, and through the introduction of new consumer goods and new or improved methods of production, transportation and communication, continues to shape the modern world (Chesnais 1986, Dicken 2003,
Schumpeter 1943, Toffler 1990); and rural areas are certainly no exception to this development (Woods 2005).

One aspect of the local impact of technological development is its importance for new local investments and thereby its redistributive pressure on the spatial division of labor, whereby new technology has changed the conditions for local investment by expanding the potential markets for products, and by increasing industrial productivity (Dicken 2003, Lovering 1989, Schön 2012, Smith and Marx 1994). In this regard, refrigeration technology, which was commercialized around 1900, made it possible to store food for longer periods of time and to transport it over longer distances. Together with other developments, such as transportation and globalization (see below), refrigeration has thus contributed to increasing the potential market of some agricultural products (Woods 2005). A larger market, in turn, increases the benefits of the division of labor, including the spatial division of labor and economy of scale (Massey 1984, Smith 1986). Following this line of thought, but without arguing for technological determinism (Smith and Marx 1994), the technology of refrigeration has thus contributed to, or at least facilitated, the development of farm specialization, large food-processing companies, supermarkets and regional specializations (Woods 2005). Transportation vehicles comprise another invention, or rather bundle of inventions, that has changed the conditions for local investments through expansion of the potential market (and which, thereby, has increased the benefits of the divisions of labor and economy of scale) (Dicken 2003, Massey 1984, Smith 1986). In terms of expanding the potential market, transportation vehicles have led to the faster and cheaper transportation of goods. Refrigeration trucks have already been mentioned as an example of technology with implications for the spatial reach of some agricultural products, but the economic impacts of transportation vehicles have of course been much broader, and basically no economic activity is unaffected by the technology. In forestry, the introduction of trailers completely replaced log driving and timber rafting as methods of transporting timber (Schön 2012). In manufacturing (or any other sector), a product produced in China could be delivered by aircraft to consumers in Europe a couple of days later and vice versa. In The Wealth of Nations, Smith (1986, 31) argued that “the division of [labor] is limited by the extent of the market”, and through the introduction and continued development of transportation vehicles this extent has certainly increased, at least in potential terms (Dicken 2003, Smith and Marx 1994). Transportation vehicles have also expanded the
potential market for tourist consumers, with importance for both rural and urban areas. In the past few decades both international and national tourism have increased considerably, partly as a result of development in transport technology (Page 1998). A third bundle of inventions with major importance for expanding the potential market of goods is those in information technology (Castells 2010, Dicken 2003), with for example the telephone, or more recently the Internet, allowing contact with faraway customers in seconds. The continued development of information technology has also facilitated the spatial division of labor within corporations, by allowing fast information exchange over long distances between the executive organ and the producing organ. This has often resulted in a spatial division, with the headquarters and sales offices located close to the market (for example, developed countries or urban areas) and the production units located in places where production costs are lower (for example, developing countries or rural areas) (Castells 2010, Dicken 2003, Woods 2005).

Apart from expanding the potential market, technological development has also increased productivity, not least in manufacturing, agriculture and forestry. Motor vehicles, for example, and their subsequent use in agriculture and forestry, have had great implications on the production process in these sectors. In agriculture, the large-scale introduction of tractors and harvest machines in the second half of the 20th century substantially increased productivity (Schön 2012). While they are not a simple, unidirectional, cause behind the decline of employment in the agricultural sector, tractors and harvest machines, along with other sector-specific technology such as milking machines, new fertilizer techniques, GMO, etc., have certainly reduced the demand for labor in the sector by increasing productivity (Schön 2012, Woods 2005). Likewise, productivity in the forestry sector also increased as a consequence of motor vehicles, such as forestry machines, and other forestry-specific equipment. The introduction of chainsaws in the 1950s, for example, coincided with a decrease in employment (Hjelm 1991). Since then, chainsaws have been replaced by more sophisticated forest machines, which has contributed to reducing the workforce in forestry to an all-time low in relation to production, a development that is likely to continue.

A third aspect of technological development relevant for local investment and related to both the immobility of physical capital and the labor force (see discussion above) is that it may be more profitable to invest in new
technology in new places, unaffected by old technology. In this regard, regions based on old technology may, due to lock-in effects and the inertia of physical and human capital, obscure investments based on newer technology. To the extent that this is important, it may therefore favor areas that are not burdened by old technology. One example of this is what has been termed the Second Industrial Revolution, which started in 1870s, with Germany developing relatively more quickly than Britain, partly because Germany was less bound by the old steam-based technology and could therefore adapt more quickly to a technology based on electricity (Broadberry and O’Rourke 2010).

A different aspect of technological development is its importance for the mobility of the labor force; for example, the large-scale introduction of the automobile meant that it was no longer necessary to live within walking distance of one’s workplace (Falk 1976). One implication of this was that people could live in rural areas and work in urban areas, and vice versa. In Sweden, the large-scale introduction of the automobile took off around 1950 and had reached 1 million cars by 1960, a development that substantially increased the spatial reach of the city and, among other things, spurred counterurbanization (Amcoff 2000, Falk 1976). However, the daily distance people are willing to travel is limited, which means that the majority of counterurbanization due to commuting was spatially limited to the vicinity of urban areas, something that has resulted in commuter belts around urban areas (Falk 1976, Nutley 1998). Information technology has also been important in increasing the mobility of the labor force, with the telephone, television and Internet all contributing to reducing the information isolation in rural areas. When the Internet arrived there were expectations it would induce employment increase in peripheral areas, and some scholars even argued that the new modes of communication may result in the death of geography due to the space-time compression of information travel (Cairncross 2001, Friedman 2005). More reasonable views, however, are that geography is not dead; instead, new developments in the field of economic geography on clusters, relatedness, labor mobility, etc. suggest that geography remains an important factor despite new communication technologies (Castells 2010, Eriksson 2009, Markusen 1996, Porter 1998). Nevertheless, developments

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2 While it is to some extent a semantic question, the urban nature of commuter belts should discourage the term “counterurbanization” in favor of “suburbanization” or “peri-urbanization.”
in telecommunication technology have at least made it conceivable for companies dealing with information to locate in peripheral areas and for persons living in rural areas to work from home.

**Social modernization**

In many accounts, the age of modernity started with the Industrial Revolution in Britain in the 1780s and the French Revolution in 1789 (Hobsbawm 2010, Nordin 2016). As such, the historical transformation from a pre-modern to modern society was a multidimensional phenomenon, ranging from technological and economic changes to political changes and changes in the thoughts and ideas at the center of society (Hobsbawm 2010). The focus in this section on social modernization, however, is narrowed down to a few aspects of modernity that are of particular importance for contemporary economic and demographic changes in rural Sweden. The aspects in question are the location of industries, the growth in prosperity and the development of the welfare state, and the shift in societal norms towards post-materialistic values.

While all these aspects are a part of modernity they are of course processes or products and, as such, vary over time and in space. A conventional periodization of modernity is Berman’s (1983) division into early modernity (1500-1789), classical modernity (1789-1900) and late modernity (1900 onward) (Osborne 1992). Using this division, industrialization and growth in prosperity can thus be placed in the periods of classical and late modernity\(^3\), and the rise of mass parties (as opposed to cadre parties) and the development of welfare states in the Western world can be placed into late modernity, as a constituent part of that period (Flint and Taylor 2011). While changes in norms towards post-materialistic values are perhaps harder to pinpoint in history, it is sufficient for our purposes here to consider Inglehart’s (1971, 2004, 2000, 2003) empirical findings, showing that the changes in norms correlate with prosperity (and thereby with industrialization and the welfare state), whereby the population in richer countries increasingly holds more post-materialistic values (gender equality, self-actualization, cosmopolitanism, etc.). In this

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\(^3\) However, Sweden did not industrialize on a large scale until the latter part of the 19th century (see Section 3).
sense, the shift towards post-materialistic values can be seen as an ongoing process.

Industrialization has had large effects on new layers of investment and the redistribution of the spatial division of labor. In fact, industrialization demanded a more spatially divided production process (Smith 1986). In the context of this thesis, one important aspect concerns the urban/rural dimension of the new layers of investment related to industrialization and the growing manufacturing sector. Whereas the literature on rural restructuring primarily focuses on the agricultural sector, the manufacturing sector is certainly not absent in rural areas (Lundmark and Malmberg 1988). In this regard, Weber (1962) argued that factories locate where the sum of production costs is as low as possible, whereby he primarily considered factors related to the nature of the raw material, transportation costs to the factory and to the market, and the location of the labor force. A consequence of this reasoning is, for example, that industries using “weight-losing materials” (such as minerals or fuel) have a propensity to locate close to the source of the raw material, in order to minimize the transportation of the waste material, and this location is not necessarily an urban area (although it may give rise to one). When, on the other hand, the raw material is “ubiquitous” the industry will be located as close as possible to the market and to the labor force in order to minimize transportation costs. While Weber’s model finds many exceptions in the real world, the point here is merely to note that manufacturing was, or is, not exclusively an urban phenomenon. At the same time, industrialization gave rise to urbanization on a scale surpassing all previous epochs (Andersson 1987, Lundmark and Malmberg 1988).

Apart from urbanization, industrialization led to economic growth on a scale unprecedented in human history, with GDP per capita more than doubling in Western Europe in the 19th century and increasing six times over in the 20th century (Bolt and Zanden 2014). The growth in prosperity during the 19th century resulted in extreme economic inequalities between the working and upper classes, creating tensions in industrializing countries. In his pessimistic account of the effects of industrialization in England, Engels (1963, 92) wrote that those in the working class “have no property whatsoever of their own, and live wholly upon wages, which usually go from hand to mouth. [...] Every working-man, even the best, is therefore constantly exposed to loss of work and food, that is to death by starvation, and many perish in this way.” While the working class lived
under poor conditions the “bourgeoisie” became very rich, and, according to Engels (1963, 55), this inequality was because “manufacture centralises property in the hands of the few.”

In the latter half of the 19th century the social tensions led to a new political movement in Europe of “mass parties” that challenged the old cadre parties and, eventually, won (Flint and Taylor 2011, Weber 1968). With the victory of the mass parties a new era of social liberalism in Western politics began, whereby the central idea was to combine liberal policies benefiting the market (for economic growth) with social policies redistributing wealth from the hands of the few to the hands of the many (for legitimacy) (Flint and Taylor 2011). The rise of social liberalism and the welfare state, in turn, has had great importance for the labor market in Western countries, especially in Sweden, where the welfare state and the public sector grew particularly large (culminating in the 1980s). Taking Sweden as an example, the welfare state could be said to have had a homogenizing effect on the geography, with each municipal center (after the municipal reform of 1971) obligated to provide a required minimum of public services, including schools, libraries, healthcare, and other service facilities (see also Section 3). In this respect, Kohli (1986) has argued that modernity and the welfare state have had both a homogenizing and a diversifying effect on the life course – homogenizing in the sense that the importance of social and regional background decreased (but did not diminish; especially gender remained important) while the importance of individual age increased, and diversifying in the sense that individuals had more freedom to choose their own paths in life (Shanahan 2000).

The growth of the public sector coincided with a shift towards more post-materialistic values with, among other things, demands on increased gender equality resulting in new generations of women who were expected to enter the labor market. Again this was especially the case in Sweden, where women’s participation on the labor market is among the highest in the world (Lewis 1992). On the other hand, the welfare state demanded greater participation of females on the labor market, and there remains a strong gender division of labor even in modern Sweden. Another way of interpreting the relationship is thus that the growth of the female-dominated public sector enforced the differences between the sexes (Lewis 1992, Orloff 1996).
The change towards post-materialistic values was, according to Inglehart (1971), the result of prolonged prosperity, whereby the generations growing up without experiencing economic hardship would increasingly adapt post-materialistic values, as they had never had to concern themselves with the lower steps on Maslow’s hierarchy of needs. In this sense the welfare state, with its redistributive function, contributed to this shift in values. In a slightly different view, the breakdown of the rigid identities of the past under capitalism was already noted by Marx and Engels (2002, 16) in the Communist Manifesto, summarized by their thesis “all that is solid melts into air”. Thus, while Inglehart’s (1971, 2004) empirical findings suggest that the changes in values were caused by growth in prosperity, both growth in prosperity and changes in values, in Marx and Engels’ view, are a constituent part of modernity (Berman 1983).

Apart from gender equality, the shift towards post-materialistic values put increased emphasis on values promoting self-actualization as opposed to those directly connected to the survival of the individual, the family and the nation. With increased emphasis on self-actualization, an individual’s social background became less important as a determining factor for his or her future occupation (Zelinsky 1971). Again, it could be argued that the welfare state was an important material basis for the reduced importance of social background, as a central idea of the welfare state was to balance out inequalities due to different social backgrounds (Berggren and Trägårdh 2015, Kohli 2007, Magnusson 2006).

The continued development towards post-materialistic and self-actualizing values coincided with increases in higher education, and, without stating that the changes in values are a cause behind the increase in higher education, their co-occurrence fits neatly together. The increase of

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4 However, as with all historical epochs, modernity encompasses contradictions. While capitalism under welfare regimes encompasses trends towards increased equality and the reduced importance of social and regional background (Zelinsky 1971), capitalism, in its more unrestricted form, may also reinforce such factors by exploiting pre-existing divisions along ethnic or gender lines (McDowell and Massey 1984). This strategy of “divide and rule” was an integral part of not least the colonial project (Flint and Taylor 2011). In this sense, capitalism entails both continuity and discontinuity with the feudal past. Furthermore, while Marx and Engels (2002, 15-16) argued that capitalism dissolved the “idyllic relations” of feudalism, their central point was that capitalism merely replaced these relations with an all-encompassing class relation: “Society as a whole is more and more splitting up into two great hostile camps, into two great classes directly facing each other – Bourgeoisie and Proletariat. […] In one word, for exploitation, veiled by religious and political illusions, it [capitalism] has substituted naked, shameless, direct, brutal exploitation.”
participation in higher education in the developed world has changed the
life pattern of many young adults, which has had consequences on periph-
eral areas. Not only does it mean that people in peripheral areas choosing
higher education have to relocate to a university town, but also that their
prospects of employment in peripheral areas decrease due to the smaller
number of qualified jobs, which makes it unlikely they will move back.
Increase in higher education is thus an important factor in explaining rural
2005).

Apart from changes in values, the increase of participation in higher edu-
cation from the 1960s onward coincided with the more general shift from
a manufacturing-based economy towards a service-based economy – a
shift that alternately has been described as the Third Industrial Revolution
(Magnusson 2002, Schön 2012), the Knowledge Economy (Cooke 2001,
Porter 1998), the Network Society (Castells 2010) or Liquid Modernity
(Bauman 2000). The increase in higher education can thus, partly, be
viewed as a response to meet the demands of this economic change, with
economic success increasingly depending on specialized knowledge and
comparative (or competitive) advantages on a highly competitive global
market (see also Section 2.3 on globalization).

Furthermore, the welfare state, which can be seen as a political response to
the manufacturing economy (Flint and Taylor 2011), has entered a period
of crisis as a consequence of the transformation of its material base
(Magnusson 2006). The shift towards a service economy and the crisis of
the welfare state may also have larger implications for the changes towards
post-materialistic values observed throughout the post-war period. If the
welfare state has contributed to reducing the importance of social and
regional background, its decline could mean a renewed importance of such
factors. In looking back on the past decades of life-course research, Kohli
(2007, 257-258) suggested that the homogenization of the life course
under late modernity, the “institutionalized life course” in Kohli’s terms,
rather than a linear trend was a product of “the ‘Fordist’ model of social
structure”, which culminated in the 1960s and “was based on rapid and
seemingly stable economic growth, low unemployment, and expansion of
the welfare state.” However, while there is general agreement that the
institutionalized life course is changing towards increased heterogeneity
and stratification, it remains an open question as to exactly what this
change entails and whether it correlates with established sociodemographic groups (Kohli 2007).

Globalization

Contemporary economic globalization has in many ways altered the conditions for economic activities in localities in many parts of the world, which among other things has changed, and continues to change, the spatial division of labor (Dicken 2003). However, and as the above discussion on the dynamics of the spatial division of labor suggests, this is not to say that the processes of economic globalization have had the same effects in these localities (Woods 2005).

Viewed as the increased interconnection of localities around the world, globalization is a multidimensional process that includes political changes, economic changes, changes in migration patterns, and cultural changes (Dicken 2003, Marks 2006). As the focus in this thesis is on economic and demographic changes in rural areas, the depiction below is delimited to economic globalization and the globalization of personal mobility (Woods 2005). Likewise, the period referred to here is that of contemporary economic globalization, which, according to many interpretations, took off on a large scale in the 1970s (Castells 2010, Dicken 2003, Friedman 2014, Pettersson 2002, Woods 2005). While globalizing phenomena such as colonization, imperialism, foreign direct investment, international trade, large-scale international migration, etc. undoubtedly have a long history (Braudel 1982b, Friedman and Friedman 2008a, Marks 2006, Nordin 2006, Wallerstein 1979), it is arguably the case that something new happened in the 1970s, which stood in contrast both to the development in the preceding decades and, at least in terms of technology and the extent of the time-space compression, to previous periods of internationalization in history (Castells 2010, Harvey 1999).

According to many authors, technological development in transportation, computation and telecommunication is a main driver behind contemporary globalization (Castells 2010, Dicken 2003, Harvey 1999, Schön 2012). Apart from new technology, another driver of contemporary economic globalization is the deregulation and financialization of the economy, and the increased emphasis on free trade policies, which has reduced national control over the economy (Schön 2012, Woods 2005). According to Harvey (2007), the deregulation of the 1970s marked the start of a neo-liberal hegemony in world politics. In Harvey’s view, neo-liberalism, represented
by politicians such as Ronald Reagan and Margaret Thatcher, should be viewed as an intentional attempt by the upper classes to regain dominance over the lower classes. However, from another perspective, that which Harvey calls neo-liberalism may be a consequence of the mechanics of capitalism rather than an intentionality (Friedman 2014). In referring to earlier periods of internationalization and financialization, Braudel (1982a, 246) argued that the Italian investors of the 16th century and the Dutch investors of the 18th century had no choice but to invest in productive enterprises abroad.

Expanding on Braudel’s argument, Friedman (2014) argues that globalization – or neo-liberalism – is a historical phase of hegemonic decline, whereby the old economic centers of the world export large shares of their productive capital and new centers rise to a hegemonic position in the world system (Arrighi 1994, Arrighi 1999, Friedman 2004, Friedman and Friedman 2013, Wallerstein 2010). In Friedman’s view the phase of globalization, including the phenomena of deregulation, internationalization and financialization, is thus the last phase of a longer cycle of capital expansion and contraction (Friedman 2014).

Besides emphasizing the structural features of globalization, this view thus suggests that globalization, and the related phenomena of deindustrialization, deregulation and financialization, is a process of economic decline in the old economic centers of the world, in which production is replaced by consumption and increase of debt. In this sense, the world system view on globalization stands in stark contrast to the view proposed by Castells (2010), Albrow (1996) and Appadurai (1996) – whereas these authors see the birth of a new global era characterized by flows and networks, Friedman & Friedman (2013), Wallerstein (2010) and Arrighi (1999) see the end of an era of American and Western hegemony.

While the world system view on globalization is appealing, not least since it offers an explanation to the historical shifts in economic power and world hegemony (Arrighi 1994), it should be emphasized that contemporary globalization consists of many new features, not least technologically (Castells 2010, Dicken 2003, Harvey 1999). Furthermore, the historicism implied by this view is certainly not unproblematic, as it may hide that the contemporary situation in fact, and by definition, is new (Popper 2002, Popper 2012).
No matter whether contemporary economic globalization is viewed as an intentionality or as a structural feature hardwired into the capitalist world system, as a historically unique phenomenon or as a reoccurring phenomenon, or as the start of a new global era or as the end of an era of American and Western hegemony, there are certain facts of the contemporary situation that are relevant for local investments, for the redistribution of the spatial division of labor and, by extension, for economic changes in rural areas in Sweden. One such fact is the increase in international trade, which tripled as a share of world GDP between 1960 and 2010, surpassing the level of trade in the more integrated period before WWI in the first half of the 1970s (Feenstra, Inklaar and Timmer 2015, Klasing and Milionis 2014). This was especially the case for the international trade of manufactured goods, which intensified due to a number of factors, including major cuts in tariffs for manufactured goods, more effective transportation technology, and increased intra-firm trade (Abreu 1996, Bruinsma 2003). The growth in trade was slower for agricultural products than manufactured products. The reason for this relatively slower growth in international trade was due partly to policy measures, such as higher tariffs on agricultural goods and subsidization of the national agricultural sector in developed countries, and partly to the structure of the agricultural sector with relatively less intra-firm and intra-industry trade (Bruinsma 2003).

While international trade with manufactured goods increased the most, the trade of both agricultural goods and raw materials saw significant increases as well (Bruinsma 2003, WTO 2017). One implication of increased international trade is that prices compete on an international level, which, in turn, means that the conditions for local economic activity are determined by factors external to the national demand to a larger extent than before, partly removing local control over production. Especially prices on raw materials are vulnerable to price changes on the world market; for example, mining activity can become profitable or unprofitable based on changes in world market mineral prices (Cutter, Renwick and Renwick 1985, Knobblock and Pettersson 2010). But the agricultural sector is also affected by changes in world market food prices, despite attempts to minimize the effect via economic barriers, such as tariffs and subsidies (Bruinsma 2003).

A related implication of increased international trade is that the market for each individual producer expands which, via comparative advantages and
economy of scale, leads to increased specialization in the division of labor, including the spatial division of labor (Heckscher and Ohlin 1991, Massey 1984, Ricardo 1817, Schön 2012, Smith 1986). Changes in local investments and the redistribution of the spatial division of labor due to expanding markets are most clearly visible in the manufacturing sector, for which the profitability of investing in countries with lower wages increases. This has led to a pressure towards both a direct and indirect relocation of industrial production – direct when companies relocate or outsource their production from high- to low-wage countries to increase profit, and indirect due to the competition advantages of lower wages and cheaper production costs (Dicken 2003, Friedman and Friedman 2013, Massey 1984, Porter 1986). The direct relocation of production, through FDI (Foreign Direct Investment), is mainly relevant for the manufacturing sector, since for obvious reasons it is harder to relocate production in the primary or tertiary sector (natural resources cannot be relocated, and only some services can). However, the expanding market has also affected agriculture by, among other things, increasing farm agglomeration and specialization. As farms become less dependent on local demand, but can export their products to distant places, the profitability of specialization increases (Woods 2005). A new, productivist, system of agricultural production thus developed, with farms specializing in single products to maximize their output. One example of this is the farm clusters of California, where one producer may specialize in cattle and another in carrots, while a third produces fertilizer by buying raw material from the cattle farmer and selling the refined product to the carrot farmer (Woods 2005).

With increased specialization in both the manufacturing and the natural resource sectors, there has also been a redistribution of the spatial division of labor within corporations, whereby multinational corporations with vast resources have emerged on a large scale. In agriculture, for example, only four corporations control large parts of the global seed market (Hendrickson and Heffernan 2002). Many of the large agricultural companies are furthermore cooperating with each other in order to increase control of the production chain. Hendrickson & Heffernan (2002) identify three global food clusters that are governed by the corporations Cargill and Monsanto, ConAgra, and Novartis and Archer Daniels Midland (ADM). These corporations work with gene modification and seed production (Monsanto, ConAgra and Novartis) and the processing of food from farmers (Cargill, ConAgra and ADM), which gives them control of the
production within the food cluster. Furthermore, their control over food processing and their dominant role on the market gives them significant power to decide the prices paid to farmers. Another example from Sweden is the forestry company Svenska Cellulosa Aktiebolaget (SCA), which in the 1960s was a regional company operating in northern Sweden. Today the company operates on a global scale, with units and production in many parts of the world (Layton and Lindgren 1992, Pettersson 2002).

Expanding markets have also affected the food retail sector, leading to the concentration of economic power (Woods 2005). One example of this is Sweden, where three corporations accounted for 88% of food retail sales in 2007 (Swedish Competition Authority 2008). Similar to the large food-processing corporations, the near monopoly in the food retail sector allows the leading food retail corporations to have significant influence over the price paid to farmers. Moreover, the development of own-brand products, which has increased steadily since the 70s, has further increased the food retail corporations’ influence over the production chain and the price paid to farmers. Apart from their direct effect on agriculture, large supermarkets in combination with increased commuting have forced many local stores in rural areas out of business, reducing the service level and attractiveness of these places (Nutley 1998, Woods 2005).

To summarize the above discussion on economic globalization and concentrate its importance for local economic changes: the causal chain started with deregulation and new technology (not least telecommunication and transportation) (Castells 2010, Dicken 2003, Harvey 2007). These factors have in turn led to increased international trade, which has expanded the market for producers (Dicken 2003, Feenstra et al. 2015, Woods 2005). The expanding market has led to spatial shifts in the layers of investment, whereby, among other things, low production costs present a comparative advantage (Friedman 2014, Friedman and Friedman 2013, Friedman and Friedman 2008b, Massey 1984). This has also led to increased specialization, rationalization, and the rise of international corporations (Dicken 2003, Woods 2005). Increased specialization and the spatial shift in local investment have, in turn, had redistributive effects on the spatial division of labor; for example, there has been a spatial redistribution in manufacturing employment from high- to low-wage countries (Dicken 2003).
Another aspect of globalization that is relevant for economic and demographic changes in rural areas is the globalization of personal mobility: both permanent and temporary migration have increased substantially since the 1970s (Woods 2005). In this regard, the tourism sector has grown several times over in recent decades, and, not least, otherwise peripheral areas have become attractive destinations for both national and international tourists (Lundmark 2006, Müller and Ulrich 2007). For a few peripheral areas, tourism even comprises an essential part of their regional economy (Müller and Ulrich 2007). Furthermore, the workforce within the tourism sector is hard to rationalize without compromising service quality, which means that growth within the sector has led to growth in employment opportunities in the areas in question (Lundmark 2006).

The globalization of personal mobility has also led to large increases in international migration streams, but also to shifts between various kinds of migration motives. In the past 30 years, for example, Sweden has experienced large increases in especially asylum immigration while labor immigration has declined (until 2006, when it began increasing again). While the largest part of immigration is directed towards urban areas, rural areas have also seen a substantial increase in immigration. By contributing to demographic changes, the large-scale immigration is an important phenomenon in rural areas as well (Hedberg and Haandrikman 2014).
Settlement and employment
development in Sweden

In this section, the settlement and population development in Sweden are described in order to place the empirical studies in this thesis in their historical context. However, before moving on to the historical description, some theoretical considerations are necessary, regarding spatial population redistribution and its relation to demographic and economic changes.

The redistribution of the population can be broken down into the natural component of birth and death rates, and the migration component of in-migration and out-migration; however, these two components are intertwined. A local decrease in the birth rate may, for example, be the result of a past out-migration of youths, and a war or famine may lead to both an increased death rate and mass out-migration (consider for example the potato famine on Ireland during the period 1845-1852, which increased emigration from the country). While the natural component is important for population redistribution, theories on population redistribution have primarily focused on the migration component, as in many cases it is an underlying cause of regional differences in the birth rate (Borgegård, Håkansson and Malmberg 1995). These theories have concerned themselves with a wide array of possible determinants of migration, including demographic, social and economic conditions and their spatial variation (Andersson 1987), policy interventions, and attitudes towards different places, whereby the importance of these factors in shaping the migration patterns is partly dependent on the perspective, the timeframe of analysis, and on variations in the importance of these factors in time and space (Borgegård et al. 1995).

From a long-term historical perspective, a fruitful view on the migratory processes and the redistribution of the population is to consider them together with changes in economic activities – a view often referred to as the structural perspective (Andersson 1987). This perspective combines the two spheres Hägerstrand (1970) refers to as “population system” and “activity system”. The reason for this is that the advance and retreat of settlements are closely correlated with economic activities, with the exploitation of local resources having played an important part in shaping the contemporary settlement pattern (Enequist 1960, Schön 2012). This is
not to say that changes in the activity system by necessity lead to changes in the population system or vice versa, but rather that the two spheres are bound to each other (Andersson 1987, Weber 1962). In an investigation of the 20th-century urbanization in Sweden, Andersson (1987) emphasized the constituent relationship between the birth of capitalism, industrialization, and the growth of wage laborers on the one hand, and urbanization on the other. Zelinsky (1971), for his part, argued that there is an inherent relationship between the demographic transition (or the “vital transition” in Zelinsky’s terms) and changes in social norms, migration patterns, infrastructure, technology and economic activities, and that these changes together comprise an important part of the modernizing process itself.

The remaining part of this section presents a brief description of the settlement development, the demographic development, and the economic development in Sweden from 1750, with emphasis on the relationship between the population system and the activity system.

In a study on the long-term trends of the population redistribution in Sweden, Borgegård et al. (1995) identified five periods of redistribution between 1780 and 1990. In the first period, 1780-1890, the settlement pattern was characterized by dispersion on both the regional and local levels, with areas previously unoccupied by the Swedish state becoming occupied. One reason for the dispersion of the population was population growth: the Swedish population grew an average of 0.5% per year during 1750-1800, and by 0.8% per year during 1800-1890. The population increased by 3 million in the period from 1750 to 1890, reaching a total of 4.8 million by 1890 (Schön 2012, Statistics Sweden 2017). In the largely agrarian Sweden of 1750, the growing population led to an increasing demand for new land, which pushed the population both north and south as well as west from the more densely populated regions of Mälardalen, Östergötland and Kopparberg (Borgegard et al. 1995, Schön 2012).

In 1750 the region of Lappland was mostly inhabited by the nomadic Sami people, but besides a few settlements in the southern parts of the region it was largely unoccupied by the Swedish state. By 1800 many new settlements had formed in the region, but these were mostly located in proximity to the old settlements in the south. By 1850 settlements had formed over the whole region, even in the more peripheral mountainous parts of Lappland, and already by this period the outer boundaries of the northern settlement expansion had been reached (Enequist 1960). While
the initial population growth in Lappland occurred through in-migration, or external colonization, a large part of the subsequent population growth in the region could be described as a process of internal colonization, primarily driven by natural population growth and resettlement from “mother settlements” (Bunte, Borgegård and Gaunitz 1982, Bylund 1956, Bylund 1960). Until around 1850, the settlers of the northern expansion used the forests primarily for animal keeping, hunting and farming, and for the production of charcoal for use in the smelting of iron (Aldskogius 1960, Enequist 1960) and tar. One enabling factor behind the northern expansion was the introduction of the potato, which was rich in nutrition and could endure the harsher climate of the northern inland. Tax reduction policies for those who chose to settle in the north and freedom from military service among the men were two other important factors (Bylund 1956, Enequist 1960).

While Sweden was primarily an agrarian society in the 19th century, employment in various forms of craftsmanship as well as industrial employment increased, especially in the latter half of the century (Enequist 1960, Schön 2012). Timber rafting was also an expanding sector during the 19th century, but in contrast to work in the forest it was not easily combined with farming, as it was performed during the summer months (Bunte et al. 1982). Work in both agriculture and the growing manufacturing sector was segregated by gender. In agriculture, for example, milking was primarily performed by women while men cared for the horses. Household tasks, such as washing, cleaning and caring for the children, were also performed by women (Ohlander and Strömberg 2002). In manufacturing, women worked as spinners in the expanding textile industry. In the 18th century, spinning had primarily been performed on the farm as a complement to agriculture; in the latter half of the 19th century this practice was replaced by textile factories (Ohlander and Strömberg 2002).

The next period identified by Borgegård et al. (1995), 1890-1930, was characterized by regional dispersion and local concentration, meaning that urban areas grew or took form in many parts of the country. The population redistribution in this period was closely related to the industrialization of Sweden. Around 1850 in northern Sweden, and earlier in southern Sweden, smaller saw mills started competing with the traditional use of the forest – partly as a result of increased demand from Britain (Bunte et al. 1982). Similar to smelters, the saw mills were located near streaming rivers, which were used both as a source of power and for the rafting of
timber to the mill. Many farmers combined farming with work in the saw mills or the forest, or producing charcoal (Enequist 1960, Lundmark and Malmberg 1988, Schön 2012). However, there was also an abandonment of smaller farms in favor of settlement in villages and employment at the local saw mill or iron smelting factory (Enequist 1960). It should also be emphasized, as Lundmark and Malmberg (1988) have shown, that the early industrialization in Sweden occurred in both rural and urban areas. This dispersed pattern of industry location has been explained by the natural resource profile of the Swedish industries during this period (Lundmark and Malmberg 1988).

The continued increase in the population, which grew by another 1.3 million during the period 1890-1930 to a total of 6.1 million by 1930, was also an important part of the settlement development in this period (Statistics Sweden 2017). While industrialization was a major development trend in many parts of Europe, not least in Britain where the Industrial Revolution started, the major increase in the Swedish population from 1750 onward was a contributing factor in shaping the Industrial Revolution in Sweden. As more children survived into adulthood, many sons and daughters of farmers did not inherit their parents’ land; this resulted in a growing rural proletariat, dependent on wage labor for their survival (Schön 2012).

In the 18th and 19th centuries the population increase resulted in a diffusion of the population in search of new land, but also in a growing proletariat who took work on the farm or in the mine as wage laborers (Enequist 1960, Magnusson 2002, Schön 2012). While agriculture remained the major sector of employment, the importance of the manufacturing sector grew from 1850 onward. As the increased supply of wage labor coincided with the Industrial Revolution, and thereby the increased demand for wage labor, the increase in population was a factor behind the growth of urban areas in this period (Andersson 1987, Borgegard et al. 1995). In 1900, approximately 500,000 persons were employed in the manufacturing sector while 1.3 million were employed in agriculture, whereas by 1930 manufacturing employment had increased to 750,000 while employment in agriculture had declined to 1.1 million (Jansson and Antonson 2011). There were some regional variations in the changes in employment, with employment in agriculture continuing to increase until around 1930 in the inland of northern Sweden. According to Bäcklund (1988), this was mainly a result of the population growth exceeding the growth of employment.
opportunities in manufacturing and services in northern Sweden, which, in turn, forced people into agriculture for their livelihood. However, the development in neither the agricultural nor the manufacturing sector could absorb the larger new generations – a combination of the severe famine of 1867-1869, better opportunities elsewhere, and reduced transportation costs led to a mass emigration of the population, primarily to America but also to more developed countries on the European continent such as Britain, Germany and Denmark. During the period 1860-1930 approximately 1.4 million emigrated from Sweden, while only 400,000 immigrated (Schön 2012, Statistics Sweden 2017).

From 1930 to 1970 the population redistributed towards a concentration on both the local and the regional level, with urban centers growing at the same time as the southern regions increased more than the northern regions (Borgegard et al. 1995). During this period the population increased by another 2 million, to a total of 8.1 million by 1970. A quarter of the population increase was due to immigration, with the negative net out-migration of earlier periods, from 1930 onward, changing into positive yearly figures (Statistics Sweden 2017).

One reason for the population concentration at the beginning of this period was industrial modernization, whereby small-scale industries were replaced by large-scale, more modern, ones – this was not least the case for the local saw mills (Borgegard et al. 1995, Gårdlund 1942, Lundmark and Malmberg 1988). However, from around 1940, employment in manufacturing grew more quickly in peripheral regions which, according to Lundmark and Malmberg (1988), suggests that explanations for the regional concentration after 1940 should be sought in other sectors than manufacturing.

Between 1930 and 1950 both employment and yearly production in manufacturing and related services, such as transportation, increased extensively. In the period 1950-1970 employment growth in the manufacturing sector slowed down, while the yearly production growth continued at the same pace as for the period 1930-1950, at around 5% per year (Schön 2012). Instead, the main employment growth took place in the service sector (for males) and in both the public and service sector (for females) (Jansson and Antonson 2011, Ohlander and Strömberg 2002, Schön 2012).
The growth of the public sector during the period 1950-1970 was an important factor for the concentration of the population. The welfare state and the related municipal reforms of 1952 and 1971 reduced the number of municipalities from 2,498 to 278, each with its own urban center, where the majority of the public services were located. The growth of the public sector thereby increased the employment opportunities in the municipal centers (Borgegard et al. 1995). The public sector growth also coincided with the increased participation of women on the labor market. In 1920 only around 5% of married women worked for wages; in 1960 this figure was 25%; and by 1980 it had increased to 65% (Ohlander 1994).

The period 1930-1970 was also when employment in agriculture underwent its major decline, and when the manufacturing sector became the major source of employment. Between 1930 and 1970, employment in agriculture declined from 1.1 million to a mere 300,000 persons. In the same period, employment in the manufacturing sector increased from 750,000 to 1.2 million, making it the largest sector in Sweden (Jansson and Antonson 2011). Similarly, the number of self-employed farmers declined by 78%, from approximately 430,000 in 1930 to 95,000 in 1970 (Figure 2). However, the decline of employment in agriculture was only one aspect of a more fundamental transformation of the sector, whereby manual labor was replaced by machines, fertilizers and other refinement techniques were introduced on a large scale and, after 1960, smaller production units were replaced by larger ones – thus, the period 1930-1970, and especially 1950-1970, saw the rise of productivist agriculture in Sweden (Flygare and Isacson 2003, Jansson and Antonson 2011, Schön 2012, Woods 2005). Although the largest decline in agricultural employment occurred between 1950 and 1960, the age distribution of farmers in 1960 (Figure 3) shows that the aggregate employment figures were delayed. That the number of farmers was largest in the age group 50-60, and decreased linearly with ages below 50, indicates that the decline in young adults entering the sector as farmers started around 1930.
Figure 2: Number of farmers, tractors and harvesters in Sweden (Board of Agriculture 2008)

Figure 3: Number of farmers by age, 1960 and 2010 (data source: ASTRID)

At the same time as employment in agriculture decreased, agricultural production more than doubled between 1950 and 1990 (Figure 4). The
explanation for this increase in productivity was the introduction of more advanced technology during this period (Jansson and Antonson 2011, Schön 2012). One such technology with importance for agriculture, but far from the only one, was motor vehicles. In 1944 there were 417 harvesters and 25,000 tractors in Sweden, while by 1975 these numbers had increased to a high point of 49,000 harvesters and 189,000 tractors. In the years following 2000, there was almost one harvester for every farmer (Figure 2). An intertwined reason for the increased production was the concentration of agriculture, which began in the 1940s (Jansson and Antonson 2011). In 1940, 65% of agricultural land belonged to farms with less than 30 ha of land while 10% belonged to farms with more than 100 ha of land, whereas in 2007 20% of total agricultural land belonged to farms with less than 30 ha and 45% to farms with more than 100 ha of land (Figure 5).

**Figure 4.** Production of wheat, grain, oat and beets in Sweden 1921–1990 in tons, five-year moving average (data source: Board of Agriculture 2008)
The same pattern of rationalization and increase in production can also be found in the forestry sector. In 1930 the number of those employed full-time in forestry amounted to approximately 182,000, while the same figure in 1970 was 32,000 and in 2015 only 16,000 (SOU 1938:58, Swedish Forest Agency 2017). The major decrease in forestry employment coincided with the implementation of new technologies in the sector. In the 1950s, the chainsaw revolutionized the forestry sector in Sweden, with the yearly sales figure of about 600 chainsaws in 1948 had increased to more than 15,000 by 1956. The chainsaw eased several work-intensive steps in forestry labor, and thus increased the productivity per worked hour and reduced the labor demand (Hjelm 1991). Similar to the development in agriculture, production in forestry continued to increase despite the decline in employment: from a five-year average of 55 million cubic meters for the period 1944-1948 to 75 million cubic meters for 1970-1974 and 89 million cubic meters for 2011-2015 (Swedish Forest Agency 2017). This development can only be explained by the technological development that has occurred in the forestry sector. Since the chainsaw’s arrival technological development has only continued, and today the chainsaw has been replaced by harvest machines and other technology, which have vastly reduced the demand for employment (Schön 2012).
The restructuring of the agricultural and forestry sectors from around 1930, and especially after 1950, whereby employment declined at the same time as production increased, was an integral part of the restructuring from agriculture to manufacturing. In the 1930s the agricultural and forestry sectors had difficulty attracting new labor to farms, as the wages in the expanding manufacturing sector were much higher than in employment as a farmhand, maid or forestry worker (Bunte et al. 1982, Schön 2012). The insufficient renewal of the sectors, with youths entering the labor market joining the manufacturing sector to a larger extent, forced the sectors to mechanize in order keep up production; but, on the other hand, the mechanization of the sectors was only made possible through the new technologies developed by the manufacturing sector (Schön 2012). The combination of employment decline at both the local saw mills and within the forestry and agricultural sectors, from the 1950s onward, hit the frontiers of the northern expansion extra hard. However, the loss of jobs in the municipalities of the northern inland was to some extent compensated for by an expanding public sector in the municipal centers (Borgegard et al. 1995).

In the following decade of 1970-1980, the concentration of the population continued but decreased in intensity. Although the 1970s are often referred to as a decade characterized by counterurbanization and a “green wave”, the net result was still a concentration of the population on both the regional and the local level (although mainly related to a larger natural growth in urban areas compared to rural areas) (Amcoff 2000, Borgegard et al. 1995). A major part of the counterurbanization, and the decline in the pace of concentration, in the 1970s consisted of suburbanization due to increased commuting (Amcoff 2000, Falk 1976). Another important part was a slight shift in the continued expansion of the public sector, with smaller urban areas in urban regions seeing a larger increase in the public sector. This led to a redistribution of employment opportunities in the public sector, from larger to smaller urban areas (Borgegard et al. 1995). Thus, the dispersion – or rather the slowed concentration – of the population in this decade was mainly a dispersion within urban regions (Amcoff 2000, Borgegard et al. 1995, Falk 1976).

From the 1970s onward, the yearly increase in population growth slowed from around 0.7% in previous decades to 0.4%. During the 1970s the Swedish population increased by 220,000 (half the growth of the 1960s),
of which 125,000 reflected a surplus of the net migration to the country (Statistics Sweden 2017).

The 1970s were also the decade when the manufacturing sector began its decline in Sweden. Following the oil crisis of 1973 and the related structural crisis in the latter half of the decade, many manufacturing companies went bankrupt or had to downsize or rationalize production; this was the case not least for companies in the shipyard and steel industries, and employment in manufacturing declined from 1975 onward. While employment in manufacturing declined, however, employment in the service and public sectors continued to increase (Jansson and Antsonson 2011, Schön 2012). The economic shift in the 1970s, which occurred in many Western countries, has consequently been described as a structural shift from an industrial economy to a service economy (Schön 2012). However, the decline of employment in the manufacturing sector during the 1970s was slower in peripheral regions, which increased their national share of employment in manufacturing (Lundmark and Malmberg 1988). A few empirical studies have highlighted the relationship between manufacturing decline and subsequent migration of the workforce. In a case study on the closing of the paper mill in the small urban locality of Jössefors, Berger (1973) concluded that the closing had significant effects on the local economy and commuting and migration patterns.

The last period described by Borgegård et al. (1995), 1980-1990, consisted of regional concentration, while local concentration neither increased nor decreased. However, when broken down into different groups a slightly different pattern emerges whereby the net migration to larger cities was different for different groups, with families with children moving to the outskirts of larger cities while young adults and immigrants had a positive net migration to larger cities (Amcoff 2000, Borgegård, Håkansson and Müller 1998). In this decade the net migration surplus made up a larger share of the total population growth, with the total population increasing by 210,000, of which 147,000 reflected a surplus of the net migration to Sweden.

In the 1990s, Westlund (2002) argued, Sweden experienced a new green wave characterized by a higher net increase of the population in rural areas. However, the “rural” population increase was concentrated around urban centers, and on the regional level the population concentrated by increasing more in the metropolitan regions (Amcoff 2003). The
“counterurbanization” was thus directed to areas within functional urban regions, which indicates that suburbanization, ex-urbanization and urban sprawl are more reasonable descriptions than a “new green wave”. Furthermore, Amcoff (2006) has shown that the net growth of the rural population (defined as population outside “tätorter”) in the 1990s disappeared entirely, when urban sprawl is controlled for. In elaborating on the study by Westlund (2002), Westlund and Pichler (2013) found that the regional concentration of the population continued into the 21st century, and argued for understanding this trend as a manifestation of the transition towards a “knowledge economy.”

The 1990s were also an important decade for the development of the Swedish economy, with the first half of the decade tinged by a severe economic crisis. In the aftermath of the crisis, employment in manufacturing and the public sector declined by approximately 200,000 jobs each, and the service sector is the only one that has grown since the crisis. However, although the service sector has grown, the employment rate has not recovered to pre-crisis figures (Schön 2012). After the economic crisis of the 1990s, the number of youths entering higher education increased substantially, which spurred migration to urban areas and thereby had a concentrating effect on the population (Lundholm 2007).

From 1990 onward the trend in the population growth that could be noted in the 1980s continued, with the growth to a larger degree being due to a surplus of the net migration to the country. Between 1990 and 2010 the population increased by 825,000, to a total of 9.4 million, of which 650,000 reflected a surplus of the net migration to Sweden (Statistics Sweden 2017). Since immigrants settled more in urban areas, especially Stockholm, Gothenburg and Malmö, the growing immigration had a concentrating effect on the population (Borgegard et al. 1995, Borgegård et al. 1998, Hedberg and Haandrikman 2014).

By way of summarizing the changes in the settlement pattern and in employment since 1750, it is evident that the settlement pattern, the demographic changes, and the changes in economic activity are bound to each other and may shift in importance over time. However, after the 1970s the description becomes more stratified, with changes in the settlement pattern being treated separately from those in the economic activities. The reason for this is that most studies on urbanization in Sweden for the period after 1970 have considered the population system in isolation from
the activity system (Amcoff 2000, Amcoff 2003, Amcoff 2006, Stenbacka 2001). However, in another strand of literature that specifically focuses on the contemporary development of cities, population redistribution is considered together with economic changes. Florida (2002), for example, argues that economic growth in the new service economy is related to the in-migration of a “creative class”. In writing on the transition to the new service economy (emphasizing the heterogeneity of the service sector), Castells (2010) argued that the new information technology would not lead to the end of cities, as was hypothesized in the 1980s, but rather to their growth. In Sweden, Nilsson (2011) has shown that cities with an industrial profile have declined from the 1990s onward, while large cities with a more diversified economy have grown. While not looking specifically at changes in the types of economic activities, Holm et al. (2013) reach a similar conclusion. This would lend support to the structural perspective of considering the population system together with the activity system even when investigating the recent history of rural and regional change.
Data and methods

Methodological perspective

The three empirical papers in this thesis investigate changes in employment and migration in rural Sweden 1960-2010 (Articles I and II), and the geographic distribution of these factors in 2008 (Article III). In turn, as the discussion in Section 2 argues, these factors should be understood as the local products of broader technological, economic and social processes on a global scale – processes that are not subject to empirical investigation in this thesis. This research design – in which observable, local factors are explained by less visible, global factors – lies at the center of the restructuring approach. In this sense, “localities are places where wider processes manifest themselves” (Lovering 1989, 213). Thus, it is not just that the broader technological, economic and social processes are unobserved in the empirical material of this thesis; it is also the case that the causal connection between the global and the local, between the broad and the specific, is less visible as an object of empirical enquiry (Urry 1987).

The underlying philosophical perspective thus lies closer to the methodological realism proposed by Bhaskar (1978) than to methodological empiricism or positivism. Whereas an empiricist or positivist approach would restrict the analysis to the data under observation, a realist approach acknowledges that causal factors may be relevant to the explanation even when they are not an object of empirical investigation (Lovering 1989). As Sayer (1982) noted, assumptions of non-empirical objects have often been a fruitful method of scientific enquiry, with for example manifestations of disease (observed) being assumed to be caused by viruses even before viruses had been discovered as an empirical object. In the case of technological development, social modernization and globalization, there is not really any doubt as to the existence of these processes; it is just that their local impact (and to some extent their content) is elusive to measure.

5 In the restructuring approach, the causal relationship between the local and the global is recognized as a two-way relationship, whereby “the locality […] may be a site of emergent causal powers” (Lovering, 1989, 213). The approach in this thesis, however, is delimited to considering the relationship between the local and the global as a one-way relationship, with global processes causing local outcomes.
– especially as their impact varies between localities with different conditions and trajectories (Urry 1987).

In following a realist line of thought, this thesis views space as a continuous phenomenon, whereby all (spatial) categorizations are in some sense arbitrary (Jones 2009). However, although a realist perspective acknowledges that reality is continuous on an ontological level, epistemology (and indeed terminology) demands that categorizations be made (Harvey 1996, Kant 1998). Thus, there is no contradiction in this thesis concerning itself with rural Sweden as a spatial category while at the same time acknowledging that space is continuous. As argued for in Section 1.2, rural is merely viewed as an area of interest, and not as an enclosed social system (Hoggart 1988, Hoggart 1990).

Methods

As this thesis sets out to explore contemporary demographic and labor market change in rural Sweden, the methodological starting point is one of inductive description, with the purpose of describing the broad features of these changes using longitudinal geo-referenced micro-data on the whole Swedish population.

In Articles I and II a life-course perspective is applied, whereby the differences between a selection of cohorts are investigated. In Paper I the selection consists of two cohorts of male and female agricultural workers, the first born in 1938-1940 and the second in 1958-1960, whose employment trajectories are studied until they turned 50-52 years old. In Paper II the selection consists of three whole population cohorts, the first born in 1945, the second in 1960 and the third in 1980. The individuals in the cohorts are defined as urban or rural based on their place of residence at age 15 (see rural definition above), stratified by sex, and measured on their sector of employment and type of residence at ages 20, 25 and 30.

It is argued here that comparing the difference in employment and migration trajectories between cohorts reveals information on larger societal changes that is harder to find using aggregate time series methods. The reason for this is related to the life-course perspective, originally developed by Elder (1994). From this perspective, the relationship between life courses and historical time is central, whereby “differences in birth year expose individuals to different historical worlds, with their constraints and options” (Elder Jr 1994, 5). In this view, aggregate data contain individuals
from many different “historical worlds”, both old and new. Since individual life courses are largely path-dependent – dependent on their past biographies – this means that aggregate data may hide, or at least delay, the extent of societal changes. Therefore, comparing cohorts is often a better method for capturing new trends than aggregate time series.

Another central aspect of the life-course perspective is the timing of events during the individual life course, whereby the individual’s age at the time of an event and the order of events are important (Elder Jr 1994). In contrast to a cross-sectional approach, a longitudinal approach also offers information on what happened before and after the event. For example, while cross-sectional data can show the number of individuals in higher education, longitudinal data may also show what the individual did before and after higher education – how many went on to a job, how many migrated, etc. In turn, such information says something important about the dynamics on the labor market that would have been missed with a cross-sectional approach.

In combination, these two aspects of the life-course perspective – historical time and individual time – make a strong argument when studying societal change for comparing trajectories between cohorts from different historical times.

In Article III the focus is on variation in space rather than change over time, with a hierarchical cluster analysis performed in order to distinguish between different types of rural areas (see definition above). The rural areas were clustered based on their share of employment in different sectors (see above), employment rate, share of population aged 65+, share of females aged 15-45, and population change in percentage 1985-2008. It was important that no spatial variable be included in the cluster analysis, in order not to bias the results towards an urban-rural continuum model.

Data

All three empirical papers in this thesis are based on longitudinal micro-data emanating from the ASTRID database, which is hosted by the Department of Geography and Economic History at Umeå University. ASTRID is a combination of annual registers from Statistics Sweden covering the whole (registered) population in Sweden annually from 1985 onward on a large array of variables. In addition, ASTRID also contains census data on the entire population that covers the period 1960-1990 at
five-year intervals. Crucial for this thesis is also that the data are georeferenced with high geographic resolution (100 square meters). The register data, from 1985 onward, contain the residence and workplace location of the individual accurate to 100x100m, and the census data for 1960-1990 contain information on the parish of residence and whether or not the individual lived within the boundaries of an urban locality.

Two variables are of special importance since they reoccur throughout the articles: namely, a geographical division into rural and urban, and sector of employment. As mentioned in the introduction, the definition of rural varied between the articles, with Article II applying a regional definition and Article III a local one.

The specific definitions of rural and urban in Articles II and III were:

- Article II – Parishes containing a “tätort” larger than 5,000 inhabitants and a population greater than 50,000 within 25km were classified as urban. The remaining population was classified as rural.
- Article III – In the first step, individuals registered in a 100x100m square not located within “tätorter” larger than 1,000 inhabitants were classified as rural. In the second step, the “rural” individuals were aggregated to SAMS (Small Areas for Market Statistics).

The rural definition in Article II thus includes peripheral “tätorter” but excludes areas outside “tätorter” in densely populated regions, while Article III excludes peripheral “tätorter” but includes areas outside “tätorter” in densely populated regions. While this may seem like a problem, it is actually a strength of the thesis. The reason for this is that the research questions vary between the articles, with Article II focusing on the labor market and Article III on rural heterogeneity. Furthermore, the results of Article III (see below) show that the large difference in demographic trends and employment characteristics is between “rural” areas close to urban centers and peripheral rural areas, rather than between rural and urban areas understood as inside/outside “tätorter”. For this reason, the results in Article II would be distorted with the rural definition of Article III. At the same time, the typology developed in Article III would be much less interesting if only peripheral rural areas were included in the study. However, it is important to keep in mind the difference between the articles when conclusions are drawn, as Article II
investigates the areas categorized as *areas outside the urban shadow*, *manufacturing periphery* and *resource periphery* in the rural typology developed in Article III (see below).

As was mentioned in the Introduction Article I does not include any definition of rural, but rather looks at changes in the agricultural sector as a “rural” sector. This does not imply that rural areas are defined by agriculture but rather that agriculture almost exclusively takes place in “rural areas” when a local definition of rural is used (as in Article III). While Article I does not discriminate between rural areas the results of Article II shows that changes in agricultural mainly took place in more peripheral areas rather than areas close to larger urban areas.

The variable “sector of employment” reoccurred throughout the three articles, and comprised a central part of the analysis. The variable is based on four- to five-digit SNI codes, which are collected at the plant level. Individuals working at a plant are then ascribed the SNI code of that plant. This means that the data do not reveal the occupation of the individual but only the sectorial category of the workplace. In order to create the variable “sector of employment”, the SNI codes were aggregated to broader sectorial categories. However, these variables have slight variations in definition between the articles:

- Article I – agriculture, other natural resource sectors, manufacturing, services, public
- Article II – natural resource sectors, manufacturing, services, public
- Article III – agriculture, forestry, mining, manufacturing, tourism, finance and other advanced services

The reason for this variation is differences in the research questions or focus between the articles. Agriculture is broken out from natural resources in Article I due to the article’s focus on the agricultural sector. In Article III, only the sectors with a substantial geographical variation are selected (the public sector, for example, is much more evenly distributed

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6 SNI = Standard för Svensk Näringsgrensindelning
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than manufacturing, mining, or tourism). A summary of the research design of the three articles can be found in Table 1.

Regarding the SNI-codes used to define the variable “sector of employment” in Article I and Article II it should also be mentioned that three different versions of the codes was connected: SNI69 (1960-1990), SNI92 (1990-2002) and SNI02 (2002-2010). This was done through using a key created by Statistics Sweden between the different versions. Few of the broader sectorial categories were affected by the transition between the different versions of SNI. However, in the more fine-grained division with 27 sectorial categories (used in Article II) the codes in the category “other services” became more detailed in SNI92 and SNI02.

**Limitations and delimitations**

In focusing on changes in employment, internal migration and population distribution in rural Sweden, this thesis is naturally delimited to these aspects. However, even when the focus is narrowed to only these aspects, there are some additional delimitations that need to be considered and made explicit. Furthermore, some limitations related to the data and methods should also be considered.

One limitation is the extent to which temporal changes in the observed sectorial distribution reflect real changes in types of employment or merely changes in the structure of companies. In this regard, Knoblock & Pettersson (2010) found that sub-contractors, not classified as mining companies in the SNI code, stood for a substantial part of the employment growth in the mining industry in northern Sweden during the period 2001-2007. Schön (2012) also points out that parts of the decline of the manufacturing sector and growth of the service sector since the 1970s are a statistical artifact caused by increased outsourcing. Whereas manufacturing companies previously kept many services internally (e.g. cleaning and other forms of maintenance services), these are increasingly being outsourced to sub-contractors. The implication of this is a reclassification of individuals from manufacturing to services, even though the content of the job (e.g. cleaning) is identical. The extent to which this effect is an important factor in the Swedish manufacturing sector has not, to the author’s knowledge, been investigated empirically. One study on this effect in South Africa between 2001 and 2007 (Tregenna 2010) found that the effect is important. However, the short time period of that investigation and the differences between Sweden and South Africa (with the latter, for
example, seeing an increase in employment in the manufacturing sector during the study period, even without controls for outsourcing), should caution against a direct transferal of the results to Swedish conditions. While Schön (2012) acknowledges that the restructuring towards services may to some extent be a statistical artifact, he also acknowledges that there has been a real (as opposed to statistical) shift towards the service sector. Thus, as far as this thesis is concerned, outsourcing may be a source of error but it certainly does not account for the broad shift from manufacturing towards services that is identified in Article II; nor can it explain the decline in employment in agriculture identified in Article I.

Another limitation is the geographic distribution of sectorial change. While Articles I and II look at the temporal change in employment in different sectors (divided into rural and urban areas in Article II), Article III looks at the cross-sectional geographical distribution of employment in 2008. As argued for above, the rural typology developed in Article III can be viewed as the spatial outcome of the processes described in Articles I and II, but the more exact measurements of the geography, at a high spatial resolution, of sectorial change are not accounted for. In this sense, one could ask whether the mining areas in the rural typology developed in Article III have had another trajectory in regard to sectorial changes than the forestry areas or the areas outside the urban shadow.\footnote{When the empirical analysis was conducted, in what would become Article III, the changes in sectorial distribution between 1985 and 2008 were examined. The tentative conclusion from this, admittedly brief, investigation was that there were no systematic differences in changes in sectorial distribution between the different categories of the typology. Thus, while the areas in the typology revealed similar characteristics in 2008, they had not necessarily reached this state through similar trajectories.} However, one indication that the detailed geography of sectorial change is of limited importance is that the initial stages of what would become Article II divided Sweden into four geographic areas (rural sparse, rural dense, urban sparse, and urban dense). As the changes in employment between the cohorts were very similar between all categories except urban dense, the division was aggregated to only two categories: urban and rural (see Methods section in Article II for further explanation). Thus, while the geographic distribution of sectorial change may vary on a detailed geographic level, it does not seem to vary when broader regions are considered. However, this is still an avenue for further studies, which
should also consider the differences between, and perhaps even within, urban areas.

One delimitation is related to the temporary mobility of the population. As mentioned above, the analyses of rural-urban migration in Article II and population change in Article III are based on the parish and the 100x100m square where the individual is registered in the ASTRID database. The focus on the location of residence means that temporary mobility, for both recreational and work-related purposes, is unaccounted for. The first delimitation is that seasonal population changes related to various forms of recreational activities are unaccounted for. However, insofar as seasonal population changes for recreational purposes are important for the combined change of the population system and the activity system they are, in fact, captured in the rural typology developed in Article III. The tourism areas (see below), where a large share of the local population is employed in tourism, imply that there is an additional inflow of consumers to these areas. Population changes through second homes are captured to a lesser extent, except for the retirement areas in the typology.

When it comes to temporary mobility for work purposes, Article III captures these movements to some extent by also considering rural-to-urban commuting, whereby, for example, rural areas closer to larger urban areas had much higher rural-to-urban commuting than more peripheral rural areas. On the other hand, Article II (on the changes of employment and rural-to-urban migration 1960-2010) does not account for changes in the commuting patterns. However, as Article II defines rural on a regional level, changes in the commuting pattern were of less importance compared to Article III, with a local definition of rural (as the distance commuters are willing to travel is limited, even if it has increased). The increasing group of weekly commuters, however, is still a source of error (Amcoff, 2003). While the empirical articles in thesis do not look at changes in commuting patterns, the description of how commuting has developed since 1960 in Section 3 and the references cited can be consulted in order to complement the picture.

Another delimitation concerns population and employment change through international migration, both temporary and permanent. This is especially the case in the cohort design of Article II, whereby the international migration to Sweden between 1996 and 2010 is unaccounted for in
the cohort born in 1980 (as they had to be registered at ages 15, 20, 25 and 30).\textsuperscript{8}

\textsuperscript{8} Although Article I also uses a cohort approach, agriculture in Sweden employs very few international migrants.
Article summaries

Summary of Article I
In the post-World War II era, the Swedish agricultural sector underwent a structural change consisting of a major decline in employment and a major increase in productivity. This structural change, induced by new technology and globalizing markets, resulted in increasing competition in the agricultural sector, putting pressure on actors to rationalize and intensify.

The aim of the article is to examine how this structural change relates to the labor market trajectories for men and women working in the Swedish agricultural sector, focusing on the labor market dynamics for individuals working in agriculture. The investigation consists of comparing employment trajectories between two cohorts of agricultural workers split by gender, the first born in 1938–1940 and the second in 1958–1960. The method of comparing the work trajectories of individuals rather than the stock of agricultural workers enables the observation of exits from and entries into the agricultural sector, and how this differed between men and women and between the cohorts.

Previous research is cited as showing that men and women have held different roles on the family farm, with men often having the most influence over the business. Due to rationalization, it was therefore often the women who left agriculture for other job opportunities. Based on such research, it is reasonable to believe that the agricultural restructuring has had different implications for men and women.

The data used in the article consist of a combination of census and register data on the entire Swedish population between 1960 and 2010 at five-year intervals. Based on these data, two cohort groups of agricultural workers were selected: the first born between 1938 and 1940, and the second between 1958 and 1960. These cohorts were followed until the age of 50-52. In order to qualify into one of the groups, the individuals in the specified cohorts also had to have worked in agriculture when they were 20 and 25 years old, respectively. This resulted in a cohort group born in 1938–1940 of 3,893 agricultural workers (3140 men and 753 women), and a cohort group born in 1958–1960 of 2,184 agricultural workers (1824 men and 360 women). In the second step, a status variable was created to show which sector the individual worked in, or that the individual was not
working. The sector in which the individual worked was based on a four-digit sectorial code aggregated into five broader sectors: agriculture, other natural resource, manufacturing, service, and public.

The results of the study show that fewer entered agriculture in the 1960 cohort compared with the 1940 one (42% fewer men and 52% fewer women). Furthermore, the individuals in the 1960 cohort exited agriculture to a greater extent and had more turbulent employment trajectories in terms of changing occupation and/or employment sector. While the changes went in the same direction for both sexes they were more prominent for women, which means that changes in the Swedish agricultural labor market have had a greater effect on the women in the sector. The results also show that men who exited agriculture mainly went into manufacturing and the service sector, while women mainly entered the public and service sectors, a pattern that reflects the general gender segregation of the job market. Furthermore, the number entering the service sector was substantially larger in the 1960 cohort while the number entering manufacturing was slightly smaller compared with the 1940 cohort.

The article concludes that the larger exits and the higher turbulence in the men’s 1960 cohort point towards an increased likelihood for this cohort to continue working in agriculture compared with the 1940 cohort, most likely due to increased competition, rationalization, and a lack of profitability in the agricultural sector. The article interprets this as an indication that the structural changes in the economy in general made it harder to continue working in agriculture, and that the exits from agriculture into other sectors was affected by the growth or decline of these sectors.

**Summary of Article II**

This article investigates long-term changes of employment in sectors and urbanization in rural Sweden. Similar to Article I, this article utilizes a comparison between cohorts split by gender. As opposed to Article I, the selection consisted of three whole population cohorts measured at the ages of 15, 20, 25, and 30. The first cohort was born in 1945, the second in 1960, and the third in 1980. These cohorts were subsequently divided into three rural and three urban cohorts, based on parish of residence at age 15. Another important difference from Article I is that this article looks at the combination of employment and rural-to-urban migration rather than just employment.
The article departs from the theoretical framework of rural restructuring, viewing the changes of employment and urbanization as the local products of the global processes of technological development, social modernization and globalization. The article also considers how life-course theory can be utilized to reveal aggregate societal changes in a more nuanced way by distinguishing between historical and individual time.

The most important findings in the empirical analysis are a substantial decline in — especially male — manufacturing, and a decline in the female public sector in rural areas in the 1980 rural cohort. At the same time, rural-to-urban migration and work in the urban service sector increased in the cohort. The article moves on to conclude that the rural change in Sweden during the period 1965-2010 encompasses the rise and decline of the rural public sector, the decline of manufacturing, a general transition towards public- and service-sector employment in urban areas, and a substantial increase in higher education. In turn, the article argues that these local changes are connected to global processes, whereby the observed local changes in rural areas should be understood in the context of the general transition from a manufacturing to a service economy.

In light of these results, the article suggests that the importance of manufacturing has been downplayed in rural geography. As the results indicate that changes in manufacturing employment are an important aspect of contemporary rural change, the article argues that manufacturing change should receive more recognition in rural research.

**Summary of Article III**

This article argues that rural areas should be recognized as heterogeneous localities, and goes on to develop a typology of rural Sweden, distinguishing between different types of rural areas based on their socioeconomic characteristics. The reason for empirically investigating the heterogeneity of rural Sweden, it is argued, is that the literature on rural change consists of many location-specific theories and many empirical claims based on case studies, while it is harder to find overview studies showing the location and magnitude of these changes. In this regard, some studies have claimed that contemporary rural change is characterized by gentrification through an in-migration of the urban middle class, whereas others have focused on population decline and ageing. The argument in the article is that both these processes could be occurring simultaneously, but most likely in
different types of rural areas. And, for this reason, it is an important task to investigate the heterogeneity of rural areas.

The socioeconomic typology was developed using a hierarchical cluster analysis on Swedish SAMS (Small Areas for Market Statistics). The socioeconomic data were aggregated from a set of cross-sectional micro-data on the entire Swedish population in 2008. The micro-data were prepared in three steps. First, the population living in rural areas was selected for further analysis while the population in urban areas was discarded (see details on the utilized definition of rural in the Methods section). Second, the rural population was aggregated to the SAMS, and in the third step the SAMS with a rural population of fewer than 20 people were excluded from further analysis. This procedure resulted in a dataset with 3,983 SAMS. Eleven socioeconomic variables were included in the cluster analysis: employment, higher education, population change 1985-2008, two variables reflecting demographic structure, and six variables reflecting sectorial distribution.

From the hierarchical clustering on the SAMS, a solution was chosen that consisted of five clusters and 16 sub-clusters. The five-cluster solution consisted of the middle-class countryside within the urban shadow (12% of the rural population), the working-class countryside within the urban shadow (22% of the rural population), the countryside outside the urban shadow (25% of the rural population), the manufacturing periphery (28% of the rural population), and the resource periphery (12% of the rural population). Among other things, the typology reveals that middle-class presence in rural Sweden is limited to the near-urban vicinity, or concentrated in small semi-remote but attractive locations (the sub-cluster retirement areas), that areas with a large-scale tourism economy are few and far between, and that areas characterized by depopulation and ageing are mostly found in peripheral areas. The article concludes by pointing out the necessity of geographic overview studies and country-specific typologies to get a better understanding of rural heterogeneity.
Concluding discussion

As stated in the introductory section, this thesis aimed at analyzing demographic and employment changes during the period 1960-2010 in rural Sweden from a structural perspective, acknowledging the interdependence between the population system and the activity system. Based on the empirical investigations in this thesis as well as previous research, a broad distinction is made between two phases of change in rural Sweden. The first phase, characterized by the decline of agriculture and the rise of manufacturing, was connected to the Industrial Revolution and the transformation from an agrarian to an industrial society (Flygare and Isacson 2003, Magnusson 2002, Schön 2012). In this phase, urbanization was extensive and many cities and smaller urban localities were formed or increased in size. In the earlier stages of this period, urban structures grew or were formed in many peripheral areas as well, including the inland of northern Sweden (Borgegard et al. 1995).

Starting in the 1980s rural change entered a second phase, which, in contrast to the first, was characterized by de-industrialization and the rise of the urban service sector. This period was characterized by regional rather than local urbanization. Peripheral urban and rural areas based on industrial employment found themselves with a declining economic motor, which meant that people had to find their source of income elsewhere (Article II in this thesis). The migration streams in this period were thus increasingly directed towards metropolitan or large city centers and their rural surroundings within commuting distance (Amcoff 2000, Amcoff 2003, Amcoff 2006, Borgegard et al. 1995).

Scientifically, this thesis contributes in several ways: firstly, by applying a structural perspective on contemporary rural change, it connects demographic and employment changes to each other and to larger processes; secondly, by applying a life-course perspective on rural restructuring, it departs from the individual level to show how urbanization and employment have changed on the aggregate level; and thirdly, by departing from geo-referenced micro-data aggregated to SAMS, it shows how demographic change and employment vary across rural Sweden. More specifically, the first two articles in the thesis describe changes employment in rural Sweden 1960-2010. This is accomplished by looking at changes in the life course of individuals from different historical times. The second article also looks at the combination of changes in employment and
urban-to-rural migration by situating these two factors on the individual level. The third article, which also departs from micro-data, describes how population change and employment in different sectors were distributed geographically in 2008, and generalizes the distribution into a typology of rural Sweden. Together, the three articles describe how employment and settlement patterns have changed in the recent past and how they are distributed in space. Furthermore, the perspective of rural restructuring widens the understanding of rural change by viewing it as a result of changes in layers of investment and the redistribution of the spatial division of labor. These changes can in turn be linked to the global processes of technological development, social modernization, and globalization. In this view, demographic and employment changes in rural Sweden are the local products of global processes, mediated by changes in local investments.

The societal contribution of this research should be viewed in the context of rural decline, with rural areas in Sweden facing several problems related to economic and demographic decline, including lower tax revenues, increased dependency ratio and the cutback of public services. In this respect, this thesis contributes by specifying which areas are declining and which are growing. Furthermore, by connecting these changes to the transition from a manufacturing to a service-based economy, and to the global processes driving this transition, this thesis could contribute to the policy discussion on rural change by offering a view based on the contemporary development.

In the remaining parts of this concluding discussion, the scientific contribution of the thesis will be discussed in more detail (Sections 6.1 and 6.2), followed by a discussion on some policy implications (Section 6.3). Finally, Section 6.4 discusses avenues for further research related to the present findings.

**Two phases of rural restructuring**

A central finding in this thesis is that contemporary rural change is characterized by a declining manufacturing sector and a growing urban service sector. This finding challenges the common assumption in rural geography that rural change during the past three decades was characterized by a transformation of the rural economy from natural resource sectors towards the service sector. This is the case not least in the discourse of “post-productivism”, in which changes in agriculture are described as an
important component of contemporary rural change. Within this discourse, it is described how productivist agriculture has been replaced by post-productivist agriculture, which is characterized by small-scale production, often of ecological or luxury products (Evans et al. 2002, Shucksmith 1993, Ward 1993, Wilson 2001, Woods 2005, Woods 2010). While there is no doubt that this trend exists, it is more questionable to what extent it is central in understanding contemporary rural change. In their report on rural change in OECD countries, the OECD (2006, 39-44) refers to the change in agricultural employment between 1983 and 2003, and concludes that “agriculture is no longer the backbone of the rural economy”. However, the figures in their report, to which the claim refers, show that employment in agriculture was already marginal by 1983 in many OECD countries, not least Britain, which means that the decline of employment in agriculture must have happened in an earlier period (Figure 6). However, this is not to say that agriculture is an unimportant economic activity (it certainly is not), or even that it is unimportant for employment in rural areas (employment in agriculture may still be studied in its own right, as is done in Article I); it is simply that changes in employment in agriculture are not a central factor behind the contemporary restructuring of rural areas.
Based on the results in Article II and on the description in Section 3 of this thesis, it is evident that in the past century rural areas have undergone two different restructuring processes. The first was a transition from agriculture to manufacturing, with, primarily, new generations of youths starting to work in manufacturing instead of agriculture. As a result of this process of industrialization, many urban areas were formed or increased in size, including many peripheral urban areas (Borgegard et al. 1995). Article II investigates the later stages of the first restructuring phase, during which manufacturing was a major source of employment in rural areas (see Figure 7). The first cohort of rural youths (born in 1945) entered a labor market dominated by employment in manufacturing and the service sector for males, and in the public and service sectors for females. For this cohort of youths, who entered the labor market in 1965, employment in natural resource sectors was already very small. Out-migration to larger urban centers was also substantial for this cohort, with a large share of the rural males migrating to work in the urban service and
manufacturing sectors, and a large share of the rural females migrating to work in the urban service and public sectors.

The second cohort of rural youths, born in 1960 and entering the labor market in 1980, entered a labor market where the manufacturing sector had begun to decline but was still a major source of employment for males. For this cohort the transition towards the service sector began to show, but it did not foster an increase in urbanization. Instead urbanization declined in this period, a fact that could be related to the expansion of the rural public sector, which employed a large share of the females in the cohort.

When the third cohort of rural youths entered the labor market in the year 2000, both employment in the manufacturing sector and the rural public sector had declined substantially. Instead, a larger percentage of this cohort, compared with previous cohorts, migrated to urban areas in order to study or work in the urban service and public sectors.

By situating the changes in employment and urbanization between these three cohorts in their historical context outlined in Section 3, we see that rural areas have undergone two different restructuring processes. In this view, the period 1965-1975 comprised the later stages of the first restructuring process, with manufacturing serving as the economic motor of rural Sweden. Through technological development and globalization, manufacturing gradually declined, and in the period 1980-1990 started to lose its absorptive capacity in rural areas. However, the decline in manufacturing was compensated for by a large expansion of the rural public sector, which in turn was a product of the welfare state, which was made possible through Sweden’s success as an industrial country (see Sections 2.2 and 3). The period 1980-1990 can thus be seen as a transition period between the first and second phases, in which elements related to both the first phase (expanding public sector) and the second phase (shift from manufacturing to services) could be observed. The period 2000-2010 marked the final break with the previous restructuring phase from agriculture to manufacturing. Manufacturing declined substantially in this period, together with a decline of the rural public sector and a large increase in the urbanization rate and the urban service sector. These major changes in employment and migration patterns should be understood as a new restructuring process, whose main component is a transformation of the economy from the manufacturing sector to the urban service sector (see Figure 7 for a summary of this process).
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<th>Late first phase</th>
<th>Transition from first to second phase</th>
<th>Second phase</th>
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<tr>
<td>Large share of females outside job market</td>
<td>Manufacturing starts to lose its absorptive capacity</td>
<td>Transformation of the economy from the manufacturing sector to the service sector</td>
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<td>Urbanization</td>
<td>Service sector grows slightly</td>
<td>Centralization of the public sector (decline of healthcare employment)</td>
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<tr>
<td>Males are mainly employed in manufacturing sector and service sector</td>
<td>Major increase in female participation on the labour market</td>
<td>Centralization of the service sector (decline in transportation and construction, increase of “other services”)</td>
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<tr>
<td>Females are mainly employed in public sector and service sector</td>
<td>Growth in rural public sector (healthcare)</td>
<td>Major increase in higher studies</td>
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<tr>
<td>Natural resource sector is already small (due to earlier technological development)</td>
<td>Decline in urbanization</td>
<td>Major increase in urbanization</td>
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</table>

**Figure 7:** Schematic model of how the two phases of rural restructuring relate to the three youth cohorts studied in Article II
As argued for in Section 2, the transformation of the Swedish economy from manufacturing towards services can in turn be understood as a product of the broader processes of technological development, social modernization, and globalization. For example, the expanding market due to globalization has increased competition, which in turn has facilitated both spatial shifts in local investments due to comparative advantages, and shifts in the content of local investments towards more automation, replacing manpower with machines.

While the empirical investigation in this thesis is delimited to rural Sweden, there is reason to believe that the two phases of rural restructuring can be identified in other countries as well. For example, the decline of employment in manufacturing is not a phenomenon unique to Sweden, but can be observed in both other parts of Europe and the United States (Dicken 2003). However, in the same manner that rural Sweden is heterogeneous when it comes to demographic changes and employment distribution (see below), it can also be expected that the processes of technological development, social modernization, and globalization have had different local outcomes in different countries.

The geography of the second restructuring phase

While the transformation of the Swedish economy from manufacturing to services has affected the whole country, the outcome of this transformation is still local and has had different implications for different places. In Article III of this thesis, a typology of rural Sweden (see definition of rural, above) based on socioeconomic characteristics was developed (see Figure 8). The typology divides rural Sweden into five broad categories and 16 sub-categories based on the local labor market, demographic characteristics, and demographic change. It can be assumed that these different rural areas have experienced, and will continue to experience, the shift from manufacturing to services differently, with some areas having grown in both demographic and employment terms while others have declined. In this sense, the heterogeneity of rural areas is a product of both growth and decline – of old development paths that are reaching their end and of new development paths that will continue into the future (compare with Figure 1).
Figure 8: Concentric model of the rural typology developed in Article III. The distance from the urban core is estimated based on the value range of the first and second quartiles for each cluster. The location of the sub-clusters of the resource periphery is approximated based on the distance to the urban core and their relative location.
Stretching the trends into the future, it is likely that the decline of manufacturing and the rural public sector, and the transition towards the urban service sector, will have large effects in the *manufacturing periphery* and in most areas of the *resource periphery*, where it will lead to continued out-migration and further decline in employment opportunities. The areas within the urban shadow, on the other hand, will continue to grow alongside the growth in the urban service sector. In this sense, the *manufacturing periphery* and parts of the *resource periphery* are products of the old economic order and the settlement pattern it gave rise to, while the *middle-class countryside within the urban shadow* and the *working-class countryside within the urban shadow* are products of the new economic order and its pressure on the settlement pattern. In addition, the *tourism areas* and *retirement areas* sub-categories of the *resource periphery* are also products of new development paths related to the contemporary restructuring of rural areas. These areas have the potential to grow, and the number of tourism and retirement areas may increase in the future. However, it is important to recognize that these areas are few in number and that only a small percentage of the rural population lives there. Thus, even if these areas are growing in size and number, they are unlikely to turn the general decline of the rural periphery – for now, they should rather be understood as small islands of new development paths in an ocean of old paths.

**Combatting rural decline?**

The contemporary restructuring of rural Sweden is comprised of a transformation of the economy from manufacturing towards the urban service sector. At the same time, this transformation is a geographic shift in economic power towards urban centers, with peripheral areas losing their economic motor. As a result of this process, peripheral rural areas have found themselves in a situation of a declining and ageing population, and with an eroding tax base.

The response from policy institutes and local politicians in rural areas has often been to say that the trends of economic and demographic decline present a large problem, and that the goal of policy should be to turn this decline into growth (Bontje 2005, Hospers and Reverda 2015, Martinez-Fernandez et al. 2012, Syssner 2006, Syssner 2014, Syssner 2016, Wiechmann and Pallagst 2012). However, while it is understandable that local politicians strive for the growth of their municipalities, it may not be possible to turn these trends around. The combined forces of technological development, social modernization, and globalization that drive...
contemporary rural restructuring are not easily changed – a more realistic view on the decline of the rural periphery is therefore that it is a structural feature of the contemporary economic changes. In this view, the decline of the rural periphery may be hard to counteract through policy initiatives.

Based on the notion that the decline of the rural periphery is a structural feature of the contemporary economy, it would be wiser to question the taken-for-granted goal that every community should grow (Syssner 2016). From a historical perspective, settlement patterns are in constant change and it is a futile task to hold onto a settlement pattern from a particular point in time. In this view, the resource periphery and the manufacturing periphery are products of the restructuring from agriculture to manufacturing, and with the contemporary restructuring from manufacturing to the service sector, a decline in these areas is expected. Perhaps a more realistic goal for policy should be to minimize the social effects of decline rather than focusing on population growth? This suggestion is in line with a relatively new, but growing, field of policy research on how to handle a shrinking population, in which the first step to handling a shrinking population is to admit the fact (Sousa and Pinho 2015, Syssner 2016). From a national public finance perspective, it may be counterproductive to increase the population in areas where local investments and the absorptive capacity of economic activities are declining. From this perspective, the optimal distribution of the population of working age is one that, within commuting distance, correlates with economic activities.

While it is hard to change the population decline in peripheral areas, the consequences of an ageing population and a high dependency ratio in peripheral municipalities need not include, for example, a diminishing tax base. In Sweden there is already a system in place whereby wealthier municipalities compensate poorer ones, and this system could be elaborated on in order to compensate for the increased dependency ratio in peripheral municipalities. On the other hand, it is hard to escape the fact that a small and shrinking population means that public services, such as hospitals and schools, become hard to preserve without the necessary population base. A continued withdrawal of public services from declining peripheral areas is therefore likely. While the effects of the withdrawal of public services could be mitigated through various technological solutions, such as telemedicine and distance studies, it is unlikely that technological solutions could compensate in full. In this respect, the current policy
discussions regarding municipal merges and/or exceptions in the welfare services for some municipalities suggest a continued phasing out of official commitments in peripheral areas.

**Suggestions for further research**

By emphasizing the co-relationship between changes in economic structures and population, and empirically situating these factors on the individual level, comparing changes between cohorts over a long time span and placing these changes in their geographical and historical context, this thesis contributes to the understanding of rural change in Sweden. Whereas previous empirical research on contemporary rural change in Sweden has tended towards isolating the population system from the activity system, or limiting the investigation to only one sector or region, this thesis looks at the population system in combination with the activity system in the whole country. Furthermore, by looking at changes in employment and migration for youths making the transition to adulthood rather than the population stock, new trends are illustrated more clearly.

In light of these results, one avenue for further research is related to the geographic context and the extent to which the findings from Sweden are applicable to other countries. As the decline of manufacturing employment and the growth of the urban service sector comprise an experience shared by many Western countries (Dicken 2003), it is likely that this is an important driver behind urbanization in other countries as well. Investigations of the hypothesis that contemporary rural change in the West is driven by a decline in manufacturing employment are thus warranted. Similarly, it would be interesting to see how the typology developed in Article III compares to other countries, and the extent to which the generalized model in Figure 8 is applicable to other countries. By comparing rural heterogeneity and rural change between different countries, insight could be gained, for example, into how the local manifestations of modernization, globalization and technological development vary between countries.

Another avenue for further research is related to the life-course perspective and the method of comparing changes between cohorts to measure societal change. While similar methods of cohort comparisons are common in other fields, particularly modernization research (Kohli 2007), to the author’s knowledge they have not previously been applied in rural geography.
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