

Wealth inequality in Sweden, 1750–1900[†]

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This article examines the evolution of wealth inequality in Sweden from 1750 to 1900, contributing both to the debate on early modern and modern inequality and to the general debate on the pattern of inequality during industrialization. The pre-industrial period (1750–1850) is for the first time examined for Sweden at the national level. The study uses a random sample of probate inventories from urban and rural areas across the country, adjusted for age and social class. Estimates are provided for the years 1750, 1800, 1850, and 1900. The results show a gradual growth in inequality as early as the mid-eighteenth century, with the sharpest rise in the late nineteenth century. Whereas the early growth in inequality was connected to changes in the countryside and in agriculture, the later growth was related to industrialization encompassing both compositional effects and strong wealth accumulation among the richest. The level of inequality in Sweden in 1750 was lower than for other western European countries, but by 1900 Sweden was just as unequal.

Wealth and its distribution are of fundamental importance for a society. Owning wealth—or not—is a key determinant of one’s standard of living, especially in pre-industrial societies where most people lived off their own production rather than earning wages or salaries.¹ Having wealth is also associated with greater influence over society and politics,² as well as cultural standing.³ For all these reasons and more, long-term wealth inequality has garnered great interest in recent years.⁴

However, studying wealth distribution before *c.* 1900 is difficult because most countries did not have estate or wealth taxes—the types of policies that led to datasets of wealth holding—over any long timespan before the twentieth century, France with its revolutionary legacy being an important exception.⁵ The most important alternative to tax data is probate inventories, which are made for the purposes of inheritance division and debt payments after someone’s death. Probate

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¹ Compare Alfani, ‘Wealth inequalities’, p. 514.

² Hacker and Pierson, *Winner-take-all*.

³ Rubinstein, ed., *Wealth and the wealthy*.

⁴ Not least through Piketty, *Capital*.

⁵ See Piketty, Postel-Vinay, and Rosenthal, ‘Wealth concentration’.

inventories were used in important studies of historical wealth inequality, for example, in the US and Britain.⁶ This article contributes to this line of research by providing a new study of wealth inequality in Sweden from 1750 to 1900, using probate inventories, which were made mandatory by the Swedish authorities in 1734.⁷

We present a new, nationally-representative dataset of almost 5,000 probate inventories for the benchmark years 1750, 1800, 1850, and 1900. Building on this dataset, we present the first comprehensive estimates of wealth inequality in Sweden before 1873. The article makes a contribution in three ways. First, it estimates the development of inequality during a period of transition from a pre-industrial to an industrial society, and thereby provides new empirical material for the extensive discussion about the relationships between economic growth, structural change, and inequality. Second, the countries for which we already have long, consistent wealth inequality estimates for before 1900 are Britain, France, and the US. This article adds another country, Sweden, which differs from the former countries in its later industrialization and its exceptionally equal economy in the second part of the twentieth century; we may wonder how deep the roots of this equality went. Third, the comprehensive nature of the dataset allows for a nuanced and sophisticated analysis, with analytical division along the lines of wealth type, social class, and rural/urban residency. We can decompose changes in inequality and provide a more precise study than many other historical studies of how inequality changes with time.

In short, our results show that wealth inequality grew significantly in Sweden over the period 1750 to 1900, and that wealth in 1900 was about as unequally distributed as in Britain, France, and the US. The Gini coefficient increased from 0.79 in 1750 to 0.84 in 1800, 0.87 in 1850, and 0.91 in 1900, while the top decile's share of total wealth rose from 69 to 74, 79, and then 86 per cent respectively. Inequality grew both through increasing inequality in the rural sector and through a structural shift whereby people moved to the more unequal urban sector. Swedish rural inequality was lower than in Britain, but higher than in the US.

I

Much of the literature on long-run economic inequality is concerned specifically with the effects on inequality of a transition from the agrarian to the urban sector.⁸ In the 1950s, Kuznets proposed that since industry is more productive and pays higher wages than agriculture, it means that when people move from agriculture into industry, income differentials grow.⁹ This increasing trend in (income) inequality persists until almost all workers are in the more productive, high-paying sector; then inequality decreases because everyone now gets the higher wage. This pattern of inequality during the shift from agrarian to industrial society

⁶ Hanson Jones, 'Wealth estimates'; Lindert, 'Unequal English wealth'.

⁷ In their recent overview of the research, Roine and Waldenström, 'Long run trends', p. 47, single out tax records as the main source, but also acknowledge probate inventories.

⁸ Steckel and Moehling, 'Trends in the distribution', p. 172, also present the Kuznets curve as a special case of a compositional shift. On the centrality of the Kuznets curve in the literature, see also Alfani, 'Wealth inequalities', p. 513.

⁹ Kuznets, 'Economic growth'.

is called the Kuznets curve; it is notable that the Kuznets mechanism focuses on the effects on inequality of inter-sectoral differences, and does not consider the intra-sectoral dimension.¹⁰

Previous studies of historical wealth inequality in Britain, the US, and France show the importance of considering differences between as well as within sectors. Lindert shows in his study of England and Wales from 1670 to 1875 that at the beginning of the period, land was the most important form of wealth, and was very unequally held.¹¹ When land gradually became less important, this had an equalizing effect. However, this effect was counteracted by a growing inequality in the ownership of non-land capital. All in all, the top decile's share of total wealth did not change very much from 1670 to 1875, hovering between 81 and 86 per cent, even though the composition of wealth and of the top wealth holders changed dramatically.¹² The fact that land inequality was higher than inequality of other wealth types might have been a specifically English phenomenon; the extraordinary wealth of the English aristocracy is a well-known fact in comparative social history.¹³ It seems that in other cases, urban and industrial inequality has been higher than rural/agricultural.

Piketty et al.'s study of wealth inequality in Paris and France from 1807 to 1994 shows that from 1860 to the First World War, inequality increased as new industrial fortunes were created and became highly concentrated into a few hands.¹⁴ After the war, inequality decreased because of wartime destruction of capital, and through political reforms and regulations. The richest percentile held around 45 per cent of total wealth before industrialization, 55 per cent in 1913, and 30 per cent in 1947.¹⁵ The two major groups of wealth holders in the nineteenth century were nobles and industrialists. Before industrialization, French inequality was higher than in the US but lower than in Britain, the reason being that British land holding was extremely unequal, with a few aristocrats having enormous holdings, while in America land holding was relatively equal. France fell midway in this regard.

Van Zanden's application of the Kuznets curve to historical wealth inequality has been very influential.¹⁶ Building on several local European studies and especially good data for the city of Augsburg and for Holland, he proposed a positive correlation between economic growth and inequality from the fifteenth to the nineteenth century. Several later studies have supported this posited growth-inequality connection: Alfani for the northern Italian city of Ivrea from the mid-fifteenth century to the end of the seventeenth century; Reis for Portugal from 1565 to 1770; Fernandez and Santiago-Caballero for the countryside around Madrid from 1550 to 1840; and Cankabal and Filztekin for four cities in Anatolia from

¹⁰ In other words, the 'Kuznets curve' metaphor is often used quite loosely; cf. Acemoglu and Robinson, 'Political economy'; Moran, 'Kuznets's inverted U-curve'.

¹¹ Lindert, 'Unequal English wealth'.

¹² The top percentile was more volatile, first decreasing from 49% in 1670 to 39% in 1700 and 44% in 1740, then increasing dramatically to 55% in 1810 and 61% in 1875. This indicates polarization among the rich. Lindert, 'Unequal English wealth', p. 1145, tab. 4.

¹³ Lieven, *Aristocracy*.

¹⁴ Piketty et al., 'Wealth concentration'.

¹⁵ *Ibid.*, p. 248, tab. 4.

¹⁶ van Zanden, 'Tracing the beginning'.

1500 to 1840.¹⁷ Ergene et al., studying the eighteenth-century Ottoman Empire, provided one of the few studies arguing against the Kuznets curve: they found economic stagnation and *growing* wealth inequality.¹⁸ This highlights the need for a multi-factor approach that considers variables connected to inequality other than economic growth or industrialization.

The view on wealth inequality offered by the Kuznets curve is limited, as it focuses very specifically on the effects on inequality of structural change, from the rural sector to the urban sector.¹⁹ As Lindert's study of England and Wales shows, we must not presuppose that the urban sector is more unequal than the rural, but rather investigate whether this is true, and then examine how sectoral shifts affect total inequality. Furthermore, an explicit investigation of social class is necessary. This is illustrated by the difference between English land holding, dominated by the aristocracy, and the US, where peasant farmers were more important, with the result that rural inequality was much higher in England.

II

How then can we position the Swedish case in the historical wealth inequality literature? Most previous Swedish studies focus on a particular type of wealth (such as land) or a particular social group. The only comprehensive and reliable previous study (covering all types of wealth and all social groups) is that by Roine and Waldenström, which begins in 1873.²⁰ They build on estate tax data from 1873 to 1877 and from 1906 to 1908, and find no real change during this period of industrialization, with the top decile holding about 85 to 90 per cent of total wealth in the 1870s as well as the years 1906–8.²¹ In their series the only clear change is seen after 1930, with a steep decrease in inequality. Given the emphasis in much of the literature on the Kuznets process during industrialization, the lack of change from 1873 to 1908 is somewhat surprising, and something to re-examine with our data.

Soltow provides a spot estimate for 1800, building on data from the one-off wealth tax levied in that year. The data are however quite incomplete (for example, the capital, Stockholm, is missing) and the assumptions made to compensate for gaps in the data are sometimes heroic. Soltow estimates a Gini coefficient of 0.73 and a top decile wealth share of 84 per cent.²² As mentioned, Soltow's estimates are not completely reliable, but they suggest that any increase in inequality between 1800 and Roine and Waldenström's first data point in 1873 was modest.

¹⁷ Alfani, 'Wealth inequalities'; Reis, 'Deviant behavior?'; Fernandez and Santiago-Caballero, 'Economic inequality in Madrid'; Cankabal and Filiztekin, 'Wealth and inequality'.

¹⁸ Ergene, Kaygun, and Cosgel, 'Temporal analysis'.

¹⁹ The Kuznets curve has recently been heavily criticized by Piketty and by Acemoglu and Robinson. According to their criticism, this empirical hypothesis is marred by technological determinism and underestimates the importance of institutional, social, and political factors; Piketty, *Capital*; idem, 'Kuznets curve'; Acemoglu and Robinson, 'Political economy'.

²⁰ Roine and Waldenström, 'Wealth concentration'.

²¹ *Ibid.* also have wealth tax data for 1908, which enables a comparison of results with estate data and wealth tax data; they have a thoughtful discussion of this on pp. 157–8.

²² Soltow, 'Swedish census'. For criticism, see Söderberg, 'Trends in inequality', p. 64; Roine and Waldenström, 'Wealth concentration', p. 166, n. 36.

There is a string of Swedish studies specifically on rural inequality. Soltow estimates inequality of land ownership among landowners from 1805 to 1921, determining the Gini coefficient as 0.70 in 1805, 0.67 in 1845, 0.64 in 1879, and 0.58 in 1921, and the top decile's share in those years as 60, 58, 54, and 48 per cent respectively.²³ However, these figures only cover people who actually owned land, and thus exclude the very important shift in the share of rural households who owned no land, which increased from one-fifth to half from 1750 to 1850, and then slightly decreased as rural proletarians left the countryside for the cities.²⁴ From this we would expect rural wealth inequality to increase from 1750 to 1850 as the group of non-owning poor grows. The relatively rich literature on stratification within the peasant class has the same problem. One study of six parishes in east central Sweden from the 1770s to the mid-nineteenth century, a study of one parish in a proto-industrial area of central Sweden from 1680 to 1860, and a study of a parish in western Sweden from 1600 to 1850 all find increased differentiation within the peasant farmer group in the first half of the nineteenth century,²⁵ but due to the local focus of these studies and the lack of information on social groups other than the peasants (that is, the nobles above them and the proletarians below them in the social structure) a more comprehensive approach is needed to understand land inequality.

From the agrarian history literature, we know that there was a small group of wealthy landlords. Before 1723, tax-exempt noble land could only be owned by nobles, so when one-third of arable land in 1700 was noble land, we know that this one-third was held by the 0.5 per cent of the population who were nobles. After 1723, non-nobles were given the right to buy noble land, and so the tax status of the land can no longer be used to estimate the nobles' share of land ownership.²⁶ Nevertheless, during our period from 1750 to 1900 we expect nobles to be important landowners. A taxation list from 1845 shows that 46 of the 53 largest land holders were nobles. However, just as we have noted with regard to the rural proletarians above, there has been no comprehensive study of the rural wealth of the nobles and their relative importance.²⁷

Our knowledge of urban wealth inequality in Sweden before 1900 is equally limited. One study looks at the incomes of burghers in Stockholm from 1730 to 1810, but since burghers were only a small part of the urban population, the conclusion that rising income inequality reflected a mercantilist 'policy of enrichment of the rich and impoverishment of the poor' appears overstated.²⁸ A study of real estate ownership in Stockholm finds Gini coefficients of 0.78 in 1715, 0.70 in 1799, and 0.68 in 1845, suggesting decreasing inequality in the city, but of course this is only one city and one asset class.²⁹ This study found that the ownership share of the nobility and persons of standing fell, while the share of merchants and craftsmen increased in the period.

²³ Soltow, 'Rich'.

²⁴ Winberg, 'Folkökning', p. 17. See also Gadd, *Det svenska jordbrukets historia*, pp. 219–30.

²⁵ Morell, 'On the stratification'; Isacson, *Ekonomisk tillväxt*; Olausson, 'Social och ekonomisk skiktning'.

²⁶ Gadd, *Det svenska jordbrukets historia*, pp. 42, 93–7.

²⁷ Norrby, 'Adel i förvandling', pp. 74–5. On the lack of comprehensive studies, see *ibid.*, p. 316.

²⁸ Lindberg, 'Mercantilism', p. 19.

²⁹ Söderberg, 'Trends in inequality', p. 68.

To conclude, the existing literature provides rather scattered evidence on Sweden before 1873; studies typically focus on just one social group, one locality, or one type of wealth, and fail to provide the ‘bigger picture’. With our dataset, we can provide a much more comprehensive view, including all social classes and the rural as well as the urban sector.

III

This section presents our new data, drawn from almost 5,000 probate inventories for the benchmark years 1750, 1800, 1850, and 1900. In Sweden, probate inventories were made mandatory in 1734. They were made at death to summarize assets and debts in order to facilitate inheritance division as well as the repayment of debts. The record also comprised the wealth of any surviving spouse, which implies that each observation can be regarded as representing a household rather than an individual. From an international perspective, the Swedish probate inventories are unusually useful, both in terms of coverage of all social classes, and in level of detail. One reason for the relatively large coverage of the population is that 0.25 per cent of the gross assets were taxed by the local community to be used for poor relief; this was an additional strong incentive for compliance.³⁰ In terms of the level of detail, compared for instance to the English probate inventories, the Swedish ones have the advantage of including real estate.³¹

The dataset consists of probate inventories from 32 rural districts (*härader/tingslag*) and eight towns in the years 1750, 1800, 1850, and 1900. In total, we collected about 1,200 inventories for each of these years (see appendix I for detailed information).³² The rural districts were randomly sampled and stratified by region according to the share of the national population for each region, and comprise 17 districts from southern Sweden (Götaland), nine from central Sweden (Svealand), and six from the less populous north (Norrland). The towns were randomly selected from all towns in Sweden by population; in other words, larger towns had a higher chance of being included in the sample than smaller towns.³³ The probate inventories for the nobility were kept in separate registers and we have deliberately over-sampled nobles to provide a detailed picture of the top

³⁰ The Swedish probate inventories were used previously to study, for example, the spread of consumer durables and the size of the informal credit market; Kuuse, ‘Probate inventory’; Lindgren, ‘Modernization’.

³¹ Another difference is, for example, that the Swedish inventories included information on clothes, in contrast to UK and US contemporary inventories, and this high level of detail in the inventories is constant throughout the period studied. For discussion of UK and US inventories, see Lindert, ‘Algorithm’, pp. 657–8.

³² Landsarkivet i Göteborg (Regional State Archives in Gothenburg): Ale, Hova, Inlands Södre, Inlands Torpe, Kinds, and Kullings häradsrätter. Landsarkivet i Härnösand (Regional State Archives in Härnösand): Arvidjaurs tingslags, Bygdeå tingslags, Delsbo tingslags, Enångers tingslags, and Piteå tingslags häradsrätter, Härnösands stad Rådhusrätt och magistrat. Landsarkivet i Lund (Regional State Archives in Lund): Bara, Bjäre, Faurås, Himle and Östra häradsrätter, Hovrätten över Skåne och Blekinge, Kristianstads stadsarkiv Rådhusrätten och Magistratens arkiv, Ystads stadsarkiv Rådhusrätten och Magistratens arkiv. Riksarkivet (The National Archives, Stockholm): Svea hovrätt huvudarkivet. Stockholms stadsarkiv (Stockholm Town Archives): Sjuhundra häradsrätt, Stockholms rådhusrätt 1:a avdelning (Justitiekollegium, Förmyndarkammaren). Landsarkivet i Uppsala (Regional State Archives in Uppsala): Folkare tingslags, Lagunda, Norrbo, Simtuna, Sundbo, Söderbärke tingslags and Väla häradsrätter, Askersunds rådhusrätt och magistrat, Västerås rådhusrätt och magistrat. Landsarkivet i Vadstena (Regional State Archives in Vadstena): Kinnevalds, Norra Vedbo, Skärkinds, Valkebo, Vista, and Ydre häradsrätt, Göta hovrätt huvudarkivet, Norrköpings rådhusrätts och magistrats arkiv. Värmlandsarkivet: Kils häradsrätt.

³³ The towns studied are Askersund, Härnösand, Kristianstad, Norrköping, Stockholm (two separate registers), Västerås, and Ystad.

wealth groups.³⁴ The information in the probate inventories that we built on is: title/occupation, title/occupation of spouse, real estate (rural and urban), claims and investments, moveables, and debts. Additionally, we have gathered information on age at death, sex, and marital status from the church archives.

There are three major methodological issues when building a dataset on probate inventories in order to draw conclusions about wealth inequality in the population: misrepresentation by age; misrepresentation by social group; and possible skewed valuations of property. The age issue arises from the fact that probate inventories are necessarily made when someone dies. The probability of death is correlated with age and older individuals are expected to have accumulated more wealth than those who died at an earlier age, which could induce bias.³⁵ It is also reasonable to believe that the wealthy accumulated wealth continuously as they grew older, while the poor might have been as poor in their prime working years as when they died. If this holds true, there would be an overestimation of inequality. To overcome this issue, we first adjusted our sample for age. The standard method to adjust for age is to use inverse mortality multipliers, which build on the mortality rates of different age groups and are used to weight the dataset to correct the under-representation of younger people.³⁶ We apply this method, using mortality rates from Swedish historical statistics.³⁷

On the representation of social groups, the issue is that probate inventories provide more comprehensive coverage of the richer segments of the population than of the poorer ones.³⁸ Without adjustment for this issue, a study of probate inventories will underestimate the share of people without wealth as well as overall inequality. We adjust for this problem by weighting the social groups according to their actual size in the population in each study year.³⁹ First we used a 16-group social classification scheme, from which we merged groups into 11 and finally into four social groups. This is to ensure a number of observations per group that is large enough to prevent any outlier from driving the results (see appendix I and appendix table A1). The age-adjusted sample was then weighted so that all the social groups would match their share of the population. For information about which professions and titles are included in each group, see appendix tables A2 and A3.

The third methodological issue is different in nature and concerns the valuation of different types of property in the inventories. Since Isacson's 1979 study, if not

³⁴ Wealth distribution is always quite unequal, so it is of utmost importance to capture the top groups. See Roine and Waldenström, 'Long-run trends', p. 47.

³⁵ Cf. Hanson Jones, 'Wealth estimates'; Lindgren, 'Modernization'; Piketty et al., 'Wealth concentration'.

³⁶ See, for example, Piketty et al., 'Wealth concentration'. This is also the method used by Lindgren, 'Modernization', in his study of Swedish credit patterns using probate inventories.

³⁷ Historisk statistik för Sverige, *Del 1. Befolkning*, p. 111. All the inequality measures in the article are based on this adjustment. However, to compute average wealth by group we have used the actual age distribution of the population for each year and expanded the younger age classes, which were less well represented, by replicating the individuals within these classes as many times as was necessary to reach the same share as in the general population. This method creates a picture that mirrors the living population in terms of number of individuals per class and average wealth.

³⁸ Cf. Markkanen, 'Use of probate inventories'; McCants, 'Inequality'; Smith, 'Underregistration and bias'.

³⁹ Lindert, 'Algorithm', p. 662, points out that risk of intra-group bias remains; the argument is that poor people *within each group* were less likely to be probated. However, this seems to be of less importance in the Swedish sample. Due to debts, there are deceased individuals with net probated values near zero or below in each social group. In the later period of investigation almost everyone left records, and in the early period the poorer segments of the population were equally poor (see workers and middle-class group in tab. 6).

Table 1. *Probate inventories in the sample by socio-economic group (number and share) compared to actual social distribution*

	1750			1800			1850			1900		
	No.	Share	TRUE									
Nobility	209	20.90	0.48	215	18.79	0.38	229	19.28	0.34	229	19.21	0.26
Bourgeoisie	166	16.60	6.53	170	14.86	6.97	151	12.71	7.75	141	11.83	11.17
Peasant farmers	460	46.00	49.63	435	38.02	45.46	381	32.07	38.14	358	30.03	27.44
Workers and low middle class	165	16.50	43.35	324	28.32	47.19	427	35.94	53.77	465	39.01	61.13
Total	1,000	100.00	100.00	1,144	100.00	100.00	1,188	100.00	100.00	1,192	100.00	100.00

Note: No. is the number of probate inventories in the unadjusted sample. Share is the share of each social group in the sample. TRUE is the actual social group share of the total living population.

Sources: See table A1.

Table 2. *Probate inventories in the sample by age (number and share) compared to actual age distribution*

Age	1750			1800			1850			1900		
	No.	Share	TRUE									
20–9	62	6.20	29.00	47	4.10	26.70	105	8.80	31.20	57	4.80	26.10
30–9	176	17.60	22.80	140	12.20	23.30	137	11.50	23.70	89	7.50	20.50
40–9	206	20.60	17.80	193	16.90	20.30	169	14.20	17.20	132	11.10	18.10
50–9	217	21.70	13.70	208	18.20	14.70	246	20.70	14.40	150	12.60	14.70
60–4	114	11.40	6.00	103	9.00	5.30	107	9.00	5.10	109	9.10	6.10
65–9	77	7.70	4.70	137	12.00	4.20	129	10.90	3.70	144	12.10	5.40
70+	148	14.80	6.10	316	27.60	5.40	295	24.80	4.70	511	42.90	8.90
Total	1,000	100.00	100.00	1,144	100.00	100.00	1,188	100.00	100.00	1,192	100.00	100.00

Note: No. is the number of probate inventories in the sample. Share is the share of each age group in the sample.

earlier, much of the debate on Swedish probate inventories has been about whether they underestimate the value of property with respect to the market value. So far, efforts to resolve this issue have been inconclusive. Isacson claimed that inventories underestimate moveables and real estate by around a quarter. On the other hand, in a recent study on a rural district in central Sweden, Erikson found that the probated real estate values corresponded well with their market values, with the exception of the 1830s.⁴⁰ However, the main concern for our study is whether the potential underestimation somehow varies by social class. If so, then our estimates of wealth distribution would be biased, as one social group's wealth would be underestimated more than another's. We checked this issue by investigating social bias in the valuation of the most valuable asset, real estate. Rural properties were evaluated by one of three methods: the latest sale price, the annual land rent, or, later in the nineteenth century, the taxation value. We have compared the probated value of rural properties in the hands of the nobility to those owned by peasant farmers. During our period of investigation, land was taxed per *mantal*, a uniform fiscal measure unit for farms. In our sample, the average peasant owner-occupier

⁴⁰ Isacson, *Ekonomisk tillväxt*, pp. 140, 225; Erikson, 'Värdering av jordbruksfastigheter'.

Table 3. *Wealth inequality in Sweden, 1750–1900*

	1750	95% conf.	1800	95% conf.	1850	95% conf.	1900	95% conf.
Top 1%	43.00%	37.3–48.7	39.70%	37.8–41.7	41.50%	38.4–44.6	57.60%	54.1–61.0
Top 10%	68.70%	65.4–71.9	73.60%	72.6–74.7	78.90%	77.6–80.1	86.20%	85.0–87.3
Gini coefficient	0.79	0.765–0.809	0.84	0.831–0.844	0.87	0.863–0.878	0.91	0.904–0.919

Source: Calculations based on probate inventories dataset; see n. 32.

held 0.25 *mantal*, while the average landed nobleman held more than 7 *mantal*. The valuation per *mantal* was very similar between the two groups of landowners. In 1750, the mean value of real estate for 106 peasant farms in the inventory sample was 463 riksdaler per *mantal*, while for 87 noble estates the figure was 413 riksdaler. Fifty years later the mean values were 2,093 riksdaler for peasant farms and 2,140 riksdaler for noble estates, and in 1850 the values were 6,676 and 6,531 riksdaler respectively. Thus, the differences were small and we cannot see any systematic undervaluation of peasant farms as compared to the noble estates, nor the other way around. Our inequality estimates should thus be unbiased with regard to the valuation of real estate.

IV

Table 3 presents our essential estimates of wealth inequality: the shares of total net wealth held by the top 1 per cent and the top 10 per cent, as well as the Gini coefficients.⁴¹ Figure 1 compares the top decile's share of wealth in Sweden with the share in Britain, France, and the US.⁴²

Wealth inequality grew in Sweden from 1750 to 1900 by all three measures in table 3. Both the top decile's share and the Gini coefficient grew between each benchmark year; the Gini increased from 0.79 to 0.84 to 0.87 and, finally, to 0.91 in 1900. Figure 1 shows that in terms of the top decile's share, Sweden was more equal than Britain and France up until the late nineteenth century, but more unequal than the US. Since inequality increased so much in Sweden, by 1900 this country was quite similar to Britain, France, and the US in terms of wealth inequality.

⁴¹ Our estimate for 1900 is very close to that for 1906–8 obtained by Roine and Waldenström, 'Wealth concentration', p. 182, tab. A1, who use tax data; we find that the top decile holds 86% of total wealth while they find 88% six to eight years later. This correspondence, getting very similar results with quite different data sources, indicates that our probate inventory-based estimates are reliable. The somewhat lower values in our study for 1900 compared to theirs for 1906–8 indicate that the rising trend from 1850 seems to continue until the first decade of the twentieth century.

⁴² Even if there are differences in the sources used, our Swedish estimates are comparable to these international ones, as they all build on full wealth estimates for individuals. The British estimates by Lindert, 'Unequal English wealth', integrate real estate and personal wealth data from different sources. The French estimates by Piketty et al., 'Wealth concentration', build on tax data and encompass all types of individual wealth. The US estimates, collected and adjusted by Shammass, 'New look', build on probate inventories in 1774 and censuses in 1850 and 1870. They include all relevant types of wealth. As a large part of the existing studies is based on tax records, which are very unlikely to include negative values, we decided to set the observations with negative wealth equal to zero when calculating inequality measures.

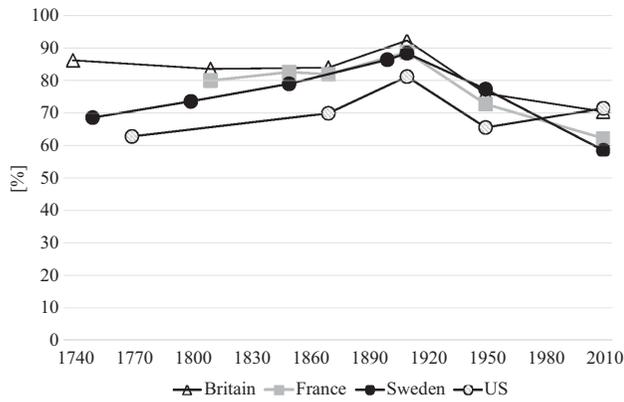


Figure 1. *The top decile's share of total wealth: Sweden in an international perspective, 1750–2010*

Sources: Sweden, 1750–1900: see n. 32. Britain, 1740–1870: Lindert, 'Unequal English wealth', tab. 4. US, 1774 and 1870: Shammass, 'New look', p. 424. All other data: Piketty, *Capital*.

Table 4. *Gini coefficients and sectoral shares of GDP for manufacture and agriculture, Sweden, 1750–1900*

	1750	1800	1850	1900
Gini coefficients	0.79 (0.765–0.809)	0.84 (0.831–0.844)	0.87 (0.863–0.78)	0.91 (0.904–0.919)
Agriculture, share of GDP	50%	44%	43%	28%
Industry, share of GDP	12%	12%	14%	31%
Services, share of GDP	38%	44%	43%	41%
GDP, growth p.a.	-0.1%	0.30%	1.40%	

Sources: Gini: own calculations. Share of each sector of GDP: Schön and Krantz, *Swedish historical national accounts*. GDP growth p.a. is 1750–1800, 1800–50, and 1850–1900 respectively, from *ibid*.

What drove the increase in inequality? The historical wealth literature discussed in section II suggests that it might have been a Kuznets-style process, where inequality increases were driven by industrialization and/or (as in van Zanden's version) GDP growth. To investigate these questions, table 4 shows the Gini coefficient together with GDP per capita growth and sector shares of GDP.

Between 1750 and 1800, the Swedish economy stagnated; average GDP per capita growth was slightly negative, at -0.1 per cent per year. Industry's share of GDP was stable at 12 per cent. Nevertheless, the Gini coefficient grew by five points, and the top decile's share by 4.9 percentage points. This, then, was not a Kuznets-type development. The period from 1800 to 1850 was similar. Industry's share of GDP grew very little, from 12 to 14 per cent of GDP, and GDP per capita growth was slow, at 0.3 per cent per annum. Despite this lack of economic dynamism, the top decile's share of wealth grew by 5.3 percentage points, and the Gini coefficient by three points. From 1850 to 1900 there was, finally, significant GDP per capita growth, 1.4 per cent per annum, and industrialization,

Table 5. *Urban and rural wealth inequality in Sweden, 1750–1900, Gini coefficients*

		1750		1800		1850		1900	
		95% conf.		95% conf.		95% conf.		95% conf.	
Panel A	Urban	0.92	0.90–0.94	0.93	0.93–0.93	0.93	0.92–0.94	0.94	0.93–0.94
	Rural	0.72	0.70–0.73	0.77	0.76–0.77	0.83	0.83–0.84	0.86	0.85–0.86
Panel B	Urban	0.84	0.83–0.85	0.93	0.93–0.94	0.92	0.92–0.93	0.86	0.85–0.87
	Rural	0.77	0.75–0.80	0.79	0.79–0.79	0.84	0.83–0.87	0.93	0.92–0.93
Urbanization, % of population		10		9.8		10.1		21.5	

Sources: For urbanization: Lilja, 'Swedish urbanization', p. 285, for 1750 (approximate figure only); Historisk statistik för Sverige, *Del 1. Befolkning*, tabs. 3–4, pp. 45–6, for 1800, 1850, and 1900.

with industry's share of GDP growing from 14 to 31 per cent. The top decile's share increased by 7.3 percentage points and the Gini coefficient by four points. Among our three periods, 1850–1900 is the only one that fits the Kuznets curve. The fact that inequality grew at roughly the same pace in 1750–1800, 1800–50, and 1850–1900, while the Kuznetsian indicators of industrialization, urbanization (see table 5), and GDP growth were only present in the final period, shows that the Kuznets curve fails to explain the general development of wealth inequality in Sweden from 1750 to 1900.

Thus, we need a more nuanced look, and we will provide this by looking at urban/rural differences, differences by social group, and differences by type of wealth. We begin by considering urban and rural inequality separately; they are shown in table 5. Panel A shows inequality estimates based on straightforward place of residence, either urban or rural. However, we know that some nobles with large estates resided in towns, especially in Stockholm.⁴³ For this reason, using the place of residence to demarcate between rural and urban wealth may in a sense underestimate rural inequality and overestimate urban inequality. In panel B, we therefore re-classify as rural those among the nobility who lived in urban areas but held the largest part of their wealth as rural real estate. The presence in the countryside of large estates held by absentee landlords residing in towns was probably perceived as inequality by the residents of the countryside (including subordinates such as tenant farmers and workers), so the urban–rural split in panel B is relevant for some purposes, even though it should not replace the method of panel A. Panel A sheds light especially on the distribution of consumption power in each sector, while panel B is more appropriate for the ownership structure by sector.

The bottom row of the table shows that until 1850, only about 10 per cent of the Swedish population lived in urban areas. Thus, rural inequality accounts for the lion's share of total inequality in this period. Sweden only urbanized after 1850, with the share of the population living in urban areas growing from 10 per cent in 1850 to 21.5 per cent in 1900. Unlike in Britain,⁴⁴ urban inequality was consistently higher than rural inequality. The root of the difference is most likely

⁴³ Gadd, *Det svenska jordbrukets historia*, p. 95, notes that many nobles who resided in Stockholm owned agricultural land as well, although he does not provide quantitative information about the phenomenon.

⁴⁴ Lindert, 'Unequal English wealth'.

the existence of a large group of farmer-owners in Sweden, with no counterpart in Britain where land holding was more dominated by aristocrats. The levels of urban inequality are very high and quite stable over time, with Gini coefficients above 0.90 in all years in panel A and above 0.84 in panel B. This contradicts both Lindberg's conclusion about rising inequality from his study of burgher incomes in the eighteenth century, and Söderberg's conclusion of decreasing inequality from his study of real estate ownership during the same period. With our comprehensive wealth data, we find stable urban inequality, unless landowning nobles residing in cities are discounted.⁴⁵

As expected, the re-classification in panel B leads to a partial convergence of inequality among urban and rural settings. The difference is large: the fact that the reclassification increases the rural Gini coefficient by five points in 1750 and seven points in 1900 indicates that absentee landlords were quite a significant factor in Swedish agriculture. The timing in the growth of inequality in the rural sector is slightly different between panels A and B, but the general direction is the same. Another finding in table 5 is that Soltow's claim that rural inequality fell in the nineteenth century is contradicted by our more comprehensive data.⁴⁶ Soltow only looked at the distribution among those who held some land, so the probable explanation for the contradictory result found here is the increase in proletarian households up to at least the middle of the century; this social group will be discussed further below.

We may consider total inequality—which increased from 1750 to 1800, from 1800 to 1850, and from 1850 to 1900—as a combination of urban and rural inequality. Urban inequality was higher throughout our period, but since urbanization did not increase until between 1850 and 1900, inequality growth before then cannot be explained by transfer from the less unequal to the more unequal sector. Panel A in table 5 further shows that from 1750 to 1850, the Gini coefficient did not increase significantly within the urban sector (the 1850 level of 0.93 is within the 95 per cent confidence interval for 1750). On the other hand, the rural Gini grew by 11 points, from 0.72 to 0.83. Given that around 90 per cent of the population lived in rural society, this was hugely important. From 1850 to 1900 on the other hand, the fact that the urban sector grew from 10 to 21.5 per cent of the population increased inequality, since the Gini coefficient was 0.94 in the urban sector and 'only' 0.86 in the rural sector in 1900.

Changes between the rural and urban sectors cannot explain all the changes in inequality, especially not before 1850. Let us therefore move to a social groups perspective. As mentioned in section II, we know that the share of the proletariat in the rural population grew rapidly from 1750 to 1850. The historical population statistics show that the population share of peasant farmers, who owned at least some land and thus wealth, decreased from 49.6 per cent in 1750 to 45.5 per cent in 1800, while at the same time the share of rural workers increased by a corresponding amount, from 14.8 to 19.6 per cent. Given that workers normally owned very little (see table 7), this increased inequality. After 1800, there was no further increase in the share of rural workers, but on the other hand the share of urban workers jumped up from 2–3 per cent in 1750–1850 to 21 per cent in

⁴⁵ Lindberg, 'Mercantilism'; Söderberg, 'Trends in inequality'.

⁴⁶ Soltow, 'Rich', p. 53, tab. 3.

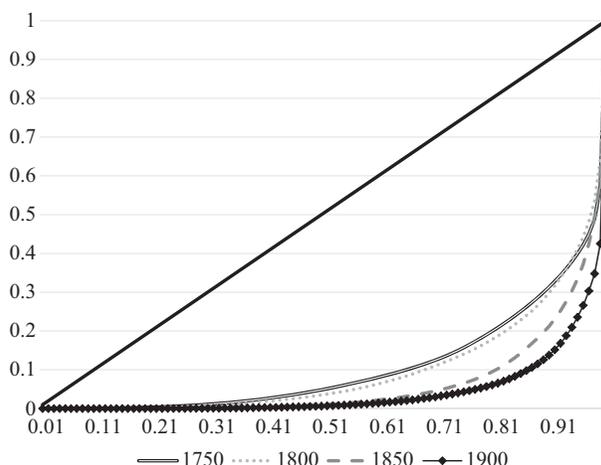


Figure 2. *Lorenz curves of wealth distribution, 1750–1900*

Source: Calculations based on probate inventories dataset; see n. 32.

1900. At the same time the share of the population who were peasants continued to fall, to 38 per cent in 1850 and 27 per cent in 1900. In other words, there was continuous growth in the proletarian groups of the population from 1750 to 1900: rurally centred before 1800–50, and more urban after that. The Lorenz curve can help us understand at which end of the distribution these changes occurred; this is shown in figure 2.

At the far left of the curve, we can see the part of the distribution with no wealth at all, which does not cause any upward movement in the curve. In 1750 and 1800, the threshold of zero share of the wealth is around 20 per cent of the population. In 1850 and 1900, the same threshold stands at around 50 per cent of the population. This indicates that the share of those who held relatively very little or no wealth at all increased over time. This chimes well with the decrease in the peasant farmer group and the corresponding growth among rural and urban workers. Furthermore, the curves show that increasing inequality in the period from 1750 to 1850 was not due to increasing wealth among the richest, but rather driven by changes among the moderately wealthy groups. This is in contrast with the change from 1850 to 1900, when the increasing shares of the top 15–20 per cent seem to fuel the patterns of inequality.

For a more precise decomposition of the wealth distribution by social class, table 6 and table 7 show the Gini coefficients of the different groups, the inequality decomposition in between and within components using the Theil index, and the average wealth of each of our four social groups.⁴⁷ Table 6 shows that the peasant

⁴⁷ Encouragingly, our estimates of private wealth per capita are quite comparable to those of Waldenström, ‘National wealth’, who uses a quite different methodology and sources. When we adjust for the differences in population (in this article we only look at those aged 20 or over) and taxation vs. market values, the difference for the overlapping years 1850 and 1900 is 10% or less. However, the complexity of this comparison means that we do not include the calculations in the article.

Table 6. *Group inequality for social groups (Gini coefficients) and Theil index decomposition*

	1750		1800		1850		1900	
	Level	95% conf.						
Nobility	0.80	0.72–0.88	0.74	0.69–0.79	0.88	0.83–0.94	0.87	0.84–0.91
Bourgeoisie	0.80	0.78–0.83	0.88	0.88–0.89	0.86	0.86–0.87	0.91	0.90–0.92
Farmers	0.57	0.56–0.58	0.71	0.70–0.71	0.77	0.76–0.77	0.80	0.79–0.80
Workers and low middle class	0.70	0.69–0.72	0.74	0.73–0.74	0.77	0.76–0.77	0.81	0.81–0.81
Total	0.79	0.76–0.81	0.84	0.83–0.84	0.87	0.86–0.87	0.91	0.90–0.92
Theil between	0.90		0.61		0.70		0.87	
Theil within	1.23		1.35		1.49		2.31	
Total Theil	2.13		1.96		2.20		3.18	

Source: Calculations based on probate inventories dataset; see n. 32.

Table 7. *Wealth by social group, 1750–1900 (adjusted sample, average = 1)*

	1750		1800		1850		1900	
	Average	Share total						
Nobility	59.6	29	21.7	8	29.4	10	19.3	5
Bourgeoisie	3.1	20	5.3	37	4.0	31	5.1	57
Farmers	0.7	33	1.0	45	1.3	49	1.0	28
Workers and low middle class	0.4	18	0.2	10	0.2	10	0.2	10
Total	1	100	1	100	1	100%	1	100

Source: Calculations based on probate inventories sample; see n. 32.

farmers were the most equal group in all years.⁴⁸ They were also, as table 7 shows, average in terms of wealth: in 1750 the average farmer had wealth corresponding to 70 per cent of the average Swede, and in 1900 the average farmer was at the same level as the average Swede. However, the inequality among farmers increased: the Gini coefficient grew from 0.57 to 0.71 between 1750 and 1800, and then continued to increase, to 0.77 in 1850 and 0.80 in 1900. This rise in inequality was mainly due to two simultaneous processes which were regulated previously: the possibility for Crown tenants to buy their farms and thereby become freeholders, and the possibility to divide farms into smaller units. The fact that Crown tenants could become freeholders increased within-group inequality since owning the farm instead of renting it increased wealth for the members of this group that used this opportunity, at the same time as other landholding groups. In other words, those Crown tenants that did not buy their farms, and particularly the tenants under the nobility who were not allowed to, remained without land as a wealth asset. The agricultural revolution also resulted in more successful peasant farmers buying parts of the farms of their less successful peers.⁴⁹ This, together with increased division of farms caused by population growth, made the share of very small farms

⁴⁸ In accordance with the distribution of land, as discussed in Wohlin, *Den svenska jordstyckningspolitiken*, pp. 522–5.

⁴⁹ Cf. Svensson, 'Peasants'; Gadd, *Det svenska jordbrukets historia*, pp. 198–201.

in Sweden quadruple from 1810 to 1865.⁵⁰ This increased inequality within the peasant farmer group, since it increased the number of farmers who actually owned very little land. Combining these processes within the peasant farmer group with the growth of the group of rural proletarians discussed above, the growth in rural inequality noted in table 5 makes sense: not only did the class structure become more polarized, but the peasant farmer class at the same time became more unequal in itself.

The inequality of our fourth group, workers and the lower middle class, increased over time, from a Gini coefficient of 0.70 in 1750 to 0.81 in 1900. Since they were such a large share of the population, growing from 44 per cent of the population in 1750 to 61 per cent in 1900 (table 1), this was important. It is also notable that table 7 shows that this group lost ground during our period. While in 1750 the average person in the workers and lower-middle-class group owned wealth corresponding to 40 per cent of the average Swede, in 1800, 1850, and 1900 this figure was only 20 per cent. In other words, they lost out especially between 1750 and 1800.

The top wealth groups also became more unequal over time. Among the nobility the Gini coefficient increased from 0.80 to 0.87 between 1750 and 1900, and within the bourgeoisie from 0.80 to 0.91. Table 7 shows that the nobility's extreme wealth advantage compared to the rest of the population diminished. In 1750, the average noble was 60 times richer than the average person, but in 1800 only 22 times richer and in 1900 only 19 times richer. In other words, there was a polarization within the nobility which meant that quite a few approached the level of non-nobles in terms of wealth, while the elite within the elite experienced a more favourable development.

At the same time, the average wealth of the bourgeoisie grew faster than the average wealth of the population. In 1750 the average bourgeois person was 3.1 times richer than the average person, but they had become 5.1 times richer in 1900. Correspondingly, the nobility's share of total wealth diminished. In 1750 the nobility, less than half a per cent of the population, held 29 per cent of total wealth; in 1800 this share had decreased to 8 per cent, in 1850 it was rather stable at 10 per cent, and by 1900 it had decreased to a mere 5 per cent. The farmers also saw their share decreasing in the long run, from 33 per cent in 1750 to 28 per cent in 1900, but with an all-time high of 49 per cent in 1850. The bourgeoisie was the dominant group in 1900, holding 57 per cent of total wealth, while they only had 20 per cent in 1750. The bourgeoisification of wealth corresponds to the structural change found in France by Piketty et al. during the same period,⁵¹ not surprisingly given the industrialization of Sweden after 1850. However, we should note that while the small group of nobles obviously had a minor effect on total wealth by 1900, as individuals they were still generally wealthy, and they were vastly over-represented among the richest 1 and 10 per cent of the population.⁵²

⁵⁰ Wohlin, *Den svenska jordstyckningspolitiken*, pp. 564, 590. Here we define very small farms as farms with less than 1/16 *mantal*; *mantal* was the Swedish tax unit for farms during this period. The share of farms with less than 1/16 *mantal* increased from 5.6% in 1810 to 20.5% in 1865.

⁵¹ Piketty et al., 'Wealth concentration'.

⁵² Their share among the richest strata decreased over time but even in 1900 almost 50% of the nobles were found among the richest 10% of the population and 20% of all nobles among the richest 1%.

In connection with the Lorenz curve in figure 2, we have seen that from 1750 to 1850, the group of relatively impoverished people grew rapidly; thus, to some degree, inequality increased partly from below. From 1800 to 1850 and 1900, top-group polarization was another factor in play: inequality increased partly by polarization at the top. It seems that the elite of the elite—within both the nobility and the bourgeoisie—were set apart from their poorer peers quite markedly; the within-bourgeoisie Gini coefficient of 0.91 in 1900 is quite astonishing, as the distribution of wealth within this class was as unequal as the distribution within the population as a whole (also a Gini of 0.91; see table 3).

We have seen that there are large wealth differences both between and within our social groups. So which have the greatest quantitative influence on total inequality: the differences between the classes—say, between nobles and farmers—or the differences within the classes? The Theil index offers a method to decompose overall inequality to within-group and between-group parts.⁵³ The results, shown in the lower part of table 6, show that in 1750, within-group differences were moderately more important (0.90 vs. 1.23). In accordance with the general increase in the Gini coefficients in all groups, we observe that the within component becomes increasingly important over time, reaching a level of 2.31 in 1900 compared to a between component of 0.87. In other words, given our classification of the Swedish population into four social groups, inequality *within* these groups has greater influence on total inequality than inequality *between* them in 1900.

Our last exercise in exploring the changes in inequality is to decompose inequality by wealth type.⁵⁴ We have four types: urban real estate, rural real estate, claims and investments, and moveables. We assess the Gini coefficient for each wealth source, its share of total wealth, the percentage contribution of each to the overall Gini, and the elasticity of total inequality to an increase of one percentage point in the source of wealth. Table 8 shows the results.

Column 1 shows the share of each component of wealth, with rural real estate being fairly stable over the years and most of the change being from moveables in favour of claims and investment. Column 2 shows the Gini coefficients for the different sources of wealth and for debts. These are all very high except for moveables, which have an equalizing effect compared to the other sources.⁵⁵ Moveables are the least unequal of the sources and they fall from 49 per cent to 20 per cent of net wealth over the period (column 3), which is confirmed by the declining percentage change in inequality over time (column 4). Their diminished importance (see column 3) and their rising inequality seem to explain a good part of the overall increase in inequality. The other side of the story is that claims and investments became more important as a share of wealth; since this was the most unequally distributed type of wealth, it has a positive effect on inequality. The increasing share in total Gini of claims and investments should be seen in the

⁵³ The Theil index is preferable to the Gini coefficient for this exercise because the former is perfectly decomposable while the latter is not in the case of overlapping distributions of wealth between groups; see Alfani, 'Wealth inequalities', p. 541. For reasons of space we only show the Theil index decomposition, although the correlation between the Gini coefficients and the Theil indices in all years is always above 0.94.

⁵⁴ We use the Lerman and Yitzhaki, 'Income inequality effects', decomposition, as applied in the Stata command *descogini* developed by Lopez-Feldman, 'Decomposing inequality'.

⁵⁵ The fact that moveables typically are more equally distributed than other forms of wealth has been pointed out by Roine and Waldenström, 'Wealth concentration', p. 158.

Table 8. *Decomposition of Gini coefficients by source of wealth (adjusted sample)*

Source	Share in total wealth	Gini	Share in total Gini	% change	95% conf.
<i>1750</i>					
Rural real estate	23.01%	0.95	26.46%	3.46%	2.89–4.02%
Urban real estate	8.00%	0.98	8.98%	0.98%	0.79–1.16%
Claims and investments	12.82%	0.98	15.68%	2.86%	2.40–3.31%
Moveables	56.86%	0.69	49.54%	–7.33%	–7.84–6.81%
Debts	–0.69%	0.87	–0.66%	0.04%	0.02–0.05%
<i>1800</i>					
Rural real estate	25.14%	0.92	25.94%	0.80%	0.44–1.17%
Urban real estate	12.61%	0.99	14.04%	1.43%	1.07–1.79%
Claims and investments	24.39%	0.97	27.41%	3.02%	2.70–3.33%
Moveables	38.76%	0.74	33.33%	–5.43%	5.63–5.23%
Debts	–0.90%	0.87	–0.72%	0.18%	0.15–0.21%
<i>1850</i>					
Rural real estate	31.83%	0.93	33.30%	1.47%	1.16–1.79%
Urban real estate	9.06%	0.99	9.62%	0.56%	0.39–0.72%
Claims and investments	25.19%	0.95	26.78%	1.59%	1.36–1.82%
Moveables	34.63%	0.79	30.92%	–3.71%	3.90–3.51%
Debts	–0.71%	0.84	–0.62%	0.09%	0.08–0.10%
<i>1900</i>					
Rural real estate	18.20%	0.92	17.61%	–0.59%	0.72–0.47%
Urban real estate	5.25%	0.90	5.22%	–0.03%	0.09–0.03%
Claims and investments	53.53%	0.98	57.28%	3.75%	3.63–3.86%
Moveables	23.42%	0.94	20.23%	–3.19%	3.28–3.11%
Debts	–0.40%	0.86	–0.34%	0.07%	0.06–0.07%

Source: Calculations based on probate inventories sample; see n. 32.

light of the increasing importance of the bourgeoisie as discussed above, but is probably also influenced by changes in the behaviour of other social groups with some wealth. In terms of marginal effects, debts are the only type of wealth that had an equalizing effect in all years.

V

This article has presented long-run estimates of wealth inequality in Sweden that, for the first time, look back into the eighteenth century and cover the entire nineteenth century, ending in 1900. The results show that Swedish inequality was relatively low in the eighteenth century and the first half of the nineteenth century, but with a clear rising trend, which led the country to reach high levels of inequality by 1900, comparable to those of other European countries. Wealth inequality increased from 1750 to 1800, from 1800 to 1850, and from 1850 to 1900, but in different ways. It was not a simple Kuznets curve development where inequality only rose with industrialization and/or GDP growth. Inequality was already on the rise before urbanization and industrialization in Sweden from 1750 to 1900 led to several kinds of inequality increases: bottom-driven (an increase in the number of very poor from 1750 to 1850 as proletarianization reduced the farming share of the population); top-driven (polarization within the elite from 1850 to 1900); and polarization driven by rural real estate as well as claims and investments. The results lend support to recent theoretical criticisms of the Kuznets curve, showing

that to understand pre-industrial and industrial wealth inequality we must not solely examine the connection between industrialization and inequality.⁵⁶

Our results points to the great influence of the make-up and development of the peasant class and the nobility on inequality in pre-industrial and early industrial society. In Sweden, inequality within the peasant farmer group increased dramatically, from a Gini coefficient of 0.57 in 1750 to 0.80 in 1900. We have pointed to the division of farms into very small units—connected to population growth—and the enrichment of former Crown tenants as possible explanations, but have not had the space here to explore these and other possible explanations in depth. Given that on the one hand agrarian historians have shown significant regional variations in Swedish agriculture, and on the other hand previous studies of peasant inequality have been very local in scope, it would be of clear interest to explore the regional patterns of peasant farmer wealth and inequality, to look at issues such as differences between primarily grain-producing areas and livestock farming areas, as well as possible connections between degrees of proletarianization (known from previous demographic research) and stratification within the peasant farmer class.

For the elite, we have shown that the wealthiest percentile grew their share of total private wealth from 36 to 56 per cent in Sweden in the nineteenth century, and that nobles were exceptionally wealthy—at least until 1900. The nobility seems to have been more powerful and privileged—in economic terms—than the previous Swedish research literature has indicated.⁵⁷ In-depth studies of this issue promise to shed light on the specific role of this elite group in economic inequality during the modern period, and also can speak to the literature on social and political implications of elite and specifically noble dominance.⁵⁸ We have also shown increasing polarization between rich and ‘poor’ within the noble group in the same century. This calls for further exploration of the wealth development of the nobility.

The importance of both peasant farmers and the noble elite are issues not only for the Swedish case per se, but also for the international and comparative discussion. Our results support Piketty’s argument that ‘Sweden was not the structurally egalitarian country that we sometimes imagine’.⁵⁹ In 1900, Swedish wealth inequality was quite comparable to the levels of Britain, France, and the US; equalization was a twentieth-century phenomenon. The finding that wealth was more unequally distributed in Britain than in France, Sweden, and the US in the nineteenth century (see figure 1) seems to be explained by the extremely high inequality of land ownership there, with agriculture being dominated by aristocrats; we have proposed that the relatively low inequality in Sweden in 1750 was due to the strength of the peasant class in this country. That Sweden then converges to a higher level of inequality, much closer to Britain, seems due partly to a structural shift with a growing urban and industrial sector, but perhaps even more to the stark increase in rural inequality. The results presented in this article should then

⁵⁶ Acemoglu and Robinson, ‘Political economy’; Moran, ‘Kuznets’s inverted U-curve’; Piketty, ‘Kuznets curve’.

⁵⁷ See Norrby, ‘Adel i förvandling’, esp. pp.17–20, 314–20, for a critical review of Swedish historical research on the nobility.

⁵⁸ See Lieven, *Aristocracy*, pp. 241–52, for a critical review of the social history literature on nobles and politics during industrialization.

⁵⁹ Piketty, *Capital*, p. 344, citing the findings by Roine and Waldenström, ‘Wealth concentration’.

reinforce the point that the discussion on historical wealth inequality needs to look not only at the Kuznets effect of a sectoral shift from agriculture to industry, but also at distribution and class structure within these sectors.

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Appendix I: The sample and the social classification

Our original sample consists of 25 inventories for each year, each district, and each town (for a total of 32 districts and eight towns), resulting in some 1,000 inventories per year. For 1750, we added all the 214 inventories registered for the nobility nationwide. For the remaining years, 214 probate inventories have then been sampled for the nobility. After having digitized the probate inventories, all deceased persons were assigned a social status based on their title or occupation, and by searching the death books of the church archives their ages were also added to the dataset. Not all the individuals had a title or occupation, nor were they all found in the death books. The shortfall was largest in 1750 and decreased over time. This explains why the final sample has different sizes for the different years. However, the missing information appears randomly distributed across all types of areas, in rural and urban contexts, and in all geographical regions. The individuals affected constitute a small part of each sub-sample. Finally, the numbers for the nobility

exceed 214 in all years due to some nobles being found in the inventories in the districts and towns, and to the fact that all higher officers, originally in the soldiers group, have later been placed into the nobility group. For each individual inventory, we have thus coded gender, age, marital status, social status, and whether the individual resided in an urban or rural context.

In order to adjust the sample by social group, we used an estimated national social structure for each year. For the period 1749 to 1859, population censuses were carried out at the parish level for the whole of Sweden and they included, among other things, the numbers in each occupational group. These groups have thus formed the basis for our social classification. However, there were three methodological shortcomings that needed to be addressed. First, there were no summarized national numbers for the years 1750, 1800, and 1850, and thus we had to reconstruct them from different previous classifications. Second, the occupational groups in the censuses changed somewhat over time, so we also had to adjust for this. Third, for the year 1900, the sources were very different, so here we had to reclassify occupational groups into those constructed for earlier years.

The shares of the population classified as nobles or persons of rank (including the clergy) are taken from Carlsson for the years 1751, 1805, 1855, and 1900.⁶⁰ The share of population in agriculture is from Wohlin for the years 1751, 1800, 1850, and 1900;⁶¹ the groups residing in towns are from *Historisk statistik* for 1751;⁶² and from the same source for 1815 and 1845.⁶³ For these years, the numbers are weighted by the shares for independent and employed within each group given by Agardh.⁶⁴ The remaining part of the population for 1900 is from BiSOS where the population is structured by sector and position.⁶⁵ The raw numbers in BiSOS have been manually assigned to each occupational category used for the previous years.

We merged the original 16 groups into 11 and then into four (the compositions of the three levels of aggregation are described in tables A1–A3). When adjusting the sample for social status *we replicate all individuals within each group as many times as necessary to reach the correct share from the population structure* (see table A4 for the numbers after the expansion).⁶⁶ The reason for using the classification with four groups only is that in some of the original groups there were quite a small number of young individuals, resulting in these being assigned a very large weight when adjusting for age using the inverse mortality multipliers (IMM) methodology. To avoid this bias, guided by findings from previous research on potential drivers of inequality, we therefore reduced the number of groups from 11 to four, obtaining a large enough number of inventories per social group. This affects the overall Gini coefficients to a very small extent (see table A5 for a comparison of the Gini coefficients using 11 versus four social groups).

Finally, it should be noted that although we use the IMM methodology to adjust for age in all our inequality measures, this methodology does not allow us to compute meaningful estimates of average wealth by social group. For this purpose only, we therefore use for age the same replication method that we use for the adjustment of the social structure. Using the shares of each age group in the population, we replicate the individuals in the younger age groups until we reach the same share of the living population. In this article, only table 7 is based on this methodology.

⁶⁰ Carlsson, *Ståndssamhälle*, p. 101.

⁶¹ Wohlin, *Den jordbruksidkande*, pp. 49, 180.

⁶² *Historisk statistik, Del 1. Befolkning*, p. 80, tab. 21.

⁶³ *Ibid.*, p. 81, tab. 22.

⁶⁴ Agardh and Ljungberg, *Försök*, p. 155.

⁶⁵ BiSOS, *A) Befolkningsstatistik*, tab. 15, pp. 172–83.

⁶⁶ In most cases, we replicated the class n number of times and we had to complete the class with m individuals, with $m < n$. The m individuals were randomly selected.

Table A1. *Probate inventories in the sample by socio-economic group (number and share) compared to actual social distribution*

	1750			1800			1850			1900		
	No.	Share	TRUE									
Nobility	209	20.90	0.48	215	18.79	0.38	229	19.28	0.34	229	19.21	0.26
Capitalists	30	3.00	0.92	42	3.67	1.08	38	3.20	1.04	53	4.45	4.77
Persons of rank	54	5.40	2.82	61	5.33	3.44	49	4.12	2.48	50	4.19	1.86
Bourgeoisie	82	8.20	2.80	67	5.86	2.45	64	5.39	4.23	37	3.10	4.54
Peasant farmers	460	46.00	49.63	435	38.02	45.46	381	32.07	38.14	358	30.03	27.44
Rural artisans	28	2.80	1.74	24	2.10	1.71	27	2.27	0.53	46	3.86	5.59
Crofters	32	3.20	10.22	95	8.30	10.79	121	10.19	18.26	87	7.30	6.16
Townspeople	19	1.90	6.90	21	1.84	8.02	35	2.95	8.23	51	4.28	4.45
Soldiers	35	3.50	7.81	55	4.81	4.79	45	3.79	3.21	34	2.85	2.96
Rural workers	35	3.50	14.75	93	8.13	19.56	148	12.46	21.39	167	14.01	20.82
Workers	16	1.60	1.94	36	3.15	2.32	51	4.29	2.15	80	6.71	21.15
Total	1,000	100.00	100.00	1,144	100.00	100.00	1,188	100.00	100.00	1,192	100.00	100.00

Notes and sources: No. is the number of probate inventories in the unadjusted sample. Share is the share of each social group in the sample. TRUE is the actual social group share of the total living population estimated from Carlsson, *Ståndssamhälle*, tab. 2, pp. 26–7, and tab. 5, p. 42; Historisk statistik för Sverige, *Del 1. Befolkning*, pp. 80–1, tabs. 21 and 22; Agardh, *Försök*, p. 155; Wohlin, *Den jordbruksidkande*, p. 49, tab. L, p. 180, tab. A; BiSOS, *A) Befolkningsstatistik*, pp. 172–83, tab. 15.

Table A2. *Merging of social groups*

16 groups	11 groups	4 groups
Nobility	Nobility	Nobility
Capitalists } Merchants }	Capitalists and merchants }	
Clergy } Persons of rank }	Persons of rank }	Bourgeoisie
Bourgeoisie } Teachers and students }	Bourgeoisie }	
Peasant farmers	Peasant farmers	Peasant farmers
Townspeople } Health care employees }	Townspeople }	
Soldiers	Soldiers	
Rural artisans	Rural artisans	
Crofters	Crofters	Workers and lower middle class
Cottagers } Rural workers }	Rural workers }	
Workers in factories and foundries	Workers in factories and foundries	

Table A3. *Examples of occupations within each social group*

<i>Social group</i>	<i>Occupations and titles</i>
Nobility	Count, baron, colonel, general
Capitalists and merchants	Factory owner, foundry owner, merchant, corn factor, ship's master
Persons of rank	County jurist, legislative official, steward, royal secretary, judge, vicar, bishop
Bourgeoisie	Burgher, artisan master, city council member, headmaster, teacher, student
Townsppeople	Lower civil servants and skilled/semi-skilled employees in trade and services; for example, mail clerk, stationmaster, policeman, artisan journeyman, cashier, clerk, pastry maker, head waiter
Farmers	Landholders with farms registered with the tax assessment <i>mantal</i> not belonging to higher social classes (that is, not belonging to the nobility, persons of rank, or the bourgeoisie); for example, yeoman, peasant farmer, tenant
Soldiers	Gunner, soldier, corporal
Rural artisans	Shoemaker, tailor, smith, cooper
Crofters	Crofter
Rural workers	Cottager, worker, day labourer, servant, lodger
Workers in factories and foundries	Factory worker, millworker, glasswork worker, foundry worker, stone breaker

Table A4. *Adjusted sample by socio-economic group (number and share)*

	1750		1800		1850		1900	
	<i>No.</i>	<i>Share</i>	<i>No.</i>	<i>Share</i>	<i>No.</i>	<i>Share</i>	<i>No.</i>	<i>Share</i>
Nobility	209	0.48	215	0.38	229	0.34	229	0.26
Bourgeoisie	2,853	6.54	3,979	6.97	5,215	7.75	9,825	11.23
Farmers	21,620	49.59	25,939	45.46	25,671	38.14	24,135	27.58
Workers and low middle class	18,915	43.39	26,932	47.20	36,187	53.77	53,312	60.93
Total	43,597	100.00	57,065	100.00	67,302	100.00	87,501	100.00

Table A5. *Gini coefficients using different social groupings in the adjustment*

	1750		1800		1850		1900	
	<i>Gini</i>	<i>95% conf.</i>						
4 social groups	0.79	0.765–0.809	0.84	0.831–0.844	0.87	0.863–0.878	0.91	0.904–0.919
11 social groups	0.78	0.762–0.807	0.86	0.857–0.871	0.86	0.857–0.873	0.90	0.896–0.910