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Schön, Lennart; Krantz, Olle

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PO Box 117
221 00 Lund
+46 46-222 00 00

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Lennart Schön and Olle Krantz

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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
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New Swedish Historical National Accounts since the 16th Century in Constant and Current Prices

ABSTRACT

This Working Paper presents and discusses Swedish Historical National Accounts back to 1560 in both current and constant prices. With current prices, this paper provides a major extension of our prior WP 123. It also presents some revisions and additions to earlier data. The main result from the earlier paper of a long secular cycle with troughs around 1600 and 1800 and a peak around 1700 still holds, but there are new aspects on long term development and structural changes from the analysis of both current and constant prices. Thus, the position of agriculture in the late 17th century looks even bleaker in current than in constant prices. The link to the data set is <http://www.ekh.lu.se/en/research/economic-history-data/shna1560-2010>.

JEL Classification: N01;N13;N14

Keywords: historical national accounts; deflating; 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@umu.se

<http://www.geoekhist.umu.se/om-institutionen/eko-hist/>

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New Swedish Historical National Accounts since the 16th Century in Constant and Current prices

Lennart Schön
Department of Economic History
Lund University

Olle Krantz
Department of Geography and Economic History
Umeå University

INTRODUCTION

Historical National Accounts have a long history in Sweden, from the pioneering group of economists in the 1930s with *National Income in Sweden 1861-1930* (Lindahl et.al 1937) up to Krantz and Schön with revised and extended accounts back to 1800, last version in 2012. During recent years, these construction works have taken a new turn following recent European and international interest in really long run economic growth, from medieval times and onwards.

The first initiative in this direction in Sweden was presented by Olle Krantz in 2004. He constructed a benchmark for Swedish GDP in 1571, based upon very exclusive archive materials for that particular year thanks to countrywide taxation, undertaken to finance a considerable ransom that Sweden had to pay for the return of a strategic fortitude. The benchmark indicated that Sweden was at similar levels in terms of GDP per capita at the end of the sixteenth century as around 1800.

This rather surprising result provided a challenge for more concerted efforts to construct comprehensive accounts for the whole period from 1800 back to the late sixteenth century. Annual and sector specific data at constant prices 1560-1800 were presented by Schön and Krantz in EREH and in Lund Papers in Economic History in the autumn of 2012.

The full GDP per capita data supported the earlier result of long run stagnation between the late sixteenth and early nineteenth century. The Swedish experience was in accordance with the continental pattern that Allen (2000) had presented, which contrasted to the growth poles in north-western Europe, around the Channel.

The annual series by Krantz and Schön provided another unexpected result – a long secular cycle in GDP per capita appeared with troughs around 1600 and 1800 and with a peak around 1700. The economic expansion during the seventeenth century went counter to most Swedish historians who saw the seventeenth century as a bleak, dismal century in economic

terms, despite the Swedish military expansion around the Baltic. The imperial Swedish power was considered to be based upon increased oppression of the peasants from a mightier state administration and expanding nobility. In agriculture, conditions deteriorated. This view was recently expressed by Myrdal (2011) in his survey of Swedish agriculture. Sixteenth century expansion – an opinion early expressed by Eli Heckscher – was followed by seventeenth century stagnation and hardships for the masses, according to Myrdal.

Our estimate of GDP, however, put forward a different view of the macro economic development. Stagnation and even retrogression in agriculture was counteracted by expansion in other sectors of the economy – growth was the effect of structural changes that would have passed unnoticed without the systematic construction of Historical National Accounts.

A data set containing the historical national accounts for the entire period 1560-2010 is found online: <http://www.ekh.lu.se/en/research/economic-history-data/shna1560-2010>. See also appendix. 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.

MATERIAL FOR CONSTRUCTION 1560-1800

The material for the annual series was very different from the rich taxation material for the 1571 benchmark. For most areas and for most of the period, statistical information was scarce and in some cases of poor quality. Therefore, a number of other sources and methods had to be used.

Population data. Before the start in 1749 of the very minute Swedish demographic statistics, estimates made by historian Lennart Andersson Palm for the whole period were used. These population data have been considered uncertain and are revised in the present paper (see further below).

Prices and wages. Series of prices, wages and consumer price index were important sources, particularly for the agricultural sector. Agricultural consumption was estimated through the demand approach, which in our works was utilized for the first time in Sweden,

with inspiration from a number of European Historical National Accounts back to medieval times.¹

Foreign trade data. Volumes of important items in both exports and imports were recorded from the 1730s and before that historical studies present many benchmarks. Export data were important especially for calculating production in the metal industry, a dominant industry in pre-modern Sweden.

Domestic trade data. Records of internal tariffs and custom values were used to calculate commercial services from the seventeenth century.

Urbanization. The number of urban citizens has been calculated for benchmarks back to the sixteenth century, following the international criteria of at least 5000 inhabitants to qualify as urban. The number of urban population was used, i.a., to estimate personal services, while the development of the urbanization rate was used as a supporting evidence of long term economic trends.

Central government records. These were available from the 1720s and have been used for public services, also with extrapolations backward.

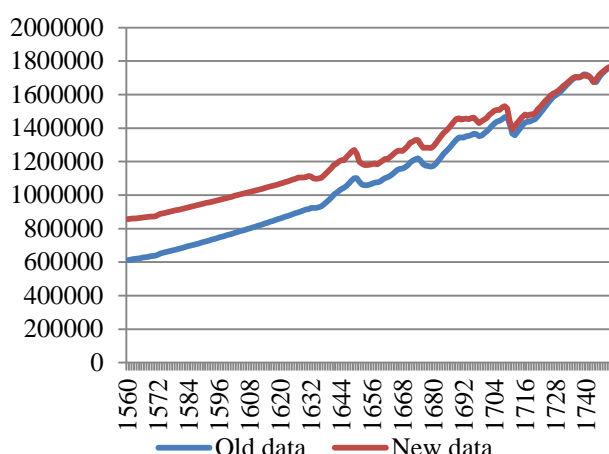
This is only a short summary of principal data and methods for the construction of annual sector production series 1560-1800. A more detailed account is of course given in the two papers of Krantz and Schön (Schön/Krantz 2012a and 2012b).

REVISIONS AND ADDITIONS TO THE EARLIER ESTIMATE OF GDP 1560-1800 IN CONSTANT PRICES

Population: In the previous construction of GDP, Andersson Palm's (2000, 2001) population estimates were used for the time span 1560-1749, that is before the beginning of the official Swedish annual population statistics. However, these data have been shown to be too low for the sixteenth and seventeenth centuries and, therefore, Edvinsson (2014) has published a revised series for 1620-1749. Since the GDP data goes back to 1560, population figures up to 1620 are also required. An estimate was made by extrapolation of the ratio between the new and the old data back to 1560. Both series are shown in figure 1.

¹ A partly similar approach, based on agricultural and industrial prices and on consumption of industrial goods, was used in Schön (1985).

Figure 1. Swedish population 1560-1749, old and new data



Edvinsson also made estimates for some years before 1620 and compared with figures computed by other scholars. Data from this comparison and from the present estimate are shown in table 1. From this it can be concluded that the new figures seem reasonable and, consequently, they are used here instead of the old ones.

Table 1. Comparisons between some population estimates for years before 1620.

	Palm (2000, 2001)	Myrdal (1999)	Maddison (2007)	Edvinsson (2014)	Present estimate
1571	639000	800000		8-900000	874000
1600		1000000	760000	970000	987000
1620	854000	1150000		1070000	1070000

Source: Edvinsson (2014), Table 1, and the present estimate.

The present estimate means a reduction of annual population growth rates from 0,6 to 0,4 percent between 1560 and 1620. This is in line with population growth in the following period up to 1800. It is still higher than average West European population growth in the seventeenth century but on par with Europe in the eighteenth century.

Manufacturing industry and handicrafts: In the previous version, this sector consisted of the metal and food industries. In the present estimate, the wood, chemical, and textile industries are added.

Wood industry: Before 1896 there is no official industrial statistics on production in the wood industry, i.e. sawmills and wood processing industries. Therefore, production has to be

estimated on the basis of other sources. For 1800-1896 Schön (1988) based the estimate on timber export in the official trade statistics. Export figures are also used here as an indicator of total production during the period before 1800.

For 1738-1800 official export data exist and are published in *Historisk statistik 3*. There are figures for a number of items and value data (*riksdaler specie*) for 1769, 1770 and 1771, which makes it possible to compute an export volume series. For scattered years before 1738, Heckscher (1936) provides data for Sweden's exports of plank and battens, and for some other years figures are found in Heckscher/Boëthius (1938). Still, there are lacunas. Data for export of planks and battens from Gothenburg are published in Lind (1923) from 1638 onwards. These are used as volume indicators. Another data set of interest is found in the Sound Toll tables which emanate from the tolls for ships passing through Öresund. The records are published in books edited by Ellinger Bang and Korst (1922, 1939, 1953). However, during most of the period the Sound Toll series show greater fluctuations than the other series. Furthermore, as Heckscher remarked, only a small fraction of the total Swedish wood exports passed through Öresund; in 1640 the share was 4.6 per cent.² Therefore, other data are preferred as far as possible. The Gothenburg series follows the official one rather closely after 1738. Furthermore, the scattered data for the whole country indicate a course of export changes rather close to those for Gothenburg. Thus, the linked series from 1638 onwards is employed. Since there are no other data available before 1638, the Sound Toll figures are used to estimate the trend. Due to the great fluctuations in this series, seven-year moving averages are employed instead of annual data.

Chemical (tar) industry: In the historical national accounts from 1800 onwards tar production forms part of the chemical industry. An estimate for the nineteenth century was made by Schön (1988) and was based on the export of tar. Actually, Schön considered the tar export to be identical with production, as was also the case in Lindahl et al. (1937). Thus, production for domestic use was not included in the estimate. This procedure is followed here.

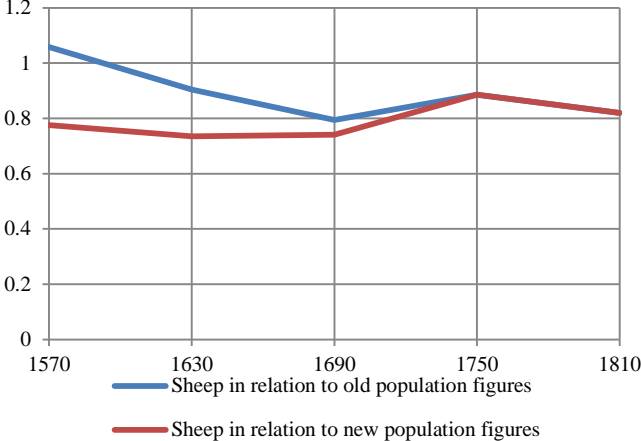
For 1738-1800 official annual export data on quantity in barrels (tunnor) for tar and pitch are published in *Historisk statistik 3*. Furthermore, as for wood export, value figures (*riksdaler specie*) are published for 1769, 1770 and 1771. This makes it possible to calculate volume values. For the time before 1738 export data, not annual though, for the whole country are found in Boëthius/Heckscher (1938), where also data for Stockholm are presented for a number of years. Furthermore, some figures for the whole country are found in

² Heckscher (1936), p 431.

Heckscher (1936). Data for tar and pitch shipped from Gothenburg are supplied in Lind (1923). Figures of interest are also found in the Sound Toll registers published in Ellinger Bang and Korst (1922, 1939, and 1953). Thus, the series used here is built on official statistics 1738-1800 linked to the Gothenburg series 1638-1738 and the Öresund series before 1638.

Textile industry: Very few data that could be used for a production estimate have been found. Thanks to Andersson Palm and Linde, the number of sheep is known for five years, 1570, 1630, 1690, 1750 and 1810.³ These data are uncertain since the source material is probably incomplete, but still they could be taken to indicate changes of wool and textile production. The number of sheep in relation to population according to the old and the new series are shown in figure 2.

Figure 2. The number of sheep in relation to population 1570, 1630, 1690, 1750, and 1810.



According to the new population figures there are about the same number of sheep per capita over a period of 240 years – at least the variations are small. This is an indication that the population changes could be used as an approximation of the production changes in the textile industry.

REVISED GDP ESTIMATE IN CONSTANT PRICES

The new data for population and for industrial production lead to the following modifications of the earlier estimates in constant prices:

Agriculture: The size of the agricultural sector increases almost parallel to the new population data. Since the previous agricultural consumption was estimated in a demand

³ Andersson Palm, Lennart, (2012, 2012a, 2013), Linde (2012), Linde/Andersson Palm (2014).

model at per capita level, the present revision of population has only a minor effect upon agricultural production per capita. Total consumption is raised in accordance with the increased population numbers and, as before, total production is calculated as consumption minus imports plus exports. The only effect upon production per capita comes from the fact that the weight of foreign trade diminishes somewhat in relation to the increased size of the sector.

Manufacturing industry: The hitherto used output data for this sector, that is the metal and food industries, are now complemented with the new series for wood, chemical, and textile industries presented above. As before, weights are computed from the respective branch shares 1800/1809 in Schön (1988).

Building: The average of the index series for industry, agriculture and population (the new series) are taken as an indicator of the production in this sector.

Transports: The average of the indices for agriculture and industry (the new series) is assumed to constitute 50 per cent of the sector production. The other 50 per cent are made up of domestic trade.

Private services: No change of the earlier estimate has been made since urban population is not revised.

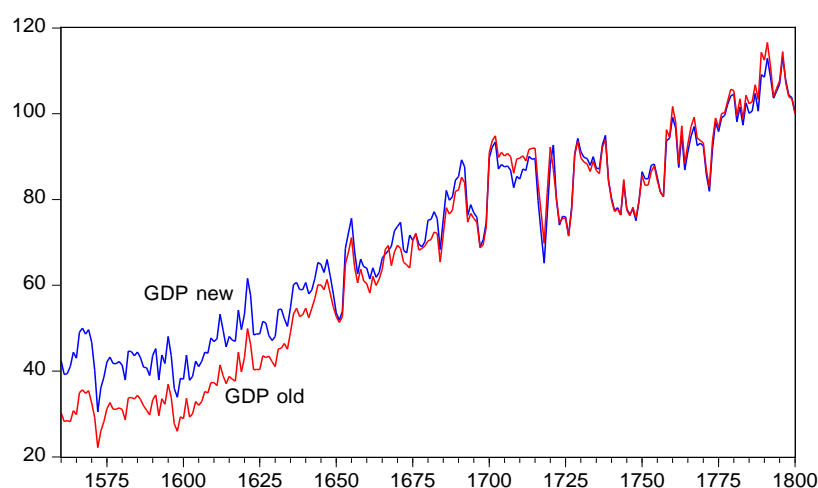
Public services: Data for the period 1722-1800 are the same as before and for 1560-1722 population figures (the new data) are used to approximate production, with the same adjustments for periods of warfare as before.

Services of dwellings: As before, the share of GDP 1800/1809 is assumed to be valid for the whole period.

MAJOR RESULTS OF THE REVISED CONSTANT PRICE ESTIMATE

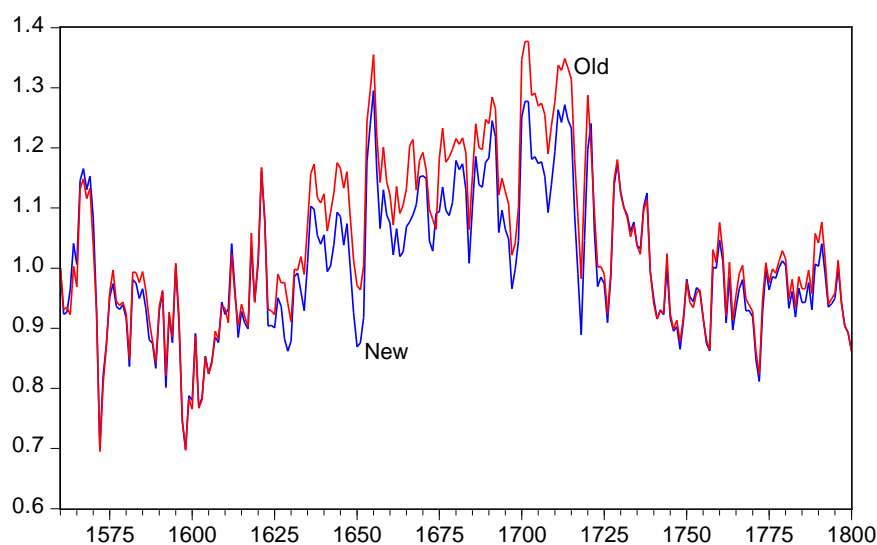
With the new estimates, the GDP level is raised roughly in the same order as population before the 1720s – it is raised by about one third in the late sixteenth century, by one quarter around 1620 and then falling down to level around 1700 (see figure 3). This means that annual growth rates in total GDP are reduced from about 0,7 to 0,5 percent between 1560 and 1700.

Figure 3. Swedish GDP in new and old estimates 1560-1800. Index 1800=100.



In per capita terms, the new and old estimates follow each other rather closely (figure 4). Actually they are almost identical 1560-1620. The reason for this symmetry, despite revisions, is that major sectors are estimated in relation to population, while the directly calculated sectors were still quite small. Between 1620 and 1720 the two curves deviate, however, with the new per capita curve about 10 percent lower than the old one. During this period directly calculated sectors not influenced by revised population, such as metal industry and part of the service sector, expanded most strongly. The weight of their expansion is lowered by the overall increase in the size of the economy.

Figure 4. Swedish GDP per capita in new and old estimates 1560-1800. Index 1560=1.



The general pattern, discovered in the previous work, is however supported by the new calculations. There is a distinctive fall in the per capita level during the late sixteenth century,

followed by the long upturn to the early eighteenth century and the subsequent fall in GDP per capita down to a low level in the second half of that century, i.e. the long term variation that describes a secular cycle is still there. The fluctuation is on a somewhat lower level than in the old series but the result is still a challenge to prevalent interpretations of Swedish economic development in the seventeenth and eighteenth centuries.

Long run stagnation in the level of GDP per capita from the late sixteenth to the early nineteenth century did not mean, however, that the economy or the society remained in a stationary position. On the contrary, structural change was pervasive (table 2). In the 1560s, agriculture dominated with more than 60 percent of the economy in constant (1800) prices but by 1800 its share had fallen to about 40 percent. Instead, the sectors of manufacturing industry, transportation and private services (commercial and personal) increased their shares strongly. Thus, in the sixteenth century, the economy was more dependent upon resources from the primary sector and upon the further preparation of these resources within the households with little specialization at the societal level. At the beginning of the nineteenth century, the economy had become more sophisticated in terms of specialization. Thus, the structure was modernized over these centuries.

Table 2. Main sectors' share of GDP 1560-1800 in constant 1800 prices. Decadal averages.

	Agricult.	Manuf.	Building	Transp.	Priv.serv	Pub.serv	Dwellin.	Total
1560s	61,1	5.9	3.5	4.3	2.3	11.8	11.0	100
1600s	61.2	8.0	4.0	4.8	2.5	8.4	11.1	100
1650s	46.4	12.5	3,8	6.3	9.6	10.3	11.1	100
1700s	44.8	10.2	3.4	5.8	12.5	12.1	11.2	100
1750s	42,9	11.3	3.7	7.2	16.8	6.9	11.3	100
1790s	41.3	11,2	3.7	7.4	16.9	8.3	11.3	100

Most of these changes occurred during the seventeenth century, particularly during the first half of the century. This was the period when the Swedish Empire around the Baltic was created. The imperial expansion had its basis in a new and modernized structure in Sweden. The State administration was modernized and urbanization took off with new nexuses for both private and public services. In the same period, a number of universities were founded or incorporated in the Swedish realm as another element in the Swedish transformation.⁴ The

⁴ Universities were founded in Tartu (Estonia), Åbo (Finland), Lund (former Danish province) and incorporated in Greifswald (Pomerania).

metal industry was probably of even greater importance. It provided income through copper exports but the iron industry had a wider significance. It was revolutionized with technological change and a new capitalist structure – with important contributions from West European immigrants. The result was a strong relative price fall in iron and iron products during the first half of the seventeenth century. Factories and foundries were founded, often with public initiative, and the industry supported the armament of the Swedish troops with greater amounts of rifles and canons. But cheaper iron products had probably a wider impact upon the Swedish economy. Equipment in agriculture and in transportation could be made more efficient even with small inputs of iron.

The shift in weight from agriculture to other sectors was not due, however, to increased efficiency in agrarian production. Per capita consumption of agricultural products fell over the centuries, particularly during the eighteenth century. Population increase in Sweden was strong and cultivation was extended to marginal land with diminishing returns to labour. That may have been counteracted by a transfer of labour to sectors with a constant, and higher, return to labour as in industry and services.

From this perspective, Sweden in the eighteenth century belongs to the group of continental countries which, according to Allen, went through a protoindustrial development with overall stagnation rather than expansion before the agricultural revolution and industrialization took off. This is further underlined when Swedish GDP per capita is put in a European comparison (table 3).

Table 3. GDP per capita in four European countries 1565/1600-1800.

	England	Spain	Germany	Sweden
1565				1107
1600	1350	1440	1150	865
1700	1890	1430	1210	1182
1750	2150	1310	1250	959
1800	2010	1290	1260	929

Source: Malanima (2011), table 5, and present estimate.

Note: Due to strong annual fluctuations in Swedish data, 11-year averages are used.

Only at the peak of the Swedish imperial period, at 1700, could Sweden compare with its closest continental neighbour Germany but that position was short-lived. Sweden was clearly behind leading economies in western, southern and continental Europe at the turn of century

1800.⁵ At the same time, however, the structural changes over the preceding centuries with a strengthened public administration and increased commercialization and specialization of the economy, had prepared Sweden for the nineteenth century agrarian revolution and industrial take-off.

GDP IN CURRENT PRICES

The earlier series were based upon estimates of production volumes, expressed in constant prices of 1800 for each sector. In most cases, data were estimated from volume indicators either from statistics or from constructions such as “the demand model” for agriculture or from extrapolations based on total or urban population. A number of price indices was used, however, as for “the demand model”. For the present paper, price series have been extended into sector deflators and ultimately into a GDP deflator whereby series in current prices are achieved. Before presenting the results of the current price estimates, all price series used for the sector deflators are described in the following section.

DEFLATORS 1560-1800

Agriculture: Rye, barley and butter prices are used: 1560-1620, rye, which is also assumed to represent barley, and butter prices, from Söderberg (2003), 1620-1732, all three price series from Hansson (2006),⁶ and 1732-1800 from Jörberg (1972).

Manufacturing industry and handicrafts: To form a deflator for the whole sector, the price series for the sub-industries are combined by weights from 1800-1809, taken from Schön (1988).

Metal industry: The iron and copper industries form the output series and therefore the deflator pertains to these sub-industries as well. The price series are as follows. Bar iron: 1560-1620, Söderberg (2003), 1620-1650, Posthumus (1943), 1650-1732, Hansson (2006), 1732-1800, Jörberg (1972). Copper: 1560-1624, due to lack of data the price changes are assumed to be identical with those for bar iron, 1624-1800: Posthumus (1943) (1624-1777, Swedish garcopper, 1777-1800, Norwegian and Trondheim garcopper).

⁵ In the paper Schön/Krantz 2012a the possible role of unpaid labour, primarily female household work, is taken into consideration. With unpaid labour included and estimated with the wage of hired housemaids, Swedish GDP per capita rises over and above the German level for the whole period since 1560. In 1700 it is even close to the English level. This raises the question to what extent this labour should be included in the Historical National Accounts and what principles in these respects different countries follow.

⁶ An adjustment for a strong deviation from CPI 1632-1633 was made.

Wood industry: 1560-1633: Due to lack of data, prices for fire wood are employed, Jansson et al (1991), 1633-1732 sawn battens, Hansson (2006) and 1732-1800, Jörberg (1972).

However, a series for the whole country is not provided by Jörberg. Therefore, since Hansson's prices refer to Östergötland, Jörberg's data for this county are used for 1757-1800, and for 1732-1757, since prices for Östergötland County are missing, data from the neighbouring Skaraborg County are used.

Food industry: The changes of production for this industry are as mentioned assumed to be represented by those for agriculture. As deflator, rye prices are employed. For 1560-1620 they were collected from Söderberg (2003), for 1620-1732 from Hansson (2006) and for 1732-1800 from Jörberg (1972).

Textile industry: For the period 1600-1719 a series for coarse cloth is provided in Jansson et al. (1991). This series is also part of the CPI computation, Edvinsson/Söderberg (2009). Before 1600 as well as 1719-1732 CPI is used and for 1732-1800, the series for coarse cloth in Jörberg (1972) is utilized.

The chemical industry: Since the series in constant prices consists of data for tar production, the deflator should pertain to this subindustry as well. Up to 1600, no data for tar were found and, therefore, prices for firewood (Jansson et al (1991)) are employed. Then, the following data were used: 1600-1641 tar prices, Jansson et al (1991), 1641-1732, tar prices, Hansson (2006) and 1732-1800, Jörberg (1972).

Building: Output data in constant prices were constructed as an average of agriculture, industry, and population and the deflator is constructed as an average of the deflators for agriculture and industry.

Transport: The series in constant prices was constructed by an average of goods transport (the volume series for agriculture 0.75 and industry 0.25) and trade (also assumed to include passenger transport). The same procedure was applied for the deflator.

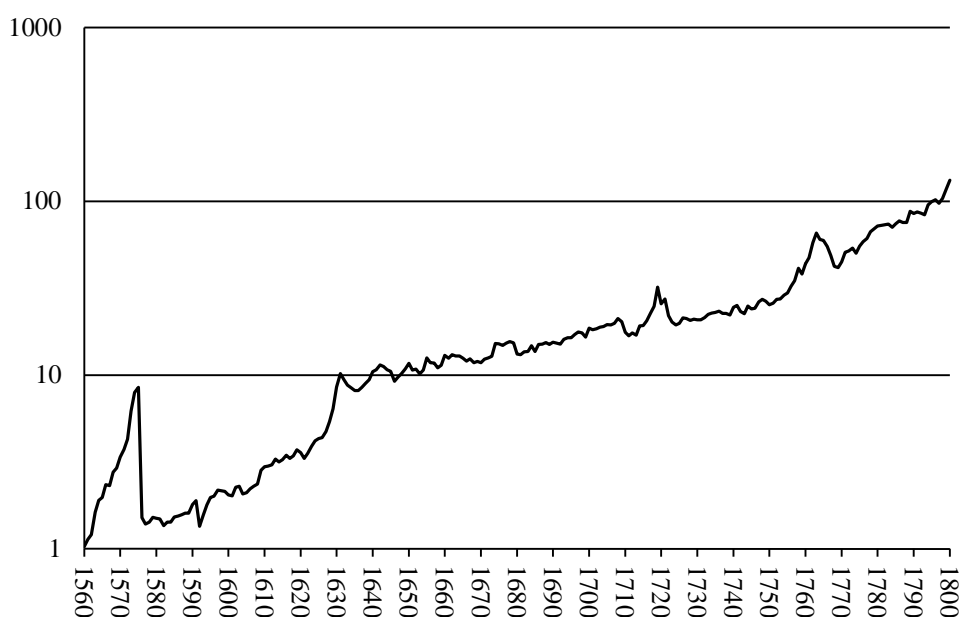
Private services: The series for trade and other services are combined by weights pertaining to 1800-1809 (Krantz (1991)). For trade, data from Andersson Palm (1992) are used, complemented with the consumer price index 1570-1622. For other services, the consumer price index (Edvinsson/Söderberg (2009)) is employed.

Public services: As for the period from 1800 onwards, wage changes are used as deflator. Here Söderberg's (2009) series is employed.

MAJOR RESULTS OF THE CURRENT PRICE ESTIMATE

The aggregate GDP in current prices does not carry much information since it is dominated by a long run inflation process, with an annual average inflation of 1,5 percent that over 240 years raised the price level by about 40 times. Inflation was particularly marked in the periods 1600-1640 and 1750-1800. There are also some marks of drastic but short run inflations/deflations, primarily in connection with wars (see figure 5). Thus, the huge fluctuation in the 1560s and 1570s spanned over The Nordic Seven Years War, while the fluctuation in the 1710s was connected with the Swedish participation in the European Seven Years War. There was also a flagrant price fluctuation during the 1760s connected both to warfare and to a political shift between the expansive Hat party and the restrictive Cap party.

Figure 5, GDP in current prices 1560-1800



Price changes differed, however, between production sectors which had an effect upon structural change in current prices compared to volume changes. The most conspicuous effect was a further deterioration in agricultural conditions during the 17th century, when measured in current prices. While volume shares fell from about 60 to 45 percent from the sixteenth

century to late 17th century, the share in current prices was below 30 percent during the same period, only to recover to over 35 percent at the end of the 18th century⁷ (Table 4).

Table 4. Main sectors share of GDP 1560-1800 in current prices. Decadal averages.

	Agricult.	Manuf.	Building	Transp.	Priv.serv	Pub.serv	Dwellin.	Total
1560s	27,0	13,2	5,0	18,6	7,5	17,3	11,4	100
1600s	30,5	15,5	5,2	21,2	8,1	8,2	11,3	100
1650s	26,3	13,2	3,3	13,4	17,6	14,8	11,4	100
1700s	24,4	9,6	2,7	9,7	19,8	22,4	11,4	100
1750s	32,7	12,0	3,6	9,0	19,9	11,5	11,3	100
1790s	35,8	11,2	3,6	8,6	19,2	10,3	11,3	100

Agricultural prices were rather stable in the long term relative to the GDP deflator from the 1560s to the 1710s, according to available data, with an upward shift in the early 17th century followed by a downward trend during the rest of that century. Prices thus underline the structural changes in the Swedish economy during the period of imperialistic advance around the Baltic, with a shift in income distribution to the disadvantage of peasants and a transmission of purchasing power to other sectors, particularly private and public services, manufacturing industry and transportation. The shift in prices also gives support to the opinion that the 17th century was a long period of oppression and misery for the agricultural population. It is documented that public administration and the military expanded, that the nobility strengthened its grip on the Swedish economy, that new capitalistic principles were imported to the metal industry and that urban centres, particularly Stockholm, increased its share of total population. But by what means such a shift in relative prices was performed needs further investigations.

Is it reasonable, however, that oppression and swings in the income distribution were so great during the 17th century that some 80-90 percent of the population received only about 30 percent of total income, indicated by the sector shares? It does not seem probable. But there is one other aspect. Much of the labour in the expanding sectors was supplied by rural households. Work became more diversified. Manufacturing, transportation, construction, personal services and trade were to a high degree rural in character. Peasants supplied metal industry with inputs of charcoal and produced most of the tar for exports. Much of

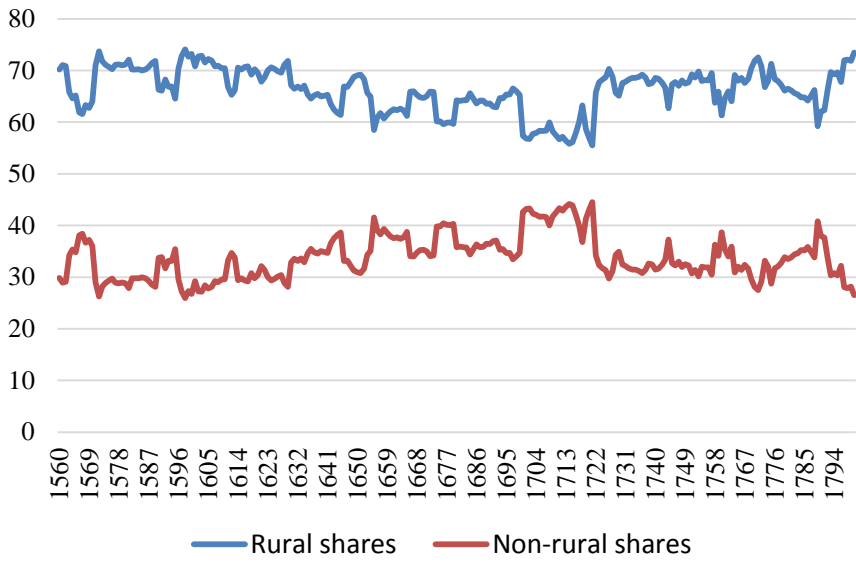
⁷ By 1800 the agricultural share was above 40 percent due to a sharp price increase during the 1790s.

transportations and residential constructions were performed by rural labour during slack seasons in agriculture. Women served much of textile and food industries within the household as well as supplied maidens for services in both rural and urban areas; peddlers became more common from the 17th century and so on. In order to estimate a reasonable share in total income for rural and non-rural households, one should add a sizeable part of these other sectorial shares to the rural household. It can only be a guestimate but the result of such an estimate will come closer to the rural character of the economy.⁸ From figure 6 it is clear that the calculation gives more likely results with levels for the rural income between 75 and 55 percent but the general pattern is still there with a shift away from rural areas during the 17th century and back again during the 18th century.

The 18th century – from the 1720s – was very different from the 17th century. Sweden lost most of its holdings east and south of the Baltic and new ideas came to govern a much less militaristic policy. An increasing population should instead colonize the interior of Sweden. Physiocratic opinions led to a more benevolent attitude from the authorities to agriculture, to private property and to population increase. Reclamation of land and construction of small cottage plots was liberalized. Perhaps most important was the new possibility for peasants to turn crown property into freeholds with a fixed taxation. Since prices rose over the century, taxes were hollowed out and income shifted in favour of landholders, especially commercially oriented peasants, creating a basis for the so called agricultural revolution that was to really take off in the first half of the 19th century.

⁸ In the present calculation 50 percent of industry and private services, 75 percent of building and transportation and 85 percent of dwellings are added to agriculture for the rural share of production in current prices.

Figure 6. Rural and non-rural shares of total income 1560-1800. Current prices.



Appendix. Tables in the Data base

<http://www.ekh.lu.se/en/research/economic-history-data/shna1560-2010>.

Table I. GDP and GDP per capita. Factor Prices, Current and Constant Prices. 1560-2010

Table II. Value added, Main Sectors and GDP. Factor prices, Mill. SEK, Current and 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 a-d. Foreign Trade 1800—2000

Table VIII. Employment 1850—2010

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

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

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

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

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

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

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

Table XVI. Deflators 1800—1950. 1910/12=100

Appendix table. GDP, mill SEK, current and constant prices (1910/12 price level) and GDP per capita, SEK, constant prices, 1560-2010

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1560	1.0	200.9	234.5	1600	2.0	181.0	183.4
1561	1.1	185.9	216.7	1601	2.0	207.4	209.2
1562	1.2	186.9	217.4	1602	2.3	180.0	180.9
1563	1.6	196.5	228.2	1603	2.3	184.3	184.5
1564	1.9	212.2	245.9	1604	2.1	201.0	200.4
1565	2.0	205.5	237.8	1605	2.1	195.0	193.7
1566	2.3	234.1	270.3	1606	2.2	200.8	198.6
1567	2.3	238.5	274.9	1607	2.3	210.9	207.8
1568	2.8	231.8	266.7	1608	2.4	209.6	205.7
1569	2.9	236.8	271.9	1609	2.8	226.5	221.4
1570	3.4	223.1	255.7	1610	3.0	222.4	216.6
1571	3.7	190.7	218.2	1611	3.0	227.3	220.5
1572	4.3	144.9	164.5	1612	3.0	254.4	245.8
1573	6.2	171.3	192.9	1613	3.3	236.9	228.0
1574	7.9	183.0	205.3	1614	3.2	216.6	207.7
1575	8.5	199.9	223.3	1615	3.3	228.0	217.7
1576	1.5	205.3	228.5	1616	3.5	224.1	213.1
1577	1.4	198.2	219.7	1617	3.3	222.7	211.0
1578	1.4	197.9	218.5	1618	3.4	257.0	242.5
1579	1.5	200.3	220.3	1619	3.7	235.5	221.4
1580	1.5	196.5	215.2	1620	3.6	252.5	236.4
1581	1.5	180.0	196.4	1621	3.3	291.7	271.9
1582	1.4	211.7	230.1	1622	3.5	273.3	253.6
1583	1.4	211.2	228.7	1623	3.9	229.5	211.9
1584	1.4	206.6	222.8	1624	4.2	230.7	212.1
1585	1.5	210.9	226.6	1625	4.3	230.7	211.1
1586	1.5	204.5	218.8	1626	4.4	244.5	222.7
1587	1.6	194.1	206.8	1627	4.7	242.5	219.3
1588	1.6	193.6	205.5	1628	5.4	228.8	206.9
1589	1.6	185.1	195.8	1629	6.4	223.2	201.8
1590	1.8	208.9	220.0	1630	8.5	229.6	207.5
1591	1.9	216.4	227.0	1631	10.2	259.2	232.7
1592	1.3	182.0	190.2	1632	9.4	259.6	233.9
1593	1.6	209.4	218.0	1633	8.8	249.0	226.6
1594	1.8	200.1	207.5	1634	8.5	240.5	219.2
1595	2.0	229.8	237.4	1635	8.1	260.9	237.4
1596	2.0	207.0	212.9	1636	8.2	286.3	259.6
1597	2.2	170.9	175.1	1637	8.5	288.6	258.4
1598	2.2	161.2	164.6	1638	9.0	280.6	247.9
1599	2.1	182.1	185.1	1639	9.4	280.3	244.4

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1640	10.5	287.9	247.8	1680	13.2	352.8	273.5
1641	10.7	275.2	233.5	1681	13.1	353.7	270.0
1642	11.4	279.6	235.4	1682	13.6	361.8	272.1
1643	11.2	292.1	243.4	1683	13.7	354.2	262.0
1644	10.7	309.8	256.5	1684	14.7	320.2	233.6
1645	10.5	307.7	254.8	1685	13.7	353.4	255.4
1646	9.2	296.6	241.7	1686	15.0	384.8	274.9
1647	9.7	310.7	250.0	1687	15.0	374.1	263.8
1648	10.2	293.1	232.8	1688	15.4	377.7	262.8
1649	10.8	273.7	215.5	1689	15.0	396.3	272.6
1650	11.7	252.2	202.2	1690	15.5	399.9	274.1
1651	10.7	244.2	203.7	1691	15.2	418.4	288.6
1652	10.8	253.4	213.5	1692	15.1	410.6	282.4
1653	10.2	322.7	273.8	1693	16.0	357.8	245.6
1654	10.7	339.5	288.0	1694	16.4	368.9	253.9
1655	12.6	358.0	303.1	1695	16.4	360.0	246.4
1656	11.8	321.9	271.6	1696	17.1	355.1	242.7
1657	11.8	297.1	249.9	1697	17.7	323.1	223.6
1658	11.0	313.5	265.1	1698	17.4	330.4	231.1
1659	11.4	305.4	255.6	1699	16.5	349.3	242.2
1660	13.0	303.0	251.7	1700	18.6	423.1	291.8
1661	12.5	291.6	239.8	1701	18.2	435.2	297.9
1662	13.1	303.3	249.4	1702	18.5	440.6	298.0
1663	12.8	293.1	238.9	1703	18.9	411.1	275.6
1664	12.9	298.4	240.4	1704	19.0	415.8	276.5
1665	12.5	314.1	250.3	1705	19.5	413.3	273.9
1666	12.0	315.9	250.2	1706	19.4	414.4	274.6
1667	12.4	319.7	252.7	1707	19.8	409.6	269.0
1668	11.8	324.5	256.7	1708	21.1	390.6	255.0
1669	12.0	341.4	267.3	1709	20.3	403.2	265.8
1670	11.8	346.2	267.8	1710	17.6	400.6	278.8
1671	12.3	350.6	266.9	1711	16.8	411.3	295.1
1672	12.6	319.8	242.5	1712	17.5	409.6	290.1
1673	12.8	316.8	238.6	1713	16.9	425.5	297.2
1674	15.2	338.8	255.0	1714	19.1	422.7	291.4
1675	15.1	332.9	255.5	1715	19.2	423.7	288.5
1676	14.8	340.2	265.2	1716	20.5	377.5	254.9
1677	15.2	328.9	256.4	1717	22.7	341.8	232.2
1678	15.6	326.1	254.2	1718	24.9	309.5	208.9
1679	15.3	331.7	259.2	1719	32.0	363.1	245.2

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1720	25.7	417.1	280.0	1760	43.6	465.7	243.1
1721	27.4	438.3	289.9	1761	47.4	453.4	234.5
1722	22.0	375.7	246.4	1762	57.8	409.3	210.4
1723	20.2	347.4	224.8	1763	65.6	447.1	229.2
1724	19.5	356.0	228.1	1764	60.4	406.1	207.3
1725	19.9	355.6	225.5	1765	59.4	426.3	216.3
1726	21.3	335.0	210.2	1766	55.0	443.4	223.4
1727	21.1	365.8	227.8	1767	48.8	454.0	226.9
1728	20.7	424.5	263.2	1768	42.2	432.6	214.7
1729	21.0	441.4	272.0	1769	41.5	434.4	214.5
1730	20.8	425.9	260.4	1770	44.8	431.6	211.9
1731	20.8	419.2	253.9	1771	51.0	400.0	195.5
1732	21.4	417.5	251.1	1772	51.7	381.8	187.0
1733	22.4	409.9	244.5	1773	53.8	428.7	213.9
1734	22.7	419.3	248.2	1774	50.2	457.5	230.1
1735	22.9	407.2	239.3	1775	55.0	447.0	222.3
1736	23.3	406.9	238.4	1776	58.6	462.4	227.7
1737	22.7	433.2	254.5	1777	60.9	464.9	226.9
1738	22.6	443.3	259.7	1778	66.8	477.8	231.4
1739	22.2	394.2	229.6	1779	69.4	487.1	234.1
1740	24.5	374.1	218.7	1780	72.0	488.7	232.3
1741	25.1	360.9	211.0	1781	72.5	458.4	215.7
1742	23.2	364.4	214.6	1782	73.3	475.0	222.3
1743	22.6	356.5	212.9	1783	73.9	455.0	212.4
1744	24.9	391.9	231.7	1784	70.8	479.5	223.6
1745	24.0	362.9	211.6	1785	74.1	468.4	218.1
1746	24.2	356.9	206.5	1786	77.2	471.2	218.5
1747	26.4	362.9	208.4	1787	75.5	490.1	225.8
1748	27.2	350.5	199.8	1788	75.5	470.6	215.4
1749	26.6	371.4	210.5	1789	87.5	515.5	235.3
1750	25.4	403.5	226.6	1790	84.9	510.6	233.4
1751	26.0	395.5	219.5	1791	86.9	531.4	242.1
1752	27.3	395.7	217.8	1792	85.3	509.2	229.8
1753	27.4	409.9	223.0	1793	83.6	483.8	216.0
1754	28.8	412.1	221.9	1794	95.3	491.7	217.4
1755	29.7	397.3	211.9	1795	99.5	499.7	219.5
1756	32.4	381.8	202.1	1796	102.2	530.5	231.6
1757	34.9	376.5	198.9	1797	97.2	502.8	217.5
1758	41.1	440.5	232.7	1798	103.9	486.9	208.7
1759	38.1	441.2	231.5	1799	118.0	485.4	206.5

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1800	130.9	468.0	199.0	1840	438.2	711.4	227.8
1801	138.6	471.3	200.4	1841	441.1	711.8	225.5
1802	144.4	489.8	207.2	1842	444.7	684.6	214.6
1803	139.1	487.4	204.8	1843	447.9	706.4	219.3
1804	129.6	460.1	192.0	1844	443.9	745.2	228.9
1805	143.6	489.0	202.7	1845	445.9	771.8	234.2
1806	158.3	501.0	206.6	1846	483.9	753.7	226.4
1807	164.0	480.0	197.2	1847	514.1	779.9	232.6
1808	182.1	453.8	186.5	1848	514.6	793.6	234.8
1809	186.2	430.3	178.5	1849	512.9	831.4	243.1
1810	197.9	461.9	192.9	1850	538.2	865.2	249.9
1811	227.4	499.5	207.8	1851	548.7	857.7	245.1
1812	263.8	470.2	194.7	1852	555.9	846.0	239.8
1813	287.1	483.3	199.6	1853	583.7	863.6	243.1
1814	288.6	486.8	200.2	1854	657.3	881.7	245.9
1815	288.7	504.3	205.7	1855	764.6	950.2	262.2
1816	299.8	520.8	209.9	1856	856.4	945.4	258.5
1817	304.7	510.8	203.5	1857	909.9	976.7	265.4
1818	321.6	524.4	207.0	1858	811.0	996.6	268.6
1819	331.1	521.9	204.3	1859	797.7	1046	278.2
1820	319.2	529.1	205.6	1860	837.9	1083	283.3
1821	304.9	550.0	211.7	1861	847.4	1059	272.4
1822	298.5	559.1	212.7	1862	866.1	1039	263.7
1823	301.3	560.7	210.2	1863	889.1	1099	275.1
1824	301.5	584.6	215.9	1864	887.1	1133	280.0
1825	327.6	609.3	221.6	1865	885.5	1166	284.8
1826	343.6	620.7	222.6	1866	885.1	1159	280.1
1827	360.7	598.8	212.6	1867	923.5	1192	285.2
1828	333.9	612.0	215.7	1868	891.6	1085	259.3
1829	337.0	624.5	218.8	1869	933.2	1155	277.2
1830	349.5	613.8	213.4	1870	995.7	1303	313.0
1831	376.7	630.4	217.8	1871	1047	1350	322.6
1832	381.3	617.3	212.0	1872	1188	1398	330.6
1833	372.9	642.9	218.6	1873	1349	1425	333.3
1834	376.0	657.9	221.4	1874	1457	1494	346.0
1835	386.9	662.7	220.6	1875	1400	1451	332.7
1836	407.3	692.7	227.7	1876	1478	1562	354.5
1837	415.7	693.7	226.1	1877	1448	1544	346.5
1838	425.8	688.3	223.3	1878	1314	1506	334.1
1839	445.0	696.6	224.8	1879	1296	1606	352.5

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1880	1331	1573	344.1	1920	12680	4066	692.1
1881	1405	1630	356.8	1921	9807	3916	660.4
1882	1379	1572	343.6	1922	8406	4226	707.7
1883	1433	1697	369.6	1923	8138	4380	730.4
1884	1402	1672	361.6	1924	8636	4698	780.2
1885	1388	1717	368.2	1925	8906	4819	797.2
1886	1316	1747	371.8	1926	9042	5069	836.0
1887	1260	1705	360.7	1927	9235	5249	863.2
1888	1313	1737	366.2	1928	9565	5413	887.8
1889	1404	1770	371.7	1929	10029	5750	940.6
1890	1457	1817	380.2	1930	10138	6022	982.1
1891	1546	1922	400.9	1931	9440	5855	951.7
1892	1562	1903	396.0	1932	8806	5617	909.4
1893	1552	1954	405.7	1933	8854	5715	921.6
1894	1547	1976	407.5	1934	9606	6118	983.2
1895	1643	2092	427.3	1935	10190	6426	1030
1896	1709	2166	438.5	1936	10748	6657	1064
1897	1847	2272	455.6	1937	11660	6839	1090
1898	1997	2370	470.7	1938	12157	7095	1127
1899	2159	2450	482.3	1939	13218	7606	1202
1900	2219	2475	483.7	1940	14129	7188	1131
1901	2202	2559	496.3	1941	15442	6984	1093
1902	2211	2540	489.8	1942	16745	7060	1098
1903	2401	2686	515.5	1943	17976	7371	1136
1904	2408	2748	524.3	1944	18764	7695	1173
1905	2459	2725	516.3	1945	19443	7897	1190
1906	2766	2964	557.6	1946	21967	8747	1302
1907	3077	3186	594.7	1947	24881	9575	1407
1908	3045	3115	576.4	1948	27208	9820	1427
1909	3025	3156	578.8	1949	28438	10180	1464
1910	3223	3241	589.4	1950	31134	10867	1549
1911	3309	3344	603.5	1951	38648	10895	1541
1912	3546	3490	625.1	1952	42513	11191	1571
1913	3804	3729	663.4	1953	42958	11311	1577
1914	3911	3838	678.2	1954	45327	11896	1649
1915	4577	3965	696.1	1955	48718	12250	1687
1916	5774	4188	730.2	1956	53323	12748	1743
1917	6964	4004	692.8	1957	57240	13103	1779
1918	9189	3692	635.7	1958	59730	13256	1789
1919	11158	3775	647.4	1959	63102	13847	1860

	GDP Current prices	GDP Constant prices	GDP per capita		GDP Current prices	GDP Constant prices	GDP per capita
1960	68725	14359	1920	2000	1919674	38816	4375
1961	75301	15284	2032	2001	1986180	39302	4417
1962	81733	15924	2106	2002	2068754	40182	4500
1963	87553	16599	2183	2003	2156924	41051	4579
1964	98410	17863	2332	2004	2255434	42734	4748
1965	109333	18710	2419	2005	2334823	44036	4873
1966	118048	18954	2428	2006	2480446	45718	5023
1967	127981	19570	2487	2007	2632730	47164	5142
1968	136312	20337	2570	2008	2697240	46082	4984
1969	147075	21215	2663	2009	2615369	43619	4675
1970	162406	22274	2769	2010	2805991	46759	4972
1971	176863	22623	2794				
1972	189952	22714	2796				
1973	211389	23615	2902				
1974	249345	25448	3118				
1975	290934	25957	3168				
1976	327006	26068	3170				
1977	351009	25290	3065				
1978	388930	25526	3084				
1979	437404	26622	3210				
1980	492948	26856	3232				
1981	537222	26734	3213				
1982	592332	27265	3275				
1983	660492	27572	3310				
1984	738914	28702	3443				
1985	797949	29062	3480				
1986	881861	30118	3598				
1987	951251	30988	3690				
1988	1040112	31859	3776				
198	1152084	32654	3845				
1990	1253959	32624	3812				
1991	1320959	31533	3659				
1992	1342120	31668	3653				
1993	1352802	30974	3553				
1994	1438656	32122	3658				
1995	1559878	33655	3813				
1996	1604146	34130	3860				
1997	1666242	34786	3932				
1998	1730018	35807	4046				
1999	1808712	37137	4193				

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