



LUND UNIVERSITY

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Master in Economic History

# Regional Wealth Inequality and Transformation of the Finnish Economy 1750-1900

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*Abstract:* Concentration of wealth has received considerable attention in recent years, and research shows that it is not only a modern day phenomenon. This thesis contributes to the ongoing debate by presenting wealth inequality estimates for rural Finland from 1750 to 1900 in three regions – East, Southwest and North. The current study uses a rich dataset of probate inventories containing over 18 000 observations for rural Finland, which enables a fine-grained analysis of farmers and workers, who constituted the two largest social groups in Finland at the time. It finds high levels of rural wealth inequality, particularly in Southwestern Finland. The results also display a trend of simultaneously decreasing mean wealth and increasing inequality for the period of 1750-1850. This development is retracted only between 1850 and 1900, when wealth grows explosively especially in the most advanced and industrialized Southwestern Finland. However, the growth of wealth inequality in this region seems to cease in 1850. These events are in stark contrast to Kuznets' theory about inequality increasing together with modern economic growth. This is especially evident given Finland's broad agrarian base well into the 20<sup>th</sup> century, and industrialization, which was fueled by the rise of forestry at the end of the 19<sup>th</sup> century. As inequality is mainly driven by changes in Finland's primary sector, present study provides an indication of the importance of intra-sectoral change vis-à-vis the conventionally emphasized inter-sectoral change. Finally, in identifying Southwestern Finland as the region determining the course of wealth inequality, it also expands our understanding of the role of regional inequality in national inequality, and the importance of regional decomposition in the research of historical inequality as a whole.

*Key words:* Wealth inequality, regional inequality, economic development, Finland, agriculture

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*The history of inequality is shaped by the way economic, social, and political actors view what is just and what is not, as well as by the relative power of those actors and the collective choices that result. It is the product of all relevant actors combined.*

-Thomas Piketty: Capital in the 21<sup>st</sup> Century (p. 20)

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# 1 Introduction

In recent years, the topic of economic inequality has received substantial critical attention. Concentration of wealth and fortunes of the global top 1 percent; globalization and distress of the lower middle classes of the rich world manifested in rising populism; and a new emerging global middle class in Asia have been the subject of research of authors such as Milanovic (2016) and Piketty (2014). Even before this, historical distribution of resources has featured as an object of interest in international research. Alfani (2010) found high concentrations of wealth in pre-industrial urban environment in Northwestern Italy, as did Hanson Jones (1972) in her study on New England colonies in 1770. Lindert (1986), in turn, detected widening gaps in English mean wealth already in 1740, while Piketty, Postel-Vinay and Rosenthal (2006), similarly, discovered increases in wealth inequality in 19<sup>th</sup> century France. These studies show that concentration of wealth is not a new phenomenon and that it is not exclusively tied to such forces as modern economic growth or globalization. This is important because history embodies valuable lessons about economic inequality and its various implications at different points in time. Comparison between, for example, the late 19<sup>th</sup> and 20<sup>th</sup> centuries, both of which were characterized by globalization, economic convergence and rising inequality, as also pointed out by Williamson (1997), could be appropriate. Against the background of the 19<sup>th</sup> century retreat from globalization, investigating past economic development and inequality trends could, namely, broaden the understanding of current adversities.

Even though researchers, such as Enflo and Rosés (2015), have demonstrated the importance of regional dimension in overall national economic development, detailed studies of historical economic inequality have, often, been concentrated on measuring either national or locally restricted economic inequalities. In this respect, surprisingly little devotion has been channeled towards regional considerations and the impact of regional inequality on overall inequality within countries. Some recent studies provide an exception to this mainstream tendency (Lindert & Nafziger, 2014; Lindert & Williamson, 2016; Modalsli, 2018), and adopting this regional approach could, indeed, foster the understanding of mechanisms driving inequality on a more detailed level. As Modalsli (2018) points out, the relatively cohesive institutional and technological environment within a country provides an advantageous context for more comprehensive rendition of theories on economic inequality through regional decomposition.

Finland's economic inequality has received only scarce attention in international research and, thus, investigating it in combination with the regional aspect could bring valuable insights into the workings of some of the mechanisms considered as drivers of inequality by pioneering researchers mentioned above. Finland is an interesting case, since it has established its position at the forefront of the developed nations only relatively recently, due to it being a latecomer in terms of industrialization and economic growth. Myllyntaus (1990), for example, points out, that as late as the 1850s, Finland was still a very peripheral area with

population exercising traditional and even primitive methods for obtaining their living. Moreover, in 1860s, Finland was the last of the European countries to experience a naturally caused famine (Voutilainen, 2016). This would, as also suggested by Milanovic, Lindert and Williamson (2011), indicate that the level of inequality was not very drastic, since GDP per capita was still rather modest, and many people were living close to subsistence level. Yet, only one hundred years ago, as a consequence of an ongoing dispute between landowners, crofters and landless workers, Finland was submerged into a devastating conflict that developed into a civil war. This episode can be thought of as a clear manifestation of disruptions caused by accumulating inequalities in the society, since several researchers have found a link between income inequality and political instability (Agnello et al., 2016; Alesina & Perotti, 1993; Correa-Cabrera, 2004). However, according to a recent, and to the best knowledge of the author, the only study on Finnish long-run wealth inequality by Bengtsson, Missiaia, Nummela and Olsson (forthcoming), Finland was in the process of equalization already from 1850 to 1900.

Many researchers have previously highlighted the regional differentiation when it comes to economic development in Finland (Alapuro, 1988; Enflo, 2014; Niemelä, 2008; Peltonen, 1992; Rannikko, 1995) but, as Enflo (2014) points out, there are few consistent long-run estimates of Finnish regional economic conditions. Therefore, examining regional inequalities is of outmost interest, and this forms the focal point of the current thesis. The abovementioned studies depict Southwestern Finland as the richest and most advanced, Eastern Finland as the poorest but also as the leading sawmill industry area at the end of the 19<sup>th</sup> century. In relation to this, Jutikkala (1953), however, argues that the value of assessed wealth diminishes when moving from the West to the East but no similar trend can be noted when moving from the South to the North. Examining the impact of distinct economic sectors and various degrees of development of farm economy on wealth inequality and development of mean wealth in different parts of Finland, could, then, extend our understanding of, not only inequality in Finland, but also of regional aspects in research of historical inequality.

## 1.1 Aim and Objectives

This thesis contributes to the literature on historical economic inequality by taking a regional view on the case of Finland during the period 1750-1900. It aims at examining the development of rural wealth with a special emphasis on wealth inequalities within the farmer and worker classes using data from probate inventories. To be able to see, whether this development was uniform throughout the entire country, and drawing on literature concerning regional inequality, rural wealth inequalities are investigated in three regions of Finland – Southwestern, Eastern and Northern.

Hence, this thesis seeks to address the following questions:

1. What was the extent of rural wealth inequality in Southwestern, Eastern, and Northern Finland in the 19<sup>th</sup> century?

2. What was the development of wealth inequality among farmers and workers in rural parts of Southwestern, Eastern, and Northern Finland in 1750-1900?
3. What was the development of mean wealth in Southwestern, Eastern, and Northern Finland in 1750-1900?

In order to answer the questions above, Gini coefficients are calculated for each benchmark year and region to clearly illustrate the development throughout 1750-1900. The Gini coefficient for rural population as a whole in different regions is calculated only for the benchmark years 1815, 1850 and 1875, because the sample had to be re-weighted to reflect the true distribution of social classes in the population, and because the availability of coherent regional population and social structure data was most sufficient for these years. For regional farmer and worker class Gini coefficients, benchmark years of 1750, 1800, 1850 and 1900 were chosen to resonate with the findings of Bengtsson et al. (forthcoming) with the same benchmark years. Additionally, Lorenz-curves depicting regional inequality among farmers and workers in rural Finland are constructed for the years 1750, 1800, 1850 and 1900. Examining the development of regional wealth inequality within farmer and worker classes through this indicator allows us to review, at which end of the distribution changes eventually occurred. Moreover, since Bengtsson et al. (forthcoming) only look into benchmark years of 1850 and 1900, an additional benchmark year of 1880 is chosen for examination of this period. This is, however, only possible when looking at Eastern Finland as well as overall rural wealth inequality within farmer and worker classes. Finally, estimates of regional average wealth for the same benchmark years for farmers and workers are provided.

The examination of regional wealth is based on the hypothesis that there would be greater wealth inequality in Southwestern parts, since this was the most modern and advanced economic area. Due to the relative backwardness of the East and North, it is assumed that the regions' wealth inequality amongst farmers and workers is lower (Milanovic et al., 2011). Nevertheless, if forestry indeed played a role in the late 19<sup>th</sup> century industrialization, and Eastern Finland was able to reap some benefits from being one of the leading sawmill industry regions, wealth as well as inequality in these areas should have eventually grown with time. Due to data limitations, however, the only years, for which inequality estimates are possible in the Northern region, are the years 1780 and 1820.

This thesis contributes to existing knowledge of wealth inequality by providing a discussion about regional wealth inequality and inequality among farmers and workers, who, according to previous research, were in pivotal role in shifting inequality trends in Finland. What enables this regional breakdown and analysis of distinct social groups, is the superior probate inventory dataset provided by Ilkka Nummela consisting of over 18 000 observations for rural Finland. For the purpose of comparison, Hanson Jones (1972) in her seminal study of the New England colonies had probate inventories from only 381 estates; Lindert (1986) had 1 354 inventories for Britain in 1670; and Bengtsson, Missiaia, Olsson and Svensson (2017) only had about 1200 inventories for each benchmark in their study on Swedish wealth inequality. This is remarkable because previous research has mainly concentrated on aggregate measures, isolated regions or single parishes. Earlier studies on Finnish wealth inequality have inspected regional aspects (Hemminki, 2014; Nummela & Laitinen, 1985;



Nummela, 1990), examined wealth distribution at a particular point in time (Jutikkala, 1953; Soltow, 1981) and assessed the development of living standards in Finland (Heikkinen et al., 1987). The richness of the Finnish dataset makes a more fine-grained and rigorous regional analysis possible. Yet, as noted before, this regional perspective taken for examination of inequalities in Finland does not only enrich county-specific research, but also studies of historical inequality in general.

## 1.2 Outline of the Thesis

The overall structure of the thesis takes the form of five sections, including a brief introduction into the topic. The second part is concerned with theoretical dimensions of the research while the third addresses description of data, source material and methodological issues. The fourth section presents the findings, focusing on long-run trends in rural wealth inequality in Finland. This thesis concludes with an overview of main themes and some suggestions for the future research in the field of historical economic inequality.

## 2 Literature Review

The following literature review begins by reviewing theories on historical long-run inequality trends, after which the specific case of Finland is discussed in detail. The analysis focuses on the main historical events contributing to the development of inequality, evolution of regional differentiation in Finland as well as previous studies on wealth inequality in Finland.

### 2.1 Economic Development and Inequality

The most discussed determinant of inequality reviewed in the historical literature is economic growth. Kuznets (1955) has formulated one of the most fundamental, but yet, concurrently, most heatedly debated theories binding together economic growth and income inequality. He traces changes in inequality back to sectorial change. Driver of increasing inequality, according to him, is the movement of labor away from the more equal agricultural sector, characterized by lower wages, to the industrial sector with higher earnings. Complementary to this approach is Lewis' (1954) model, which draws a parallel between economic development and unlimited supply of labor. Capital accumulation in the upper-income brackets and rise in inequality could, in his view, continue until there was no longer an unlimited supply of labor at the disposal of industrialists. Leveling of inequality in Kuznets' (1955) theory would, similarly, happen when the majority of the population was in the industrial sector.

Kuznets' (1955) ideas have been criticized, tested and further developed by other researchers. Milanovic et al. (2011), in true Kuznetsian spirit, argue that income inequality is constrained by an *inequality possibility frontier*. This means that when the average income is very low, the surplus that elites could extract is also very low, which, then, results in low levels of inequality. Consequently, when incomes grow, elites can appropriate a greater share without having the poor starving to death. Van Zanden (1995) is more concerned with the timing of growing inequality and engenders a *super Kuznets curve* through locating the upswing in economic inequality already in the premodern economic growth of Holland. Bolt and Hillbom (2016), likewise, find increasing inequality during the colonial period in Botswana, reinforcing van Zanden's (1995) interpretation of the earlier timing. Milanovic (2016), on the contrary, fails to see a connection between mean income level and the level of inequality before the Industrial Revolution. Instead, he contends that, at this time, inequality was affected by idiosyncratic events such as epidemics, invasions and wars. For Scheidel (2017), on the other hand, the source of persistent inequality can be found already in the establishment of farming and herding, which brought creation of wealth on an entirely novel level. In his view, the only forces that could interrupt this ever rising inequality are mass mobilization warfare, transformative revolution, state failure or lethal pandemics.

Many of the studies, as shown above, are concentrated on income inequality, but the analysis based on these theories can be extended to include wealth inequality. Piketty (2014) has brought wealth back into the debate around economic inequality in its full compelling nature. His idea of constantly accelerating inequality under capitalist system can be tied to Lewis (1954), who highlighted the role of capitalist surplus and the role of the industrialist class in capital accumulation early on. Lindert and Williamson (2016), on the other hand, argue that exogenous forces, such as politics, demography, education policy, trade competition, finance, and labor-saving technological change have been the drivers of inequality in the U.S. over the past four centuries. They conclude that since exogenous forces are erratic, there is no evidence to support any capitalist law of motion, such as propagated by Piketty (2014). All in all, examination of wealth is especially appropriate for the historical context. In the past, as Bengtsson et al. (forthcoming) also point out, in an environment, where subsistence was commonplace, ownership of property played an important role in defining one's living standards and, therefore, concentration on wealth distribution in studies on historical inequality is especially justified.

An example of a study closer to Finland, that has taken approach kindred to those of van Zanden (1995) or Lindert and Williamson (2016), is one by Bengtsson, Missiaia, Olsson and Svensson (2017). They assessed the evolution of wealth inequality in Sweden from 1750 to 1900 by analyzing data from probate inventories, and their results show that inequality grew since the mid-18<sup>th</sup> century all the way into the late 19<sup>th</sup> century. This development is attributed to different forces at different points in time by them. At first, inequality was bottom-driven with decreasing population share of peasant farmers and simultaneous growth of urban and rural workers. Then, in 1850-1900, polarization was due to increasing wealth among the richest and divergence within the elite group. These researchers also point out that since only approximately 10 percent of the Swedish population was urbanized until 1850, rural inequality weighted especially much in the estimates of total inequality. These findings, highlighting rise of inequality before the onset of industrialization, cast further shadow on standard Kuznets curve theory, which insists on connecting inequality with industrialization. These inferences, despite lacking a regional perspective, are also important for examining the development in Finland, since it was tightly connected to Sweden until the beginning of the 19<sup>th</sup> century.

## 2.2 Finland's Economic Development

Exploring Finland's economic development is important for understanding the drivers of economic inequality over time. In this regard, the primary sector has always been dominant in Finnish history. Ojala and Nummela (2006) disclose that nearly 90 percent of employment in the beginning of the 19<sup>th</sup> century came from the primary sector, and in 1860, agricultural sector accounted for 60 percent of the GDP. These researchers, additionally, imply that, before the 19<sup>th</sup> century, agricultural exports were not significant, but by the 1890s, agricultural products formed around one third of the value of Finnish exports. Commercialization of agriculture also happened in conjunction with expanding exports (Ojala & Nummela, 2006). Alapuro (1988), thereby, emphasizes the transformation of peasants into farmers in

connection with this development. This gradual spread of capitalism in the Finnish countryside resulted in landowning peasants taking more active measures towards market integration while experimenting with alternative uses for the factors of production. Moreover, Alapuro (1988) notes that the division between manors and wealthy peasants became more and more blurred toward the end of the 19<sup>th</sup> century. This happened as a consequence of gentry estates being, to an accelerating extent, acquired by peasants – a development that is also observed by Jutikkala (1958).

The aforementioned process was not, however, a fully natural one, and Alapuro (1988) contends, that in Finland's economic integration and capitalist transformation, state played a significant role in several ways. First and foremost, during the 1840s and 1850s, state began to actively support economic consolidation and growth. State revenues were, for instance, increased to promote industry and the construction of infrastructure. Other changes occurred during this time as well – monetary reform was carried out, the position of the Bank of Finland was reinforced, the tariff and land tax systems were reorganized, financing of industry was facilitated, vocational schools were established and roads and canals were built. This all paid off as Finland reached the fastest growth rate in Europe at the end of the 19<sup>th</sup> century (Alapuro, 1988) with wood processing becoming country's leading industry (Statistical Yearbook of Finland, 1900; Virrankoski, 1975). The rise of the forest industry, in turn, benefited directly the upper stratum of the peasantry because peasants owned the bulk of the main industrial resource, the forests. As a consequence, landowning and Finnish-speaking peasantry became a new emerging group in the society, next to the bourgeoisie (Alapuro, 1988).

Although there has been some debate over pinning down the exact period of time for the outset of industrialization in Finland (Karisto, Takala & Haapola, 1998), it is broadly seen as commencing in the latter half of the 1800s, around the 1860s or 1870s (Alanen, 1995; Alapuro, 1988, Hjerppe & Jalava, 2006; Myllyntaus, 1980). Contributing factors to this development can be found in the economic liberalization of the 1860s, when the use of steam in sawmill industry was allowed in 1857; trade activities in rural regions were permitted in 1859 and 1861; and the guild system was abolished in 1868 (Myllyntaus, 1980). Alanen (1995) argues that industrialization was based on foreign demand for wood-processing products and that sawmills, pulp mills and paper factories were not only established in the urban regions but also in the countryside. As a result, the number of industrial workers grew rapidly in rural areas (Alanen, 1995; Alapuro, 1988).

In terms of purely economic indicators of development during this period, Heikkinen, Hjerppe, Kaukiainen, Markkanen and Nummela (1987) present several estimates of GDP and population growth. Although there are no GDP estimates for Finland before 1860, these researchers contend that GDP per capita should have increased between 20 and 25 percent already during 1820-1860. Subsequently, at the end of the 19<sup>th</sup> century, GDP growth was considerably stronger, approximately 2,6 percent per year for the period 1860-1913. At the same time, population grew too – 1,0 percent per year in 1860-1898 and 1,1 percent per year in 1890-1913. Heikkinen et al. (1987) allot the growth of the national product during 1870s to the flourishing of the sawmill industry and growing exports to Russia, while the growing domestic demand benefited total production in 1890. Furthermore, they recognize that GDP grew particularly at a time when the share of industry in total production increased, going

from 8 percent in 1860 to 20 percent in 1913. The Maddison Project Database (2018) also provides some GDP per capita estimates for Finland in 2011 US\$. For 1860, the figure is 1038, but in 1900 it has increased to 1813. When comparing this to the corresponding estimate for the UK, which reached 5608 in 1900, it becomes clear how modest the conditions still were in Finland.

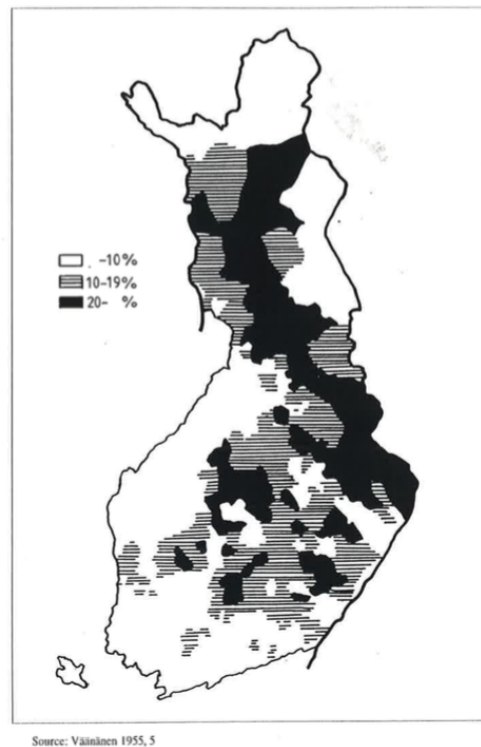
Virrankoski (1975), similarly to Heikkinen et al. (1987), notes the growing foreign trade headed by close relations to Russia and presents statistics based on Erkki Pihkala's data on Finnish exports. These show a considerable growth trend starting with 34 million marks in the 1860s and reaching 320 million marks between 1909 and 1913. Sawn goods constituted the most important share of all exports and even grew in importance from the 1880s to the beginning of the 20<sup>th</sup> century, forming 38 and 44 percent of all exports, in respective years. Dairy farming and products such as butter were second most important with regard to exports, comprising a share of 18 percent in 1880s, but their importance slightly declined in the beginning of the next century. Hence, as emphasized before, the dominance of the primary sector well into the 20<sup>th</sup> century explains the peculiar development trajectory of Finland, which was, in addition to this, shaped by geopolitical forces. The obstacles hindering economic blossoming of Finland were eliminated at a relatively late stage, while industrialization in the late 19<sup>th</sup> century did not follow a standard path of transition from agriculture into manufacturing. Yet, with the share of private consumption in GDP increasing amidst the growth of the economy and expansion of the total production, Finnish population could gradually start enjoying the rising living standards (Heikkinen et al., 1987), at least in certain regions of the country.

### 2.2.1 Regional Differentiation

There have been surprisingly few attempts at measuring regional differences as well as the geographical evolution of production in Finland. Enflo (2014) provides the first consistent long-run estimates of Finnish regional GDP's from 1880. During the Swedish rule from approximately 12<sup>th</sup> century until 1809, after which Finland was annexed by Russia and became a Grand Duchy, the orientation was towards the West (Alapuro, 1988; Enflo, 2014). This meant that Ostrobothnia and the other Western parts of Finland flourished. Enflo (2014) contends that over time and through Russian influence, regional GDP growth became more concentrated in the capital region (Helsinki-Uusimaa) while the Western parts of Finland show the steadiest decline in their shares of GDP from 1880 onwards. With the help of population-weighted coefficient of variation, she is able to demonstrate that regional inequality figures were quite large during early industrialization.

Enflo (2014) argues that these inequalities originate from the division of Finland into "a relatively rich, industrialized and urbanized South and a less developed Northern part of the country" (p. 15). Regional division in Finland could, indeed, be examined from various points of view, since climatic and geographic conditions in different parts vary considerably, and, throughout this thesis, diverse aspects of regional differences will be brought up. Here, it would be appropriate to look even closer at regional variation when it comes to farm economy. Both Niemelä (2008) and Rannikko (1995) highlight the importance of forest and forestry in the development of countryside. Niemelä (2008) describes the birth of three

distinct economic zones in Finland in the 17<sup>th</sup> century based on forest resource utilization. These were ship building and lumber exports in the narrow coastal zone in Western Finland, slash and burn regions of Central Finland and tar burning regions of Eastern Finland. When Vyborg and Hamina lost their position in tar trade, it was replaced by the sawmill industry, which became the strength of Eastern Finland (Niemelä, 2008). Rannikko (1995) has also noted that lives of people in Eastern and Northern Finland have long been dependent on forest and lumbering. Figure 2.1 can perhaps give an illustration of this dependency by visualizing the regional distribution of professional forest workers in Finland. The map shows that Eastern and Northern parts were, undeniably, most important in this regard. Alapuro (1988), too, presents evidence of production of sawn goods concentrating in the Eastern parts, especially in 1860, when counties of Kuopio and Mikkeli were responsible for 31 and 35 percent of the overall production. He, however, suggests that farmers in Eastern Finland did not benefit from the timber boom to the same extent as in Southwestern Finland due to timber companies purchasing large areas of peasant land. Out of land not owned by the state, 20 percent was held by companies in the East while in the Southwest it was timber that was sold, not land (Alapuro, 1988).



Source: Rannikko (1995)

*Figure 2.1 Regional Distribution of Professional Forest Workers in Finland in 1950*

Orientation towards the East was tangible after 1809, with St. Petersburg exerting influence over Finnish economic progress (Alapuro, 1988). Virrankoski (1975) mentions that, in the 1820s, approximately 50 percent of Finnish exports had been oriented towards Sweden, whereas the number was only 8 percent in 1850. This dynamic made Southwestern Finland and the county of Vyborg in Eastern Finland the two main regions. The disparity between

East and Southwest was, however, considerable. The Southwestern parts of Finland had the majority of manors together with gentry and wealthier peasants located there (Alapuro, 1988; Jutikkala, 1958). In the East, on the other hand, no strong peasant upper class was born (Alapuro, 1988). Consequently, class conflict between landowners and crofters as well as agricultural laborers was most tangible in the Southwest. According to Peltonen (1992), this regional differentiation can be traced already to the beginning of the 19<sup>th</sup> century. He argues that processes used in arable farming had different development trajectories in Southern Finland and Ostrobothnia when compared to Eastern and Northern parts of Finland, which were lagging behind in adopting new methods. New ways of sowing hay crops were already widely disseminated in the West while they were only in the early stages in the Eastern and Northern parts. Niemelä (2008) suggests that the more favorable climate led to the early development of agriculture in Southwestern parts. Moreover, the findings of Heikkinen et al. (1987) about historical living standards in Finland seem to reinforce the picture of the special position of Southwest, depicting it as having more landowning farmers, and, consequently, having highest concentrations of wealth. They, however, show that 1750 marked a general decline in wealth throughout the country, although average wealth after 1860 rose again quickly.

These regional considerations are important in Peltonen's (1992) studies on the various aspects of reorientation from crop farming into dairy farming at the end of the 19<sup>th</sup> century. The transition into dairy farming in Finland had origins in the fluctuations of grain prices at the end of the century caused by the grain invasion from Russia and the New World, which is also examined by O'Rourke (1997). Peltonen (1992) argues, that these events together with expanding dairy product markets, made it more profitable to concentrate on live-stock farming. He notes that dairy farming really took off in Finland around 1850. Yet, the 1880s were an important transitional period for dairy operations in Finland with the introduction of new technology, such as the separator. Proceeds from live-stock farming grew four times from the 1860s to the 1890s with the strongest growth taking place in the 1880s. Sales profits were highest in Southern Finland, and this region had a definite lead in 1910, as the farms there were much more integrated with the markets than in Eastern Finland (Peltonen, 1992). Alapuro (1988), similarly, recognizes the role of milk production and its contribution to growing farmer income, while Ojala and Nummela (2006) also note the supremacy of Western Finland and Ostrobothnia in cattle raising from quite early on. Peltonen (1992) presents statistics on the existing dairies in Finland in 1879, which show that in the Southwestern part of Finland, and more precisely in the counties of Turku and Pori, 132 dairies existed. In other Southern parts of Finland, including Uusimaa and Häme, 108 and 96 dairies were recorded, respectively, whereas in the Eastern regions, namely Vyborg, Mikkeli and Kuopio, 42, 31 and 51 dairies and in the Northern county of Oulu, 36 dairies were counted. The aforementioned findings portray Southwestern Finland as a superior region in almost every respect, while the strength of Eastern Finland seems to be confined to the growing sawmill industry. Whether these various economic aspects had an impact on development of wealth inequalities in different regions will be discussed later on.

## 2.2.2 Rural Class Structure in Finland

In 1900, the population of Finland reached approximately 2,7 million but despite considerable leaps in terms of economic growth and industrialization, over 87 percent of the population still lived in societies classified as rural (Peltonen, 1992). This rural population could be, roughly, divided into landowning and landless population (Haatanen, 1968; Jutikkala, 1958). There are, however, nuances to this strictly categorical picture. Haatanen (1968) adds a third class by introducing tenant farmers with various subcategories while, for example, Jutikkala (1958) and Peltonen (1992) consider crofters to be a class of their own alongside with independent farmers. The nature of tenant farming was clearly versatile since peasants could be renting out only parts as well as entire farms (Jutikkala, 1958). Landless population, on the other hand, consisted of farm workers hired on yearly salary, but also of people who had no permanent employment (Haatanen, 1968). Later on, this group was replenished by industrial workers of rural sawmills (Alapuro, 1988). Haatanen (1968) draws particular attention to the, so called, *parasites (loinen)*, who lived under the roof of independent farmers or crofters and did temporary work to provide for themselves. This particular segment of the population was especially common in the Eastern part of Finland, which in general was the least developed (Anttila, 1974; Haatanen, 1968) with the poorest districts placed in South-Savonia (Jutikkala, 1953).

An even more detailed representation of Finnish rural population could be constructed, which is evident from the work of Kilpi (1913), who adds categories for merchant classes and further fine-tunes the composition of different subcategories. For the purpose of the current thesis, a rough division of rural population into farmers and workers is the most appropriate. Ultimately, only for the analysis of the overall regional wealth inequality, the population is divided into four classes suggested by Bengtsson et al. (forthcoming): nobility, bourgeoisie, farmers and workers. Farmers, in the present study, constitute independent farmers, while the worker group encapsulates crofters, farm and other workers as well as craftsmen under the same umbrella concept. This is justified because of the strong juxtaposition of farmer and worker groups in the Finnish historical research tradition, in particular regarding the ongoing conflict between landowners and crofters working on their farms (Peltonen, 1992). Economic growth towards the end of the 19<sup>th</sup> century was an important factor in further differentiation and juxtaposition of these two groups, which presents an important context for the focus of this study.

Table 2.1 illustrates the development in the number of independent farmers in different regions of Finland. Eastern Finland had quantitatively the largest amount of independent farmers but the growth in the number of these farmers was steady in all three regions. The difference between the East and the Southwest might, indeed, be related to the fact that large farms were more common in the Southwestern parts (Alapuro, 1988; Jutikkala, 1958). Despite the overall small number of farmers in the North, the growth rate of independent farmers was quite impressive in this region. In Uusimaa and Häme, the number of farmers, on the contrary, diminished throughout the entire period from 1815 to 1875, and the same was true for Turku and Pori from 1850 onwards.



*Table 2.1 Number of Independent Farmers in Different Regions*

<b>Region</b>	<b>1815</b>	<b>1820</b>	<b>1850</b>	<b>1875</b>
<b>Southwest</b>				
Uusimaa	6 949	6 930	6 576	5 918
Turku and Pori	10 625	10 834	10 875	10 373
Häme	7 891	7 862	7 811	7 040
Vaasa	11 098	12 393	15 678	18 126
Total	36 563	38 019	40 940	41 457
<b>East</b>				
Vyborg	19 816	21 189	21 666	22 897
Mikkeli	7 743	7 758	8 519	8 577
Kuopio	10 306	10 782	11 392	12 071
Total	37 865	39 729	41 577	43 545
<b>North</b>				
Oulu	7 745	8 211	10 289	12 523
Overall Rural	82 173	85 959	92 806	97 525

Source: Kilpi (1913)

The number of rural workers also grew dramatically during the period from 1815 to 1875, as depicted in Table 2.2. Especially impressive is the growth in the Southwest with an increase of 131 651 workers from 1815 to 1875. These statistics, at least partially, confirm the previous observations about the Southwest being the fastest advancing and industrializing region (Alapuro, 1988) with most of the workers being concentrated in this region throughout the 19<sup>th</sup> century. The relatively stagnant growth of independent farmers together with the expansive multiplication of workers could be seen as being in line with notions of stationary or even with the declining landowning class detected by Haatanen (1968) and Jutikkala (1958).

*Table 2.2 Number of Rural Workers in Different Regions*

<b>Region</b>	<b>1815</b>	<b>1820</b>	<b>1850</b>	<b>1875</b>
<b>Southwest</b>				
Uusimaa	35 965	38 723	46 857	50 721
Turku and Pori	58 720	63 133	80 512	92 345
Häme	40 113	43 881	53 747	65 314
Vaasa	41 312	45 609	70 810	99 381
Total	176 110	191 346	251 926	307 761
<b>East</b>				
Vyborg	56 670	61 283	81 318	83 881
Mikkeli	33 284	37 211	49 773	58 155
Kuopio	40 312	43 986	67 681	78 029
Total	130 266	142 480	198 772	220 065
<b>North</b>				
Oulu	33 278	36 521	49 339	60 584
Overall Rural	339 654	370 347	500 037	588 410

Source: Kilpi (1913)

## 2.3 Economic Inequality in Finland

Having explored the economic conditions in Finland, the subsequent section will provide an overview of historical inequality trends. A revived interest in Finnish economic inequality reaching into the past centuries can be detected in recent years, although scarcity of comprehensive economic inequality research in Finland is still evident. As Roikonen and Heikkinen (forthcoming) have observed in their study, the preceding research is often patchy, methodologically inconsistent and regional, which makes formation of a broad understanding of Finnish inequality challenging. Much of the existing literature on long-run economic inequality in Finland is also concentrated on income inequality. Roikonen and Heikkinen (forthcoming) present a new inequality series for Finland ranging from 1865 to 1926 and find, that income inequality was relatively low from the 1860s to 1870s. However, as economic growth accelerated in Finland, income inequality grew substantially all the way up until the early 20<sup>th</sup> century. Explanations for this initial inequality and following rise are sought in

Piketty's theory of returns on capital exceeding the pace of growth, the unfair institutional framework of that time as well as Kuznets' inverted-U curve. Roikonen and Heikkinen (forthcoming) also show that income inequality decreased significantly as a result of shocks and crises in 1914-1924. The study suggests that the civil war in 1918 was one of these shocks, and that it was caused by severe inequalities in the society. Abandonment of the gold standard, resulting in high inflation, which damaged capital incomes significantly together with new redistributive policies, including taxes and the partitioning of the land, also played a decisive role in bringing down inequalities. Hjerppe and Lefgren (1974), in their study on the development of income distribution in Finland from 1881 to 1967, find similar results but they also emphasize the considerable increase of average incomes detected during the period of investigation and the relatively small changes in income distribution during this time.

### 2.3.1 Wealth Inequality in Finland

Besides the aforementioned studies on income inequality, there is also some research concentrated on wealth inequality. The most important study, also with regards to the current thesis, is one by Bengtsson et al. (forthcoming), which extends the examination of Finnish inequality into the early modern period. One of the merits of this study is that it reconsiders the theories concerning the relationship between economic growth and inequality. It examines the development of wealth inequality in Finland between 1750 and 1900 using probate inventories and finds that Finland was very unequal between 1750 and 1850 but that inequality started decreasing after 1850. This is in line with previous research by Soltow (1981), who used a wealth tax record from 1800, but in stark contrast to the findings of Roikonen and Heikkinen (forthcoming) as well as Hjerppe and Lefgren (1974), who discovered that income inequality increased during this period of economic growth at the end of the 19<sup>th</sup> century. Findings of Bengtsson et al. (forthcoming) would, nevertheless, seem to impugn the idea of Milanovic et al. (2011) about very low levels of GDP per capita, correspondingly, leading to lower levels of inequality. Furthermore, the falling Finnish wealth inequality after 1850 would also oppose Kuznets' (1955) theory indicating that inequality should increase during industrialization. Inequality would not, then, necessarily decrease only as a result of disasters or wars, as argued by Scheidel (2017), but it could be a consequence of "inclusive growth, built on widespread property rights in a large share of population" (Bengtsson et al., forthcoming, p. 23).

Bengtsson et al. (forthcoming) further suggest that high inequality from 1750 to 1850 was driven by a large share of population owning nothing or close to nothing. They argue that rural inequality was induced by expansion of the non-landowning class as well as the growing share of workers without land, which amounted to 29 percent of the population in 1880. The decrease in inequality from 1850 to 1900, on the other hand, was "driven by the growing wealth of the farmers in relation to the upper-class groups, nobility and bourgeoisie" (Bengtsson et al, forthcoming, p. 20). This course of development is different from the experience of Sweden, which is described by Bengtsson et al. (2017) in their study on Swedish wealth. While wealth inequality in Finland declined after 1850, it continued to rise in Sweden. Similarly rising wealth inequality was also evident in France (Piketty et al., 2006). In Sweden, Bengtsson et al. (2017) attribute this to polarization of the elite – something that, for

some reason, did not occur in Finland, although Finland was very similar to Sweden in many respects. Farmer wealth also increased more markedly in Finland from 1850 to 1900 while in Sweden, during this period, farmer wealth actually decreased (Bengtsson et al., 2017; Bengtsson et al., forthcoming). As Finnish farmers held much of the forest land, they grew richer due to the rapid expansion of the wood sawn goods and paper industries (Bengtsson et al., forthcoming). These different trajectories and the key role of wealthy farmers in Finland are, hence, origins for diverging inequality trends in these neighboring countries.

The gains of the middle of the distribution, and more precisely the farmers, in Finland could certainly have outweighed the gains of the elites and could have led to diminishing overall wealth inequality from 1850 to 1900, but a more interesting finding by Bengtsson et al. (forthcoming) is the declining rural wealth inequality during the same period. This is especially unusual, in the light of writings of researchers such as Peltonen (1992), who has studied the transformation of Finnish farm economy. He demonstrates that what seems to be driving down the overall inequality could also contribute to further polarization in the countryside. Since land ownership was limited, the proceeds from forestry ended up in the pockets of the landowning rural classes. Moreover, Peltonen (1992) uses historical records showing farmers' statements, which express a less rosy picture of forest income that was mainly used to pay off debts instead of contributing to acquisition of new farming technology. According to these records, dairy farming was the most secure source of income for farmers.

In terms of land ownership, Peltonen (1992) sides with the view disclosed already earlier by Alapuro (1988), who notes that "from 1860 to 1900 timber prices rose three to four times as fast as consumer prices" (p. 44) resulting in incomes in the countryside being more unevenly distributed during the last decades of the 19<sup>th</sup> century. The widening gap between landowners and the rest as a result of the increase in land prices was, according to him, especially appreciable in Southwestern Finland. As shown previously, landowning population grew much more slowly than the number of agricultural workers. This was problematic since landless population expanded without being absorbed into industry, which was still at its infancy in Finland (Alapuro, 1988). Although agricultural commercialization did widen the gap between landowners and agrarian laborers, the rise of the forestry did alleviate the conditions of laborers by providing employment (Alapuro, 1988).

When it comes to regional aspects, Nummela (1990) has studied wealth inequality in Savonia, Eastern Finland, using the Silver Tax Register in 1571, wealth tax in 1800 and probate inventories in 1909. He finds that, in 1571, level of inequality in the county of Savonia was fairly similar in all of its parishes. In 1800, when adjusting for persons with no taxable property, the parishes of Savonia do not seem to be more unequal in wealth distribution when compared with the rest of rural Finland. Then, in 1909, few probate inventories relative to adult deaths give an indication of poor living standards in Eastern Finland, since people did not leave behind much of value to be inventoried. When examining wealth concentration solely among probated persons, inequality does not seem to be exceptional. However, when taking into consideration all deaths, inequality turns out to be high during this time.

Nummela and Laitinen (1985) have done a similar analysis for the city of Kuopio in Eastern Finland for 1875-1915 using probate inventories. They find an increasing pattern of mean net value of wealth with total wealth growing faster than total incomes. Yet, the inequality in

wealth distribution measured by the Gini coefficient decreases over the entire period of investigation, despite a slight increase between 1888 and 1892. This temporary increase in the 1880s could, nevertheless, be important because the benchmark years Bengtsson et al. (forthcoming) provide are 1850 and 1900. Subsequently, they do not account for the development of wealth inequality in-between this period of time. The study of Nummela and Laitinen (1985) could be the only indication that Finnish wealth inequality trend during industrialization was not unequivocally diminishing.

### 2.3.2 Summary

In short, economic growth in Finland commenced relatively late, and regional advances in terms of, not only industrialization, but also agricultural transformation differed considerably, with Southwestern Finland dominating in many aspects. Capitalist transformation did also widen the gap between the two biggest groups – landowners and workers, who played a key role in changing inequality trends in Finland. Given the broad agrarian base in Finland long after industrialization began, research literature on Finnish historical wealth inequality provides us with two principal puzzles. Firstly, both Bengtsson et al. (forthcoming) and Soltow (1981) observe very high initial wealth inequalities in Finnish society in 1750-1850. Secondly, these researchers note a decline in inequality during the period of industrialization at the end of the 19<sup>th</sup> century. In both cases, the origins of high inequality but also of declining inequality are in the rural sector. High inequality in 1750-1850 is attributed to the majority of population owning close to nothing, whereas the declining inequality is due to accumulating wealth of farmers. There are also differing views, which show increasing income inequality throughout this period (Roikonen & Heikkinen, forthcoming) and even slightly increasing regional wealth inequality, at least for a limited period of time (Nummela & Laitinen, 1985). Peltonen (1992) also questions the role of forestry as the main driver of farmer wealth, while Alapuro (1988) argues that land ownership was very concentrated. Since the farmer class, according to Bengtsson et al. (forthcoming), decreased, while the worker class, which owned no land, increased drastically, it would, rather, seem like rural wealth was concentrating in the hands of relatively few. The next section will briefly outline methodological issues, before various aspects of rural wealth inequality presented here will be taken up in the context of the results of this study.

### 3 Data and Methods

The data used for the exploration of historical wealth inequality in the current thesis involves probate inventories collected by Ilkka Nummela in different regions of Finland between 1985 and 1989. This dataset has been previously used in studies of Heikkinen et al. (1987), Nummela and Laitinen (1985) and Nummela (1990). A probate inventory was an inventory of a person's belongings and debts made after the person's death. The purpose of the inventory was to assign these belongings an economic value in order to facilitate division among heirs (Kuuse, 1974). Information about the heirs, their personal circumstances and their shares of the inheritance were, thus, also a central part of inventories (Moring, 2007). Moreover, the probate inventory document traditionally contained the age, marital status, occupation and place of residence of the deceased but also debts owed to the deceased as well as a list of all portable or fixed goods and chattels (Kuuse, 1974). According to Markkanen (1978) inventories were usually drawn up in a particular order starting with real estate, precious metals, and cash, which were listed separately. After this, horses and other livestock, wooden and iron implements, and other personal property were detailed in separate groups. Unfortunately, and opposed to the practice in Sweden, the 19<sup>th</sup> century inventories in Finland did not register age at death, but merely its date (Markkanen, 1978). However, the inclusion of real estate in Finnish inventories is especially noteworthy, since this was one of the main shortcomings of British probate inventories (Lindert, 1981).

There are several published studies (e.g., Kuuse, 1974; Lindert, 1981; Markkanen, 1978; Markkanen, 1988) that describe the use of probate inventory as a source for economic and social history. Already in the 19<sup>th</sup> century, British scholars studied aggregate personal wealth patterns using probate returns and, as Lindert (1981) recounts, “Marx in 1867 briefly cited the rise in probated millionaire estates as evidence of the rise in inequality” (p. 650). In the field of Finnish economic history, probate inventories have been used to study historical wealth inequality and living standards (Bengtsson et al., forthcoming; Heikkinen et al., 1987; Nummela & Laitinen, 1985; Nummela, 1990), dwellings and household appliances of farmers in the 18<sup>th</sup> century (Laurikkala, 1947), financial resources of the Finnish rural population (Hemminki, 2014; Markkanen, 1978; Markkanen, 1977), and standard of living of widows in Finland and Sweden (Moring, 2007). Scandinavian countries were true forerunners in consolidating the practice of probate inventories compared with countries in continental Europe. For example, in Sweden, probate inventories were made obligatory in 1734 (Kuuse, 1974) and this also applied to Finland since it was under the Swedish reign (Markkanen, 1978).

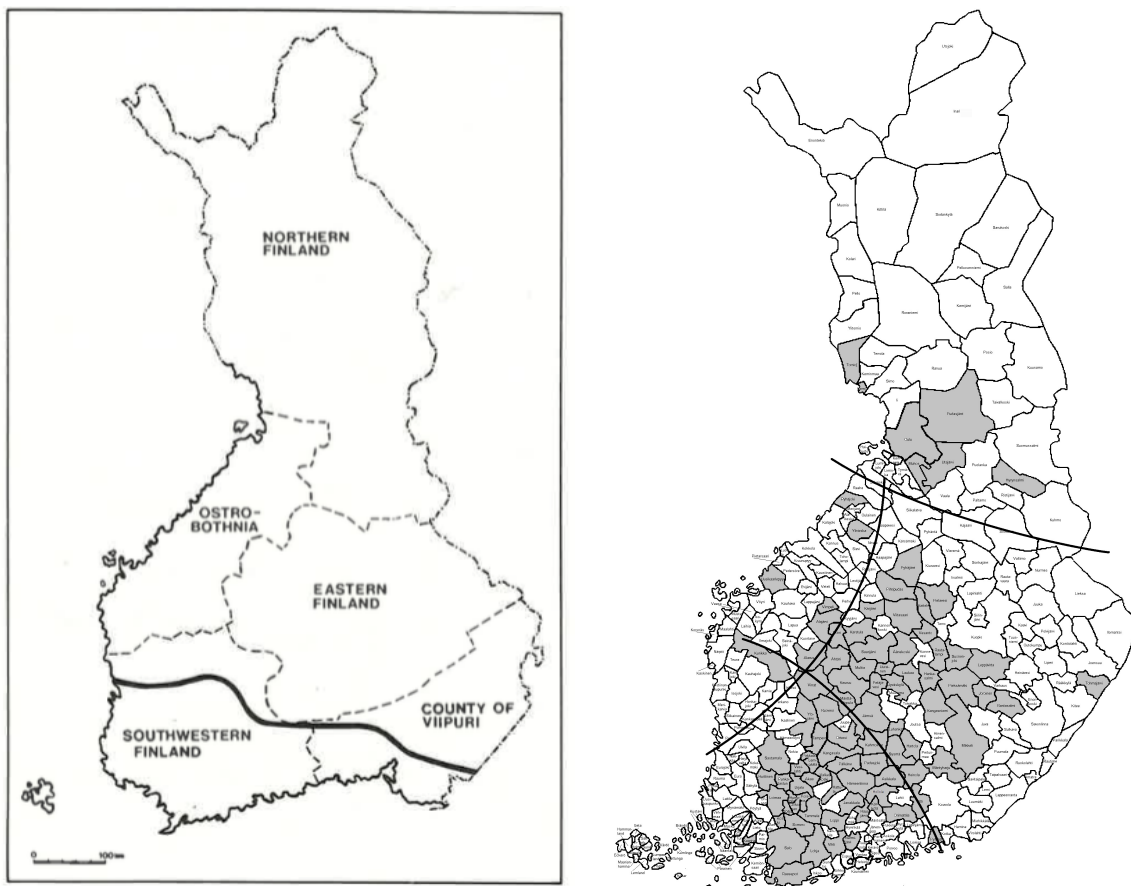
There are, of course, problems when it comes to the practices of collecting probate inventories in the past. Kuuse (1974) points out that probate inventories, despite being mandatory in Sweden, were not compiled for each individual due to such hindrances as the small size of the estate. He brings up findings of Gösta Lext, according to whom, in the 18<sup>th</sup> century Gothenburg, probate inventories were composed for only 25 percent of deceased residents of

the city. Also in Finland the law was disregarded, and Markkanen (1978) provides a means of roughly estimating this discrepancy by comparing parish lists of the deceased with the lists sent to the assizes or district magistrates, that deposited the copy of inventory in the judicial district files. In 1890, in the rural parish of Jyväskylä, 38 deaths of adults were registered by the parish records, whereas the list received by the assizes contained only 18 names. The names of children, crofters, dependent lodgers, vagabonds, elderly people, who no longer held land and, occasionally, even poorer cottagers were often omitted. Consequently, it can be assumed that probate inventories significantly omitted or under-represented the poorer classes. In line with this, Lindert (1981) notes that probate inventories often overstated “the share of propertied persons in society, missing much of the essence of economic inequality” (p. 660). The imbalance is especially evident in the earlier centuries as “the underrepresentation of the lower orders of society in probate records decreases perceptibly in the course of the nineteenth century” (Markkanen, 1978, p. 25).

Moring (2007), however, emphasizes the versatility of these inventories as well as their ability to transfer the researcher back in time. It is possible to feel closer to the past due to incredibly detailed information of these sources, including the names and the color of the cows that people had (Moring, 2007). Lindert (1981) exhibits the aforementioned flexibility by, aptly, stating that “historians can either sketch individual lives or build aggregate estimates” with the help of probate inventories (p. 649). He also points out that the utilization of probate inventories can be extended beyond examining overall distribution of wealth. As an example he brings colonial historians, who have investigated the prices and quantities of individual assets with the help of inventories. Moreover, Markkanen (1978) points out that probate inventories can be employed for studies of cultural history and agricultural mechanization. Overall, probate inventories' strengths outweigh their weaknesses as sources for economic and social history. They are, along with tax data, one of the two main sources on historical wealth (Roine & Waldenström, 2014)

### 3.1 Data Description

In the dataset, there are 27 111 probate inventories from 1653 to 1915. The inventories come from six towns and 122 rural parishes. The towns include Oulu, Kokkola, Hämeenlinna, Kuopio, Porvoo, and Käkisalmi. The concentration in this thesis is, however, on rural parishes and their distribution across Finland, when comparing rural inequality in different parts of the country. The observations for rural parishes were drawn, mainly, from three regions of the country. The first is the Southwestern region, southeast of Tampere and northwest of Helsinki. The second region is Eastern Finland and, finally, the third region is Northern Finland.



Sources: On the left Alapuro (1988), on the right adapted by the author from Wikipedia.

*Figure 3.1 Regional Division of Probate Inventories.*

Figure 3.1 displays regional considerations, which are crucial for this thesis. The map on the left side shows a regional division of Finland by Alapuro (1988), while the map on the right side is a visual representation of all the rural parishes and their regional placement compiled by the author in order to better demonstrate how the data looks in a regional perspective. The parishes marked in grey are, thus, the ones from which data was drawn. In Finnish economic history literature, regional variation has, in one way or another, been emphasized by different authors (Alapuro, 1988; Niemelä, 2008; Peltonen, 1992; Ruutu, 1959). These regional dimensions have been discussed in section 2.2.1 and form the foundation for the division here. The regional division used by Alapuro (1988) is taken as the basis for the grouping of rural parishes in the current thesis, as it aptly reflects the ideas of many other writers about regional differences in Finland.

In order to make the regional division of parishes, all of them had to be identified and placed on the map separately. After careful consideration of these various regional aspects, the division of rural parishes into bigger regional entities was executed as follows. The region of Ostrobothnia was made to constitute the parishes of Alavus, Kurikka, Lehtimäki, Munsala,



Vimpeli and Ylivieska. The Northern region was completed to comprise parishes of Muhos, Alatornio, Hyrynsalmi, Karunki, Kemi, Kiiminki, Pudasjärvi, Tornio and Utajärvi. The border between the Southwestern and Eastern regions was created to run along the parish border lines of Virrat, Vilppula, Jämsä, Kuhmoinen, Sysmä, Heinola, Iitti and Pyhtää. For the Southwestern region 6 311 observations were generated, while 10 716 observations were attached to the Eastern region and 540 to the Northern region. Unfortunately, only 7 observations were produced for the region of Ostrobothnia and it had to be merged with the Southwestern region on the basis that both of these were the leading economic regions. For the Southwestern region there are observations from year 1741 to 1900, in the Eastern region years range from 1741 to 1914 and, finally, for the North the corresponding years run from 1766 to 1837. Unfortunately, this makes it impossible to examine what happened in the North in terms of wealth during the period of industrialization.

For the construction of each benchmark in different regions, a 20-year window is used in order to cluster enough inventories to make an analysis possible. This is, however, insufficient when it comes to certain regions and benchmark years. In Eastern Finland, for the year 1750, a 25-year window is used, but no worker wealth analysis for this year is possible. This is also the case for the year 1880, which lacks the adequate amount of data for workers. In 1900, a 21-year window for farmers and a 22-year window for workers is used. The richest amount of observations in the East is concentrated around the year 1850 with 2394 observations for farmers. For the Southwest, a 25-year window is used in 1750, while for 1900, only a 3-year window for farmers and a 5-year window for workers is possible. In the end, there are also only 32 farmer observations for this benchmark year in the Southwest, and, therefore, the results cannot be interpreted as very robust. In general, for the years 1860-1900, Southwestern Finland is missing a considerable amount of inventories, at least when it comes to farmers and workers. Most of the data is concentrated around the year 1800, and for 1750 only farmers could be included in the analysis. In Northern Finland, a 24-year window is adopted for the benchmark year 1780 and a 20-year window for the year 1820. An analysis of the worker wealth distribution was only possible in the year 1820. At this time, however, only 77 observations for workers are available with a 25-year window. For the overall analysis of rural inequality amongst farmers and workers, there appears to be a sufficient amount of data for each benchmark year.

## 3.2 Lorenz-curve and Gini Coefficient

Lintunen (2007) and Lambert (1989) describe how a Lorenz-curve can be, easily, used to capture and delineate the distribution of either wealth or incomes, and Figure 3.2 shows the visual representation of this curve. Following their instructions, wealth units in this study are ordered by magnitude of wealth from lowest to highest. The cumulative proportion of total wealth received by the wealth units is, then, plotted against the cumulative proportion of the population. If wealth was equally distributed, the Lorenz curve would run along the 45 ° line represented by the broken lines in the picture, which is the line of perfect equality (Lambert, 1989). The closer the curve is, thus, to the horizontal and vertical axes, the greater is the inequality.

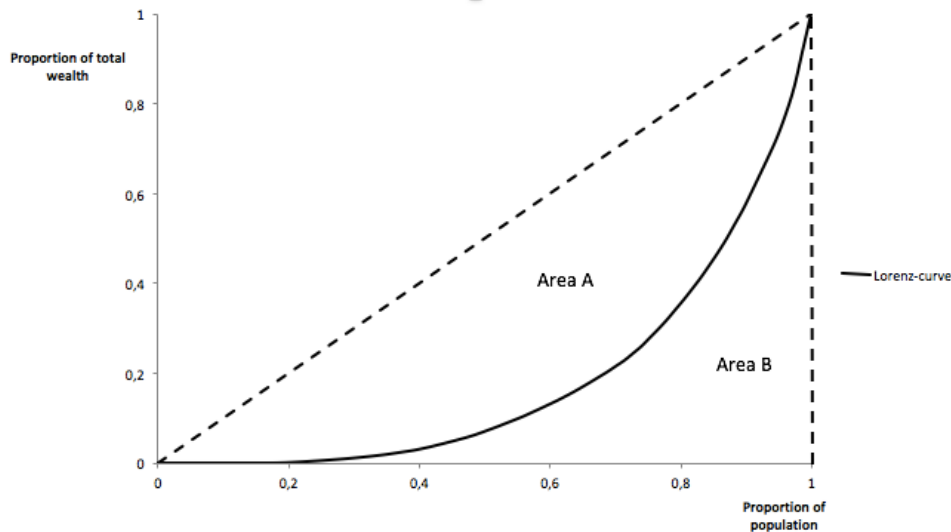


Figure 3.2 Lorenz-curve

Lambert (1989) also shows that Gini coefficient is derived from Lorenz-curve. The Gini coefficient, simply, indicates how far the given distribution is from a perfectly equal distribution. Lintunen (2007) reminds that the coefficient can take a value between zero, meaning perfect equality, and one, indicating maximal inequality. It is calculated as the ratio of area A and area B, represented by the triangle confined by the dotted line, and, as Lambert (1989) illustrates, can be written in the form of the following equation:

$$G = \frac{A}{A+B} = 2A = 2\left(\frac{1}{2} - B\right) = 1 - 2B$$

In order to make the Gini coefficients more representative of the Finnish rural population, the sample was reweighed for the years 1815, 1850 and 1875 using the data by Kilpi (1913) on different social classes in rural Finland. The very small landowning class was chosen to represent nobility and the share of bourgeoisie was obtained by adding the number of merchants and proprietors of official posts. Farmer and worker classes comprised the groups already discussed in section 2.2.2.

### 3.3 Limitations of the Study

Some limitations of the study, naturally, stem from the general shortcomings of probate inventories, as discussed previously in this section. As shown, there are, nevertheless, possibilities of overcoming these differences, such as reweighing of the sample to represent the entire population, which is also done for regional estimates of overall rural wealth inequality in this study. Against this background, the main concern for the present thesis is the lack of data in Southwestern Finland for the crucial years of nascent industrialization. It limits the conclusions that could be made regarding the distribution of wealth among farmers and

workers as well as the direction of inequality trends between 1850 and 1900. For many of the benchmark years, there are also less than 500 observations for farmer and worker groups, but this should still be sufficient since the concentration is on one social group instead of the entire population.

Another issue that has to be addressed is the coverage of the data in different regions since the parishes from which inventories are drawn do not necessarily represent the entire region, particularly with regard to the large size of each and every one of them, whether it is North, Southwest or East. The lack of observations from the county of Vyborg in the East, the majority of which, today, is part of Russia, is also unfortunate, since this region contained many independent farmers as can be seen in Table 2.1. This is offset by the overwhelming majority of observations coming from Eastern Finland. Merging of Ostrobothnia with the Southwest and the discussion of economic conditions of these Finnish regions as if they were homogenous is not optimal either, but necessary for a coherent analysis.

Lastly, the shortcomings of the Lorenz-curve and the Gini coefficients as measures of inequality together with the decision to pick them as indicators of inequality, instead of reporting the share of the top 1 and 10 percent, should be addressed. Because much of this thesis is concentrated on the development of wealth inequality among farmers and workers, concentration on the top layers of these groups does not seem fitting. Moreover, as Lambert (1989) puts it “Lorenz curve shows how the cake is divided, but it does not reveal the size of the cake or the number of mouths” (p. 54). This is to say, the Lorenz-curve cannot express what the conditions in terms of well-being are. Two distributions might be identical, although wealth in the other could be double. There are also problems with the Gini coefficient as a measure of inequality. Piketty (2014), for example, notes that it integrates too many aspects of the distribution, lacking the ability to show what is happening at the bottom or at the very top of the distribution. Atkinson (1970), on the other hand, argues that Gini coefficient is especially sensitive to changes in the middle of the distribution. However, demonstrating the development of regional wealth inequality through this indicator, which assigns one figure to represent all aspects of inequality, brings simplicity into the analysis of the changes that happened over time. All in all, in order to get a sense of the broad lines of development, the chosen indicators are very effective.

## 4 Empirical Analysis

Before initiating the breakdown of rural wealth in Finland, a quick reminder and iteration of the most important historical, political, demographic and economic circumstances that marshaled the inequality trends throughout centuries, has to be provided. It has been previously noted that the agrarian nature of Finnish economy was a crucial factor (Alanen, 1995; Anttila, 1974; Haatanen, 1968; Ojala & Nummela, 2006) while the configuration of Finnish population and especially the increase of landless population markedly affected the social structures (Pitkänen, 1980). Alapuro (1988) has noted the strong role of the state in bringing about changes, and Soininen (1980) adds the impact of agrarian policies on agricultural development to this mix. Moreover, the three pillars of the economy – crop farming, cattle farming and forestry – and the transition between these (Peltonen, 1992); an agricultural land reform of Great Partition (Soininen, 1980); economic liberalization (Myllynatus, 1980); nascent structural change (Hjerpe, 1989); rise of the labor movement (Alapuro, 1988; Peltonen, 1992); and even the famine of 1867-1868 (Haatanen, 1968) should not be forgotten. These different aspects are tightly knitted together, and the challenge of the following sections will be to weave them together with the findings, and present a coherent story and interpretation of the results in the light of these events. The examination of the findings starts with an analysis of overall rural regional wealth inequality and then moves on to discuss wealth inequality among farmers and workers in different regions.

### 4.1 Development of Rural Wealth Inequality in Finland

Ownership of land and increasing productivity of this land as well as increasing population have historically played an important role in determining inequalities in the society (Alfani, 2010; Piketty et al., 2006). These aspects are also present in the historical development of Finland and the regional wealth inequalities presented in Table 4.1. As can be deduced from the review of Gini coefficients, Eastern Finland experienced a constant increase in wealth inequality, although the level of inequality was lower when compared to Southwestern Finland. Even Northern Finland, in 1815, was more unequal in terms of wealth than Eastern Finland. The Southwest, on the other hand, had the highest level of inequality, which seems to diminish slightly from 1815 to 1850.

So how can these results be interpreted in the light of changing land ownership and other economic factors? Jutikkala (1958) relays, that a major land reform, the Great Partition, which was equivalent to enclosures in England, was initiated at the end of the 18<sup>th</sup> century and continued in the 19<sup>th</sup> century. The objective of this reform was to make farming more efficient through gathering of the scattered pieces of land into one connected plot for each farmer. When also taking into the consideration that the Southwest was a leader in adopting more

innovative farming methods (Peltonen, 1992), this overall tendency towards increased productivity could have played a role in very high levels of inequality in this region. It could, however, have been a contributor to the refraction of this trend in 1850, when more and more people were able to benefit from the early progress in Southwestern Finland. Unfortunately, there are no estimates of overall wealth inequality in the Southwest for 1900, but judging from within-group inequality development of the two biggest classes – farmers and workers (Tables 4.2 and 4.3) – it could not have increased too drastically. Fading out of the class differences between nobles and wealthy farmers (Soininen, 1980), could also have had a twofold effect. This fading out happened as farmers were able to buy out noble land at an increasing pace, which could have led to decreasing overall rural inequality as can be seen below in Southwestern Finland. However, it could also have increased inequalities in places where wealthy farmers were scarce, that is to say in Eastern Finland.

*Table 4.1 Gini Coefficient for Different Regions in Rural Finland*

<b>Region</b>	<b>1815</b>	<b>1850</b>	<b>1875</b>
East	0,69	0,75	0,77
Southwest	0,87	0,85	-
North	0,72	-	-

The ever increasing wealth inequality in Eastern Finland can be a consequence of fast increasing landless population, which is also discussed below in connection with growing within-group inequality of workers. As the supply of labor increased, agricultural wages fell, and the simultaneously increasing land rents put further pressure on crofters and other agricultural workers (Soininen, 1980). These developments, in turn, contributed to the profits concentrating in the hands of the landowning population (Soininen, 1980; Alapuro, 1988), which can also be the source of high inequality in the Southwest.

When comparing these measures of wealth inequality with previous studies, the results obtained are not exceptional. Bengtsson et al. (2017) found constantly increasing inequality in rural Sweden with Gini coefficient growing from 0,72 in 1750 to 0,86 in 1900. Bengtsson et al. (forthcoming), in turn, discovered that wealth inequality in entire rural Finland was 0,95 in 1850 and fell to 0,87 in 1900. Alfani (2010) found a Gini coefficient of 0,68 for the city of Ivrea in Italy in 1630. Finally, Hanson Jones (1972) came up with a Gini of 0,71 for free adults in New England and 0,82 for the free families in 1860 in the United States, while Yang (1984) discovered a Gini of 0,72 for Southern farmers and 0,56 for Northern farmers in the U.S. The Gini estimate of 0,87 in 1815 in Southwestern Finland is, indeed, high but still in line with previous findings and the specific nature of the region.

### 4.1.1 Rural Wealth Inequality among Farmers and Workers

Tables 4.2 and 4.3 present the Gini coefficients for farmers and workers, respectively. When looking closer at farmer wealth inequality, Eastern Finland in 1750 seems to be the most equal region with a Gini of 0,45. This is in line with the previous notions of Eastern Finland being the poorest region (Jutikkala, 1953), when Western parts were still oriented towards Sweden. By 1850, Eastern Finland has, nevertheless, almost caught up with the Southwestern parts, where farmer wealth inequality seems to have diminished from 1800 to 1850. Worker wealth inequality in the Eastern parts also grows until 1850 but, at the same time, stays lower than Southwestern until 1900, when a drastic drop in the Southwestern worker wealth inequality happens. In the Southwest, the worker Gini coefficient drops from 0,82 in 1850 to 0,64 in 1900, while it maintains the same level of 0,75 in Eastern Finland throughout this period. It is also noteworthy, that in Eastern Finland, worker inequality is consistently at a higher level than farmer inequality, whereas it is lower in Southwestern Finland in 1800. By 1850, it has risen again, before establishing itself at a lower level. In 1900, Southwestern Finland is the leader in levels of farmer wealth inequality, although Eastern Finland, too, quickly gains back the points lost from 1850 to 1880, ending up with a Gini coefficient of 0,70 in 1900. In Northern Finland, the farmer Gini coefficient in 1820 is 0,65 while for workers it is 0,63. Northern Finland also shows surprisingly high farmer inequality in 1780 with a Gini of 0,58. This level of inequality is approaching the levels of the Southwest in 1750 and can be seen as remarkable due to the peripheral nature of Northern Finland.

*Table 4.2 Gini Coefficient for Farmers in Different Regions*

<b>Region</b>	<b>1750</b>	<b>1780</b>	<b>1800</b>	<b>1820</b>	<b>1850</b>	<b>1880</b>	<b>1900</b>
East	0,45	-	0,59	-	0,71	0,67	0,70
Southwest	0,60	-	0,78	-	0,74	-	0,75
North	-	0,58	-	0,65	-	-	-
Overall	0,55	-	0,75	-	0,72	0,69	0,73

Note: Number of observations for East 1750 (207), 1800 (400), 1850 (1465), 1880 (146), 1900 (292). Southwest 1750 (331), 1800 (1750), 1850 (364), 1900 (32). North 1780 (132), 1820 (168).

Table 4.3 Gini Coefficient for Workers in Different Regions

Region	1750	1800	1820	1850	1880	1900
East	-	0,61	-	0,75	-	0,75
Southwest	-	0,68	-	0,82	-	0,64
North	-	-	0,63	-	-	-
Overall	0,61	0,67	-	0,77	0,80	0,73

Note: Number of observations for East 1800 (138), 1850 (2394), 1900 (472). Southwest 1800 (1151), 1850 (635), 1900 (124). North 1820 (77).

This increase in farmer wealth inequality both in the East and the Southwest from 1750 to 1800 can be connected to the established right of Crown tenants to buy their farms, while there were also general improvements in the rights of farmers when it came to inheritance estates (Jutikkala, 1958). These improvements could have benefited the wealthy strata of the farmers and, thus, increased inequalities. Continuing increase in farmer wealth inequality in the East and slight drop in the Southwest, in turn, could be attributed to the transition from crop farming into dairy farming and forestry. Southwestern farmers, which, according to Peltonen (1992), were more advanced in dairy operations, but could also reap the greatest benefits from rising timber prices (Alapuro, 1988), could have experienced a more equal distribution of these advantages among themselves. Eastern Finland was more peripheral in this sense, and the vast holding of forest land by forest companies could have hindered the more equitable distribution of proceeds from forestry among Eastern farmers.

Similar developments could have played a role in worker wealth inequality trends. Soininen (1980) claims that cattle farming was not as labor intensive, and this freed a considerable amount of workforce that, perhaps, could not be integrated into the economy as smoothly in Eastern Finland as in the economically more developed Southwestern parts. Moreover, crop farming in the Eastern region was, for a long time, characterized by slash and burn techniques, and this method of cultivation was based on a large non-sedentary workforce (Nummela, 1990). This made concentration of landless population with irregular sources of income in Eastern Finland more acute. Another reason for the growth of the landless population was that, for centuries, the division of farms into smaller units was forbidden (Soininen, 1980). The increasing and persistent worker inequality in the East might, thus, reflect this policy. As previous research has shown, the segment of the population lacking permanent dwelling (*loinen*) was concentrated in this region (Haatanen, 1968), and this, certainly, added to the inequality.

The growth of sawmill industry in Eastern Finland, however, allowed some workers to still benefit from the growing economy, which contributed to growing inequality within worker class. Moreover, the nascent industrialization after the 1860s further differentiated Southwestern Finland from the rest of the country making it the most advanced and prosperous. An interesting and almost Kuznets-like development can be seen among the Southwestern workers as their wealth inequality first grows but then diminishes by 1900. As

mentioned before by Alapuro (1989), the growing number of Finnish workers could not be integrated in the emerging industry as should have happened according to the conventional picture painted by Kuznets (1955) and Lewis (1954). Table 4.4 explains this by showing the very agrarian composition of Finnish GDP at the end of the 19<sup>th</sup> century. Agriculture and forestry dominated, while the share of manufacturing was only 10 percent from 1860 to 1890. Evidence of the advanced position of the Southwest is presented in Table 4.5, which shows the growing number of rural industrial workers. The Southwest totals 11 288 workers in 1875 beating all other regions. At the same time, when compared with the overall exponentially growing number of workers in this region in Table 2.2 of section 2.2.2, it becomes clear that only a fraction of the workforce could be integrated in the secondary sector. However, with regard to this, Anttila (1974) observes that, at the turn of the century, the excess pressure of the landless population in Eastern Finland discharged through migration into Southern parts in search for work. This indicates that opportunities for employment existed in the Southwest, and the drastic drop in inequality among workers between 1850 and 1900 signifies improving conditions there.

*Table 4.4 Value Added of Economic Activities in GDP, Average Annual %*

<b>Year</b>	<b>Agriculture</b>	<b>Forestry</b>	<b>Manufacturing</b>
1860-1890	41	16	10
1890-1913	33	15	16

Source: Hjerpe (1989)

*Table 4.5 Number of Rural Industrial Workers in Different Regions*

<b>Region</b>	<b>1815</b>	<b>1820</b>	<b>1850</b>	<b>1875</b>
<b>Southwest</b>				
Uusimaa	1 770	2 039	2 950	3 022
Turku and Pori	2 123	2 289	3 876	3 494
Häme	1 285	1 536	2 405	3 399
Vaasa	522	644	977	1 373
Total	5 700	6 508	10 208	11 288
<b>East</b>				
Vyborg	436	878	1 267	1 817
Mikkeli	322	444	960	1 743



<b>Region</b>	<b>1815</b>	<b>1820</b>	<b>1850</b>	<b>1875</b>
Kuopio	235	288	811	1 746
Total	993	1 610	3 038	5 306
<b>North</b>				
Oulu	113	155	348	654
Overall Rural	6 806	8 273	13 594	17 248

Source: Kilpi (1913)

All in all, the fact that the worker class in this thesis is defined very broadly, assembling crofters as well as workers with irregular earnings and no land under the same umbrella term, is in itself a circumstance that increases estimates of inequality. Peltonen (1992), namely, describes the living standards of crofters as being considerably better than those of workers', despite crofters' otherwise distressful relation to landowners. Yet, these groups have a historical unifying factor that brings their perspectives and goals together – the Finnish labor movement of the end of the 19<sup>th</sup> century. The workers party was founded in 1899, and the movement turned out to be, not only close to industry workers' hearts, but a markedly agrarian mass movement (Alapuro, 1988).

Alapuro (1988) argues that the rise of the Social Democratic Party was mostly a reflection of a greater demand for democracy and not necessarily a consequence of highly unequal conditions within the society. He suggests that the party gained support in areas “with the largest proportion of crofters, industrial and agricultural workers” (p. 128) and, thus, Southwestern and Eastern Finland were the strongholds of Social Democrats. Kuopio and Mikkeli, in the East, were counties where support for the Social Democrats was especially persistent. This sympathy for Finnish Social Democrats would not, however, have been enough to spark a revolution, and as Alapuro (1988) argues, the process leading to the civil war of 1918 was initiated by governmental incapacity and succeeding mobilization of masses.

Alapuro (1988) also claims that capitalist commercialization did not hurt Finnish peasants as severely as, for example, farmers in some colonial states. Thus, class conflict could not have been so drastic as to cause a conflict of that size. This claim could be supported by the Gini coefficients found for the year 1900, which were not, historically seen, at their highest levels and were, in many cases, even diminishing. Instead, Russian collapse, weakening of social and cultural restraints on violence, memory of mass action in 1905 and fear of starvation due to shortages in grain are presented as factors leading up to the civil war by Alapuro (1988). He remarks, that the objectives of the Social Democratic Party and leaders of the revolution were not particularly revolutionary or ambitious even after the occurrence of the revolution. Hence, whether the polarization of the nation caused the revolution or not cannot be determined here, but the growing representation of Social Democrats in the Finnish parliament could have strengthened the political voice of agrarian workers. This, in turn, could have affected the abolishment of the predominant institutional frameworks, which

increased inequalities and, perhaps, even contributed to diminishing wealth inequality in some regions.

#### 4.1.2 Regional Rural Wealth Inequality

Figures 4.1 and 4.2 present the Lorenz-curves for overall rural wealth distribution in different regions of Finland. These Figures add to the discussion around the Gini coefficients presented in Table 4.1 by visualizing the changes in distribution over the years. The most striking feature of Figure 4.1, depicting Eastern wealth distribution and increasing inequality in this region, is that changes seem to occur on a very broad front among the wealthiest and moderately wealthy groups. When looking at Figure 4.2 and Southwestern Finland, the picture is very different, since the wealth is very unevenly distributed with a lot of people owning close to nothing and with wealth concentrating among the richest. The decrease in inequality, however, happens due to the equalization among the wealthiest, while the bottom seems to even lose some more of its share.

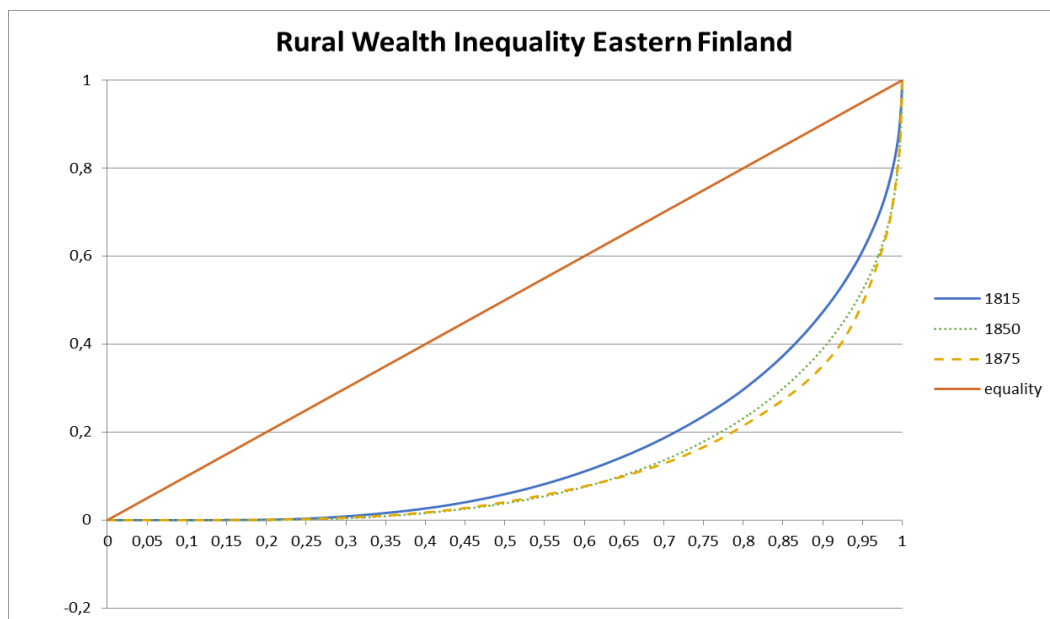


Figure 4.1 Lorenz-curve for Overall Rural Wealth in Eastern Finland in 1815-1875

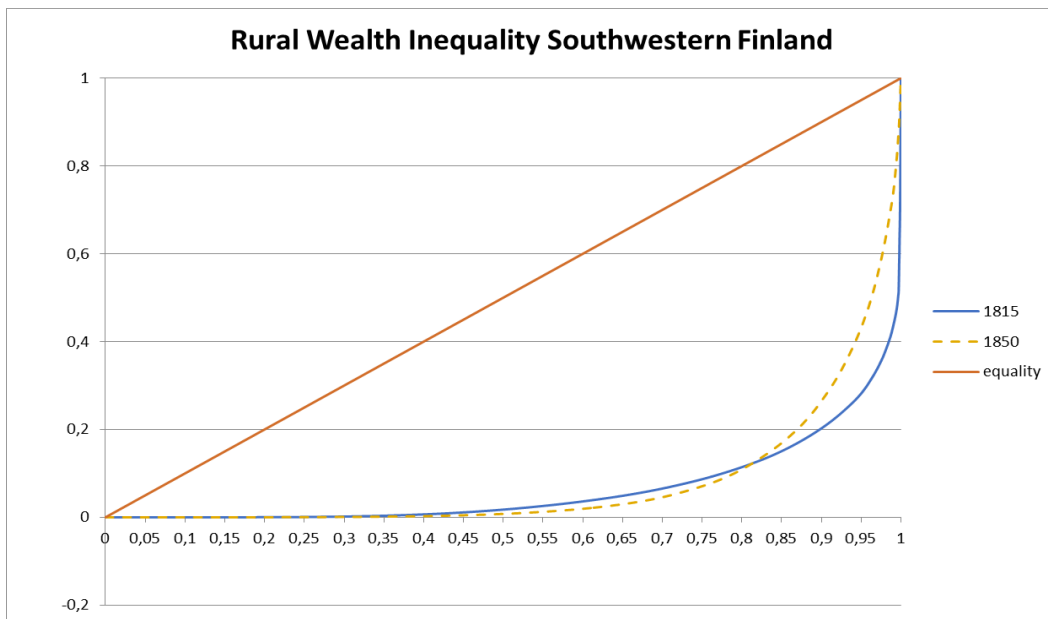


Figure 4.2 Lorenz-curve for Overall Rural Wealth in Southwestern Finland in 1815-1850

Figure 4.3 further demonstrates the curious case of Northern Finland, which, despite its peripheral nature, shows surprisingly high levels of wealth inequality. Alapuro (1988) points out that, in the beginning of the 20<sup>th</sup> century, this region accounted for 42 percent of Finland’s total area but only 5 percent of population. He explains that what could be seen as contributing to inequality, is the fact that peasants were exploited by merchants and tar producers of Oulu. Later on, when sawmill industry began to grow in this region, cities like Oulu developed into economic centers, and this is something that could have further increased inequality. Unfortunately, only one benchmark year is available for the examination of the overall rural inequality in this region, but exploitation of peasants by bourgeoisie would, indeed, fit the picture shown below with a large share of population owning close to nothing.

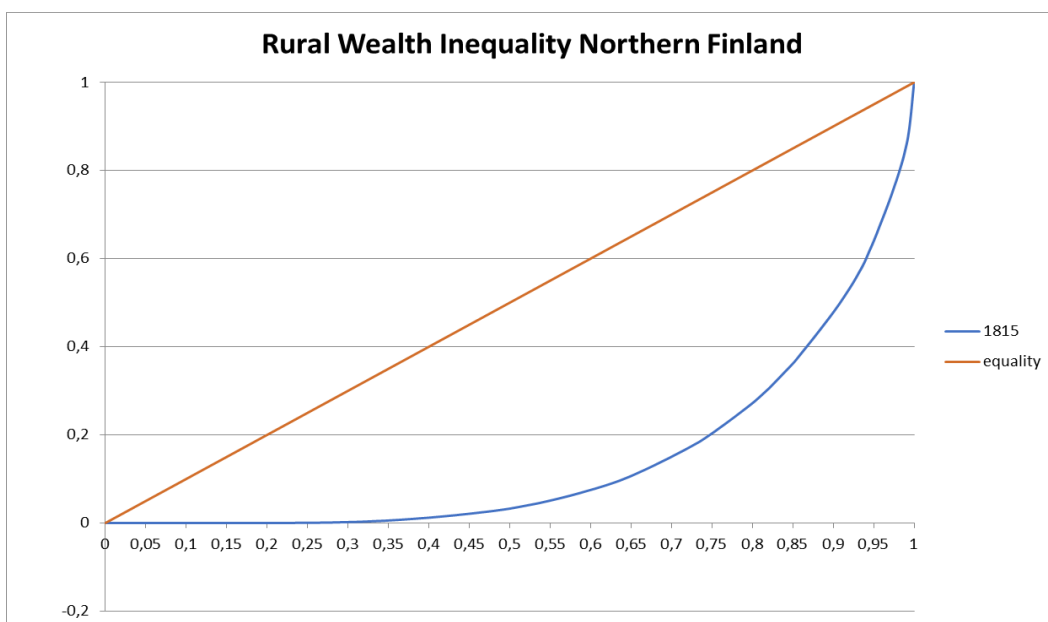


Figure 4.3 Lorenz-curve for Overall Rural Wealth in Northern Finland in 1815

### 4.1.3 Wealth Inequality in Eastern Finland

Wealth inequality increases steadily throughout the Eastern farmer class until 1850, before this trend is refracted in 1880, which is evident from Figures 4.4 and 4.5 below. In 1880, the decrease occurs as a result of growing wealth in the middle and bottom, but this decreasing trend is disrupted in 1900, when the upper 5-15 percent, yet again, gain a considerable share.

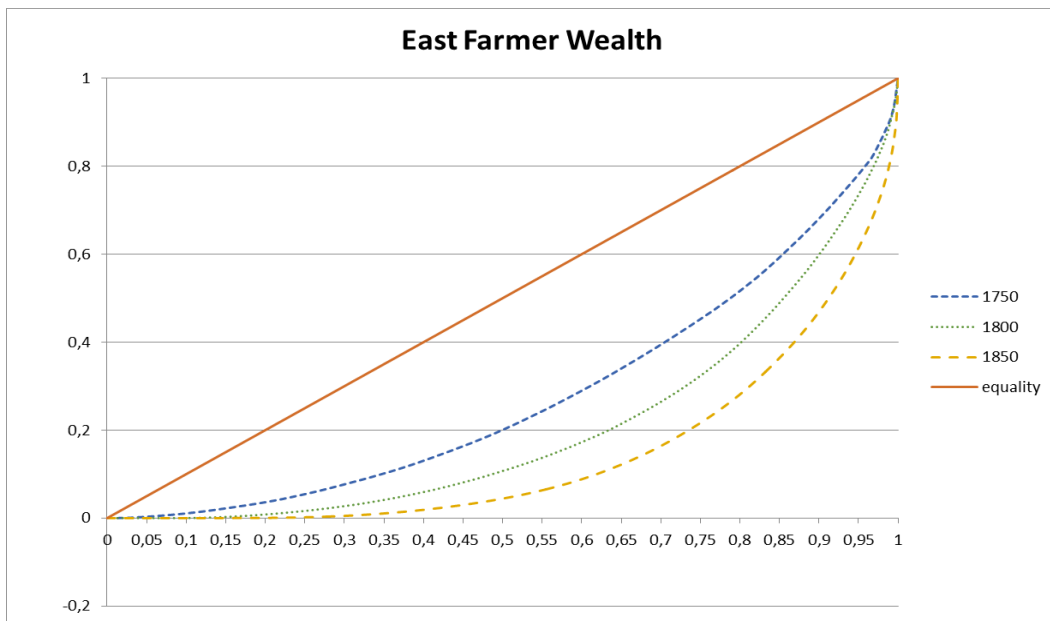


Figure 4.4 Lorenz-curve for Eastern Farmer Wealth in Rural Finland in 1750-1850

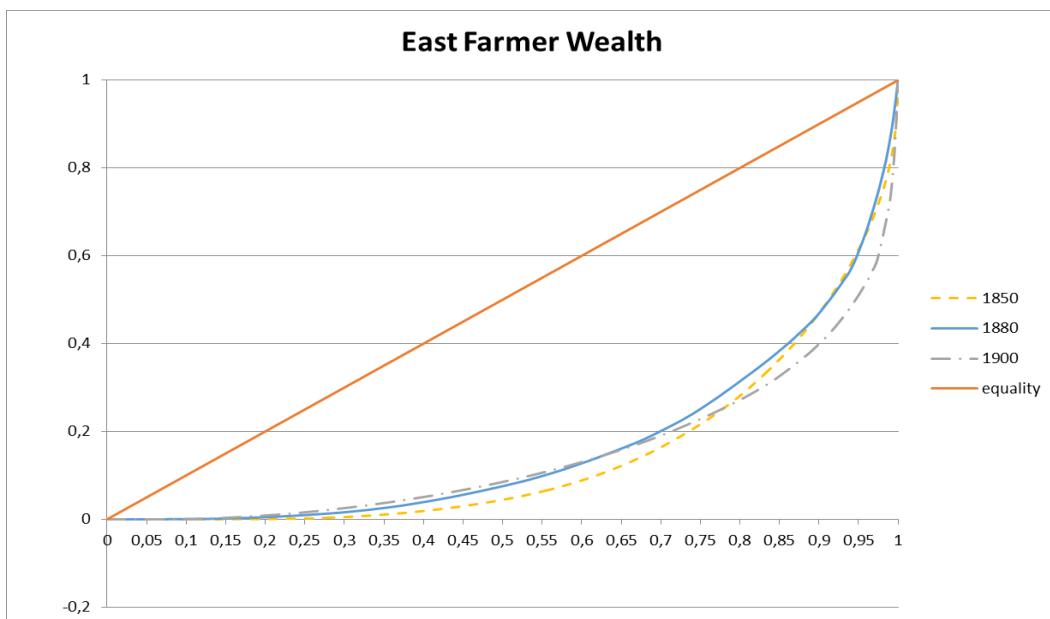


Figure 4.5 Lorenz-curve for Eastern Farmer Wealth in Rural Finland in 1850-1900

The case of the distribution of the Eastern worker wealth is more straightforward with an increase in inequality from 1800 to 1900 as exhibited in Figure 4.6. Surprisingly enough, there is virtually no change between the curves in 1850 and 1900.

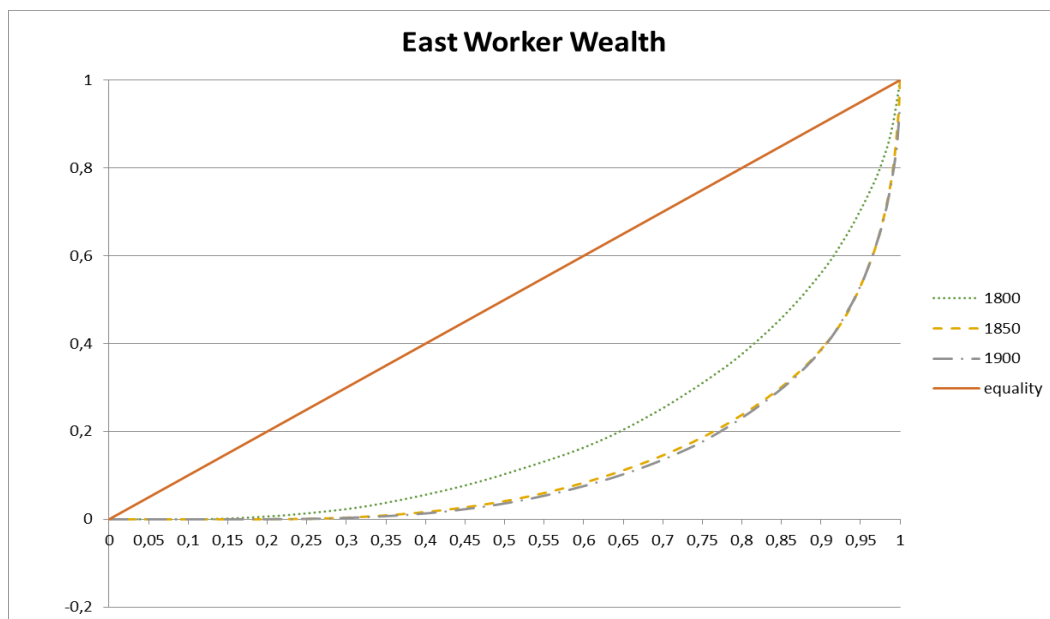


Figure 4.6 Lorenz-curve for Eastern Worker Wealth in Rural Finland in 1800-1900

As can be seen from Figure 4.5, Eastern Finland is the only region for which an analysis of the distribution of farmer wealth during 1880 is possible, and this gives the only indication that the trend in wealth inequality in the East was not invariably ascendant. As shown before, farmer wealth inequality in the region fell to 0,67 in 1880, while the overall wealth inequality in the rural East still was on an increasing path ending up with Gini of 0,77 in 1875. Moreover, overall rural worker wealth inequality in 1880 grew to 0,8 as shown in Table 4.3.

An important factor that could have influenced the level of inequality during this time is the famine of 1867-1868. As the role of world markets was particularly strong in Finland until World War II, Finland had long ago lost its self-sufficiency in the supply of grain due to cheap international grain (Peltonen, 1992). Grain shortages were, thus, patched by imports of foreign grain but after catastrophic harvest failures in 1867 this was no longer possible, which led to starvation of the population (Soininen, 1980). Haatanen (1968) does not find differences in regional mortality figures, while Voutilainen (2016) mentions that Eastern Finland could have been affected particularly severely due to societal macro-structure and high inequality. The landless population that was paid in grain lost their work and was forced to wander around the country in search for food while the spreading diseases that came with these migrating paupers only worsened the situation (Soininen, 1980). The growing worker inequality could have something to do with the great disparities between landless workers forced to wander in search for work and workers who had permanent incomes and a dwelling place. The decrease of inequality among the middle and bottom distribution of farmers could have been a consequence of higher mortality among this group leading to concentration of the remaining wealth among the living. This unanticipated fall in inequality after a nationwide

shock, can be seen to reflect the theory of Scheidel (2017), who found lethal pandemics to be one of the four major forces diminishing ever increasing inequalities in the society.

#### 4.1.4 Wealth Inequality in Southwestern Finland

In Southwestern Finland, the trend is slightly different from Eastern Finland. Farmer wealth inequality starts decreasing already from 1800 to 1850, as can be seen from Figure 4.7, but a following increase in inequality can be detected between 1850 and 1900 in Figure 4.8 due to gains of top 5-20 percent.

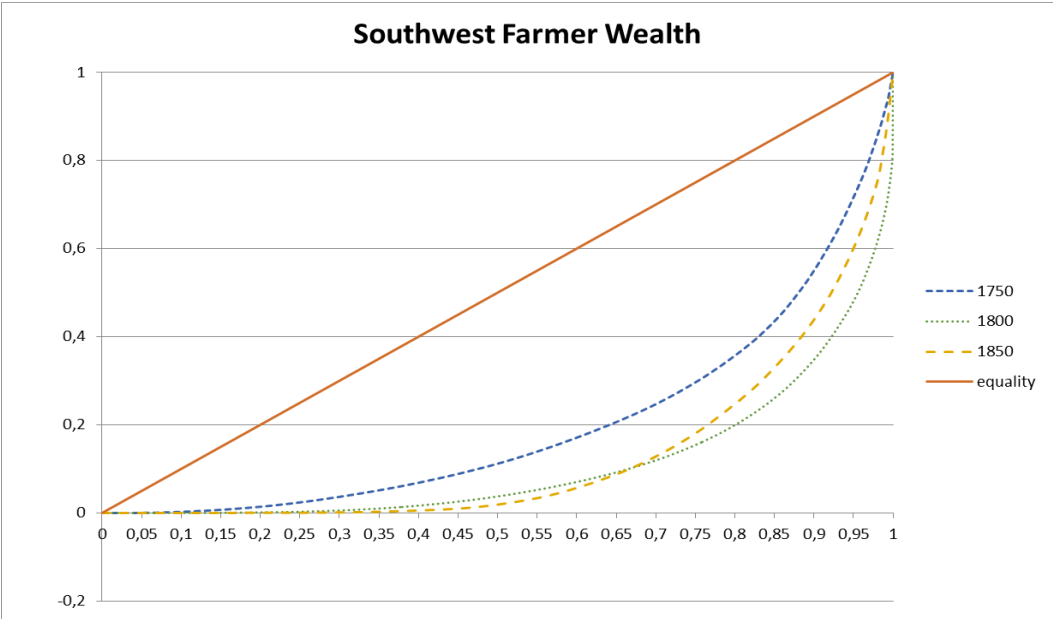


Figure 4.7 Lorenz-curve for Southwestern Farmer Wealth in Rural Finland in 1750-1850

Extremely curious is the fact that the decrease from 1800 to 1850 is due to equalization in the wealthiest part of the distribution, and this would fit well with the explanation of more farmers being able to own their farms. At the bottom, however, the number of farmers owning close to nothing increased. As can be seen from the figure below, their position, yet again, improved in 1900.

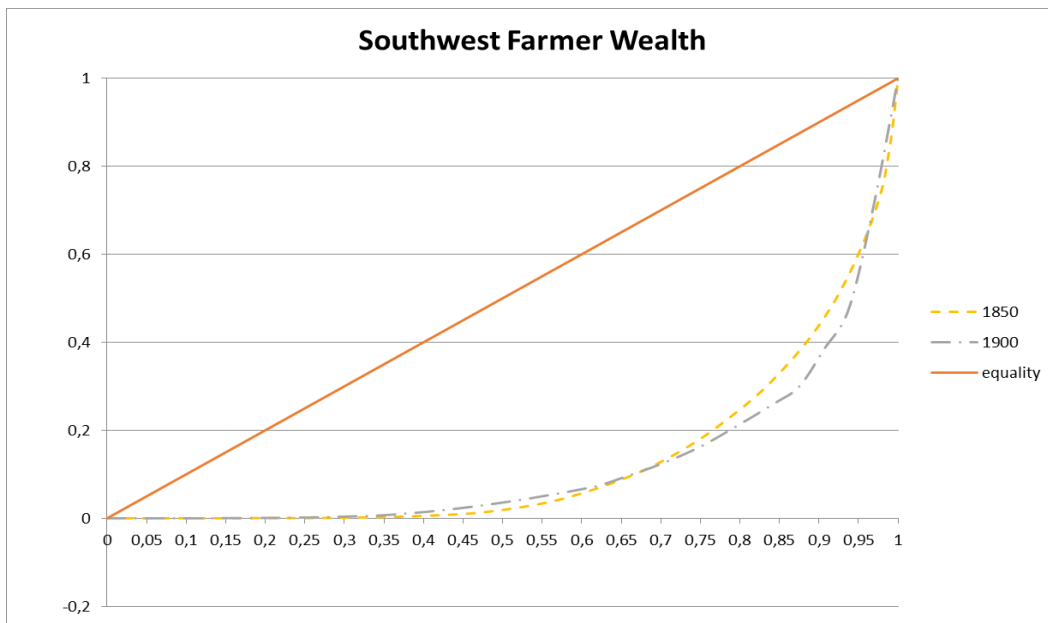


Figure 4.8 Lorenz-curve for Southwestern Farmer Wealth in Rural Finland in 1850-1900



Figure 4.9 Lorenz-curve for Southwestern Worker Wealth in Rural Finland in 1800-1900

The development of Southwestern worker wealth inequality is especially peculiar considering the drastic increase in inequality from 1800 to 1850 but also just as drastic decrease between 1850 and 1900. These changes are displayed in Figure 4.9. The increase could be attributed to the slowly rising industry that benefited only the few in this new sector. Furthermore, crofters

had been under vast pressure in the latter decades of the 19<sup>th</sup> century, which can also be reflected in exceptional worker wealth inequality in 1850 in Southwestern Finland presented in Table 4.3. Soininen (1980) contends that the right of crofters to use forests for personal purposes, including collection of firewood, was considerably restricted amidst the nascent timber boom. Conversely, one factor that could have affected the decreasing trend at the end of the century, propagated by Peltonen (1992), is the growing importance of the labor movement, as the fight for shorter working hours that had started in the industry finally reached agriculture. Peltonen (1992) argues that the enormous wave of agricultural strikes and the organization of tenant farmers at the turn of the century, eventually, led to the shortening of the labor day of the crofters. This meant that the workload on the estate owner's land diminished and they could concentrate on working on their own croft. In 1900, decreasing inequality could, then, indicate the narrowing differences between industrial workers and crofters. Peltonen (1992), nevertheless, points out that the development was not that straightforward. The 1909 land rent act, objective of which was to improve the position of the crofter, led to greater insecurity, because of the opposition on behalf of landowners. Eventually, by 1939, Peltonen (1992) estimates that approximately 45 000 crofters became independent.

#### 4.1.5 Wealth Inequality in Northern Finland

The case of Northern Finland is very different since the analysis does not cover the period of industrialization. Only two benchmark years could be constructed for farmers and Figure 4.10 shows the development among the Northern farmer class. Wealth inequality seems to be increasing due to changes throughout this class. However, a further investigation into the conditions in this region would be necessary, but this would require additional data.

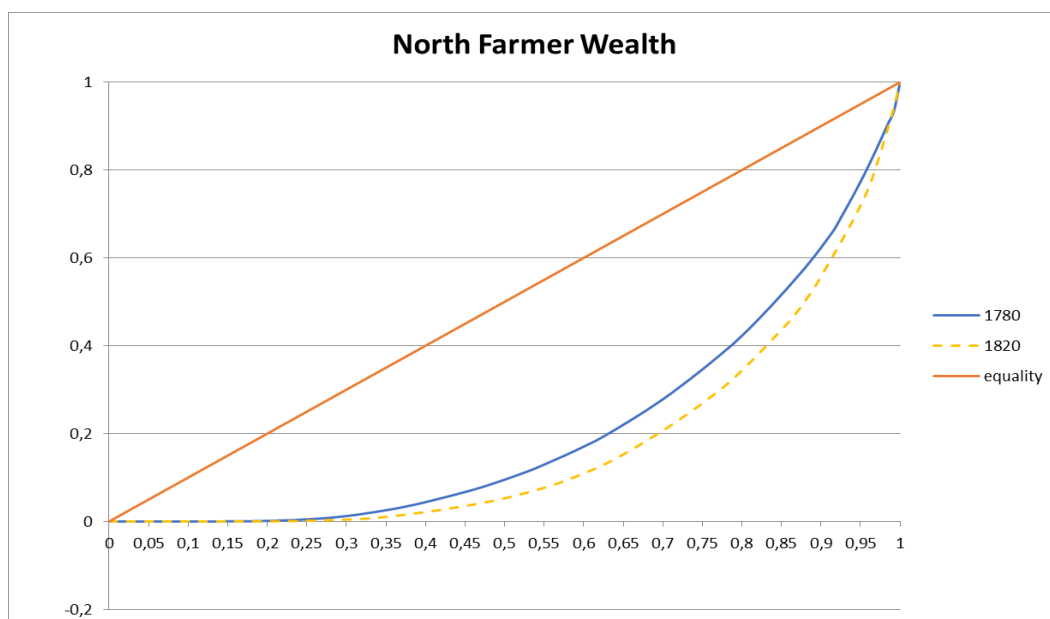


Figure 4.10 Lorenz-curve for Northern Farmer Wealth in Rural Finland in 1780 and 1820



## 4.2 Development of Regional Mean Wealth

Extending the examination of inequality into the distribution of wealth between different regions is interesting for understanding the origins of inequalities. Looking at the overall rural mean wealth development over time can give us indications regarding the economic differences between regions. Wealth, here, is deflated using 1900 prices and this is done with the help of Customer Price Index calculated originally by Bengtsson et al. (forthcoming). As indicated by Table 4.6, in 1750, mean wealth in Southwestern Finland was 4,5 times greater than in Eastern Finland, and, in 1780, even the Northern region was more prosperous than the East. Yet, in all regions, a drastic fall in mean wealth can be detected from 1750 to 1850. The most dramatic drop occurs in the Southwest, but the recovery in 1900 is also significant. This fits the findings of Heikkinen et al. (1987) presented in the literature review section, when they argue that the year 1750 marked a decline in wealth, which only recovered after 1860. In the year 1900, Southwestern Finland had the highest mean rural wealth of 3647,70 rd (riksdaler) versus 3516,67 rd in Eastern Finland. To some extent, Jutikkala's (1953) argument that the value of measured wealth diminishes when moving from West to East is, thus, valid. The North and the Southwest were, certainly, not that far apart when it came to mean wealth, at least in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries. Also Heikkinen et al. (1987) and Enflo's (2014) assertion regarding the Southwest as the wealthiest region holds. At the same time, the growing wealth in Eastern Finland could be seen to mirror the reorientation towards Russia after 1809 (Alapuro, 1988; Enflo, 2014).

*Table 4.6 Mean Rural Regional Wealth, when East 1750 Mean = 1*

<b>Region</b>	<b>1750</b>	<b>1780</b>	<b>1800</b>	<b>1820</b>	<b>1850</b>	<b>1880</b>	<b>1900</b>
East	1,00	-	0,35	-	0,26	1,64	4,91
Southwest	4,50	-	0,86	-	0,21	-	5,09
North	-	1,22	-	0,5	-	-	-

What happens, then, when picking apart the development of mean wealth among farmers and workers? Table 4.7 illustrates that farmer wealth can be seen as having a more even distribution throughout the period of examination among different regions, at least until 1900. In 1750, mean wealth was almost the same in the East and the Southwest, while the wealthiest farmers can be placed in Northern Finland, with mean wealth in 1780 reaching 1075,64 rd (in 1900 prices) as opposed to 1033,34 rd in Eastern Finland in 1750. These results for Northern Finland are in stark contrast with the traditional picture of the peripheral nature of this region. Alapuro (1988), for example, portrays the landholding class as very poor, but the figures here and the comparison with other regions suggests that this is not entirely true. Yet, when observing wealth in the final benchmark year of 1900, the picture changes tremendously. Southwestern farmers' mean wealth explodes, reaching a level more than double the mean

wealth of Eastern farmers. Caution should, nevertheless, be exercised when interpreting these numbers due to the extremely low level of observations for farmers in the Southwest in 1900.

*Table 4.7 Mean Farmer Regional Wealth, when East 1750 Mean = 1*

<b>Region</b>	<b>1750</b>	<b>1780</b>	<b>1800</b>	<b>1820</b>	<b>1850</b>	<b>1880</b>	<b>1900</b>
East	1,00	-	0,30	-	0,23	1,93	7,96
Southwest	1,01	-	0,50	-	0,34	-	17,89
North	-	1,04	-	0,39	-	-	-

*Table 4.8 Mean Worker Regional Wealth, when East 1800 Mean = 1*

<b>Region</b>	<b>1800</b>	<b>1820</b>	<b>1850</b>	<b>1900</b>
East	1,00	-	0,29	3,30
Southwest	0,68	-	0,23	2,56
North	-	0,54	-	-

Table 4.8 provides an insight into the regions' worker wealth, with Eastern Finland reporting the highest values during the entire period of 1800-1900. Both growing farmer wealth and the incredible mounting of worker wealth in the Eastern region show that the sawmill industry could have played an important role in bringing prosperity to workers, and at least to some farmers. In Eastern and Southwestern regions, mean worker wealth also grows from 1850 to 1900 with Eastern workers having a mean wealth of 393,33 rd in 1900. This is, however, still considerably lower compared to mean farmer wealth of 8225,58 rd in Eastern Finland in this period. The growing mean wealth of workers, and most notably farmers shown here, indeed, seems to confirm the findings of Bengtsson et al. (forthcoming). As they suggest, the key to falling inequality could be the growing wealth of farmers in relation to the nobility and the bourgeoisie from 1850 to 1900. The current study, however, shows that the Southwestern region was the main driver of this development.

Finally, drawing on an article by Kuhn, Schularick and Steins (2017) and Bengtsson et al. (2017), a final indicator of the development of wealth inequality in Finland is constructed. Kuhn, Schularick and Steins (2017) contend that, in modern society, the portfolios of rich households are dominated by business equity and financial assets, while the portfolios of the typical middle class households consist of residential real estate. Therefore, middle classes would hugely benefit from rising real estate prices, while the rich households would accumulate most wealth from booming bond markets. Bengtsson et al. (2017) in their paper on historical wealth inequality in Sweden show that movables are the least unequal of the

sources of wealth while real estate together with claims and investments are more unequally distributed, just like financial assets are today. Consequently, if the share of movables of total wealth decreases and the share of real estate, claims and investments increases, it would have a positive effect on inequality and would explain a good part of increases in inequality.

Figure 4.11, however, starts off the examination by depicting farmer and worker debt as a share in total wealth in different regions. In the case of Sweden, Bengtsson et al. (2017) describe this type of wealth as having an equalizing effect, and the share of debt does seem to slightly increase throughout the years, at least among workers. For both workers and farmers, the share of debts is greater in Eastern Finland in almost all years. Moreover, workers seem to have been more highly indebted, in relation to their wealth, than farmers.

Shares of different wealth types in total wealth are presented in Figures 4.12 and 4.13. Workers and farmers are examined separately and the different regions are also reviewed as distinct entities. When looking at shares of real estate and claims in total farmer wealth, the trend seems to be increasing while the share of movables is constantly decreasing, at least until 1900. This also matches the broad lines of initially increasing inequality, which in 1900, seems to diminish, at least regionally. Southwestern Finland, again, shows a slightly different development with the share of real estate falling but the share of claims rising considerably from 14,89 percent in 1850 to 48,69 percent in 1900. In Eastern Finland, the share of movables indicating greater equality in 1750 is notable, but even in this region, the share of claims is ever increasing. In all of the regions, the share of cash seems to completely disappear by the end of the 19<sup>th</sup> century.

Among workers, the development of shares of different wealth types is less ambiguous. The share of real estate is strikingly low, and in Southwestern and overall Finland this share is skewed due to an outlier, which increases the share of real estate in 1750. Surprising even here is the growing share of claims that seems unusual considering the low levels of worker wealth in general. Figures 4.12 and 4.13, however, clearly show the difference between workers and farmers in terms of real estate, as the share of real estate in farmer wealth is constantly more important.

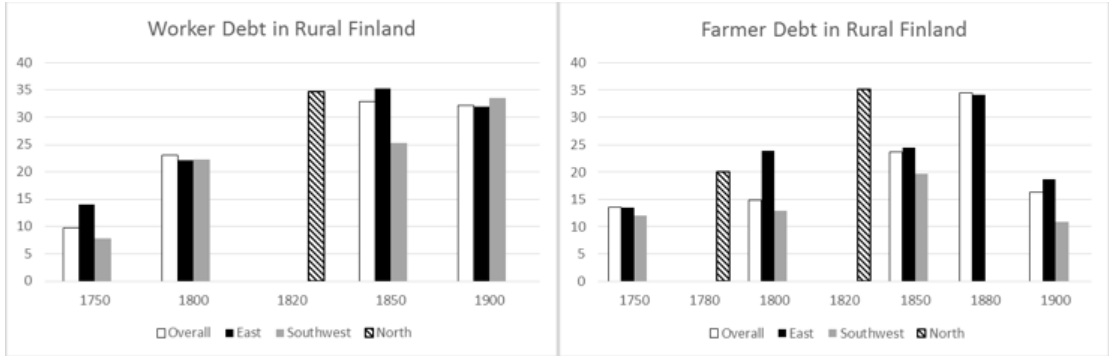


Figure 4.11 Farmer and Worker Debt as a Share in Total Wealth in Different Regions 1750-1900

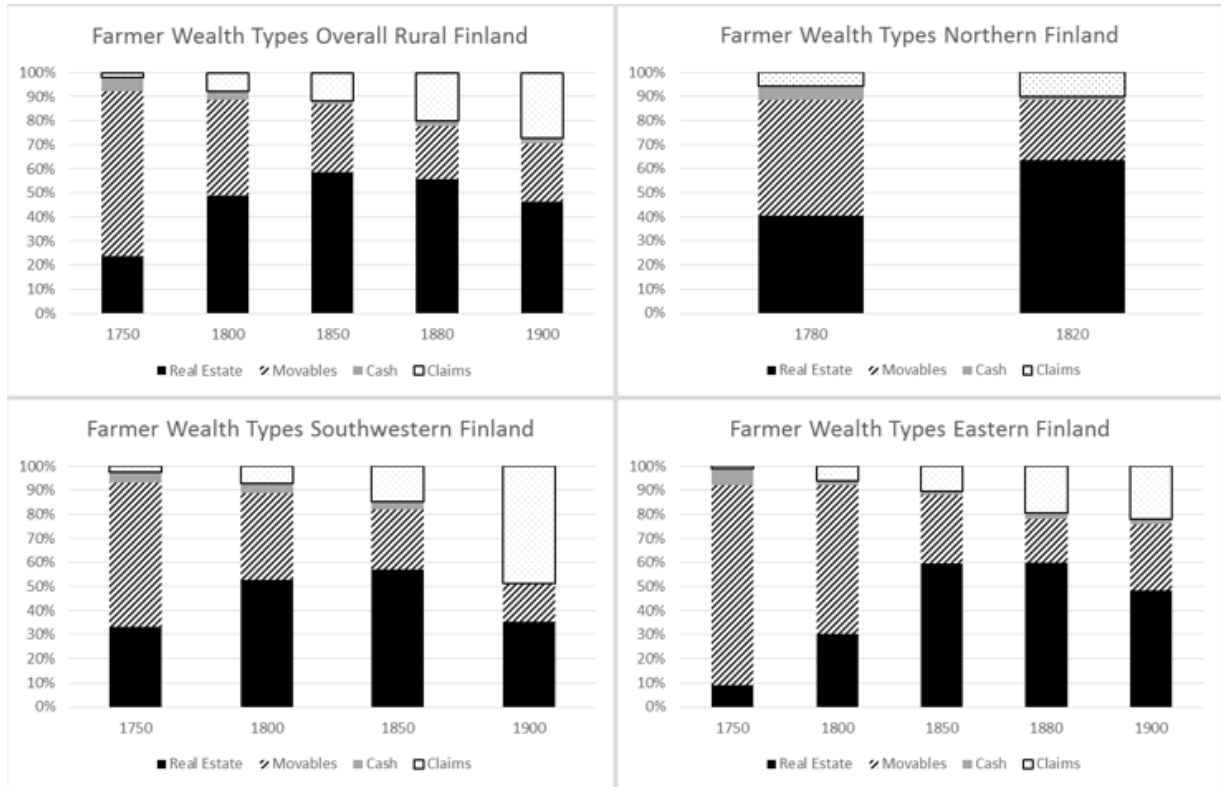


Figure 4.12 Farmer Wealth Types as a Share in Total Wealth in Different Regions 1750-1900

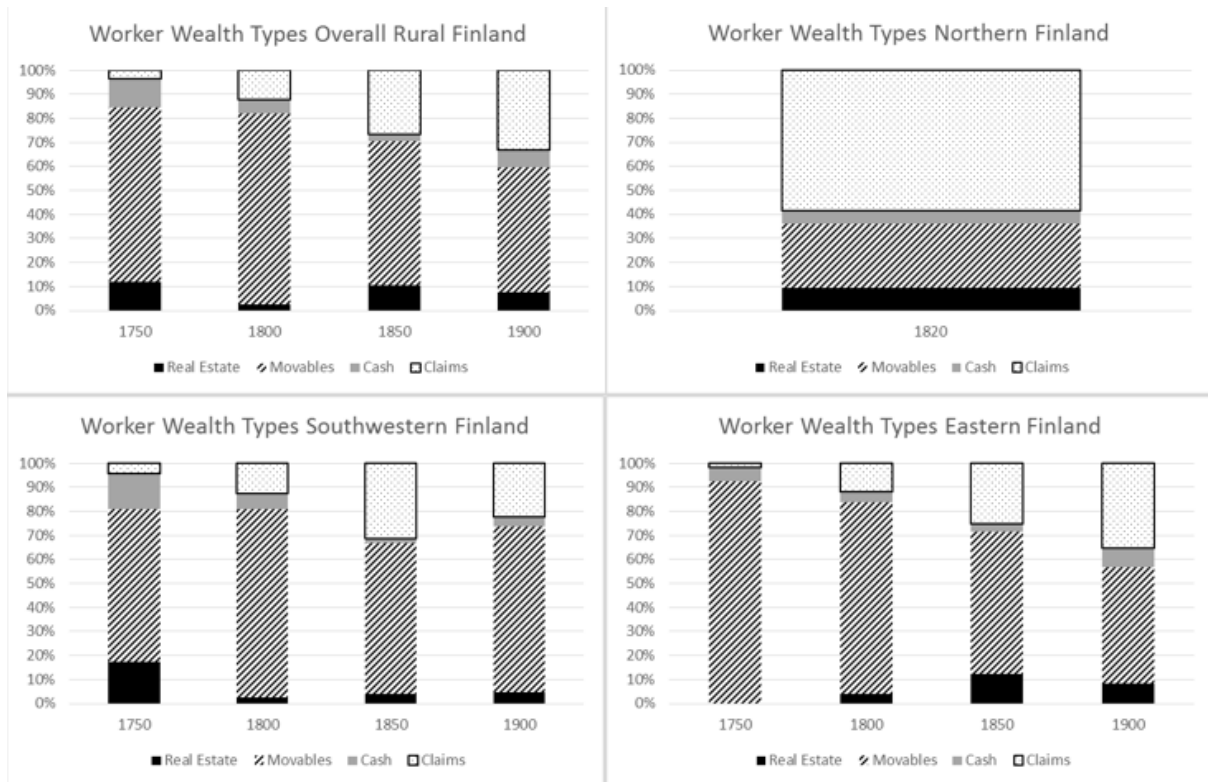


Figure 4.13 Worker Wealth Types as a Share in Total Wealth in Different Regions 1750-1900

### 4.3 Inequality and Economic Growth in Finland

This section will bring into focus the meaning of the findings of the previous sections with regard to existing theories on economic growth and inequality. The discussion has to, naturally, start with Kuznets (1955), who outlined the premises for this debate by presenting his exploration of the link between growing income inequality and flourishing modern economic growth. Kuznets was mostly preoccupied with income, yet, for the interpretation of the results here, it has to be noted that the distribution of wealth is always more concentrated than income from labor (Piketty, 2014). The Finnish case, presented in this thesis, is curious because it does not necessarily reflect the ideas of Kuznetsian (1973) modern economic growth, even at the time when industrialization is considered to have started. Whereas Kuznets (1955) insists that sectorial change is the one that matters, in Finland it was not a question of labor moving from agricultural into manufacturing sector. Instead, early rising economic inequality could have been a result of intra-sectoral transformation with the Finnish farm economy moving from crop farming into dairy farming. Later, the transformation continued through growing importance of forestry and, here, the definition of industry becomes crucial. Forestry is a very different branch compared to traditional agriculture but is still treated as distinct from manufacturing by, for example, Hjerpe (1989). As shown previously in Table 4.4, manufacturing accounted for only 10 percent at the end of the 1890s. This ambiguity in the interpretation of primary and secondary sectors in Finland, hence, diversifies traditional adaptation of Kuznets' (1955) theories.

Even more interesting, in this light, are, then, the falling wealth inequalities in rural Finland in 1850-1900 during the period of industrialization found by Bengtsson et al. (forthcoming). Similar decreases are also found also in rural Southwestern Finland in 1815-1850, among Eastern farmers in 1850-1900 as well as among Southwestern workers in 1850-1900 in the current thesis. What the Lorenz-curves show, is that the decrease in the overall Southwestern rural wealth inequality in 1815-1850 happened due to equalization at the very top, meaning wealthiest landowners and bourgeoisie. For Eastern farmers in 1850-1900, equalization happened in the bottom share of this class, while for Southwestern workers, equalization happened on a very broad front at this time. The fall in wealth inequality, hence, occurred before the movement from primary to secondary sector could properly pick up speed, and can be seen as a consequence of different events. Various forces, also described by Linder and Williamson (2016), including demography, the active role of the Finnish state and the rise of the labor movement are crucial influencers of inequality trends, but their impact in different regions and different social groups is also distinct. Regional perspective, in this sense, is powerful, because the review of the same forces causing certain changes on national level can be further broken down and followed up on an even more detailed level.

Recently, the views of Kuznets (1955) and Lewis (1954) depicting agricultural sector as more equal due to low productivity, have been questioned by Malinowski and van Zanden (2016), who found high levels of income inequality in the Polish preindustrial agricultural sector. This thesis also found high level of rural wealth inequality especially in Southwestern Finland before industrialization or sectorial change could even have taken place. Malinowski and van Zanden (2016), search for the origin of inequality in institutional frameworks that promote

and maintain political privileges and unequal property rights. The same should be done in rural Finland. Landownership was very concentrated and political and societal participation was very limited in the Finnish agricultural societies at the end of 18<sup>th</sup> and the beginning of 19<sup>th</sup> century (Alapuro, 1989). Liberalization of the economy also started relatively late, which made these inequalities persist for a long time.

Furthermore, when looking at the relationship between mean wealth and inequality, there are two aspects to discuss. Firstly, mean wealth diminished from 1750-1850 while inequality increased, which could reflect the rapidly growing share of landless population. Secondly, wealth grew explosively during 1850-1900, especially in Southwestern Finland, but, at the same time, farmer inequality in this region grew only moderately and worker inequality diminished drastically. This is not a consequence of the majority of the workforce having moved into the more prosperous secondary sector, as can be seen from the relatively low level of industrial workers compared with all the workers in Southwestern Finland at this time. Thus, Kuznets' (1955) theory, regarding the equalizing effect of the majority of the workforce having moved into industrial sector, does not apply. Perhaps, a possible explanation is the Finnish labor movement and the very early organization of both industrial workers and agricultural workforce, which, for example, led to the improved position of crofters pointed out by Peltonen (1992).

Concurrently, regional decomposition shows that in the most advanced and wealthiest Southwestern region, wealth inequality was highest, indicating that elites were able to extract much of the benefits. This seems to reinforce Milanovic et al. (2011) theory linking together real income and inequality extraction ratio, which indicates how much of the maximum inequality is actually extracted in the society. This theory cannot, however, explain high initial wealth inequality in Finland throughout the poorer regions, because, according to this model, in poor societies elites are not able to extract much. In reality, elites were, possibly, able to do this even at very low levels of GDP, as was the case in Finland. As Malinowski and van Zanden (2016) contend in their study on Poland, landlords were able to exploit serfs leading to high levels of income inequality. The scenario was, possibly, similar among crofters and landowners in Finland, although crofters were free as opposed to serfs. Tenancy of the crofter was insecure, and landowners could increase working days and rents arbitrarily (Peltonen, 1992). The exploitation of crofters and their distressed situation being completely dependent on landowners' caprices, was a basis for the creation of surplus for landowners. Only with active measures from the state to improve the position of crofters and the aspiration to drive change from the bottom, manifested in growing support for the Social Democratic party, could the first steps toward a more equal society be taken.

## 5 Conclusion

The objective of this thesis was to contribute to the theoretical discussion about the development of historical wealth inequality as well as the relationship between inequality and economic growth by applying these theories to the regional dimensions of Finnish rural wealth inequality from 1750 to 1900. Finland, in terms of historical long-run economic inequality analysis, is a fairly unexplored but auspicious terrain due to administration being modern enough to enable data collection before industrialization had properly even commenced. The richness of the probate inventory dataset used in the current study enables a more fine-grained and rigorous examination of regional wealth inequalities and allows a closer scrutiny of the two biggest social groups in the country – farmers and workers. By providing Gini coefficients and Lorenz-curves for each benchmark year throughout 1750-1900, the development of wealth inequality could be linked with political, economic, demographic and societal changes in Finland's history. This, in turn, enables the reconsideration of some of the most fundamental theories regarding inequality and economic growth.

Whereas most of the previous studies have been either aggregate or very local in their nature, this study introduces the decomposition of inequality for three major regions – East, Southwest and North. All of these regions have their distinct characteristics and the impact of these features on regional wealth inequality trends has, historically, been significant. This thesis set out to explore regional differences in Finland based on three research questions. The first one was concerned with overall rural wealth inequality in each region. As it turns out, Eastern Finland is the poorest, demonstrating fairly low initial wealth inequality but this inequality also persists in the final decades of the 19<sup>th</sup> century. Southwestern Finland is the region with highest wealth inequality, but Northern Finland is not far behind, displaying higher wealth inequality than Eastern Finland in 1815. These results question the traditional view of the agricultural sector as being very equal as well as the link between growing inequality and industrialization by revealing a stagnant or diminishing trend in rural inequalities during the economic upturn in Finland. Moreover, they challenge the Kuznetsian conviction of the importance of inter-sectoral change by demonstrating the role of intra-sectoral transformation in growing wealth inequality.

The second research question focused on the development of farmer and worker wealth inequality over time. When it comes to farmer wealth inequality, Eastern Finland is again the region with the lowest levels of inequality, but even in the Southwest, farmer wealth inequality seems to drop between 1800 and 1850. In the Southwest, worker wealth inequality also drops drastically from 1850 to 1900. The review of these developments, origins of which can be traced into political, demographic and structural changes of the society, shows that the explanations for national trends can be tested more precisely on regional level. The importance of regional perspective brought forward by Alapuro (1988), Enflo (2014), Lindert and Williamson (2016) and Modalsli (2018) is, thus, strongly validated in this thesis.

The final research question, investigating the development of mean regional wealth, can also give some indication for the origins of inequality trends described here, but can, additionally, challenge some common sentiments regarding regional characteristics. Mean rural wealth was, initially, lowest in Eastern Finland explaining the initial low levels of wealth inequality, but the growth over time can be an indication of the reorientation towards Russia after 1809. The large increase of mean wealth in the Southwest in 1900, on the other hand, explains the high levels of wealth inequality in this region, but what is surprising, are the higher levels of worker mean wealth in Eastern Finland when compared with Southwestern Finland. This could signify that timber boom did benefit Eastern workers, which brings an additional dimension to the analysis of Bengtsson et al. (forthcoming) by showing the regional disparities when it comes to their explanation of the role of forestry in diminishing inequality. Unexpected are also the high levels of mean farmer wealth in Northern Finland in 1820 which provide an opposing view to the traditional perspective bypassing North as peripheral and poor.

All in all, in terms of wealth inequality research on Finland, this study positions itself between Bengtsson et al. (forthcoming) concerned with national estimates and Nummela (1990) focusing on local inequalities. This thesis identifies the Southwestern region as the driver of inequality trends in Finland at the end of the 19<sup>th</sup> century. By dissecting the regional inequalities and providing regional population weighted estimates of inequality for the 19<sup>th</sup> century, it can be seen as a premise for a more thorough regional examination of Finnish inequalities. The analysis could be extended to comprehend other social groups in addition to farmers and workers, and through acquisition of new data, it could focus on, for example, crofters. Regional exploration of inequalities is by no means drained with the conclusion of this study, and closer investigation of inequalities in Eastern Finland from the point of view of improving transportation and infrastructure, could be carried out. It could also be extended into the most important cities including Vaasa, Tampere and Helsinki, which are currently lacking data. The regional analysis should, however, not be confined to Finland but, instead, it should be embraced by historical inequality research in other countries as well. This is because regional inequalities and characteristics matter, as they considerably affect the overall economic development.



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