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Schön, Lennart; Krantz, Olle

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Lennart Schön & Olle Krantz

DEPARTMENT OF ECONOMIC HISTORY, LUND UNIVERSITY

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Department of Economic History, Lund University
Postal address: P.O. Box 7083, S-220 07 Lund, Sweden
Telephone: +46 46 2227475
Telefax: +46 46 131585

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Swedish Historical National Accounts, 1560-2010

Abstract

A comprehensive set of GDP series for Sweden with annual estimates at both aggregate and sector levels 1560-2010 is presented (Swedish Historical National Accounts of 2012). New series for the period 1560-1800 are linked to slightly revised data for 1800-2000, which are extended to 2010. The series provide a new view on Swedish long term development. While there was long term stagnation between the late sixteenth and the early nineteenth century, secular fluctuations were considerable with low points around 1600 and 1800 and with a peak around 1700. The early peak was surpassed only in the late nineteenth century. Furthermore, the revisions of the 1800-2000 series have a considerable impact upon benchmark comparisons of income levels. Thus, minor revisions of prior sector accounts for agriculture and services of dwellings, together with a major shift in deflation technique, raises the level of Swedish GDP in constant prices in the early nineteenth century by about 45 percent. The paper gives an overview of the data construction and of the revisions for the new SHNA. The paper also provides a presentation of a satellite account on unpaid domestic work. Furthermore, links to the full data set are given.

JEL Classifications: N01; N13; N14.

Keywords: historical national accounts; deflation; economic growth; demand approach.

Lennart Schön: Department of Economic History, Lund University School of Economics and Management, Sweden.

Email: lennart.schon@ekh.lu.se

http://www.ekh.lu.se/ekhlsc/

Olle Krantz: Department of Geography and Economic History, Umeå University, Sweden.

Email: olle.krantz@ekhist.umu.se

Swedish Historical National Accounts 1560-2010

Lennart Schön
Department of Economic History
Lund University

Olle Krantz
Department of Geography and Economic History
Umeå University

Introduction

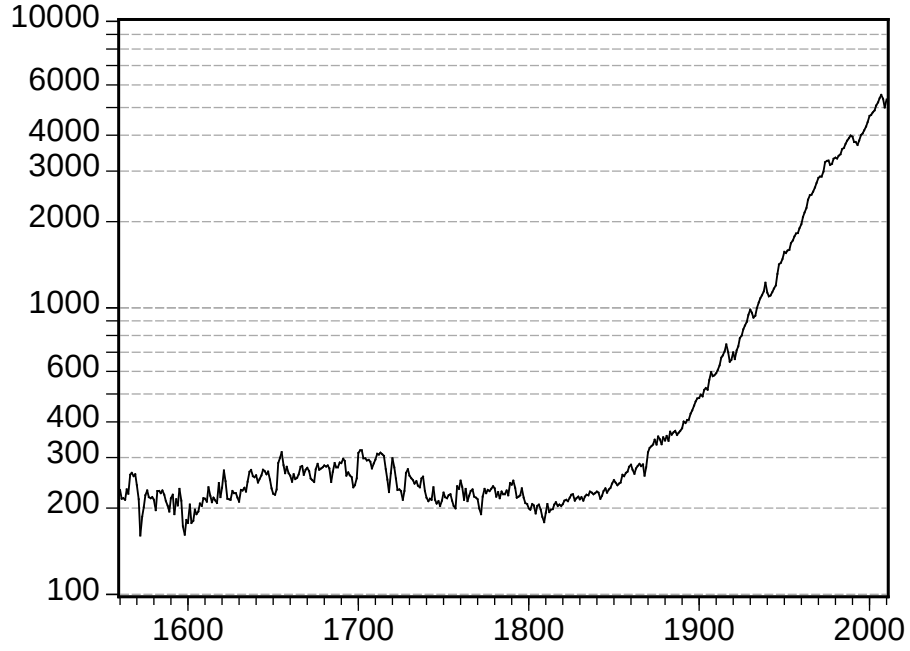
New data on the Swedish GDP were recently presented and analyzed in the article *The Swedish economy in the early modern period. Constructing Historical National Accounts 1560-2000.*[1] It is part of a comprehensive research project aiming at constructing series for Sweden[2] as far back as possible, hopefully from the early middle ages onwards. The GDP per capita series up to 1800 was completely new and for the following period a revised series from a book published some years ago (Krantz and Schön (2007)) were used.

The new GDP per capita series (see figure 1 and appendix A) provides a new view on Swedish long term development. The series reveals stagnation between the late sixteenth and the early nineteenth century. However, this does not imply that there were no fluctuations. On the contrary, a clear pattern of change is visible. After retrogression during the second half of the sixteenth century to a low point around 1600, there was economic growth in most of the seventeenth century, i.e. in the period that patriots have described as "Sweden's Era of Greatness". The next century, which comprised the period that for some reasons has been called "the Era of Liberty", was distinguished by retardation with another low point around 1800. This meant that GDP per capita around 1800 was roughly at the same level as in the late sixteenth century. In the nineteenth century an economic growth commenced which accelerated in the last decades of the century and mirrored an intensified industrialization process. However, the prior peak level from around 1700 was surpassed only in the second half of the nineteenth century. Then, sustained growth characterized the rest of the period, with variations as to speed and structural change. In the article a first analysis of this very long-run pattern and its implications for the interpretation of the Swedish history was made. For the period after 1800 some revisions of sector series as well as change of deflation technique to provide a better basis for international comparisons were made, which raised the

1 Schön and Krantz (2012).
2 Or rather the area that nowadays is called Sweden.

Swedish level in the early nineteenth century up to about 45 percent relative to the aggregated GDP series in constant prices in Krantz and Schön (2007).

Figure 1. GDP per capita in Sweden, 1560-2010. SEK in constant prices, price level 1910/12.



This paper gives an overview of the data construction for the Swedish Historical National Accounts (SHNA) of 2012. It is divided into three sections. The first one deals with the period 1560-1800 with completely new series. The second section deals with the period 1800-2010 with some revisions and corrections and an extension to 2010. In this section, furthermore, a comparative analysis of deflation techniques provides some insights into structural changes, both on aggregated GDP level and on sector levels. In the third section a short presentation of a satellite account on unpaid domestic work is provided.

A data set containing the historical national accounts for the entire period 1560-2010 is found online: www.ekh.lu.se. See also appendix C. One should note that present time levels of GDP and sector value added in these series differ from data in contemporary official national accounts. It is natural that a number of shifts and redefinitions are performed in contemporary statistics in relation to structural and technological changes, but it is also reasonable that levels in the short contemporary series are adjusted to the long historical series rather than the other way around.

The construction of SHNA1560-1800

Agriculture

For the pre-industrial period, agriculture is probably the most studied industry in Swedish economic history. However, only to a limited extent, these studies have been quantitative meaning that there are few long-term data series concerning for instance output. One exception is the tithes which are related to production and for which data exist for the whole period. However, their usability as an output indicator has been questioned. Hannerberg (1971) gives a critical overview of the discussion in an authoritative study and his conclusion is that the tithes show the allocation of harvests to various cereals more or less correctly. However, he maintains that the long-term performance is not shown in a proper way by these data. This opinion is corroborated by Leijonhufvud (2001) in a meticulous study. She have processed the data and added them up to series for the entire country 1559-1680. The aggregated series indicates a constant level of production in a period when population roughly doubled. This result questions the validity of the tithes as an indicator of long term changes.

In another recent work on harvests in the seventeenth and eighteenth centuries, Edvinsson (2009) maintains that tithes and harvest estimates show short-term fluctuations properly while they are not reliable for long-term changes. Instead, he presents a series of annual harvest per capita 1665-1820 combining harvest estimates and prices with an assumption of long-term constant per capita level. In the study as well, he shows that there is a high degree of correlation between harvest estimates and price fluctuations.

To conclude from these three authors, tithes and harvest estimates show short term fluctuations in a proper way but not trends over longer periods.

Olsson and Svensson (2010) is an exception in Swedish agricultural history since they have estimated agricultural production 1700-1860 in the southern province of Scania, with the help of direct production data from farmers' accounts. The outcome of their study is that there was stagnation on a per capita level until the 1780s when a first trend break occurred with the early enclosure movement. It was followed by a strong expansion in the first half of the

nineteenth century; a productivity increase per worker of 0.8 percent annually and a per capita increase of 0.6 percent. These estimates are based upon a large sample of farm records but Scania was the leading agricultural district and a pioneer in the enclosure movement, and, thus, not entirely representative for Sweden. Their results, however, point in the same direction as the present estimates which show similar trends but a somewhat weaker development for agriculture in Sweden overall. Thus, a downward per capita trend in the estimate for the eighteenth century was followed by an annual growth trend of 0.4 percent from 1800 up until the 1860s.[3]

Due to the fragility of direct sources, the present estimate of agricultural production prior to 1800 utilizes another method than either tithes or farm records, viz. the demand approach used by Crafts (1980), Allen (2000), Alvarez-Nogal and Prados (2007), and Malanima (2011). While production data are scarce or non-existent over the period 1560-1800, this approach utilizes series of real wages and real prices of agricultural and industrial products.

Wage and price data are among the best indicators of economic performance available in Sweden prior to 1800. Two long and consistent wage series exist, one for unskilled workers in Stockholm and the other for agricultural day workers. The first one, from the early sixteenth century up to the mid-nineteenth century, is constructed by Johan Söderberg (2009). It is excellent in consistency and scope in time but the data is of course restricted to the only really urban region in an overwhelmingly agrarian economy. The other series is constructed by Lennart Jörberg (1972) and goes from the 1730s up to the early twentieth century. The price and wage notations that form the basis for the series are from the so called market price scales which are available almost annually for all provinces in Sweden. Thereby averages for the whole economy were calculated for wages as well as for a number of commodities of various kinds.

It should first be noted that the Stockholm series and the average rural series are very similar in the long run between 1732 and 1850. With only Stockholm data prior to 1732, however, one may ask whether these wages are representative for the whole country.There may have been specific periodical trends and fluctuations in building worker wages in the capital city, due for instance to construction booms or slumps. In the longer run, however, it is reasonable that regional wage development goes in the same direction as long as there is some degree of

[3] For agriculture proper, annual per capita growth was 0.38 percent. Adding forestry, gives a sector growth of 0.51 percent.

market integration. There was probably an integration of the economy in the country at least in the central parts and thus it could be expected that the long-term wage changes were rather equal as was the case between 1732 and 1850. Here it is assumed that these mechanisms of integration worked also in the pre-1732 period. It might be the case though that the strong expansion of the capital city in the seventeenth century periodically gave an upward bias in the wage estimate. On the other hand, the construction boom led to inflow of workers who could have exerted a downward pressure on wages, particularly when recession set in. Thus, the Stockholm series from 1540 is linked to the average rural series in 1732 to obtain a wage series for the whole period.

The wage series is deflated into real wages with the consumer price index constructed by Rodney Edvinsson and Johan Söderberg (2009). It shows some distinctive long trends. From the 1540s to the turn of century 1600, real wages were falling. From the low points in the early seventeenth century, the trend turned upwards to the 1690s but fluctuations were very strong. From that point of time the level stagnated for a couple of decades with some deep falls during the wars in the early eighteenth century. From the 1730s and 1740s real wages clearly moved downwards quite persistently to the trough in the decade of the Napoleonic wars, to turn upwards again, but irregularly, from the 1810s to the 1850s.

For estimating the demand for agricultural products, price indices of agricultural and industrial goods are constructed from the major products of rye, barley and butter and of bar iron and woolen cloth respectively.[4] Income is approximated by day wages i.e. the real wage series discussed above. Since the actual number of working days is unknown, day wages may deviate from income. In the short run, this uncertainty is met by a rather low elasticity in demand from changes in real wages, which corresponds to the fact that the effects from changes in prices or wages on demand may be counteracted by variations in annual labour time, as noted by Malanima (2011).

It is possible, though, that there has been a long term shift in the number of productive working days over the year that would make day wages and income deviate to some extent. The "agrarian revolution" in Sweden that started during the late eighteenth century, plausibly led to an increase in the number of productive working days per worker. This might have been

[4] 1560-1620: rye, butter and bar iron prices from Söderberg (2003); 1620-1732: rye, barley, butter and bar iron from Hansson (2006) with a link for bar iron 1620-1639 from Posthumus (1943), 1732-1800: rye, barley, butter, bar iron and cloth from Jörberg (1972). The Hansson price series for agricultural goods are adjusted for a strong deviation in 1632-1633 to the consumer price index. Indices of prices and wages are presented in appendix B.

the case particularly since the cultivation season was prolonged with a greater variety of crops and since investment activities increased (Gadd (2011)).This intensification of agriculture occurred however mainly in the nineteenth century and had probably less effect on working opportunities in the eighteenth century. Consequently, no correction is made for this in the estimate. Thus, while there might be a slight upward bias in the income estimate for the seventeenth century with the Stockholm series, there might also be similar downward bias for the eighteenth century.

With the demand approach, per capita consumption of agricultural products is estimated in a model that assumes positive income elasticity, negative price elasticity to agricultural products and a weak positive cross elasticity to industrial products. All prices and wages are in real terms, i.e. deflated by the consumer price index. The elasticities used in the model are the same as in Malanima (2011): 0.4*d(wages)-0.5*d(agroprices)+0.1*d(indprices). [5]

The long-term trends of the estimated annual per capita consumption 1560-1800 are quite clear. From the mid-sixteenth century to the mid-seventeenth century, consumption is estimated to have decreased by roughly about a quarter. The decrease was followed by stagnation, however with strong annual fluctuations up to about 1800. These tendencies are in line with the historiography of the Swedish economy. Thus, the decrease from the sixteenth century is partly in line with the study by Leijonhufvud but it is less severe than in her estimate. It is also in line with Heckscher (1935-1949) who maintained that there was a drastic decline in consumption standards from the sixteenth century, while Myrdal and Morell (2011) recently presented a generally very pessimistic view of agriculture in the seventeenth century.

To arrive at production, consumption data have to be complemented with foreign trade data, i.e. production=consumption +export-import. Annual figures on trade items are available from 1732.[6] Prior to this year, Heckscher reports the composition of imports and exports at a number of benchmarks from the 1550s to the 1720s.[7] With annual trade figures from 1732,

[5] Within the constraint that the sum of elasticities is unity, there is some room for varying the elasticities of wages and agricultural prices. As demonstrated by Malanima, the effect on the outcome of such variations is only marginal.

[6] With quantities 1732-1800 given in *Historisk statistik 3* , current values are calculated with prices from Jörberg (1972) and linked to the series in SHNA from 1800.

[7] Heckscher (1935-1949) gives the percentage share of different items. Using data from metal industry, these shares are converted into values in current prices and so the exports and imports of agricultural products are added to/deducted from the estimates of annual consumption to reach annual production. Furthermore, between the benchmarks, export and import figures are interpolated. See also Heckscher and Boëthius 1938.

and interpolated figures between the benchmarks mentioned together with consumption data, agricultural production 1560-1800 is estimated.

One can notice that trends in foreign trade are similar to trends in the estimated consumption. A small positive trade balance in the mid-sixteenth century was turned into a negative balance in the following decades and at the turn of the century 1600, while a substantial trade surplus arose during the first decades of the seventeenth century. However, in the second half of this century, and through the eighteenth century, the balance was negative again, with a culmination of imports around the turn of the century 1800. In the first decades of the nineteenth century, trends shifted once more with a new export surplus in the 1840s and 1850s. Thus trade data give support to the consumption estimate from the demand approach and reinforces the long-term trends, when going from consumption to production.

Manufacturing industry and handicrafts

No complete production figures for the manufacturing industry exist but there is information which can be combined in an estimation of a series that represents the whole industry.

The metal industry: Export and production figures for iron for some years are found in Heckscher (1935-1949). Additional figures were provided by Kumlien (1953), Hammarström (1956), Hildebrand (1957) and some other scholars. These data are not complete over time and no attempts were made to put them together in long time series until such series were constructed and presented in Olsson (2007), and Krantz and Olsson (forthcoming). An estimate of a series of production of *osmund*, an old form of iron, and bar iron was made on the basis of available data. It is mainly based on export figures which are more frequent than output data. From 1732, annual figures are given in the official statistics, *Historisk statistik för Sverige*, 3, and these were utilized. First an annual export series was estimated for the whole period. Then, with the help of point estimates of total output for some years, export shares were arrived at. These were interpolated and on this basis output figures were computed. Osmund iron was exported until the early seventeenth century and after that only bar iron. For a short period both kinds existed and they were weighted to form one series.

For copper production a quantity series from 1540 onwards was compiled by Lindroth (1955) in a comprehensive work on Swedish copper mining and manufacturing. Some lacunas in the series were filled by interpolation.

The iron and copper series were combined by a rough weighting to form a volume series which can be assumed to represent the output of the Swedish metal industry. The weighting was made on the basis of the price ratio between iron and copper. In the 1580s the copper price, according to Heckscher, was six times higher than the iron price. Of course this ratio varied over the two centuries up to 1800. However in the 1820s, according to Jörberg (1972), it was again around 6:1 and this ratio was used for the whole period.

Data in current prices can be calculated by using price data. For bar iron they were taken from Söderberg (2003), for the period 1560-1620 which were linked to data from Posthumus (1943) for the period 1620-1650, Hansson (2006), 1650-1732, and Jörberg (1972) 1732-1800. For copper, data from Posthumus (1943) could be used. For 1540-1624, due to lack of data, it was assumed that the price performance was the same as for bar iron.

The food industry: Data for this industry do not exist and, consequently, approximations had to be made. Inputs emanate mainly from agriculture and therefore it was assumed that output in the food industry followed that of agriculture. Data in current prices could be constructed by reflating with an index series of rye prices. This series was preferred instead of a cost-of-living index which contains items that do not relate to the food industry.

Total industry: A combined series of iron and copper production is taken as representing the entire metal industry, which, not least due to its exports, was a very important sub-industry. So was the food industry as well with its relatively large output. In 1800 their respective shares of the whole industry were 28.7 and 34.1 percent and these shares were used when weighting them together. Thereby a series assumed to represent the whole industry could be calculated.

Building

For the nineteenth and twentieth century, the building industry is problematic when constructing historical national accounts due to lack of information on which to base the estimates and these problems become even more accentuated for earlier time periods. Therefore, an indirect estimation technique had to be employed.

Manufacturing industry and handicrafts as well as agriculture had a strong influence on building activities via investments. Therefore, it was assumed that the series for industrial and agricultural output constitute indicators of building. Furthermore, building of dwellings is

important and for this sub-industry population figures are supposed to be an indicator.[8] Hence, the average of indices (1800=1) for agricultural and industrial production and population are supposed to show the performance of the building sector and this indicator was linked to the production value of building 1800 in Krantz and Schön (2007).

Transport

Very few data on which to base an estimate on transport production for this period are available. Therefore it was assumed that this sector's output is represented by an index series (1800=1) constructed from 50 percent of the volume of material production (industry and agriculture) and 50 percent from the volume of domestic trade (as an indicator of transport intensity also in passenger transport). The resulting series was linked to the value for 1800 according to Krantz and Schön (2007).

Private services

Domestic trade etc: All commercial services are assumed to be included here which means not only trade but also banking, insurance and hotels.

1624-1810: In this period domestic custom duties had to be paid within the Swedish realm. For all goods brought to market places or to towns to be sold, the sellers had to pay such duties (1/32 of the merchandise value). The control of the trade was rather strict which resulted in comprehensive records of the customs revenues. Most of these records are available in archives and have been used to study various aspects of domestic trade, mostly local. However, no systematic compilation of the whole data set was made until Andersson Palm (1992) carefully processed the data and presented series for the whole country.

One problem with these data is that they comprise the entire Swedish realm which means that Finland is included. However, the Finnish share of the total was roughly the same during the whole period, around ten per cent. Therefore, this is not troublesome when a recalculation is made to an index series. Another issue is that some major Danish-Norwegian regions were incorporated with Sweden in the mid seventeenth century. However, for the period prior to this an estimate was made for these regions. (Andersson Palm (1992), p 228)

[8] Population figures from Andersson Palm (2001) and SCB via *Historia.se* which is administered by Rodney Edvinsson.

Deflation of domestic trade is a general problem when constructing historical national accounts and it has been tackled in various ways. One is to use employment figures in volume calculations, which means that constant labour productivity or a specified productivity change is assumed. Here, this is impossible since employment figures are missing. Another way is to use a consumer price index as deflator. Andersson Palm constructed a volume series in another way. He eliminated the changes in tariffs over time by applying one tariff, that of 1655, to the whole period. Data are missing for some years and, therefore, in the present work interpolations were made.

1560-1624: Prior to 1624 no data of the same quality as in the following period exist for domestic trade. Therefore it was assumed that the trade followed the changes in the urban population. (*Stads- och kommunhistoriska* (2009)) To arrive at figures in current prices, the data could be reflated with a cost-of-living index.

Personal services: This item includes all personal services specified in the historical national accounts after 1800. (Krantz and Schön (2007)) However, due to lack of data it is assumed that the changes in constant prices follow those of urban population. To arrive at data in current prices the cost-of-living index could be employed.

Public Services

Central government: 1722-1800: The same sub-sectors as in Krantz (1986) were distinguished. They are civil services, the court, and the armed forces. Furthermore, the source used by Krantz for the period 1800-1809 was employed here, i.e. Åmark (1961). Data for civil services were taken from table 21, p 364ff, for the court from table 17, p 321ff, and for the armed forces from table 18, p 342ff. As in Krantz, wages constitute value added and to arrive at these wages, a selection of the items given in each of Åmarks tables had to be made. The selection was the same as in Krantz (1986, p 15f)). In Åmark (1961, table 18) an item is given for armament and ordering costs ("*rustnings- och utredningsstater*") during the war periods 1757-62 and 1789-91. It is impossible to discern exactly how much of this that constituted wages which are the relevant item here. Therefore it was assumed that this share was 50 per cent.

In Krantz (1986) one item was added which has to do with the armed forces. Sweden had a military organization called *indelningsverket* which meant a standing army supported in kind by the peasants and, thus, the costs were not visible in the state finances. Krantz estimated these costs for the nineteenth century up to the cancellation of the organization in the early twentieth century (p 17ff). For the period up to 1800 a simplified procedure was chosen. The

ratio between the total costs for the armed forces inclusive of the standing army and the costs given by Åmark (1961) for the period 1800-1809 was applied to the series for the period before 1800.

As remuneration constitutes value added, the series should be deflated with a series pertaining to wages. However, to construct separate series for civil and military personnel had required too much work and therefore, it was decided to use a wage series for workers in Stockholm provided by Söderberg (2009). The Stockholm series is preferred since much, perhaps most, of the work in the public sector was performed in Stockholm.

1560-1722: No data collection of the same kind as Åmark's exists for this period and it was considered as too laborious to penetrate the archival material concerning the state finances to arrive at relevant data. Therefore it was assumed that public service production followed population changes as estimated by Andersson Palm (2001). Implicitly, the costs concerning *indelningsverket* are thereby included for the whole period. This organization was established in a more formal way in the late seventeenth century, but there were more or less similar arrangements also earlier and, thus, the estimation procedure is the same for the whole period.

For the period after 1722 the data during wars, namely 1741-43, 1757-1762, and 1788-1790 are considerably higher than in the surrounding years. It is probable that the war periods before 1722 should also be distinguished by higher values than periods of peace. War periods prior to 1722 were as follows, 1563-1570, 1590-95, 1611-13, 1628-1645, 1655-1666,1674-79, and 1700-1721. However, there were more phases that could be defined as war periods but the intensity of the warfare differed a lot and therefore, a selection was made so that the estimate comprises only the more intensive wars. (Sundberg (1998)) In the war periods in the eighteenth century public production was roughly double that of the surrounding years. Therefore, it was assumed that public production during the intensive war phases prior to 1722 should be doubled as well and, thus, a series for central government services was arrived at.

To reflate the data Söderberg's wages series could be used and, consequently, this series could be considered as a deflator.

Local government: Sources for local government are extremely time-consuming to deal with and sometimes missing. Therefore a simplified procedure was opted for. The ratio between local government and central government production 1800/1810 was assumed to be valid also for the period prior to 1800.

Services of dwellings

This is a special sector since it comprises the return to or output of the dwellings capital. (Krantz (1991), p 151) For more recent periods estimates were made on the basis of rents or imputed rents. This, however, requires data on the stock of dwellings and such knowledge is lacking for earlier periods. Therefore it was assumed that the sector's share of GDP for the period 1800-1810 was valid also for the time prior to 1800.

Revision and extension of SHNA 1800-2010.

The revised version of the Swedish Historical National Accounts (SHNA) is still based upon the fundamental constructions of gross production in branches and sectors, its distribution on uses and value added as well as on relevant price series that were presented in the SHNA series of volume 1-9. However, in relation to the aggregation into GDP performed in Krantz and Schön (2007), one correction and two revisions are made. The correction concerns services of dwellings for the period 1800-1910, while there is a minor revision of agriculture 1800-1950. The other revision is of the deflation methodology, for the whole period 1800-2000. Despite being of a more technical nature, the change in deflation methodology has a major impact upon levels in the long run.

Correction of services of dwellings 1800-1910

In Krantz and Schön (2007), the sector services of dwellings had a much too low level of value added in the early nineteenth century in relation to the series in the sector volume by Krantz (1991). This was due to a mistake in the input-output scheme in the aggregation of GDP. This is corrected in this version, with a value added of the sector that follows the calculation of gross and net output in Krantz (1991).

The new series raises the level of the sector value added substantially in the first half of the nineteenth century, while the revision effect decreases during the second half of the century

down to an insignificant level by 1910. In relation to GDP, the correction means an increase in current prices by about 12 percent in 1800. By the 1860s, the effect upon GDP is down to an increase of about 5 percent, which falls consecutively until it disappears by 1910.

Revision of agriculture 1800-1950

In Schön (1995), the net output of the sector was estimated, following the procedure both in the pioneering works of National Income of Sweden (Lindahl et.al. 1937) and in the official investigations into agriculture from the late 1930s, preceding modern national accounts. The net output perspective means that all intermediate inputs produced and consumed within the sector, such as fodder for the livestock, were cancelled out. Suffice it to say here, that in Schön (1995) the level of agricultural output was raised relative to prior historical national accounts in two steps, firstly in the period 1861-1910 based on new consumption estimates; secondly, for the whole period 1861-1938 when linked to the output level in the official investigations into the agricultural sector. From the resulting level in 1861, a series of human consumption was constructed for 1800-1861 with an assumption of long term constant per capita consumption but with annual fluctuations estimated in a model of wages and prices. Net output was then obtained by consumption plus exports minus imports. The net output of the subsidiary branch forestry was of course estimated from other ends (mainly inputs to industry and construction as well as to consumption and exports).

The output of agriculture went mainly into food industries for further processing or directly into human consumption. However, a part of the agricultural production went to input into other sectors that did not end as human consumption of food. Primarily it was fodder to horses in the transport sector that played a large role during the nineteenth century and still had a significant share until about the 1950s. These inputs from agriculture into transportation were estimated in Krantz and Schön (2007) but were not added to the net output of agriculture. As a consequence, the input into transportation resulted in a deduction from human consumption. This is corrected in this revision.

Furthermore, agriculture also provided input other than for human food into industry and consumption. It was mainly wool and flax for textiles and skins for leather industries. The total consumption of domestically produced textile fibers is estimated from Schön (1979) for the period up to the 1870s and then assumed to fall gradually until 1950. The output of other

produce such as skins or hides is estimated in a similar way from the input into the relevant industries.

Taken together, these additions to agriculture by output other than for human consumption of food raise the level of the sector value added in the beginning of the nineteenth century by about 15 percent. The effect on GDP is an increase by about 6 percent. Around 1910 the sector increase has fallen to 5 percent while the addition to GDP is down to 1 percent. By 1950 the effect is insignificant at both levels.

New deflators 1800-2000 – from double to single and from Paasche to Fischer

The calculation of GDP in constant prices in Krantz and Schön (2007) followed a very specific procedure that is not common in historical accounts internationally, partly due to differences in the supply of data, partly due to differences in analytical traditions. The procedure was also different to those that Krantz and Schön had performed in earlier aggregations (as in Krantz (1997) or in Schön 2000, (transl. 2012))

Firstly, a double deflation with annually chained indices was carried through for the whole period 1800-2000. In Swedish historical accounts, that has been done only in Krantz and Schön (2007). Double deflation means that the input and the output side of each sector is deflated separately into constant prices; with value added in constant prices appearing as the difference between the two. This is the recommended practice in modern national accounts. In historical accounts, however, single deflation is the usual practice. In single deflation, value added is calculated each year with current prices on both the input and output side, and then the value added is deflated with a set of relevant price indexes. Single deflation puts a lower demand on the supply of details and data, which is of course the primary reason why it is preferred in historical accounts.

With a full set of input/output data as well as of price indexes, double deflation gives a more direct estimate of value added in constant prices and a number of analytical possibilities. Above all it separates the impact from price developments of inputs from price developments originating in the value adding process in the sector as such. Such analytical possibilities were utilized in a following-up paper by Lobell et.al. (2008).

However, particularly in the short run and in periods of heavy price volatility, double deflation may introduce spurious fluctuations if there is a fixed input structure based upon no

or very limited knowledge about substitution possibilities. Even if the input/output structure is comparatively detailed as in Swedish Historical National Accounts, it falls short of being flexible to different situations. For this reason and for the sake of conformity in international comparisons, single deflation in these 2012 revised SHNA series was used.

Secondly, and for the long term analysis much more importantly, a shift was made from Paasche deflators to Fischer deflators. This is a shift of principles in deflation that runs against a long analytical tradition at the Lund Department of Economic History but it is once again motivated by the importance of international comparability of the series.

The analytical question involved in deflation technique is the following. When constructing deflators, either a fixed set of prices or a fixed set of quantities can be used. The question asked is either "what are the quantities of tomorrow worth in the prices of today" or "what are the quantities of today worth in the prices of tomorrow". If there are changes between today and tomorrow in the price-and-quantity structure of a branch, a sector or an economy, these two procedures will give different results, which constitute the well-known index problem. It is impossible to say whether one is truer than the other, only that they provide different perspectives on historical change. Shifting between the two perspectives over a period – which means shifting between a Paasche deflator and a Laspeyre deflator over the same period – will give a compound measure of the changes in the price-and-quantity structure. In both cases as well, there is a clear basis for the construction of deflators.

When commodities with a relative price fall also rise in relative quantity, the Paasche deflator will fall relative to the Laspeyre deflator. Correspondingly, in this case the volumes will rise with the Paasche deflator relative to volumes with the Laspeyre deflator; hence Paasche deflator will give higher growth rates. This is a very common case in processes of industrialization and economic growth but the opposite case is also prevalent. The two alternatives have been analyzed as supply-driven and demand-driven processes respectively. (Schön 1979, Ljungberg 1990).

For analytical reasons, the Paasche deflator was the preferred method in the SHNA. Partly it was due to the directness of the method in the construction of constant price volumes which is preferable as long as there are detailed data of quantities over all years. Partly it was considered as based on a more relevant forward-looking question over an investment cycle

since plans will directly affect the quantities produced while prices will be given by the market.

However, in the revised SHNA 2012, we adapt the deflation technique to common international practices. That means that a mixture of the Paasche and Laspeyre perspectives in the form of a Fischer index is applied. The Fischer index is the geometric average of Paasche and Laspeyre – with no question asked.

New Fischer deflators are constructed at both sector and total economy levels. Furthermore, all deflators are chained annually for the period 1800-1950, which is no change, however, from Krantz and Schön (2007).

For the period 1950-2000 the construction of GDP volumes follows a new principle as well. In Krantz and Schön (2007), the sector volumes of the official National Accounts were linked to the levels of the sectors in the SHNA 1950 and then aggregated into a GDP series, with fixed price base periods, i.e. with Paasche deflation periods. In these new SHNA, however, the aggregate GDP series in the official accounts is linked to the aggregate GDP in SHNA in 1950, while the sector series 1950-2000 in their turn are adjusted to balance the official growth rate of the GDP.

The deflation technique has a clear effect upon the long term performance of the GDP series. In figure 2, the relation between the new and the old deflators is illustrated for the total economy 1800-2000. Up until 1870, the Fischer deflator rose by about 10 percent in relation to the old Paasche deflator, affecting volume growth in the reverse way. From 1870 to 1950, the level in the relation was rather constant but fluctuations were considerable. From the mid-1950s to the 1980s, the new deflator from the official National Accounts rose quite strongly with another 10 percent in relation to the old deflator – the rise was particularly strong in the 1960s.

The new deflation principle leads, as expected, to a lower rate of economic growth. On an annual basis in the long run, the effect is rather small - less than minus 0.1 percent annually between 1800 and 2000. For shorter periods with strong changes in the price-and-quantity structure the effect on growth rates may be much more pronounced. Thus, between 1950 and 1970 the effect is a lowering of annual growth rates with 0.4 percent.

When comparisons are made between levels of benchmarks far apart, however, the effect of even small changes in annual growth rates becomes considerable. Thus, if one is to express the 1800 income per capita in the price level of 1910/12, the 1800 level is increased by 10 percent due to the new deflation technique. If the same income of 1800 were to be expressed in the price level of 1990, which is common in international comparisons, the level in 1800 rises by slightly more than 20 percent due to the shift of deflation technique from Paasche to Fischer.

On sector level, the effect of deflation technique differs both in level and character, as is shown by the analysis of the period 1800-1950 (figure 3 and 4). The most pronounced effects are in transport and communication. This is clearly a sector with very strong tensions between old and new techniques. The shift away from horse-drawn wagons and mail diligences to modern means occurs primarily in two steps, firstly in the 1860s and 1870s with the advent of railways and telegraphs and, secondly, from World War I and in the 1920s with lorries and telephones. Furthermore, the effect of going from double to single deflation is particularly pronounced in this sector with the very heavy fluctuations in double deflated value added during the two world war periods, due to sharp price increases for input such as fuel.

The other sector with clear structural effects is manufacturing industry. The upward shift in the Fischer index is clear from the 1890s to 1950, with sharp increases in the periods 1905/10, 1920/25 and 1945/50, indicating pronounced changes in the price-and-quantity structures of a supply-driven character.

In agriculture as well as in private and public services the effects are weaker but go in the same direction - the Fischer deflators rise relative to the Paasche deflators. In the two service sectors, development starts already in the 1830s and is very even over the whole period, while in agriculture the relationship between the deflators fluctuates strongly from World War I. This might also be an effect, as in transport and communication, of going from double to single deflation in periods of heavy price movements, particularly on the input side.

Figure 2. The relation between the GDP Fischer deflator (with single deflation) and the GDP Paasche deflator (with double deflation), 1800-2000. Index 1800=1.

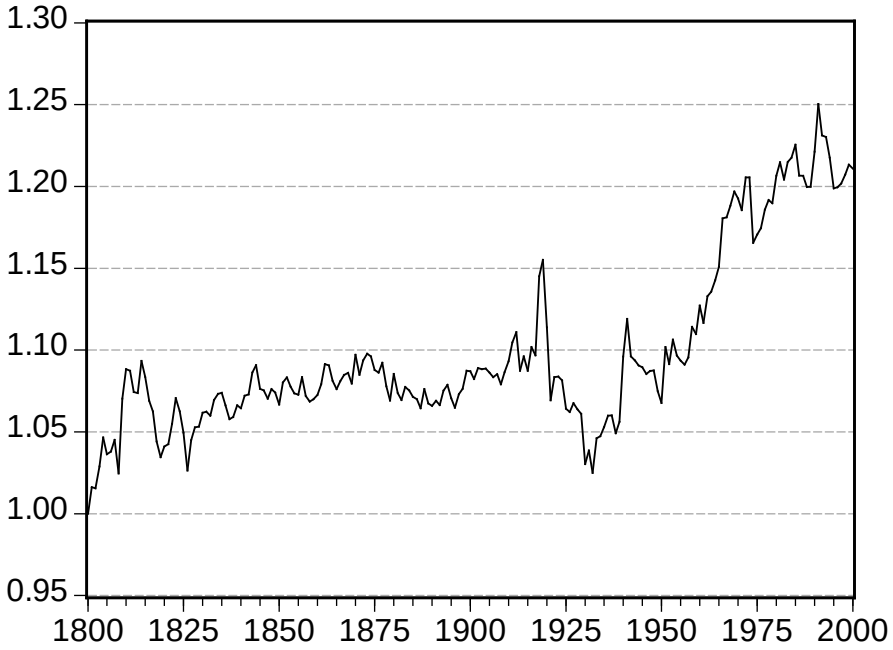


Figure 3. The relation between Fischer deflators (with single deflation) and Paasche deflators (with double deflation) in industry and agriculture, 1800-1950. Index 1800=1.

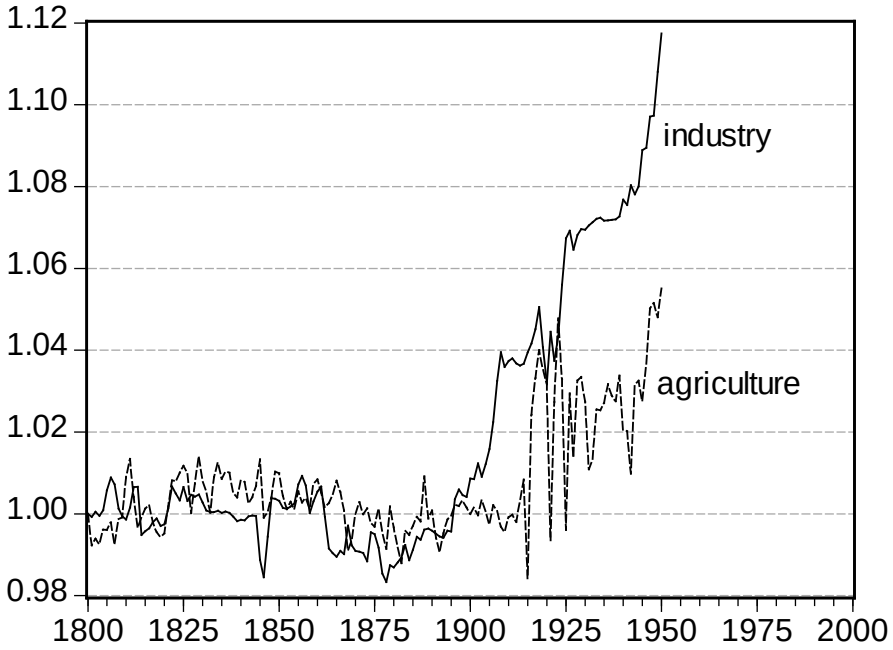
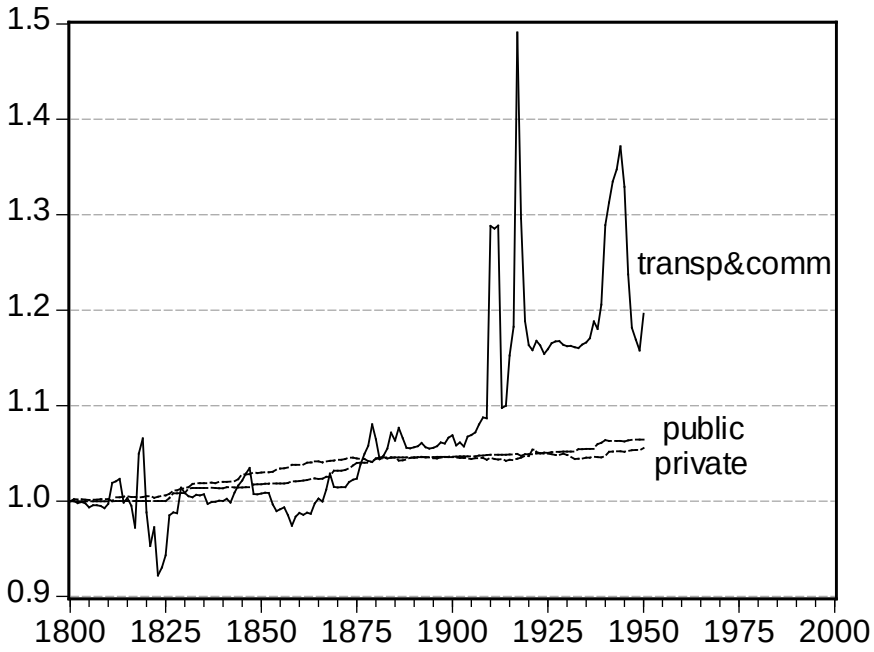


Figure 4. The relation between Fischer deflators (with single deflation) and Paasche deflators (with double deflation) in transport and communication, private services and public services, 1800-1950. Index 1800=1.



Summary of revisions 1800-2000

The correction and revision of the sector series has its strongest impact upon levels in the early nineteenth century. Thus, in 1800 GDP in current prices increases by nearly 18 percent in relation to Krantz and Schön (2007). The effect diminishes over the century to only a 1 percent increase 1910 and has disappeared by 1950. Taken together with the shift from Paasche to Fischer deflators, however, the effect increases. Thus, when expressed in the price level of 1910/12, the level in 1800 increases by about 30 percent. In the price level of 1990, the combined effect is even stronger, namely a rise in the 1800 level by roughly 45 percent in relation to Krantz and Schön (2007).

Unpaid domestic work

In *System of National Accounts* (SNA)[9] it is recommended that production performed within the production boundary[10] should be included in the ordinary national accounts and that satellite accounts should be used for various fields outside this boundary. In SNA 2008 satellite accounts are for instance suggested for environmental accounting, health services, and unpaid household activities. The latter comprise unpaid household services, treatment of consumer durables, and volunteer labour in general. The first category, that is production of household services for own consumption, can comprise in principle all work for own use performed in the household. In the second category, consumer durables are treated as a form of fixed capital formation by households and not simply as final consumption expenditure[11] and the third category has to do with unpaid voluntary work, e.g. for charity.

In the present Swedish historical national accounts, production of unpaid household services is estimated but not included in the ordinary accounts. This means that it is a form of satellite account comprising production that for certain purposes could be added to the production within the production boundary. However, it is not all household work that is contained. Instead it is the production done by members of households, mostly housewives but also daughters (in principle also husbands and sons), working a full "normal" working day or part of it within the household. The idea is as follows. The work behind the production reported in the ordinary national accounts, i.e. within the production boundary, is performed by most of the work force in the economy in question (for instance all persons 15-69 years old). In this capacity they are employed in paid work during the "normal" working day (which of course varies over time; in the long run it has been shortened). However, part of the total work force is doing unpaid household work and this is not included in the national accounts and GDP within the production boundary. Thus, the production by this category could in principle be separated from the household work done by almost all the work force outside the "normal"

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[9] *System of National Accounts 1993*, Commission of the European Communities – Eurostat, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank: Brussels/Luxembourg, New York, Paris, Washington, D.C. 1993, and *System of National Accounts 2008*, European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank: New York 2009

[10] For a definition, see SNA 2008, 6.27. Production of goods and services included in the historical national accounts for Sweden roughly corresponds to this definition. However, the organization of these accounts is adapted to the historical context, meaning that it is more simple than the one for contemporary accounts.

[11] This was also treated in the 1920s and 30s e.g. by Lindahl et al (1937).

working day, that is in the evenings after the paid work or in the mornings before this work or in other free time, Saturdays and holidays, as well as by people not belonging to this work force. This means that if the standard working day is, say, eight hours, the unpaid household members´ work during this working day is estimated in the satellite account. Thereby, it is possible to analyze structural changes, for instance unpaid work in relation to the total. [12]

The estimation of the unpaid household work from 1800 onwards was made in principally the same way as that of paid work, that is the number of people in the group times wages.[13] The number of home working women, i.e. housewives or daughters, was calculated annually on the basis of various sources, mainly censuses. Thereafter, wages were determined for the respective group. Thereby the total remuneration, also considered as value added, could be calculated. A difference was made between home working women in agriculture and those in other strata. On the basis of various studies it was assumed that the women in agriculture worked roughly one third of their time directly in agricultural production, for instance with harvests and animals. Accordingly, two thirds of their time was devoted to household work, for instance cooking, churning, baking, brewing, curdling, tidying, baby care, washing, weaving and sewing, and this production was included in the calculation of unpaid domestic work. This means that production which, in principle, should belong to other sectors and branches, for instance in food and textile industries or in restaurants, is included here. However, allocation to these has not been made partly because of profound uncertainty about their magnitude in unpaid domestic work, partly because the same principle applies also to paid domestic work which is a branch within private services.

Unpaid domestic production as defined here has had a slower growth than GDP during the whole period since 1800. This means a fundamental structural change in the economy. The share of GDP (per cent) in current prices including unpaid work changed as follows:

1800/1810	29	1951/1960	10
1851/1860	24	2001/2010	1
1901/1910	17		

As is obvious in the table, unpaid domestic work has become insignificant in the early twenty-first century, but it was important in earlier centuries. Internationally, it is however uncertain whether this item, or parts of it, is included or not in the accounts. For international

[12] See e.g. Schön and Krantz (2012)
[13] Krantz (1987).

comparisons it would be a great advantage with a common practice for the organization of the historical national accounts.

Appendix A. GDP per capita 1560-2010. Constant prices, 1910/12 price level.

1560	232	**1601**	206	**1642**	253	**1683**	276	**1724**	233
1561	216	**1602**	178	**1643**	261	**1684**	247	**1725**	230
1562	217	**1603**	181	**1644**	273	**1685**	268	**1726**	214
1563	214	**1604**	198	**1645**	270	**1686**	288	**1727**	230
1564	233	**1605**	191	**1646**	263	**1687**	278	**1728**	266
1565	225	**1606**	195	**1647**	269	**1688**	278	**1729**	274
1566	262	**1607**	208	**1648**	252	**1689**	289	**1730**	260
1567	266	**1608**	204	**1649**	235	**1690**	288	**1731**	255
1568	259	**1609**	217	**1650**	225	**1691**	298	**1732**	251
1569	263	**1610**	216	**1651**	223	**1692**	293	**1733**	244
1570	241	**1611**	211	**1652**	233	**1693**	260	**1734**	249
1571	215	**1612**	237	**1653**	288	**1694**	267	**1735**	240
1572	161	**1613**	221	**1654**	300	**1695**	261	**1736**	237
1573	187	**1614**	210	**1655**	314	**1696**	257	**1737**	254
1574	202	**1615**	218	**1656**	283	**1697**	237	**1738**	258
1575	222	**1616**	213	**1657**	265	**1698**	241	**1739**	230
1576	231	**1617**	209	**1658**	279	**1699**	255	**1740**	218
1577	219	**1618**	245	**1659**	265	**1700**	312	**1741**	212
1578	217	**1619**	219	**1660**	260	**1701**	319	**1742**	216
1579	219	**1620**	236	**1661**	248	**1702**	319	**1743**	214
1580	214	**1621**	271	**1662**	263	**1703**	299	**1744**	237
1581	197	**1622**	249	**1663**	253	**1704**	299	**1745**	214
1582	230	**1623**	216	**1664**	256	**1705**	294	**1746**	208
1583	230	**1624**	215	**1665**	263	**1706**	295	**1747**	212
1584	226	**1625**	214	**1666**	279	**1707**	291	**1748**	204
1585	231	**1626**	230	**1667**	281	**1708**	276	**1749**	213
1586	223	**1627**	226	**1668**	262	**1709**	287	**1750**	227
1587	212	**1628**	226	**1669**	273	**1710**	296	**1751**	219
1588	204	**1629**	218	**1670**	277	**1711**	310	**1752**	217
1589	195	**1630**	211	**1671**	270	**1712**	308	**1753**	222
1590	217	**1631**	232	**1672**	254	**1713**	313	**1754**	224
1591	223	**1632**	231	**1673**	251	**1714**	309	**1755**	213
1592	191	**1633**	236	**1674**	247	**1715**	305	**1756**	204
1593	215	**1634**	229	**1675**	274	**1716**	274	**1757**	200
1594	205	**1635**	248	**1676**	286	**1717**	252	**1758**	239
1595	234	**1636**	268	**1677**	273	**1718**	228	**1759**	234
1596	213	**1637**	272	**1678**	275	**1719**	265	**1760**	250
1597	173	**1638**	259	**1679**	278	**1720**	299	**1761**	238
1598	162	**1639**	257	**1680**	282	**1721**	278	**1762**	214
1599	182	**1640**	261	**1681**	280	**1722**	254	**1763**	234
1600	178	**1641**	246	**1682**	282	**1723**	232	**1764**	212

1765	221	**1806**	206	**1847**	233	**1888**	367	**1929**	947
1766	230	**1807**	198	**1848**	236	**1889**	373	**1930**	988
1767	233	**1808**	187	**1849**	244	**1890**	381	**1931**	963
1768	220	**1809**	179	**1850**	251	**1891**	402	**1932**	925
1769	218	**1810**	193	**1851**	246	**1892**	397	**1933**	940
1770	215	**1811**	207	**1852**	241	**1893**	407	**1934**	1001
1771	200	**1812**	194	**1853**	244	**1894**	408	**1935**	1047
1772	191	**1813**	198	**1854**	246	**1895**	428	**1936**	1082
1773	220	**1814**	199	**1855**	262	**1896**	439	**1937**	1109
1774	234	**1815**	206	**1856**	259	**1897**	457	**1938**	1143
1775	226	**1816**	210	**1857**	266	**1898**	472	**1939**	1224
1776	232	**1817**	204	**1858**	269	**1899**	484	**1940**	1132
1777	230	**1818**	206	**1859**	279	**1900**	486	**1941**	1099
1778	234	**1819**	204	**1860**	284	**1901**	498	**1942**	1105
1779	239	**1820**	207	**1861**	273	**1902**	492	**1943**	1138
1780	235	**1821**	213	**1862**	264	**1903**	518	**1944**	1168
1781	220	**1822**	214	**1863**	276	**1904**	526	**1945**	1200
1782	228	**1823**	212	**1864**	281	**1905**	519	**1946**	1316
1783	217	**1824**	218	**1865**	286	**1906**	560	**1947**	1420
1784	229	**1825**	223	**1866**	281	**1907**	598	**1948**	1437
1785	224	**1826**	224	**1867**	285	**1908**	579	**1949**	1481
1786	224	**1827**	213	**1868**	260	**1909**	582	**1950**	1571
1787	231	**1828**	217	**1869**	278	**1910**	593	**1951**	1558
1788	222	**1829**	220	**1870**	314	**1911**	608	**1952**	1588
1789	245	**1830**	215	**1871**	325	**1912**	631	**1953**	1598
1790	242	**1831**	219	**1872**	330	**1913**	670	**1954**	1685
1791	250	**1832**	213	**1873**	334	**1914**	684	**1955**	1719
1792	236	**1833**	220	**1874**	347	**1915**	708	**1956**	1778
1793	218	**1834**	223	**1875**	334	**1916**	747	**1957**	1818
1794	220	**1835**	222	**1876**	356	**1917**	702	**1958**	1826
1795	222	**1836**	229	**1877**	348	**1918**	649	**1959**	1898
1796	235	**1837**	227	**1878**	335	**1919**	659	**1960**	1961
1797	218	**1838**	224	**1879**	354	**1920**	700	**1961**	2076
1798	209	**1839**	226	**1880**	345	**1921**	664	**1962**	2153
1799	207	**1840**	229	**1881**	358	**1922**	712	**1963**	2232
1800	200	**1841**	227	**1882**	344	**1923**	735	**1964**	2386
1801	198	**1842**	216	**1883**	370	**1924**	785	**1965**	2476
1802	207	**1843**	221	**1884**	362	**1925**	803	**1966**	2485
1803	205	**1844**	230	**1885**	369	**1926**	842	**1967**	2546
1804	192	**1845**	235	**1886**	373	**1927**	869	**1968**	2634
1805	204	**1846**	227	**1887**	361	**1928**	894	**1969**	2731

1970	2843	**1978**	3186	**1986**	3737	**1994**	3835	**2002**	4806
1971	2871	**1979**	3319	**1987**	3832	**1995**	4009	**2003**	4891
1972	2874	**1980**	3342	**1988**	3921	**1996**	4064	**2004**	5082
1973	2992	**1981**	3323	**1989**	3993	**1997**	4166	**2005**	5222
1974	3225	**1982**	3394	**1990**	3958	**1998**	4295	**2006**	5400
1975	3263	**1983**	3441	**1991**	3796	**1999**	4455	**2007**	5534
1976	3265	**1984**	3579	**1992**	3794	**2000**	4674	**2008**	5364
1977	3160	**1985**	3618	**1993**	3705	**2001**	4718	**2009**	5010
								2010	5345

Appendix B. Price indices for agricultural and industrial goods and wage index in the estimation of agricultural consumption 1560-1860. 1700=100.

	Agricult.	Industry	Wages		Agricult.	Indust	Wages
1560	10.1	50.1	7.5	**1600**	30.4	60.2	12.5
1561	13.7	50.1	8.7	**1601**	19.2	60.2	11.2
1562	13.7	50.1	8.7	**1602**	31.4	60.2	12.5
1563	19.2	60.2	11.0	**1603**	31.4	70.2	12.5
1564	18.5	62.7	13.3	**1604**	23.3	45.1	12.5
1565	20.5	65.2	13.3	**1605**	26.3	50.1	12.5
1566	19.7	69.0	20.0	**1606**	25.8	60.2	12.5
1567	18.2	53.7	20.0	**1607**	22.3	70.2	12.5
1568	22.3	100.3	20.0	**1608**	23.3	80.2	12.5
1569	23.0	90.3	22.5	**1609**	24.3	110.3	15.0
1570	30.4	86.5	25.0	**1610**	25.3	105.3	15.0
1571	40.5	100.3	27.5	**1611**	30.4	80.2	15.0
1572	81.0	100.3	27.5	**1612**	22.3	80.2	15.0
1573	74.9	338.5	30.0	**1613**	28.4	90.3	15.0
1574	87.1	486.4	40.0	**1614**	29.4	90.3	15.6
1575	87.1	451.3	53.3	**1615**	27.8	90.3	16.2
1576	14.6	69.7	10.0	**1616**	32.4	90.3	17.5
1577	15.5	50.1	10.0	**1617**	32.4	90.3	17.5
1578	15.9	50.1	10.0	**1618**	23.3	80.2	17.5
1579	16.2	61.2	10.0	**1619**	33.4	100.3	20.0
1580	16.6	50.1	10.0	**1620**	28.4	90.3	20.0
1581	20.3	50.1	10.0	**1621**	19.4	77.3	20.0
1582	13.2	50.1	10.0	**1622**	23.6	71.5	20.0
1583	13.7	55.2	10.0	**1623**	36.7	67.0	20.0
1584	14.2	51.4	10.0	**1624**	41.0	107.2	20.0
1585	14.2	60.2	10.0	**1625**	42.5	71.5	22.5
1586	15.2	60.2	10.0	**1626**	38.9	89.4	22.5
1587	17.2	60.2	10.0	**1627**	43.5	71.5	25.0
1588	18.2	50.1	10.0	**1628**	62.3	85.8	30.0
1589	20.3	50.1	10.0	**1629**	83.7	100.1	35.0
1590	19.2	50.1	10.0	**1630**	123.5	111.7	45.0
1591	18.2	60.2	10.0	**1631**	105.7	172.0	50.0
1592	16.2	50.1	5.0	**1632**	91.1	178.7	40.0
1593	14.2	45.1	6.9	**1633**	97.2	89.4	40.0
1594	22.3	50.1	10.0	**1634**	108.6	92.7	40.0
1595	18.2	50.1	12.5	**1635**	91.1	72.6	45.0
1596	19.2	60.2	12.5	**1636**	74.9	89.4	45.0
1597	31.9	50.1	12.5	**1637**	80.5	134.1	45.0
1598	38.5	50.1	12.5	**1638**	91.1	107.2	45.0
1599	29.4	60.2	12.5	**1639**	93.5	89.4	45.0

	Agricult.	Industry	Wages		Agricult.	Indust	Wages
1640	104.4	107.7	50.0	**1680**	82.8	85.0	80.0
1641	117.6	134.1	50.0	**1681**	81.6	79.9	80.0
1642	121.7	112.1	60.0	**1682**	83.6	80.0	80.0
1643	105.8	89.4	60.0	**1683**	88.5	79.8	80.0
1644	88.2	111.5	60.0	**1684**	124.0	79.8	80.0
1645	86.1	85.8	60.0	**1685**	91.7	79.9	80.0
1646	76.9	75.1	60.0	**1686**	90.0	80.0	100.0
1647	76.9	85.8	62.5	**1687**	101.8	80.0	100.0
1648	94.0	89.4	60.0	**1688**	102.6	80.0	100.0
1649	120.2	89.4	60.0	**1689**	89.8	79.8	100.0
1650	152.1	78.6	60.0	**1690**	92.3	80.0	100.0
1651	141.5	84.7	56.0	**1691**	80.8	80.0	100.0
1652	129.4	84.7	60.0	**1692**	81.6	63.7	100.0
1653	72.3	89.4	67.2	**1693**	121.2	73.2	100.0
1654	71.0	89.3	80.0	**1694**	118.2	76.4	100.0
1655	72.8	91.6	80.0	**1695**	129.4	80.0	100.0
1656	83.1	96.3	60.0	**1696**	138.1	80.0	100.0
1657	100.8	96.8	60.0	**1697**	175.5	80.0	100.0
1658	80.8	96.8	60.0	**1698**	160.7	79.2	100.0
1659	93.3	96.8	60.0	**1699**	133.8	80.0	100.0
1660	115.1	79.9	60.0	**1700**	100.0	100.0	100.0
1661	121.1	83.8	60.0	**1701**	90.9	90.0	100.0
1662	117.5	80.7	60.0	**1702**	90.6	90.0	100.0
1663	126.3	80.9	60.0	**1703**	112.8	80.0	100.0
1664	121.0	72.6	60.0	**1704**	115.1	84.1	100.0
1665	101.4	60.0	60.0	**1705**	122.3	88.6	100.0
1666	92.9	60.0	70.0	**1706**	119.8	89.4	100.0
1667	95.2	76.9	70.0	**1707**	125.3	80.0	100.0
1668	84.9	60.0	70.0	**1708**	158.4	93.7	100.0
1669	76.7	63.7	70.0	**1709**	125.9	77.1	100.0
1670	72.7	70.0	70.0	**1710**	105.9	75.0	100.0
1671	78.7	75.0	70.0	**1711**	90.6	75.0	100.0
1672	97.7	79.9	70.0	**1712**	97.1	80.0	100.0
1673	105.0	60.0	70.0	**1713**	85.3	75.0	100.0
1674	113.1	67.5	70.0	**1714**	102.1	80.0	120.0
1675	113.1	60.0	70.0	**1715**	105.1	85.1	120.0
1676	105.9	70.0	75.0	**1716**	148.7	80.0	120.0
1677	118.0	80.4	80.0	**1717**	206.9	90.0	120.0
1678	126.1	76.9	80.0	**1718**	302.2	120.0	120.0
1679	118.0	80.2	80.0	**1719**	278.8	140.0	200.0

	Agricult.	Industry	Wages		Agricult.	Industry	Wages
1720	163.2	120.0	160.0	**1760**	295.2	200.7	154.3
1721	156.3	117.8	180.0	**1761**	361.9	234.5	171.4
1722	180.7	120.0	160.0	**1762**	563.6	270.3	205.7
1723	178.4	141.3	120.0	**1763**	589.1	288.1	257.1
1724	171.4	150.0	120.0	**1764**	617.6	297.4	274.3
1725	178.5	146.7	120.0	**1765**	545.8	297.1	274.3
1726	224.0	155.0	120.0	**1766**	456.0	316.3	274.3
1727	185.6	150.0	120.0	**1767**	378.8	242.4	257.1
1728	131.1	150.0	120.0	**1768**	348.1	199.5	205.7
1729	122.8	149.4	120.0	**1769**	344.8	202.2	205.7
1730	135.0	143.2	120.0	**1770**	390.4	225.6	222.9
1731	142.4	120.0	120.0	**1771**	531.3	233.6	222.9
1732	150.3	122.5	120.0	**1772**	558.6	239.3	222.9
1733	166.5	121.8	120.0	**1773**	469.7	252.3	222.9
1734	163.3	121.8	120.0	**1774**	388.1	259.4	222.9
1735	177.3	118.2	120.0	**1775**	483.1	278.2	257.1
1736	187.8	114.5	137.1	**1776**	453.3	294.9	257.1
1737	161.1	117.8	137.1	**1777**	450.1	288.2	257.1
1738	147.8	119.8	137.1	**1778**	474.9	316.3	274.3
1739	173.8	119.8	120.0	**1779**	468.3	319.0	274.3
1740	224.1	121.8	120.0	**1780**	486.3	315.0	274.3
1741	244.1	121.5	120.0	**1781**	549.6	298.3	257.1
1742	208.0	121.2	120.0	**1782**	522.8	292.6	274.3
1743	202.7	121.2	120.0	**1783**	572.3	293.9	274.3
1744	189.5	135.9	120.0	**1784**	483.7	290.6	274.3
1745	218.4	132.6	102.9	**1785**	540.4	295.9	257.1
1746	228.5	134.6	102.9	**1786**	572.1	295.6	257.1
1747	251.5	144.6	120.0	**1787**	520.4	294.3	257.1
1748	283.2	146.6	120.0	**1788**	568.0	304.3	257.1
1749	244.3	151.3	120.0	**1789**	577.6	333.8	257.1
1750	194.1	165.4	120.0	**1790**	567.0	341.7	257.1
1751	213.5	164.7	120.0	**1791**	546.3	347.1	274.3
1752	229.5	158.7	120.0	**1792**	590.9	358.1	291.4
1753	223.1	154.3	137.1	**1793**	633.1	395.9	291.4
1754	233.3	154.3	137.1	**1794**	737.1	438.9	325.7
1755	259.8	156.3	137.1	**1795**	768.9	456.0	342.9
1756	317.0	160.0	137.1	**1796**	708.4	480.8	360.0
1757	362.0	176.1	137.1	**1797**	730.6	501.1	394.3
1758	330.3	201.8	154.3	**1798**	852.9	537.3	411.4
1759	290.1	194.7	154.3	**1799**	1024.3	568.0	445.7
				1800	1280.9	567.0	462.9

Note: Construction and sources. see footnote 4 and text.

Appendix C. Tables in the Data base – www.ekh.lu.se

Table I. GDP and GDP per capita. Factor prices. Constant prices. 1560-2010

Table II. Value added, Sectors and GDP. Factor prices, Mill. SEK, Constant Prices. 1560—1800

Table III. Value added, Main Sectors, and GDP. Factor prices, Mill. SEK, Current and Constant Prices. 1800—2010

Table IV. Unpaid Domestic Services. Mill. SEK, Current and Constant Prices. 1800—2010

Table V. GDP in factor and market prices and Population. Mill. SEK, Current and Constant Prices. 1800—2010

Table VI. GDP by destination in Market Prices. Mill. SEK, Current and Constant Prices. 1800—2010

Table VII. Employment 1850—2010

Table VIII. Agriculture and Ancillaries Production Account 1800—1950. Current Prices

Table IX. Manufacturing Industry and Handicrafts. Production Account 1800—1950. Current Prices

Table X. Building and Construction. Production Account 1800—1950. Current Prices

Table XI. Transport and Communications. Production Account 1800—1950. Current Prices

Table XII. Private Services. Production Account 1800—1950. Current Prices

Table XIII. Public Services. Production Account 1800—1950. Current Prices

Table XIV. Services of Dwellings. Production Account 1800—1950. Current Prices

Table XV. Sector Deflators 1800-1950.

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