Productive peasants – total factor productivity in Scania during the agricultural revolution, 1750-1850

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Very preliminary draft – Do Not Quote!

Introduction

We have in previous work shown that the most southern province of Sweden, Scania, underwent an agricultural revolution from the mid-eighteenth to the mid-nineteenth century (Olsson and Svensson, 2009, 2010, 2011). This was reflected in a massive growth in production, grain production increased almost five-fold 1700-1850, and in an increase in labour productivity from the 1780s onwards.

Much of this growth and transformation have so far been a story of supply changes, where an existing demand from within the rest of Sweden were met by institutional changes affecting the incentives and possibilities of increased production for the peasant-farmers in the province. This adheres to factors such as the enclosures, a tax system implicating fixed taxes, secured property rights, and deregulation of markets.

In this very preliminary attempt, we aim at estimating the total factor productivity for Scanian agriculture to move further into explaining growth patterns. We use a sample of 34 parishes in the province, displaying all different natural conditions and property rights existing in the area. The data is micro-level data aggregated to discern the overall tendencies in the Scanian agricultural development during the agricultural revolution.

Output

To estimate production on the former, tithe records from Scanian priests' income accounts are used. These sources contain individual yearly records for more than 2,500 farmsteads in 34 parishes, of which some can be followed for 20 to 30 subsequent years and some for more than 120 years (see Olsson and Svensson, 2010 and 2011 for an elaborated discussion on the data).

We have calculated the grain production for an average Scanian farm every tenth year from 1750 to 1850 by taking the average production for five years centered averages (i.e. for 1750 we take the average production 1748 to 1752 divided by the average farm size). To this we have added the animal production for each year by converting it to grain by its relative value.

Table 1. Output in grain and animals in Scanian agriculture, in hectoliters, in SEK in 1850 years prices, and annual growth rate.

	Output	Output SEK in 1850 years prices	Annual growth rate
1750	76	431	
1760	82	463	0.73
1770	75	424	-0.88
1780	91	518	2.01
1790	98	554	0.68
1800	104	592	0.66
1810	128	726	2.06
1820	154	873	1.86
1830	167	951	0.86
1840	204	1158	2.00
1850	254	1444	2.23

Source: Historical Database of Scanian Agriculture

The results show a large variation in output growth rates. The 1760s was a decade of stagnating grain production and outbreaks of cow plague/rinderpest reflected in the decrease in overall production. In general higher growth rates are discernible in the nineteenth century, although they vary also for this period.

Labour

To estimate the change in labour input over time, we use the quinquennial population censuses.[1] The censuses contain information on population by parish, and within each parish the population is registered by five-year age groups and by sex. The series starts 1749 and ends 1855. The sample consists of the same parishes as in the output series. However, quite a few of the censuses are missing in the archives, particularly for the first part of the period. That leaves us with fifteen parishes with continuous[2] information on population, still covering the main agricultural districts of Scania.

To estimate the labour force in agriculture we have selected all men and women 15 to 60. However, not all of the population was engaged primarily in agricultural production. First, there were groups such as the nobility, the clergy and the non-noble persons of standing (mostly military officers or civil servants) who mainly were pre-occupied with other tasks.[3] Whereas the clergy remained at the same level in absolute terms throughout the period, the nobility and the non-noble persons of standing (including the "distinguished servants employed by persons of standing") increased in size, although somewhat slower than the

[1] Tabellverket, Demographic Database, Umeå University

[2] In 1780 the censuses for two of these fifteen parishes are missing. Here we have interpolated the population from the information given in 1775 and 1785. One parish is missing in 1800 and one in 1820, resulting in the same kind of interpolations.

[3] Although the rural clergy had farms, theses farms are not part of the output series since they did not pay tithes.

total population (Carlsson 1973, chapter III). In total these groups made out slightly more than two per cent of the population in the mid-eighteenth century, decreasing to slightly more than one and a half per cent a hundred years later.

Table 2. Persons of standing as percentage of total population, Scania, 1751-1855

	1751	**1805**	**1840**	**1855**
Nobility	0.30	0.23		0.23
Clergy	0.89	*0.64*		*0.37*
Non-noble persons of standing	1.02	(1.05)	1.05	0,99
Total	2.21	1.92		1.59

Source: Carlsson, S. (1973) *Ståndssamhälle och ståndspersoner 1700-1865*. Lund: CWK Gleerup, tables 1, 4, 5, 6 and 7.

Note: For the clergy the numbers for 1805 and 1855 have been calculated by following the information that the absolute number of clergy being almost constant over time (Carlsson, 1973: chapter III), thus only correcting the 1751 number by the increased total population. For the non-noble persons of standing, we have corrected for the share being engaged in agriculture. The figure for 1805 is a simple mean of the shares for 1751 and 1840 multiplied in the same way as for 1751 and 1855 by the shares non-employed in agriculture.

Second, another group mainly working outside agriculture was the rural artisans. Some of them, the most skilled ones, were full time employed as artisans whereas others might have worked part-time in agriculture to supplement their income (see van de Putte and Svensson, 2010: 269-276 for a thorough discussion on this). The aggregate information on occupations are not available in the digitized population censuses but have to be followed parish by parish and year by year in the original files. We have used the population censuses for four parishes in the sample to estimate the proportion of the population working as artisans. To this we have used previous work using other sources containing information on occupation for these parishes, i.e. the poll-tax registers and a combination of information from church archives and parish registers (Adler and Svensson, 2002).

The results show that around 4 to 5 per cent of the population in the parishes was engaged as artisans during the second half of the nineteenth century. This is the same level found in other parts of Scania (e.g. Hanssen, 1952: 50-53). The figure for 1800 is lower but more uncertain since the variation between the sources is much larger for this year; therefore we disregard this figure and interpolate the number by using the information for 1775 and 1825. In the first half of the nineteenth century the artisan group grew faster than total population and constituted slightly more than 7 per cent in 1850.

Table 3. Artisans as percentage of total population in four parishes in Scania, 1751-1850

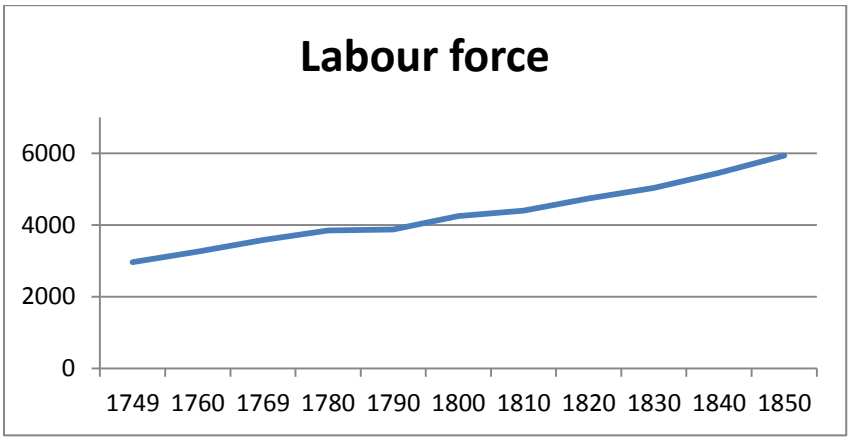
	1751	**1775**	**1800**	**1825**	**1850**
Total	4.03	5.07	3.69	6.97	7.34

Sources: Populations censuses, Tabellverket, Demographic Database Umeå; Adler and Svensson, 2002

From this, we estimate the total number of workers in the fifteen parishes for every tenth year using the censuses and deducting persons of standing and artisans, ending up with an

increase in the number of labourers from around 3000 in 1750 to almost 6000 in 1850; a doubling in 100 years (an annual growth rate of around 0.69 per cent).[4]

Figure 1. The number of labourers in fifteen parishes in Scania, 1750-1850



Source: Population censuses, Demographic Database Umeå.

The growth pattern of the labour force may seem linear in the graph but in reality there were differences over time. It is particularly the 1780s and the first decade of the 1800s that seem unexpectedly low. This has to be further evaluated in coming versions.

Table 4. Agricultural labourers in fifteen parishes in Scania, 1750-1850, by decade.

Year	Number of labourers	Index	Growth per annum
1749	2965	100	0,94
1760	3256	110	0,94
1769	3575	121	0,73
1780	3844	130	0,07
1790	3870	131	0,95
1800	4252	143	0,34
1810	4398	148	0,76
1820	4742	160	0,60
1830	5035	170	0,80
1840	5450	184	0,86
1850	5939	200	

Source: Population censuses, Demographic Database Umeå.

[4] In comparison to earlier estimates this seems a bit low, indicating a potential bias in the labour sample in relation to the output sample. From Olsson and Svensson (2011), we would expect an annual growth rate of around 0.75-0.80. On the other hand, the growth rate is almost identical to the overall population growth for Sweden 1750 to 1850, where population doubled from 1.8 million to 3.6 million inhabitants.

Capital

The primary sources for measuring the change in capital stock is probate inventories of landholding peasants. We have used 204 inventories preserved after active farmers 1750 to 1850 for three different districts of Scania, covering the different natural conditions existing in the region. The total value of a number of items found in their inventories has been calculated on individual farm level. The items used are: Wagons, plows, horses, oxen and cows. The values has been divided by farm size and expressed in constant prices.

Table 5 shows the averages, with 20 years between the measurement points and in-between years interpolated. As can be seen, capital investments took place already in the eighteenth century (for example in improvements of wagons, see Bergenfeldt et al 2013) but there was an especially strong growth in the capital stock value between the years 1810 and 1830. This is the period of enclosures, indicating investments in tools and animals during this period. After 1830 it declined in constant prices, above all due to less need for draught animals due to improved tools. This is in line with previous findings on technology and animals (see Gadd, 1983 for West Sweden; Olsson and Svensson 2011 for Scania).

Table 5. Capital stock value in Scanian agriculture 1750-1850, value in 1850 prices, index, and annual growth rate.

	Capital	Index	Annual growth rate
1750	612	100	
1760		123	2,11
1770	897	146	1,74
1780		170	1,48
1790	1 182	193	1,29
1800		229	1,71
1810	1 619	264	1,46
1820		382	3,75
1830	3 061	500	2,72
1840		480	-0,41
1850	2 814	459	-0,42

Source: Probate inventories for Bara, Harjagers and V. Göinge härader, Regional Archives, Lund.

Land

There are different ways of estimating the development of the input factor land. The most obvious way, perhaps, would be to calculate the size and use of land for each farm, adding this to a general pattern into our calculation. However, even though data on production is at hand on farm level, this is not the case for acreages and use of these. One way to solve this would be to take some examples where we have data, mostly on village level.

Looking at the village of Hög, situated on the plains in western Scania, a primary observation is that most land already in mid-eighteenth century was used either as arable land or as meadows. The intensity was restricted by the prevailing three-course rotation and during the eighteenth century an extensive process took place with a slow conversion of first wastes and then meadows into arable land. After the radical enclosures in 1804, creating one single unified plot per farm, i.e. "compact farms" to use the words of Grantham (1980), a more intensive use of the arable land took place through changes in crops and crop rotations (see table 6). Finally, from the 1830s most of the remaining meadows and wastes were converted into arable land following the inclusion of fodder crops in the rotation on the arable fields and in consequence with the falling number of draught animals needed (discussed above). The pattern found in Hög village is highly consistent with that of another village on the plains in Scania, Lilla Harrie (Bohman, 2010: 136, table 7.2). Here, a somewhat larger portion of the land was wastes during the eighteenth century and these were converted into meadows and arable land all through the century. The decades following the enclosure in the early nineteenth century meant that almost all land was turned into arable land.

Table 6. Land use in Hög village 1749-1900, *per cent*.

	Arable		**Meadows**	**Wastes**	**Total**	**Yearly sown acreage**	**Yearly increase in sown acreage**
		share of fallow of arable					
1749	69	*41*	23	8	100	41	-
1782	70	*42*	24	5	100	41	-
1804	74	*33*	22	4	100	49	0.82
1828	87	*13*	11	2	100	76	1.85
1866	97	*13*	2	1	100	84	0.26
1900	98	*13*	2	-	100	85	0.03

Source: Olsson 2005:138

As regards the intensification, all available records indicate that the nineteenth-century enclosures were a turning point in the introduction of new crop rotations and new crops in Scania, decreasing the fallow share and permitting the conversion of meadows (see Olsson and Svensson 2010 and 2011).

The size and speed of the land reclamation process, turning wastes into meadows and arable land is not the same as turning previously unused land and into land used in agricultural production. The wastes were sometimes used as grazing areas and were also in some cases important for the collection of firewood and other necessary items. One important thing to consider here is that this conversion process and the share of land being non-meadows, non-

arable land differed dependent on initial natural conditions. In the plains, most land was used already at the start of our study period whereas in the more wooded parts a larger share could be reclaimed.

Data on land use in the wooded areas of the region indicates that also here a gradual conversion of woodland and wastes occurred during the eighteenth century (see table XX). Although the share of land being arable increased they were mainly converted to meadows. It was not until the mid-nineteenth century that a faster conversion to arable land took place. In these parts the arable land was used more intensely than on the plains. Two-thirds of the arable land in Billinge was sown yearly with rye during the eighteenth century while the remaining third was of lower quality, and although also this part was sown yearly it could only bear barley and oats (Bohman, 2010: 176). The meadows were in some cases used yearly and in other alternatively as meadows, as grazing areas and with long intervals as arable land. During the course of the period land was ditched and drained and therefore became of higher quality which in turn made each type used more strictly according to their general purpose, arable for vegetables, meadows for fodder and the rest for grazing and wood (Bohman, 2010: 178-179). A fast increase in the share of land being arable started during the 1830s and, based on records from individual farms, by 1850 around 17 per cent of the land was arable (Bohman, 2010: 179, table 7.24).

Table 7. Land use in Billinge village 1706-1911, per cent.

Year	Arable	Share of fallow of arable*	Meadows	Forest and grazing	Other	Yearly sown acreage*	Yearly increase in sown acreage
1706	8	0	31	61		8	
1821	10	0	44	46		10	0.20
1834	11	0	47	42		11	0.68
1911	39	13	5	53	3	34	1.52

Source: Bohman, 2010, p. 178, table 7.23

Note: *This is estimated from the land surveyor report and for 1911 from the custom on the plains, i.e. assuming a more advanced crop rotation being implemented after 1834.

Finally, there were areas in-between the plains and the forest districts, the intermediate land. This type of brushwood natural conditions was in some respect the most vulnerable part of the region (Campbell, 1928). The share of land being arable have been found to lie in-between the shares for the other two types of natural conditions, around 40 to 50 per cent of the land (Bohman, 2010: 159). However, unlike the plains and the forest district, this share did not change much over time. Attempts to convert land into arable were hindered by its poor quality leading to decreasing fertility of the soil and problems with drift sand (Bohman, 2010). Overall though, a more frequent use of the arable land that existed would increase the intensity of land use somewhat over time also for this part of the region.

Table 8. Land use in Östra Hemmestorp village 1705-1912, per cent.

	Arable	Share of fallow of arable	Meadows	Forest and grazing	Other	Yearly sown acreage	Yearly increase in sown acreage
1705	47	40	42	11	0	28	
1836	40	25	16	16	28	30	0.05
1912	44	13	14	42	0	38	1.75

Source: Bohman, 2010: 159.

Estimating the land input in this perspective therefore requires two things, the share of parishes by natural conditions, and the yearly increase in sown acreage. The first is estimated from the sample, showing that the plains constituted around 13 per cent of the sample up to 1780 and thereafter around 19 per cent. The share of land being classified as intermediate decreased from 48 to 44 per cent and the share of woodlands were relatively stable, changing from 39 to 37 per cent of total land. The yearly increase in sown acreage can be collected from the previous tables, resulting in table XX.

Table 9. Land input, growth per annum by period and district.

Period	**Plains**	**Intermediate**	**Woodland**	**Total (weighted by district)**
1750-1780	0.10	0.10	0.20	0.14
1780-1800	0.82	0.10	0.20	0.27
1800-1820	1.85	0.10	0.20	0.47
1820-1830	1.85	0.10	0.68	0.65
1830-1850	0.26	1.76	2.20	1.64

Source: See tables 6, 7, and 8.

Factor shares in input

The factor shares for the inputs are calculated for 1750, 1800 and 1850. The labour input uses calculations on labour in an average household adding semi-landless and landless population on the assumption that they work fifty per cent of their time on the farms.[5] The labour force on an average farm is calculated to be 3.78 labourers in 1750 increasing to 5.15 in 1800 and 6.85 in 1850 (Wohlin, 1909) and this figure is multiplied by the wages for each year taken from Jörberg (1972).

The capital share is calculated by using the estimates on the capital stock in 1800 (see above) with a ten year depreciation.

Finally, for the land input we must estimate the actual value of the land. This value should reflect the use and quality of land and buildings. The data comes from two sources, first the

[5] Assuming that they spent 75 per cent of their time changes labour input only to a very minor degree (around one percentage point in the final share).

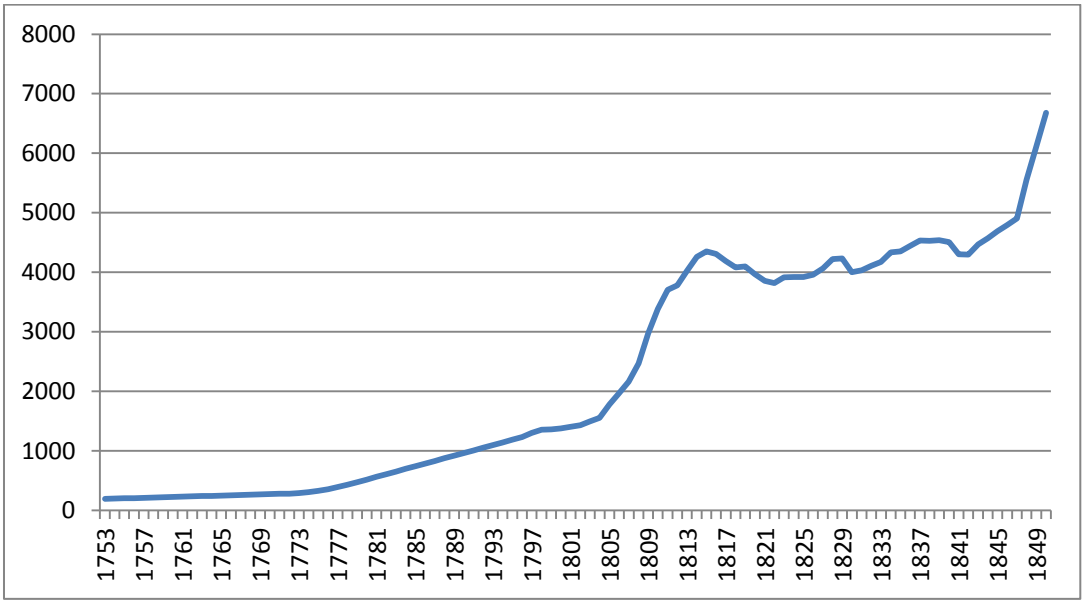
Historical National Accounts of Sweden, HNAS, (Pettersson, 1987) providing an estimation of values for buildings and land in agriculture in Sweden 1800 to 1862, and, second, prices at sales of agricultural farms in Scania found in the poll-tax registers for two parishes in this province (Svensson, 2001: 261). The first source creates a series over the development of property prices in agriculture over time, whereas the second source establishes the price level of the farms in the studied area.

The original data in HNAS show that property values rose fast during the Napoleonic War but from around 1812 to around 1850 there was a much slower increase with several ups and downs. From the 1850s a new boom in property prices occurred. The series can be compared the official taxation of farms made for land taxes. This taxation was fixed from 1810 to 1862 so in essence this cannot be used for the development of property values. On the other hand, the figures for 1810 should approximately reflect the market values and can therefore be used to test the validity of the constructed series. Real prices at sales of farms from the poll-tax registers provide that an average Scanian farm of 0.37 mantal cost around 4700 riksdaler banko in 1845 (Svensson, 2001: 261). Putting this value into the estimated series from the HNAS gives us the result that a same-sized farm in 1810 cost around 2600 rdr bko. In the taxation registers for one parish in Scania for 1825 we find two farms of this size taxed for on average 2400 rdr bko. The estimated price lies around 8 per cent higher than the observed price which we value as a relatively good fit.

Since this series starts in 1800 we need additional data to bring it back into the mid-eighteenth century. We use sales prices for farms collected from the title deed registers from two parishes (the same one as for the taxation registers and its neighboring parish) to estimate the value of the farms during the eighteenth century. There are a few farms sold during this period and the price level seems to be very low, as compared to the 1800 estimation. One reason for this is that they do not reflect real market values, since they were sold within the family (Svensson, 2013). To correct for this we have used price information form the title deeds for the nineteenth century and compared this to the estimated property value curve; the difference, around 40 per cent higher property values, is used to correct the prices in the land title deeds.[6] Even so, land prices increased dramatically from the mid-eighteenth century to the early nineteenth century, a fact found also by other researchers dealing with this period and province (Dribe and Lundh, 2005:183). The estimated value for buildings and land is used with twenty year depreciation.

[6] In a few cases the land title deeds include farms sold at auctions – the prices for these farms are substantially higher than for the other sales.

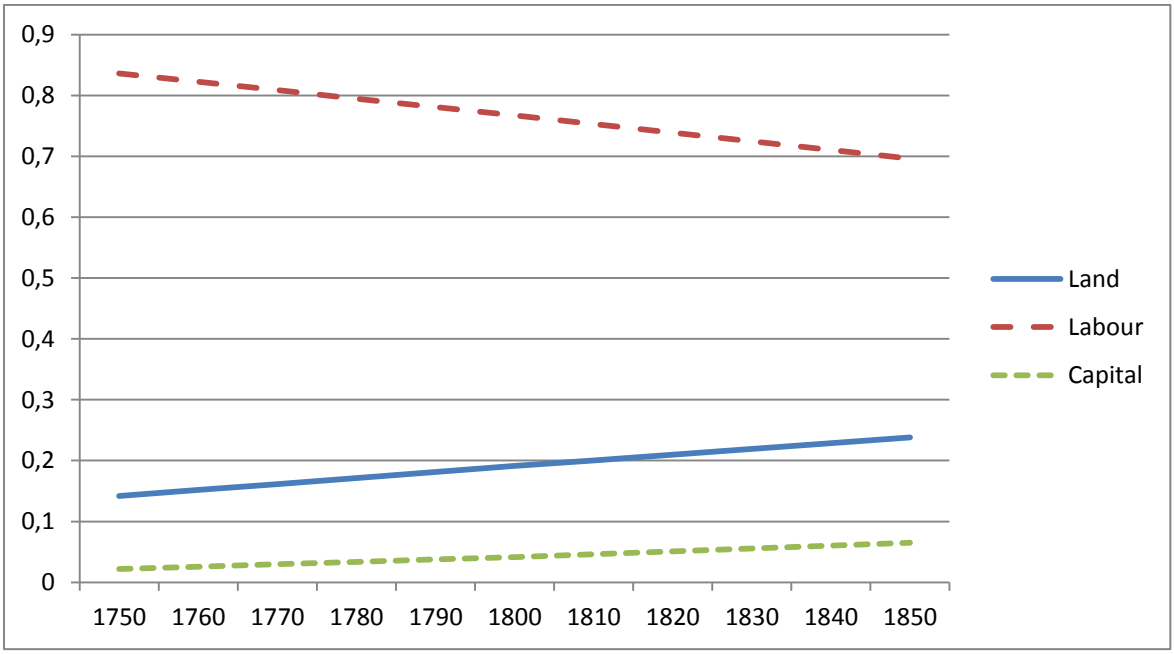
Figure 2. The estimated value of an average Scanian farm, 1753-1850 (riksdaler banko)



Sources: 1800-1850: Pettersson, 1987 and Svensson, 2001; 1750-1800: Regional Archives in Lund, Land title deeds for Hög and Kävlinge parishes.

Adding these estimations together and calculating the share for each input results in 84 per cent for labour, 14 per cent for land and 2 for capital in 1750. However, this changes over time so in 1850, doing the same calculations for inputs with the 1850 values, the shares are 70, 24 and 6 respectively (see Figure XX). In order to capture this we use different shares over time when calculating the TFP.

Figure 3. Input shares in Scanian agriculture, 1750 – 1850 (estimates 1750, 1800 and 1850 with trend in-between)



Total factor productivity

Combining these calculations we estimate the growth in total factor productivity in the Scanian agriculture 1750 to 1850. We do this by using the following formula:

$TFP\cdot/TFP = Y\cdot/Y - \alpha\, L\cdot/L - \beta C\cdot/C - \gamma T\cdot/T$

Where:

$Y\cdot/Y$, $L\cdot/L$, $C\cdot/C$ and $T\cdot/T$ is the annual growth rate of output (grain and animal), labour, capital, and land respectively

and

α, β and γ are the factor shares in input for labour, capital, and land respectively, changing over time in accordance with input shares estimations above.

The overall achievement of the Scanian agriculture 1750 to 1850 is good. An annual growth rate of 0.51 is higher than what is generally found for pre-industrial agriculture in Europe (Persson, 2010). One example is Philip Hoffman's estimations of French agriculture before 1800, where the fastest growing region, the Paris Basin, displays growth rates of on average 0.31 for the second half of the eighteenth century.

Table 10. Agricultural output, weighted input, and total factor productivity, Scania 1750-1850, by 10-year intervals (annual growth rates).

	Output	**Input**	**TFP**
1750-1760	0,7346	0,834713	-0,10014
1760-1770	-0,8768	0,816426	-1,69326
1770-1780	2,0107	0,633154	1,377534
1780-1790	0,6852	0,096964	0,588246
1790-1800	0,6619	0,803456	-0,14159
1800-1810	2,0553	0,32013	1,735194
1810-1820	1,8614	0,742293	1,119061
1820-1830	0,8596	0,583663	0,275965
1830-1840	1,9961	0,552234	1,443915
1840-1850	2,2285	0,587322	1,64116
1750-1850	1,2163	0,706913	**0,509387**
1750-1800	0,6316	0,671696	-0,0401
1800-1850	1,797	0,773879	1,023121

However, as can be seen from table 6, growth rates varied substantially over time for the Scanian agriculture. One important factor contributing to this is the variation in output, partly explained by climate, making it hazardous to break down the estimations to shorter periods of time. Even so, looking at the second half of the eighteenth century in relation to the first half of the nineteenth century there are distinct differences. The TFP growth rate is slightly negative for the eighteenth century, mainly due to the fall in output during the 1760s, whereas it grows by one per cent per year during the early nineteenth century; a very high growth rate.

In general terms, this preliminary estimation indicates investments in primarily labour during the eighteenth century. According to land surveyor information, this is put in work to intensify work on existing land but also to start a process of reclaiming land (convert meadows and grazing areas to arable land) and in ditching. This extensive and partly intensive strategy does not immediately pay off in output. One reason is the open-field system restricting land reclamation and the introduction of new crops and new rotations. During the nineteenth century more labour is still employed, but due to improved tools (iron ploughs) and new crop rotations the need for draught animals is decreasing, reflecting itself in higher production growth rates and lower capital investments. Speaking in general terms, the old traditional open-field system allowed for slow land reclamation and production kept pace with a rising population but in the long-term, enclosures introduced in the early nineteenth century allowed for new ways of managing land more productive.

Recent estimations of Swedish GDP per capita find a stagnation or even retrogression during the eighteenth century followed by a growth phase from the early nineteenth century (Schön and Krantz, 2012). Since agriculture share of GDP was over 50 per cent during this period, changes in this sector was of importance to the overall achievement of the Swedish economy.

References

Adler, J. & P. Svensson (2002) *Social Structure and Social Mobility in Southern Sweden 1751-1894*. Paper presented at the SSHA-meeting in St Louis, October 24-27 2002.

Bergenfeldt, F., Olsson, M. & P. Svensson (2013) "Wagons at Work. A Transport Revolution From Below", *Agricultural History Review*, vol. 61, No. 1, p. 63-82.

Bohman, M. (2010) *Bonden, bygden, och bördigheten. Produktionsmönster och utvecklingsvägar under jordbruksomvandlingen i Skåne ca 1700-1870*. Lund Studies in Economic History 52. (Doctoral dissertation) Lund: Media-Tryck.

Campbell, Å. (1928) *Skånska bygder under förra hälften av 1700-talet. Etnografisk studie över den skånska allmogens äldre odlingar, hägnader och byggnader*. Uppsala.

Dribe, M. & C. Lundh (2005) "Retirement as a strategy for land transmission: a mico-study of pre-industrial rural Sweden", *Continuity and Change*, 20: 2, p. 165-191.

Gadd, C-J. (1983) *Järn och potatis. Jordbruk, teknik och social omvandling i Skaraborgs län*. Göteborg.

Grantham, G. W. (1980) "The Persistence of Open-Field Farming in Nineteenth-Century France", *The Journal of Economic History*, 40: 3, p. 515-531.

Hanssen, B. (1952) *Österlen. Allmoge, köpstafolk & kultursammanhang vis slutet av 1700-talet i sydöstra Skåne.* Stockholm: Gidlunds

Hoffman, P. T. (1996) *Growth in a Traditional Society. The French Countryside 1450-1815*. Princeton: Princeton University Press.

Jörberg, L. (1972) *A History of Prices in Sweden 1732-1914*. Lund: Gleerups förlag.

Olsson, M. (2005) *Skatta dig lycklig. Jordränta och jordbruk i Skåne 1660-1900*. Hedemora: Gidlunds förlag.

Olsson, M. & P. Svensson (2010) "Agricultural growth and institutions: Sweden, 1700-1860", *European Review of Economic History*, 14, p. 275-304.

Olsson, M. & P. Svensson (2011) "Agricultural production in southern Sweden 1702-1864", in Olsson, M. & P. Svensson (eds.) *Growth and Stagnation in European Historical Agriculture*. Rural History in Europe, 6. Turnhout: Brepols publishers, p. 117-139.

Persson, K. G. (2010). *An Economic History of Europe. Knowledge, Institutions and Growth, 600 to the Present*. Cambridge: Cambridge University Press.

Schön, L. & O. Krantz (2012) "The Swedish economy in the early modern period: constructing historical national accounts", *European Review of Economic History*, 16, p. 529-549.

Svensson, P. (2001) *Agrara entreprenörer. Böndernas roll i omvandlingen av jordbruket I Skåne ca 1800-1870*. Lund Studies in Economic History 19. Lund: Almqvist & Wiksell International.

Svensson, P. (2013) ”Land market, property rights, and agricultural transformation in southern Sweden, 1680-1870”, in Béaur, G., P. R. Schofield, J-M. Chevet & M. T. Pérez Picazo (eds.) *Property Rights, Land Markets, and Economic Growth in the European Countryside (Thirteenth-Twentieth Centuries)*. Rural History in Europe 1. Turnhout: Brepols publishers.

Van de Putte, B. & P. Svensson (2010) "Measuring social structure in a rural context. Applying the SOCPO-scheme to Scania, Sweden (17th-20th century)." *Belgisch Tijdschrift voor Nieuwste Geschiedenis/Revue belge d'histoire contemporaine,* vol. XL, no. 1-2, p. 249-293.