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FINLAND'S HISTORICAL NATIONAL ACCOUNTS 1860–1994:
Calculation Methods and Statistical Tables

PREFACE

The Finnish Economy 1860–1985, Growth and Structural Change (Bank of Finland Publications, Studies on Finland's Economic Growth XIII, Helsinki 1989) was published in 1989. It covers the historical national accounts of Finland from 1860 on, the so-called growth studies, and an overview of the economic development in Finland, based on these statistic.

At the time The Finnish Economy 1860–1985, Growth and Structural Change was published it was not possible to translate Appendix 1 - containing information on sources and methods as well as a reliability analysis of the data - into English. An effort was made to compensate for this by adding some notes to the English version of the book, briefly illustrating the main methods used.

In the course of the years this has proved insufficient. For this reason a translation has now been made of the Methods Appendix and the chapter dealing with the growth study method and the problems involved in general. The Bibliography mainly contains the literature and other sources quoted in the Methods Appendix. The most important tables have been updated to contain data until 1994. Today the time series are updated twice a year by the Statistics Finland. Further data may be obtained from that source.

The Growth Studies were not finished in Finland with the publication of the "Finnish Economy". Since then special studies have been published on timber floating by Matti Tapani Peltonen (1991) and the current account by Ragni Bärlund (1992). The time series in these publications were not used here. Also the study on factors of economic growth by Pekka Tiainen contains GDP series for the years 1900–1990 (1994).

There has been and still is plenty of international cooperation concerning the Growth Studies. A recent highlight in this respect is the study by Angus Maddison (1995) with time series and analyses on the economic progress of 56 countries. In the Nordic countries, a research project carried out by the economic historians and statistical authorities of five countries in cooperation and funded by Nordiska Ekonomiska Forskningsrådet (Council for Economic Research in the Nordic Countries) has been launched. The purpose of this study is to harmonize the growth study methods in order to improve the comparability of the data.

Rekola, in May 1996

Riitta Hjerppe

ON THE UPDATING OF THE TABLES APPENDIX

The tables chosen to be included in the Tables Appendix are those thought to be the most often used ones among the tables of the original book. In part they are identical with the tables in the original book, in part slightly amended - hopefully more useful.

The time series are identical with the 1860–1975 series in the original book. There is a slight interruption of continuity in 1960, at which time Statistics Finland adopted the new SNA and gave up the old SNA used in the original Growth Studies. The current price data for 1960 are given according to both the old and the revised SNAs, to give the reader an idea of the extent of the difference. The 1960 volume indices were just chained into each other. The base year for the 1960–1975 volume index time series is 1960. On the compilation and chaining of the 1860–1960 volume index series, see page 86.

For the period 1975–1994, the National Accounts system of Statistics Finland was used, with 1990 as the base year. The key current price data for 1975 were also given on both the 1960–1975 level (with 1960 as the base year) and according to the latest National Accounts system (with 1990 as the base year). The changes in the scopes of the concepts are, as a rule, slight enough to allow the use of congruous volume indices as well as distributions computed on the basis of current price series.

A systematic description of the correspondences by kind of economic activity, used in joining together the gross domestic product accounts according to the so called revised SNA and the old SNA can be found on page 89.

1. METHODOLOGY AND SOURCES*

From sources to accounts

The system of national accounts is employed in this study as a set of conceptual tools. The accounts describe the economic activity of the entire nation within the framework of a coherent system. These descriptions focus on production and expenditure on production, incomes and their disposal, gross accumulation and its financing, as well as transactions between Finland and other countries. This study concentrates on the description of production and expenditure on production. As a matter of fact, it is a question of so-called functional accounting, which is concerned with the transactions involved in the production and use of economic goods, i.e. merchandise and services.

Labour-input time series since 1860 have also been determined in order to reveal the development of productivity. The development of the volume of production is also proportioned to population growth so that an indication of the materialistic standard of living can be obtained.

The aggregate supply and aggregate demand account is examined to determine how the supply of goods is made up of domestic production and imports, and how goods are demanded as final products in private and public consumption, gross fixed capital formation and exports. The components of the balance of aggregate supply and aggregate demand have been determined both at current prices and as volume indices.

Gross domestic product at market prices Imports	Exports Private consumption Public consumption Gross fixed capital formation Change in stocks and statistical discrepancy
Aggregate supply	Aggregate demand

The production accounts describe production from the standpoint of producers, i.e. economic units, classified by economic activity. On the income side of the account is total output, which comprises the sum of all goods and services produced. The difference between this total and the intermediate products used in production is value added - which comprises the incomes arising out of

production. Gross domestic product is obtained by adding up the value added of each economic activity, which is calculated in the following manner:

Production account for economic activity i

Expenses	Incomes
Purchases from other sectors Value added at factor cost of production - compensation of employees - operating surplus - consumption of fixed capital	Total output
Gross value of production	Gross value of production

Alternatively, the value added of an economic activity can be calculated as the sum of the factor incomes of the economy - i.e. wages and salaries, the consumption of fixed capital, and the operating surplus.

When the value added of all economic activities is aggregated, the result represents gross domestic product at factor cost. Gross domestic product at market prices is arrived at by adding indirect taxes and subtracting subsidies.

The economic units of the economy are institutionally categorized into firms, financial institutions, households, the public sector, non-profit institutions and the rest of the world. As the corporate and public sectors are categorized by economic activity on the basis of their principal production, the division in question is a functional one; firms are divided into economic units and these are categorized by economic activity, because the same firm could be engaged in production belonging to different industries or economic activities. Public sector activities in the form of business enterprises (public utilities, state-owned companies and joint-stock companies) are included in the appropriate economic activity on the basis of the principal production of each economic unit. Other public sector activities are recorded as belonging to central or local government.

Gross domestic product mainly consists of market production, i.e. production intended for resale. There are, however, certain exceptions to this: e.g. agricultural and forestry production for the use of the producer and self-constructed buildings are included in domestic product. Most public sector activities are concerned with the production of collective goods, for which there are no markets. Gross domestic product also includes an imputed item in respect of housing ownership, which represents the "production" of housing services. This item reflects the rental value of the nation's housing stock.

In principle, the calculations involved in arriving at national income can be carried out from the viewpoints of either production, income or the disposal of income. The study can be crystallized in the form of accounts covering the whole economy:

Production account	Incomes account	Expenditure account
Value added - primary production - refined goods - services	Compensation of employees Operating surplus Consumption of fixed capital	Consumption - private - public Gross fixed capital formation - private - public Change in stocks Net exports
Gross domestic product at factor cost plus Indirect taxes minus Subsidies	National income minus Net incomes from the rest of the world	
Gross domestic product at market prices	Gross domestic income	Gross domestic expenditure

The data available for historical calculations of national income places limitations on the choice of viewpoint. Every account that is to be clarified must be estimated with the aid of other accounts. By combining statistics from numerous sources - i.e. time series and cross-sectional data - and exploiting literature and archive material, it has been possible to reconstruct missing time series satisfactorily.

The old and revised systems of national accounts. A system of national accounts appropriate for the circumstances of Finland was developed by the Central Statistical Office of Finland in the 1950s.[1] The main features of this system were based on the so-called old SNA system of the United Nations.[2] Uniform series for the period 1948–1964 prepared in accordance with the old SNA were published in 1968. The national accounts of Finland were drawn up in accordance with the old SNA until 1977. Present-day calculations are made in

accordance with the revised SNA, which has been applied retrospectively to annual accounts dating back to 1960.[3]

Earlier growth studies made in Finland have conformed to the old SNA. The time series in this study have been prepared in accordance with the old SNA for the period 1860–1960 and with the revised SNA for the period since 1960. It has been possible to do so because the concepts and differences of coverage of the balance of aggregate demand and aggregate supply in the old and revised SNA systems are small at this level of examination. Old SNA series have been extended with revised SNA series by partially reclassifying the economic activities of the revised SNA. It was also decided that volume indices of production could be chained together, as the differences between the old and revised SNA systems are insignificant. In the appendix of tables, the value added by kind of economic activity for 1960 is drawn up in accordance with both the old and revised SNA. The differences in the comparability of the series can thus be seen. The differences are not so much a consequence of the concepts being changed, but rather because more production than before was included in gross domestic product when the national accounting calculations were revised.[4]

Production account. The best statistics are available on agricultural harvests and livestock numbers, many industrial products, the railways, the postal service, public construction, and the banks and insurance companies. Basic statistics are either missing or in short supply in a number of important areas of the Finnish economy; these include the sawmill industry, forestry, private construction, private transport, private services, and the early activities of the municipalities. Many areas of economic activity covered by deficient basic statistics have now been satisfactorily clarified using a wide variety of sources and in some cases with the aid of substitute series and estimates. Information deficiencies have also been rectified by special studies, such as Kai Hoffman's extensive archive study on the sawmill industry - which was made using growth-study methods - and Erkki Pihkala's study on the government sector during the period 1860–1900.[5]

Income account. A systematic income account has not been formulated here; instead, wage totals have been estimated for most economic activities.

In principle, taxation statistics include appropriation tax statistics 1865–1881, municipal tax for studies 1891 and 1900–1901 as well as statistics on municipal tax and state income and property taxes since the 1920s.[6] The earlier appropriation tax statistics are, however, inadequate because the number of people taxed was small. Presumably, the coverage and reliability of the tax statistics since the 1920s is quite good. On the other hand, it has not been possible to make much use of these, as their occupational classification is crude and deviates from the one used in the SNA.

The recording of accident statistics was started in 1898. These include wage totals and employee numbers; they constitute time series which are classified in a fairly detailed manner.[7] Their coverage, however, did not improve until legislation was gradually extended to encompass most groups of employees.

Expenditure account. Foreign trade statistics are Finland's oldest official series of statistics. Erkki Pihkala and Heikki Oksanen have recast this data in accordance with the national accounts for use in their growth studies on foreign trade. There are no estimates for exports and imports of services before 1948, neither have these been made for this study.

In the study on private consumption it has been possible to exploit a number of consumption studies. The first of these covers working-class families in towns and cities for the period 1907–1908. The others are considerably wider in coverage and start in the 1920s. As is generally the case in growth studies, private consumption, like investment, is principally estimated on the basis of the production account. Thus attention is primarily focused on the production, import and export of products defined as consumer and investment goods.

The central government budgets have been reclassified in order to reconstruct public consumption. Some of the data on local government consumption has been obtained from the reports of provincial governors and national education statistics since the 1880s. The recording of statistics on local government activities was started at the beginning of this century, although annual publications did not appear regularly until the 1930s.

Volume calculations. In addition to the series on the value of production at current prices, constant price series and volume indices of production based on them have been calculated in order to estimate the real development of production.[8] In Finland fixed-price calculations have been made in three different ways: 1) the commodity values in the base year have been "brought forward" with the aid of the commodity volume or a volume indicator; 2) the volumes in the year of calculation have been determined using the unit prices of the commodities in the base year; or 3) current prices have been deflated using price indices. The last method has been employed the most, because price indices have been available.

The change of volume should in principle include qualitative as well as quantitative change. The deflation method best fulfils this requirement. In this case, however, it is essential that the price index is "correct" and that it is the best possible index for the commodity in question.[9]

The long-run volume index is calculated for intervals of a few years at a time, and the indices thus obtained are chained together (Laspeyres-type volume index). In the "orthodox" Laspeyres index the first year of the observation period is the base year. When volume indices are calculated nowadays, the base year is generally round about the midpoint of the time period under observation. Although the "normality" of the base year is regarded as being important, it is impossible to find a year which is normal from every aspect of the economy: there are always irregularities of one kind or another.[10]

As an alternative method of calculating volume indices of production, the use of a Divisia index, in which the weights change continuously, has been discussed.[11] A Laspeyres index is used rather than a Divisia index in national accounts, because of the insufficient availability of information on prices. Dan Usher, a researcher of Canadian national accounts, argues in favour of using a Laspeyres index on the basis of the modest data requirements and the fact that even though the index is known to be inaccurate, the direction of the bias is known. A Laspeyres index overestimates development, because it uses the initial year of the observation period as the base year.[12]

Price and wage indices. The calculation of official indices was started in the 1920s. The base year of the oldest official wholesale price index was 1913, while that of the earliest cost-of-living index was 1914. The index of building costs (1922) and the price index of foreign trade (1919) were started later, and official indices of the level of earnings were not compiled until after the Second World War. The earlier indices were often based on defective and unsystematic data. These basic indices have been improved with the passage of time: their coverage having been widened and their classifications made more detailed.

Information on prices is fairly abundant even for the period before the institution of official price indices. The practice of publishing tax prices (for a group of foodstuffs and other commodities as well as certain agricultural wages) began in Sweden in the eighteenth century and was continued in Finland during the Period of Autonomy.[13] Finnish newspapers of the nineteenth century also published economic information: for example, prices of foodstuffs in the market-place, agricultural prices gathered by the offices of provincial governors (since 1877) and foreign trade prices recorded by the customs authorities. A wholesale price index (for the period since 1860) and a cost-of-living index (for the period since 1850) were subsequently constructed from these items of information. Wage indices of many areas of economic activities have also been determined during the study.[14]

Despite certain deficiencies in the available indices, it has been possible to evaluate them as being fairly reliable and, for the most part, as providing a good basis for the calculation of constant prices. During periods when the rate of inflation was high, such as in and after the First and Second World Wars, the representativeness of the indices and their ability to reflect real development is, however, problematic.

Employment. The availability of information on employment varies greatly from one area of economic activity to another: the range of variation stretches from annual records through cross-sectional data to a complete absence. The best annual data is available for industry - some groups of employees having been registered annually since the 1840s and the total industrial workforce as often as four times a year from 1909 onwards - the railways, the postal service, educational establishments and doctors. Accident statistics include long time series of the numbers of some employee groups in the form of work years. Demographic statistics appeared every ten years and these have been the only source of information on some service sectors. Their use is made more difficult by the fact that the concept of a "population engaged in work" used in demographic statistics is too wide to be used as such in a growth study. This is because it includes such groups as the unemployed and part-time workers. Moreover, the classifications used in the demographic statistics differ greatly both from one publication to the next and from those used in the national accounts. Neither has the information assembled every ten years by the clergy from ecclesiastical records always been up to date. It is apparent that some changes of occupation not accompanied by changes of residential location and some instances of people coming into and leaving the country have not been recorded in the church's population register.

In those areas of economic activity for which there are no statistical sources as such on the number of persons employed, it has been possible to divide estimates of wage totals by the average wage in the best cases (central and local government). To some extent it has been necessary to resort to data on the value or volume of production and estimates of the use of labour per unit of output (agriculture) or productivity (industrial handicrafts).

Estimation problems

In order to ensure that the growth studies would be suitable for use as the basis for an economic, economic-historical or historical analysis of social development, the most important requirement for the data was that it is reliable: it had to give an accurate picture of economic development and the level of economic activity during each time period. The use of the data for analytical purposes is, however, limited by the assumptions employed in the construction of the growth studies: interpolations, productivity assumptions, the interdependency of the series, etc.[15]

The concepts of national accounting form a coherent framework for the observation of long-run economic change and restructuring. Nevertheless, the accounting classifications developed principally in the middle of this century have sometimes been difficult to apply to nineteenth-century society. The growth researcher is obviously in difficulty when, for example, the classification of economic activities divides farming-related activities into at least agriculture, forestry, house building, land and water construction (clearing land for cultivation) and manufacturing (production for sale of small cottage industries, tar burning). How much production should be apportioned to which economic activity? Can we be sure that all production will be included? It is also difficult

to distinguish between parochial, municipal and state activities in the local government of rural districts at the end of the nineteenth century - a time when areas of responsibility were not clearly delineated. Some material required a great deal of time-consuming work on reclassification (government accounts).

When resorting to old statistical sources, it is particularly important to focus attention on what has been measured. In principle, different sources can often be used to obtain information on the same subject; the data obtained from each source would not be the same, however, due to such reasons as inconsistencies of definition. For example, industrial statistics record the labour input or the number of people in work; demographic statistics record the population engaged in industrial work - which includes such groups as the unemployed; and tax statistics record the number of people whose incomes exceed the lowest threshold of taxable income.

The necessity for imputations associated with national accounts has been a problem in itself. This difficulty had to be faced primarily when measuring public services, estimating housing services, determining imputed interest rates and calculating subsidies.

As much time as possible has been spent gathering and preparing statistical material for use in the construction of the time series. If annual data has not been available, information on intermediate years has been interpolated, for example, with the aid of an assumption of steady growth, a linear trend or some auxiliary series. [16] In some cases it has been necessary to resort to extrapolation with the aid of data on some base year and either an auxiliary series or a development assumption. These kinds of estimates can distort the reality of cyclical fluctuations, and extrapolation may also do the same for the level of activity. Interpolation or extrapolation based on an assumption of steady or linear growth may destroy or alter the cyclical picture. Estimations made with the aid of auxiliary series may result in additional, exaggerated or diminished cyclical fluctuations in time series. These estimations also clearly restrict the possible use of the findings as a tool for accurate cyclical analysis.

A comparison of the results obtained with both independent source materials (e.g. tax statistics) and international data suggests that the cyclical profiles have come out rather well.

As appropriation tax was collected on more or less the same basis over the years, it probably reflects the annual development and fluctuation of incomes, even though it clearly underestimates their level. It is most unlikely that the bases upon which incomes have been estimated would have fluctuated randomly from one year to the next. Because of the aggregated occupational classification used in appropriation tax statistics and the fact that they significantly underestimate incomes, these tax statistics have been little used as a source in the growth studies. On the other hand, a comparison of the appropriation tax receipts with the gross domestic product series of this study is interesting and also functions as a reliability test for the GDP series.
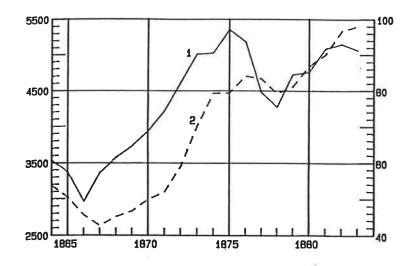

Chart 1. Gross Domestic Product an Appropriation Tax Receipts, 1865–1884, Thousands of FIM

1   *Gross domestic product at market prices (left-hand scale)*
2   *Appropriation tax receipts (right-hand scale)*

Source: Official Statistics of Finland SVT III, Kertomus Suomenmaan suostuntaverosta, 1881 (Appropriation Tax Report 1881), p. 12.

Fluctuations in income appropriation receipts during the period 1865–1885 generally follow the curve of gross domestic product at current prices with a one-year lag (Chart 1).[17] The curves of taxes and gross domestic product also have very similar profiles. Income appropriation tax receipts amounted to about 1.5 per cent of GDP at market prices during the years 1865–1867 and then dropped to 1.2-1.3 per cent between 1868 and 1873. In 1873 the proportion began to rise and was 1.7-1.9 per cent between 1878–1885.

It has not always been possible to preserve the independence of individual series. Often, the only road to an estimation of the value of production has been via the labour input, wage total and a productivity estimates. It has been necessary to use the volume or value of production as the basis for estimates of labour input in large sectors like agriculture, forestry and construction. It has frequently been possible to obtain additional assistance in the form of comparative data from other sources, e.g. demographic, accident and tax statistics. Measu-

ring the production and productivity of services - with the possible exception of transport and communication presents a conceptual problem, as the value of production for non-market services (e.g. administration) is conventionally calculated on the basis of inputs. Generally, the value of private services has not been available either. Even if the value could have been measured conceptually, it would still have been necessary to settle for estimates of production using inputs - in most cases, employment.[18]

Factors such as these should be taken into consideration when using the time series: Do the results provide information on real development or merely the assumptions of the time series' maker? There is cause to exercise caution particularly with observations of productivity, as problems with the source material mean that one can not be sure whether labour input is consistently defined throughout the whole observation period. The concept of employment (wage earners, salaried staff and self-employed persons) ranges from the number of work years to persons in work or receiving their principal livelihood from some economic activity or another. The marked seasonal fluctuations typical of the Finnish economy also cause problems; for example, in agriculture, construction and certain areas of industry, far more work is done at some times of the year than at others. Underemployment may have been fairly widespread a hundred years ago.

Cottage industry products for the producers' own use have not been estimated here, even though, in principle, this is recommendable according to national accounting practices. The boundary line between domestic production for resale and for the producers' own use is not constant. It is possible that some market production from side-lines could have been inadvertently omitted from the estimate.[19]

The production of many household necessities has changed to become market production as tasks formerly carried out by the households have been replaced by the purchasing of goods and services from markets; unpaid household work is not, by definition, included in gross domestic product. On the other hand, other transitional processes have simultaneously been taking place in the opposite direction. New relatively cheap and easy-to-use domestic appliances have reduced market purchases (from laundries, barber's shops, etc.) at the same time as increased wage costs have resulted in the decline of domestic assistants and the general prevalence of self-service. On the other hand, it should be remembered that many commodities produced for the producers' own use - agricultural products being the most important of these - and which formerly accounted for a larger slice of GDP than they do nowadays are included in gross domestic product. In such circumstances it is a question of the national accounting framework not being particularly well suited to providing a description of such changes in the division of labour and economic structure. The growth of gross domestic product is ostensible in so far as the relocation of unpaid household production to markets exceeds the transference of productive activities in the opposite direction. In a new growth study made in Sweden, alternative estimates of unpaid household work have also been made. Thus the Swedish researchers have recorded a somewhat slower growth rate of gross domestic product than that indicated by the national accounts themselves.[20]

New and old time series

The earliest calculation of Finland's national income is contained in the appropriation tax statistics of 1880. K. E. F. Ignatius used a method based on income statistics to estimate total taxed incomes as well as those household incomes which did not fall within the scope of taxation (average value 3.60 mk). Ignatius arrived at a total for "the permanent income of the Finnish nation", which is the equivalent of FIM 3.3 million. In the same publication Ignatius used a method based on production statistics to estimate the national income for 1882 at FIM 3,93 million.[21] According to this study, gross domestic product at market prices was FIM 5.2 million in 1882. Although the explanation of definitions given by Ignatius on his production-based estimate and its coverage is extremely meager, it is worth comparing findings with the GDP components of corresponding economic activities determined in this study.[22]

Ignatius's calculation		The findings of this study	
	FIM 1,000		FIM 1,000
Arable farming	1,060	Agriculture	1,777
Animal husbandry	810		
Forestry	700	Forestry	610
Hunting and fishing	60	Hunting and fishing	130
Industry and industrial handicrafts	800	Industry and industrial handicrafts	621
		Trade, transport	
Trade and sea-traffic	500	and communication	428
Total	3,930	Total	3,566

The value of primary production (arable farming, animal husbandry, forestry, hunting and fishing) is therefore FIM 2,630 million in Ignatius's calcula-

tion and FIM 2,517 million in this study - a variation of 4.5 per cent. The difference between the results obtained by Ignatius and the findings of this study with regard to industry and industrial handicrafts is, however, proportionally larger. It is obvious that Ignatius's industry also includes production which nowadays falls under the category of construction, because it was also recorded in the industrial statistics of the 1880s. Trade, transport and communication in the comparative series bear a close resemblance to each other, despite the fact that there are apparent differences in their concepts. Ignatius hardly included any over-land transport or internal waterway traffic in his calculations. Ignatius's domestic product does not include any public sector activities or private services, not to mention housing services. The concept of national income at that time still lacked definition. Ignatius, himself, pondered over this issue: "It should also be remembered that the basic notion of national income being the same size as the total annual income of the nation's citizenry is wrong, because in this group can be found sizable classes whose incomes are not a direct product of industry or capital, but born out of the taxes paid by others and therefore already counted..."[23]

The estimate of national income calculated by means of taxed incomes is low, even though Ignatius added in estimated incomes for shopkeepers, industrial entrepreneurs, farmers and others. Ignatius, himself, did not regard appropriation tax statistics as being a sufficiently reliable basis for estimating national income, and they have not been employed to any great extent in this study.[24]

In 1977 the author of this report and Erkki Pihkala published an initial estimate of the gross domestic product of Finland for the years 1860, 1870, 1880, 1890 and 1913. Its findings are 7-12 per cent Tower than the corresponding figures of this study. Gross domestic product at current market prices grows at an annual rate of 3.06%, compared with the figure of 3.13% for the GDP of this study. The difference in the rate of growth is small.[25]

After Ignatius, the next estimates of the magnitude of national income were made in the 1920s, when the state income and property taxes were reintroduced and statistical data on them was recorded. Valter Lindberg used income and property tax statistics to arrive at a figure of FIM 1,400-1,500 million for the Finnish national income of 1924. The figure obtained in this study for the gross domestic product of that year is about FIM 2,000 million.[26]

Jaakko Kahma made an estimate of the national income for 1922 using a method based on production statistics.[27] Kahma's concept differs markedly from the concept of national income in use nowadays. It includes agriculture, forestry (Including a yield from the annual growth of forests), hunting and fishing, industry and handicrafts as well as some aspects of transport and trade (the transportation of goods to markets and possibly their exchange, i.e. trade) reduced by the balance of payments deficit. Kahma's estimate of the national income for 1922 was FIM 113 million. The combined total of the corresponding economic activities in this study, i.e. agriculture, forestry, industry, trade and

transport, amounts to FIM 121 million, which is 7 per cent larger than Kahma's estimate. The concept of Kahma's study is, however, so vague that the similarity of the findings is largely coincidental.

The most important determination of national income to be made before official calculations were initiated in 1948 was Valter Lindberg's study "Suomen kansantulo vuosina 1926–1938" (The National Income of Finland 1926–1938).[28] It followed his estimates of Finland's national income in some years since the 1920s.[29] Lindberg's basic concept is chiefly net national product (which does not include the consumption of fixed capital). Lindberg additionally defined the public sector activities in his national income more narrowly than the national income concept of the old SNA and included in it only "the sum of the public expenses used for consumption", i.e. health, education, social and welfare activities. Lindberg omitted defence and administrative costs from his national income combination, although he did make an alternative series ("A Broader Study of the Public Sector") in which he included administration as a sort of "upper limit of public sector activity".[30] In all other respects Lindberg's concept of national income and his computational solutions are fairly close to the concepts of national income used in the old SNA. The development of Lindberg's national income series is very similar to the development of this study's gross domestic product at market prices. Lindberg's figures are 15 - 20 per cent lower than those of this study, which to some extent at least reflects his use of net national product and the conceptual difference between the two studies with regard to the public sector.

In 1950 Eino H. Laurila published a series for the national income of Finland over the period 1926–1949, using a large portion of Lindberg's figures for the period 1926–1938.[31] Laurila's figures for public sector activities differ from Lindberg's in that they include public administration and defence.

Laurila's study is conceptually close to the national income of the old SNA, but there, too, only net national product has been calculated, and its results cannot be compared directly with the findings of this study. Laurila's estimate of the value of private services is clearly lower than in later studies. The figures of both Lindberg and Laurila also indicate a lower level of construction and forestry than do the findings of this study.

Lindberg only had a series at current prices. Laurila, however, also estimated a real national income index for the period 1926–1949. The gross domestic product volume index of this study is very similar to Laurila's real national income index over the period 1926–1949. The only deviations are a few years in the 1940s (1940, 1945 and 1946).

Laurila's study is associated with the national income calculations initiated by the Central Statistical Office of Finland in 1948. The results of these calculations have been published in the "Economic Survey" of the Ministry of Finance's Economics Department, and in the Bulletin of Statistics (Tilastokatsauksia) since 1956. A comparison with figures conforming to the old SNA which were pub-

lished in 1964 indicates that the level of these 1950s' calculations are somewhat lower throughout than subsequent estimations.

In 1959 0. E. Niitamo published an employment estimate for the years 1938–1959.[32] His estimate of total employment for 1938 was 1,522,000, which corresponds exactly with the resuit of this study (1,521,600). An examination of Niitamo's employment figures by kind of economic activity shows that his estimate of 74,000 work years for agricultural employment is as much as 10 per cent higher than the corresponding figure in this study. Correspondingly, with the exception of the ownership of dwellings and private services, his estimates of employment in other areas of the economy are about 10 per cent lower than those presented here.

In the 1970s completed growth studies as well as others still being prepared were used as the basis for an estimate of the volume index of gross domestic product for the period since 1900. This index - a combination of value-added volume indices for agriculture, forestry, manufacturing and industrial handicrafts, construction, transport and communication, trade, and housing services; i.e. a volume index of predominantly material production - develops in much the same way as the total volume of gross domestic product in this study.[33] Eino H. Laurila has made a very detailed study on private consumption in Finland for the period 1900–1975, in which he has published a gross domestic product series for the same period, both at current and 1938 prices. It too is very close to the findings of this study.[34]

1   See PAAVO GRÖNLUND - O. E. NIITAMO Suomen kansantalouden tilinpito vuosina 1948–1964, Käsitteet ja menetelmät (National Accounting of Finland 1948–1964, Concepts and Methods). Tilastollinen päätoimisto, Monistettuja tutkimuksia No 5, Helsinki 1968; HEIKKI SOURAMA - OLLI SAARIAHO Kansantalouden tilinpito, Rakenne, määritelmät ja luokitukset (National Accounting, Structure, Definitions and Classifications). Tilastokeskus, Tutkimuksia No 63, Helsinki 1980; REINO HJERPPE - O. E. NIITAMO Uuden SNA:n mukaisen kansantalouden tilinpidon perusrakenne (The Basic Structure of the New System of National Accounts). Tilastokeskus, Tutkimuksia N:o 15. Helsinki 1971.

2   A System of National Accounts and Supporting Tables. Studies in Methods, Series F, 2, United Nations, New York 1953; also see EINO H. LAURILA Suomen kansantalouden kirjanpito (National Accounting in Finland). Kansantaloudellinen aikakauskirja 1953; EINO H. LAURILA Suomen kansantulotilaston kehityksestä vuosina 1948–1963. Kokonaistaloudellisia ongelmia (The Development of National Income Statistics in Finland 1948–1963. Macroeconomic Problems), Kansantaloudellisia tutkimuksia XXV, Helsinki 1964; PERTTI MARJOMAA Suomen kansantalouden tilinpidon historiaa. Taulukoinnista tietoyhteiskuntaan (National Accounting in Finland, Historical Aspects. From Tabulation to Information Society), Helsinki 1986.

3   Suomen kansantalouden tilinpito vuosina 1948–1964, Taulut (National Accounting in Finland in 1948–1964, Tables). Tilastollisia tiedonantoja No 43, Helsinki 1968; Kansantalouden tilinpito, Aikasarjat vuosilta 1960–1981 (National Accounts, Time Series for 1960–1981). Tilastollisia tiedonantoja No 75, Helsinki 1984; Kansantalouden tilinpito 1980–1985 (National Accounts 1980–1985). Tilastotiedotus, KT 1986:6.

4   This rise in the level of domestic product seems to have continued during the 1970s and 1980s due to estimates having been revised to conform with the revised SNA.

5   KAI HOFFMAN Suomen sahateollisuuden kasvu, rakenne ja rahoitus 1800-luvun jälkipuoliskolla (The Growth, Structure and Financing of the Finnish Sawmill Industry in the Second Half of the Nineteenth Century). Bidrag till kännedom av Finlands natur och folk H. 124, Tammisaari 1980; ERKKI PIHKALA Valtion tulojen ja menojen rakenne 1800-luvun jälkipuoliskolla (The Structure of Government Revenues and Expenditure in the Second Half of the Nineteenth Century). Helsingin kauppakorkeakoulun julkaisuja B 23, Helsinki 1977.

6   KYÖSTI JÄRVINEN Suomen maalaiskuntain finanssitilasto I-II (Financial Statistics of Rural Municipalities in Finland I-II). Jyväskylä 1899; AUG. HJELT - O. A. BROMS Kunnallinen tuloverotus ja tulosuhteet Suomessa, I ja II, Kaupungit ja Maalaiskunnat (Municipal Income Taxation and Incomes in Finland, I and II, Urban and Rural Municipalities), Tilastollinen tutkimus. Helsinki 1904 ja 1905.

7   Official Statistics of Finland SVT XXVI. Työtilastoa (Labour statistics); Official Statistics of Finland SVT XXVI A. Tapaturmatilastoa (Accident statistics).

8   The volume index of total gross domestic product was calculated using a Laspeyres index formula. The volume indices of individual economic activities were weighted by their value added in the middle year of various eleven-year periods and added together (i.e. the base year is 1865 for the period 1860–1870, 1875 for the period 1870–1880,... 1944 for the period 1940–1948). These were chained together into totals for sectoral value added at constant prices and total gross domestic product, which were used to calculate the volume indices of production, 1926=100. The GDP volume index of the old official system of accounting (1954=100) was used for the years 1948–1960, and this was chained onto the index calculated here from the year 1948. The volume of private services was assumed to have developed as in the old system of accounting, although an adjustment was made to the level of their value added. The volume index of value added according to the revised SNA for the years 1960–1985 has been chained onto the volume index of gross domestic product for the period 1860–1960 and the

sectoral volume indices up until 1960. See the note on page 89 in the appendix: Comparability of the old and revised national accounts.

9   Olle Krantz criticizes the use of price indices which are not constructed specifically for calculating volume indices, see OLLE KRANTZ Techniques for Measuring Economic Growth in Sweden. Workshop on Quantitative Economic History, 2-4 September 1985, University of Groningen.

10 SOURAMA - SAARIAHO 1980, KRANTZ 1985.

11 See USHER 1980, pp. 177-182; BENT HANSEN - EDWARD F. LUCAS On the Accuracy of Index Numbers. The Review of Income and Wealth 1984:1.

12 See USHER 1980, P. 183. A volume index of the whole gross domestic product for the period 1860–1948 was calculated using the Divisia-Törnqvist index and the so-called Vartia II index. The volume index of production calculated by means ofthe Divisia index generally indicates growth of almost the same magnitude as a Laspeyres index. In the periods of intense inflation that occurred during and after the First and Second World Wars, however, GDP volume calculated by means ofthe Divisia index grows significantly faster than the result obtained with a Laspeyres index. See YRJÖ 0. VARTIA Relative Changes and Index Numbers, ETLA A4, Helsinki 1976, pp. 110, 128.

13 Tax prices are prices which have been officially confirmed as the basis for paying tax, and to some extent they may have diverged from current prices. In most cases they apparently lagged behind changes in market prices.

14 HEIMER BJÖRKQVIST Guldmyntfotens införande i Finland åren 1877–1878 (The Introduction of the Gold Standard in Finland in 1877–1878). Publikationer utgivna av Finlands Banks institut för ekonomisk forskning, Serie B:13, Helsingfors 1953; HEIMER BJÖRKQVIST Prisrörelser och penningvärde i Finland under guldmyntfotsperioden 1878–1913, En struktur- och konjunkturanalys (Price Movements and the Value of money in Finland during the Gold Standard in 1878–1913, A Structural and Business Cycle Analysis). Publikationer utgivna av Finlands Banks institut för ekonomisk forskninp, Serie B:19, Helsingfors 1958; SAKARI HEIKKINEN et al. Palkat, toimeentulo ja sosiaalinen rakenne Suomessa 1850–1913 (Wages, Livelihood and Social Structure in Finland 1850–1913). Helsingin yliopiston talous- ja sosiaalihistorian laitoksen tiedonantoja N:o 13, Helsinki 1983; VÄINÖ LUOMA Virkamiesten järjestäytyminen Suomessa I-II (Civil Servant Unionism in Finland I-II). Virkamiesliiton julkaisuja No:8, Turku 1962; VERNER LINDGREN - Valtion virkamiesten palkat, Kehitys vuosina 1914–1927 ja 1927–1938 (The Development of Civil Service Pay 1914–1927 and 1927–1938). Suomen virkamiesyhdistyksen julkaisuja, Helsinki 1928 ja 1938.

15 Also see EINO H. LAURILA Mittausongelmista kasvututkimuksissa, Kokonaistaloudellisia ongelmia (On the Problems Concerning Long-Term National Accounting, Macro-economic Problems). Kansantaloudellisia tutkimuksia XXV, Helsinki 1964.

16 MILTON FRIEDMAN Interpolation on Time Series. American Statistical Association Journal, Dec. 1962.

17 For reasons of clarity, tax for the year 1876 has been omitted from the appropriation tax data in Chart 1. The annual data for the years 1877–1884 has therefore been advanced by one year. Up until 1876 tax was paid - according to the tax statute - on the principle of income received during the year of payment; after 1876, it was paid on the principle of income from the preceding year. In practice, it is clear that income received during the preceding year was used between 1865 and 1876 as the basis for the tax paid at the beginning of the next year. Tax receipts during the period 1875–1877 were equal in amounts and subsequently followed the development of incomes with a lag of about two years.

18 Also see OLLE KRANTZ Productivity Changes in Scandinavia in the 19th and 20th Centuries. International Productivity Comparisons and Problems of Measurement, 1750–1939, Ed. Patrick O'Brien, Ninth International Economic History Congress, Berne 1986, pp. 57–58.

19 Matti Peltonen has made a study on the secondary earnings of farms at the end of the nineteenth and the beginning of this century. Log and freight haulage as well as fishing were the most important sources of secondary income. A large number of farms had secondary incomes, but the proportion of these to the total income of farms was small. See MATTI TAPANI PELTONEN Suomalaisen maatilatalouden murros autonomian ajan lopulla, Maataloushistoriallinen tutkimus (The Transformation of Finnish Agricultureat the End of the Period of Autonomy, Agricultural History Study). Talous- ja sosiaalihistorian lisensiaattityö, Helsingin Yliopisto 1986.

20 The development of Sweden's gross domestic product with and without unpaidhousehold work. GDP has grown as follows (annual percentage increases):

	Without	With
1851/55–1891/95	2.1	1.8
1891/95–1906/10	2.7	2.4
1906/10–1926/30	1.8	1.6
1926/30–1951/55	3.5	3.4
1951/55–1971/75	4.2	3.7
1971/75–1976/80	0.8	0.8

OLLE KRANTZ Utrikeshandel, ekonomisk tillväxt och strukturförändring efter 1850 (Foreign Trade, Economic Growth and Structural Change after 1850). Stockholm 1987, p. 58. Unpaid household work is included in Lindbergs estimate of Finlands gross domestic product, see VALTER LINDBERG Suomen kansantulo vuosina 1926–1938 (The National Income of Finland,

1926–1938). Suomen Pankin suhdannetutkimusosaston julkaisuja, Sarja B:1, Helsinki 1943.

21 Official Statistics of Finland SVT IV 3. Varallisuuden suhteita, Kertomus Suomenmaan suostuntaverosta vuonna 1881 (Condition of Wealth, Appropriation Tax Report 1881), p. 12.

22 Georg Luther examines Ignatius's first calculation of national income and the circumstances in which it came about. GEORG LUTHER Suomen ensimmäiset kansantulolaskelmat. Suomen kansantalouden tilinpitoa sata vuotta (The First Calculations of Finland's Nationai Income. A Hundred Years of National Accounting in Finland). Tilastokeskus, Tutkimuksia, 83, Helsinki 1982, pp. 83-91.

23 Official Statistics of Finland SVF IV, Kertomus Suomenmaan suostuntaverosta vuonna 1865 (Appropriation Tax Report 1865), p. 7.

24 Ilkka Nummela used taxation data to study the distribution of income in the Finnish city of Kuopio. He also observed that the tax office made higher income tax assessments for municipal taxation than they didfor state appropriation taxation. ILKKA NUMMELA - ERKKI K. LAITINEN Distribution of Income in Kuopio 1880–1910. The Scandinavian Economic History Review 1987.

25 RIITTA HJERPPE - ERKKI PIHKALA The Gross Domestic Product of Finland. Economy and History, Vol, XX:2, 1977.

26 VALTER LINDBERG Incomes in Finland. Bank of Finland Monthly Bulletin 1926:11, pp. 22-28.

27 JAAKKO KAHMA Tullikysymys kansantaloudessamme (The Question of Customs Duty in our Economy), Helsinki 1924.

28 LINDBERG 1943.

29 LINDBERG 1926; VALTER LINDBERG The National Income of Finland, Bank ofFinland Monthly Bulletin 1937:2; VALTER LINDBERG En uppskattning av Finlands nationalinkomst (An Estimate of the National Income of Finland). Unitas 1936, pp. 65-69.

30 LINDBERG 1943, pp. 121-124.

31 EINO H. LAURILA Suomen kansantulo 1926–1949, Ennakkoarviointien tuloksia (The National Income of Finland 1926–1949, The Results of Preliminary Estimates). Tilastokatsauksia 1950.

32 O. E. NIITAMO Työllisyyden kehitys Suomessa vuosina 1938–1959, Ennakkolaskelma (The Development of Employment in Finland 1938–1959, Preliminary Report). Tilastokatsauksia 1959:12.

33. See EERO HEIKKONEN Asuntopalvelukset Suomessa 1860–1965 (Housing in Finland, 1860–1965). Suomen Pankin taloustieteellisen tutkimuslaitoksen julkaisuja, Kasvututkimuksia III. Helsinki 1971, p. 234; OSMO FORSSELL KaUppa Suomessa 1860–1960 (Finland's Domestic Trade, 1860–1960). Suomen Pankin Julkaisuja, Kasvututkimuksia X Helsinki 1979, Appendix 15; O. E. NIITAMO National Accounting and National Statistical Service on the Threshold of the 1980s. Liiketaloudellinen Aikakauskirja 1980:1, pp. 37-38. In 1977 Laurila published preliminary data on the development of national income in the twentieth century: EINO H. LAURILA Suomen kansantalouden kasvu ja rakennemuutokset kasvututkimuksen valossa (Growth and Structural Change in Finland in the Light of Various Growth Studies). Taloustieteellisen Seuran vuosikirja 1977, Helsinki 1978.

34 EINO H. LAURILA Kulutus Suomen kansantaloudessa vuosina 1900–1975 (Consumption in Finnish Economy in the Years 1900–1975). ETLA B 42, Helsinki 1985.

* *This chapter is reprinted from The Finnish Economy 1860–1985, Growth and Structural Change, pp. 23–40.*

2. CALCULATION METHODS, SOURCES, RELIABILITY ANALYSIS

Agriculture

The agricultural growth study "Maataloustuotanto Suomessa 1860–1960" (Agricultural Production in Finland 1860–1960) by Pentti Viita was published in 1965 as the first volume in the Kasvututkimuksia (Growth Studies) series of the Bank of Finland.[1] According to the SNA recommendations, Viita considers the agricultural production to cover "field crop production, domestic animal husbandry, garden cultivation, reindeer farming, beekeeping, fur farming and horse labour not included in farm work. The production generally also covers the first stage processing of agricultural products on the farm. Defined this way, the production includes all agricultural products irrespective of whether part of them has been marketed..." Commodity subsidies were mainly included in producer prices.[2]

The main data sources for studying the agricultural growth in the 19th century were the governors' reports with information on crop yields, domestic animals and prices. Concerning the year 1901 there are extensive data collected by the Subcommittee for Landless Population. From 1910 on, the source is the Agricultural Enquiry, conducted once in 10 years (SVT III). From the same period on, annual agricultural statistics were collected, based on samples, and from 1912 on there are data on farms obliged to keep official accounts.[3]

Viita's study was reviewed by Arvo Soininen in Kansantaloudellinen aikakauskirja (Finnish Economic Review).[4] Soininen considers the crop yield data to be relatively reliable, at least those collected after the 1877 agricultural reform. The data on milk production are based on the number of cows and the average milk yield per cow. Neither can hardly have been estimated in a fully reliable way, but the error is not likely to be a major one. The meat production data were based on the numbers of animals alive and estimating their carcass weights was a difficult task. The price data available to Viita have, in principle, been reliable. According to Soininen, the source material available for the early part of the period was poor, and this may have had an effect on the development of this item's contribution to the GDP. The data became more reliable as more and more farms were obligated to keep accounts and participate in the Agricultural Accounting system.

The agricultural labour input estimate for 1860–1948 was made by Matti Peltonen.[5] The estimate for the years 1860–1910 is based on productivity assumptions: the labour needed for crop husbandry and livestock production during different periods was estimated on the basis of contemporary studies concerning the level and development of labour input required to achieve a certain volume of output. In stock rearing as well as in tilling and sowing, the demand for labour, in other words labour productivity, is assumed to have re-

mained constant, because of the mutually counterbalancing effects of labour increasing and labour saving changes. In haymaking, harvesting and threshing, the introduction of machines and new working methods improved the productivity of labour by an estimated 45 % between 1860 and 1910. According to Peltonen, the overall increase in labour productivity amounted to 34 % in the years 1860–1913; the productivity increase is accountable in part to the internal structural changes within the agricultural sector, in part to the productivity development of the various work phases. Productivity-improving factors during the last decades of the 19th century were e.g. the expanding use of mowing machines and the introduction of threshing machines.

For 1912–1948 labour demand data are available concerning farms obliged to keep accounts. Based on these and the output data, it was possible to make estimates on the labour input. The data from farms obligated to keep accounts (accounting farms) were converted to correspond with the actual farm size structure.

Peltonen's labour input data, based on the crop yield data, vary considerably from year to year, according to the size of the crops. It seems unlikely, however, that in a case of crop failure, the amount of work done would have decreased to fully the same degree. Tilling and sowing were likely to require a more or less normal amount of work and a subnormal crop yield would even require above-average input of labour per crop unit produced. Over a longer period, the annual fluctuations are of no major importance.

In the summary, the data used for 1860–1960 is agricultural contribution to the GDP at current prices, quoted by Viita. From 1961 on the sources are the official series based on the new System of National Accounts (SNA). The production volume index for 1860–1960 was computed on the basis of Viita's GDP contribution at 1926 prices, continued from 1960 on by the volume index according to the new SNA. The labour input series for 1860–1948 was computed by Matti Peltonen. A five-year moving average was used to even out the very extensive fluctuations in labour input in Peltonen's original series, caused by variations in crop yields. Peltonen's original estimates were used for the years 1860–1861 and 1947–1948.

The labour input data on agriculture, forestry, hunting and fishing for the period 1948–1960 were given as a single series in official publications. No separate estimate on the input of labour in agriculture was made for the years mentioned.

1 VIITA 1965.
2 VIITA 1965, p. 11–12.
3 VIITA 1965, p. 20–23.
4 ARVO M. SOININEN: Arvostelu Pentti Viidan teoksesta "Maataloustuotanto Suomessa 1860–1960" (Critique of Pentti Viita's Work "Agricultural Production in Finland 1860–1960") Kansantaloudellinen aikakauskirja 1966:4, p.

310–312; PENTTI VIITA: Kasvututkimuksesta dosentti Arvo M. Soiniselle, Keskustelua (To Docent Arvo M. Soininen: Growth Study, A Discussion), Kansantaloudellinen aikakauskirja 1967:1, p. 41–42; ARVO M. SOININEN: Kasvututkimus ja dokumentaatio, keskustelua (Growth Study and Documentation, A Discussion), Kansantaloudellinen aikakauskirja 1967:1, p. 43–44.
5   PELTONEN 1987.

Forestry

The growth study on forestry "Metsätaloustuotanto Suomessa 1860–1965", Kasvututkimuksia IV (Forestry in Finland - Growth Studies IV) was published by Heikki J. Kunnas in 1973. In this study forestry covers the production of wood and other forest produce for economic purposes, divided into 1) timber harvesting and log floating, 2) afforestation, 3) forestry promotion and 4) gathering of forest produce, other than wood.[1] There is a difference between the definitions of forestry in the growth study and in the old national accounts: in the growth study forest cultivation is counted as a cost item in timber harvesting, while in the official accounts it is considered an investment in forestry.[2]

The figures used in the summary were taken from the contribution of forestry to the GDP at current prices and the volume index of production for 1860–1960 calculated by Heikki J. Kunnas, the employment series for 1860–1948 and gross wages and salaries series for 1860–1960. From those points on the figures were taken from the official national accounts according to the SNA, in which the labour inputs in agriculture, forestry and fishery are presented as one figure annually.

In addition to log floating, the labour input in forestry mostly consists of harvesting, including felling the standing trees, rough classification of the timber, delimbing and cutting into commercial lengths, and transportation to the collection point for long-distance haulage.[3] The timber harvest volume data are based separately on commercial and household use cutting. The commercial cutting data for 1860–1942 were reconstructed by estimating the use of timber by main consumer groups: exports, industry, transport, others. The correctness of data for the period 1922–1942 was verified on the basis of studies on wood consumption. Actual statistics on the cutting volume exist since 1942. Some estimates on the consumption of wood in household use are available from 1850 on. Data have been compiled on stumpage prices by the Finnish Forest Research Institute, starting from the felling season 1934–1935. The stumpage price series covering the period before 1934 was reconstructed on the basis of price data on

exported timber, raw timber used by the industry (1910–1934) and the timber sold by the National Board of Forestry (1900–1934). Data on the labour input in market felling only exist since 1942. For the period before that year, the labour input data were estimated on the basis of production volume and mainly relying on assumptions of constant productivity. An exception here are the early 1920s when the productivity is assumed to have improved by 3–6 % annually (depending on the wood product) in the course of five years. The estimates on the use of labour are based on the studies by Helander and Pöntynen in the 1920s and 1930s.[4]

The critics on the study by Kunnas are focused on the consumption of wood for household use, estimates on the market fellings, price data on standing timber and the constant productivity assumption in estimating the labour input for the pre-First World War period. According to Kunnas, the non-marketed share of forestry's contribution to the GDP was nearly 80 % in the 1860s. Compared with the data presented by Soininen, the estimates on the consumption of wood in household use made by Kunnas for the years 1860 and 1875 are low, only 59–66 % of those made by Soininen. According to Soininen, the consumption of wood was rationalized rapidly, when the value of and demand for timber were rising.[5]

The choice of pricing basis for household consumption of wood is a difficult one in those periods of time when there would not have been any demand for timber on the market. According to Soininen, the value of such timber is only the value of the labour used to harvest it. Kunnas chose to use the market price for heavy timber and a value slightly below the market price for firewood.[6]

In his report on the commercial cuttings, Kunnas does not define exactly what data on the consumption of wood by the industry he has been using for those periods of time when there were no industrial statistics available (before 1884). He also does not say whether the largish quantities of wood used by the iron industry are included in the estimates or not.[7] A comparison between the data in the study by Kai Hoffman on the timber consumption by the sawmills and the Kunnas study is problematic because different concepts and units of measure are used by the two. The standing timber prices differ from Hoffman's estimates in that there is more variation in the figures used by Kunnas. Hoffman also presupposes a rise of standing timber prices by 0.9 % annually, while the standing timber price series of Kunnas shows no rise.[8] Kunnas' standing timber price data are based on the exports of heavy raw timber which were rather low in some years. For this reason Hoffman thinks that the prices quoted by Kunnas display fluctuations of unrealistic dimensions.

Matti Peltonen has criticized Kunnas' constant productivity assumption in estimating the labour input. According to Peltonen, innovations improving the productivity of labour in timber harvesting and floating were introduced in both tools and working methods. The output per worker data for the late 19th century, calculated on the basis of Kunnas' material, are unproportionately high.[9]

Peltonen also finds that Kunnas underestimates the total cutting volume, i.e. the wood consumption, and by the same token overestimates the standing timber prices.[10] These errors may cancel each other. It is obvious that the labour input series by Kunnas gives too low values for the pre-First World War data because of the constant productivity assumption. On the other hand, the total wage bill data are too low, although the average wage data may be correct.

1   KUNNAS 1973, p. 18–19.
2   KUNNAS 1973, p. 13.
3   KUNNAS 1973, p. 20.
4   KUNNAS.1973, p. 47–57.
5   SOININEN, ARVO M., Vanha maataloutemme (Old Traditional Agriculture in Finland). Historiallisia tutkimuksia 96, Forssa 1974, p. 294.
6   KUNNAS 1973, p. 55
7   HOFFMAN, KAI – LEHMUSKALLIO, KLAUS, Tillväxtforskning i Finland, En litteraturkommentar (Growth Studies in Finland, A Review of the Literature). Ekonomiska Samfundets tidskrift 1974:3.
8   HOFFMAN, KAI, Suomen sahateollisuuden kasvu, rakenne ja rahoitus 1800-luvun jälkipuoliskolla (The Growth, Structure and Finanding of the Finnish Sawmill Industry in the Second Half of the Nineteenth Century). Bidrag till kännedom av Finlands natur odh folk H.124, Tammisaari 1980, p. 87–88.
9   PELTONEN, MATTI TAPANI, Maatalous ennen traktorin aikaa, Arvio maatalouden työllisyydestä 1860–1948 (Agriculture before the Tractor, An Estimate of Agricultural Employment 1860–1947). Helsingin yliopiston talous- ja sosiaalihistorian laitoksen tiedonantoja N:o 20, Helsinki 1987.
10 PELTONEN, MATTI TAPANI, Suomalaisen maatilatalouden murros autonomian ajan lopulla, Maataloushistoriallinen tutkimus (The Transformation of Finnish Agriculture at the End of the Period of Autonomy, Agricultural History Study). Talous- ja sosiaalihistorian lisensiaattityö, Helsingin yliopisto 1986, p. 154, 170.

Hunting and fishing

Fishing as a main means of livelihood has been practised on the Lake Ladoga, in the outer archipelago and along the major rivers. Elsewhere it has been more of a subsidiary source of living for those engaged in agriculture. Hunting as an independent trade had some meaning in the late 19th century. The hunting and fishing data were calculated by Hilkka Taimio.

In the hunting and fishing data, no estimated purchases are included in the gross production value, which means that their GDP contribution corresponds with the gross production value, except for the period 1926–1960 for which there is a series taken directly from an article by Heikki Kunnas of 1962.[1] No labour input estimate is given for the years 1860–1948. The fishing and hunting series of the new SNA were used from 1960 on.

In order to make an estimate on the contribution of hunting to the GDP, data on the yield of hunting in individual years was collected from the Statistical Yearbook of Finland and the provincial governors' reports.[2] The exports of fur skins were also included; the values were taken from studies on the growth of the Finnish foreign trade.[3] The value of domestic sales was not estimated. The value of hunting was arrived at by multiplying the yield volume by an estimated price index, and chaining that to the value of production in 1926.

In the sources used the yield of hunting is divided into three categories: game hunted for food (elk), game hunted for their skins (squirrel, fox, ermine, elk skins) and other game (game birds, hare). The data also include the numbers of bears, wolves, lynxes, wolverines, otters and martens killed. The 1878–1913 average prices for squirrel and wolf skins, from the study by Björkqvist of 1958, serve as a price indicator for hunting.[4] The price trends of the rest of the years are presupposed to have reflected the fluctuations in the standard of living index.

Data on the quantities of fish, crayfish and seals caught were collected as basis for an estimate on the fishing yield. Individual data were collected on the following categories: salmon and trout, whitefish and grayling, Baltic herring, vendace and smelt, sprat, and others.

Only the crayfish exported are included, not the domestic consumption. The export data for 1860–1917 were taken from the growth study on foreign trade by Erkki Pihkala, the 1918–1925 figures from the Statistical Yearbook of Finland. The fish and seal catches in 1860–1876 were estimated on the basis of the provincial governors' reports. The catch data for the said period were corrected upwards, based on Sakari Heikkinen's manuscript, and the value of exports added to the sum.[5] The catches in the governors' reports were given in numbers of seals caught and five-year average weights of fish catches. The 1877–1925 data on seal and fish catches were taken from the Statistical Yearbook of Finland.

From the year 1919 data are available on the prices of seal meat, oil and skins, on the basis of which the prices of average-sized ringed seals, grey seals and young seals were interpolated as, respectively, 235, 560 and 60 Finnish markka. Since the seals caught were not specified by species in the 1919 data, an average price was calculated, i.e. 285 Finnish markka. The price trend for seals was assumed to reflect the cost of living index in 1914–1925, based on the 1919 price. For the years 1869–1913, the fish price index constructed by Sakari Heikkinen was used.[6]

The source for price data concerning the individual fish species for the years 1860–1913 is the study by Heimer Björkqvist.[7] The missing data, the Baltic herring prices for 1878–1887 and the vendace prices for 1878–1889 were interpolated on the basis of Heikkinen's index.

The volume indices of the GDP contributions of hunting and fishing were calculated by deflating the current price series by the cost of living index. The employment effect and total wage bill were not estimated.

The reliability of the hunting and fishing yield data varies. The hunting yield data for 1860–1880, as given in the governors' reports, are not considered very reliable. If a bounty was paid for an animal killed, it was probably reported. Any reports on other catches are likely to have been more haphazard. Mainly included were the cases where the catches were sold, in part only those exported. There are price data concerning the various fish species which is why the value series may be considered sufficiently reliable. Since there are no prices for individual animals available, anyway, the price data for hunting are rough estimates.

1 HEIKKI J. KUNNAS, Metsästystä ja kalastusta koskevat kansantulolaskelmat vuosilta 1926–1960 (National Income Calculations concerning Hunting and Fishing 1926–1960). Tilastokatsauksia 1962:8.
2 SVT: Suomen tilastollinen vuosikirja (Finnish Statistical Yearbook, various years); SVT II: The economic situation in Finland in various years.
3 PIHKALA 1968 and OKSANEN-PIHKALA 1975.
4 BJÖRKQVIST 1958.
5 SAKARI HEIKKINEN, Elinkustannukset Suomessa vuosina 1850–1913 (The Cost of Living in Finland, 1850–1913), manuscript.
6 HEIKKINEN, manuscript
7 BJÖRKQVIST 1958.

Industry

Industry in this study includes, as in the old SNA, mining and quarrying, manufacturing as well as power, gas and water utilities. Manufacturing covers the mechanical or chemical transformation of all organic or inorganic matters into new products - whether by or without machine power or whether the work was done in an industrial plant or the home of the worker - except when the object or the end result of the work was a building.[1]

"Suomen teollisuus ja teollinen käsityö 1900–1965" (Finnish Industry and Industrial Handicrafts 1900–1965) by Reino Hjerppe, Riitta Hjerppe, Kauko Mannermaa, O.E. Niitamo and Kaarlo Siltari was published in 1976 as the 7th volume of the Kasvututkimuksia (Growth Studies) series. "Suomen teollisuus ja teollinen käsityö 1860–1913" (Finnish Industry and Industrial Handicrafts 1860–1913) by Sakari Heikkinen and Riitta Hjerppe was published in 1986; the team also included Kai Hoffman, Timo Myllyntaus and Birger Rabb.[2] Some data published earlier for 1900–1912, mainly concerning the industrial handicrafts, were corrected in the latter study.

In this summary study, the sources used for the GDP contribution series of industry and industrial handicrafts at current and constant prices, volume indices of production, employment series and total wage bills were as follows: for 1860–1913 Heikkinen-Hjerppe, for 1913–1960 Hjerppe et al., for 1960–1994 the official data according to the new SNA.

In the industrial growth studies, the industrial production has been delimited to exclude home production for own use. However, it covers the output of home industries for sale, in principle. In practice, it has been difficult to estimate how much of the home industry output for sale could be included.[3]

The industrial growth studies separate industry from industrial handicrafts by the size of the plant. As a general rule, plants with a minimum of five workers are counted as industry, those with less than that as industrial handicrafts. Sawing by hand and tar burning are not included in the 1860–1913 growth study; a separate estimate was made for this summary and is published in conjunction with the industry data. In the Hjerppe et al. study, however, tar burning is included in so far as the data were available in the industrial and handicrafts statistics.

The basic source available for the industrial growth studies are the industrial statistics (SVT XVIII and XVIII A) since 1884 and the handicrafts statistics for the years 1913, 1923 and 1934 (SVT XVIII B) as well as the census of enterprises of 1953 (SVT XXXV). From 1842–1844 on until 1876 there are the statistics of the Manufaktuurijohtokunta (Board of Manufacture) and for 1872–1883 the statistics on mining and metal industry of the Vuorihallitus (Board of Mines). These were complemented with data from other volumes of the official statistics, archival material and separate studies.[4]

The data available for the growth studies on industry have been relatively good. The gross output values have been reported annually by industrial branch since 1884 and are in part available even for earlier years in the statistics of the Board of Manufacture and Board of Mines. Similarly, data are available on the value of raw materials since 1884, although on a systematic basis only from 1909 onwards. The published statistics also contain information on the number of employees over the whole period, although the data before 1909 are incomplete and give the total number of persons employed (irrespective of employment duration) rather than man-years of labour. The industrial data for 1860–1884

were complemented by archival information, original statistics material as well as information found in the archives of companies and separate studies.[5]

In the case of industrial handicrafts - before 1909 partly included in the industrial statistics - the authors had to make estimates on a much larger scale concerning the production volumes, output values per worker and raw material values. Statistical data on industrial handicrafts available for the period 1870–1884 are especially scarce. The authors had also to conclude that the handicrafts statistics were far from complete and assessments on the output not included in them were made on the basis of e.g. demographic and accident statistics.[6]

It is very likely that the data arrived at concerning the actual industry is of relatively good quality. This makes industry one of the few sectors with really independent, distinct data on the output value, value-added and the number of workers. In the case of industrial handicrafts, on the other hand, the authors have been forced to make assessments on either the output value or the number of workers, based on a productivity assumption. In these assumptions the authors have mainly relied on data from the industrial statistics concerning small plants in closely related sectors.

The industrial growth studies do not cover sawing by hand nor tar and pitch production which were subjected to separate estimation.

Sawing by hand

The estimates on sawing by hand cover exports and the production of railway sleepers for the years 1860–1900, during which period hand-sawn timber was a significant export item. By 1900 the value of these exports had sunk to 800 000 old Finnish markka and after that the hand-sawing was not estimated as a separate item. An assessment was also made on the hewing and debarking of railway sleepers. Hand-sawn timber was also used for building on the home market, but an assessment was not attempted here - it is in part included in the household use of wood in the forestry sector. In the house construction sector, hand-sawn timber is in principle included as a deducted item, although it is not clear how high its share is of the total, as compared to timber sawn in the sawmills.

The volume and value of hand-sawn timber exports were estimated on the basis of Hoffman's figures as the difference between exports and the volume of sawn timber produced.[7] The authors here assumed that all timber produced for sale - with the exception of railway sleepers - was exported. This assumption is not quite correct, although consumption on the home market was relatively modest. The labour input and total wage bill were estimated on the basis of the volume sawn; the labour input was assumed as eight man-days per standard, based e.g. on Vuorela's data.[8] The wage assumption is based on the man-day conversion price.[9]

The number of sleepers used by the State Railways was estimated, based the information in the railway statistics on tracks completed and sleeper replacement requirements (10 % per year.[10] The price index for the sleepers used was the stumpage price index for sales of timber from state-owned forests, calculated by Matti Peltonen,[11] and the 1898 price level data were taken from the report of the Private Forests Committee.[12] The labour productivity assumption used is five logs per man-day and a work year of 300 days. The wage data is based on the man-day conversion price.[13]

The GDP contribution of hand-sawing is estimated at 40 % of the gross value of production.

Tar and pitch production

The production volume of tar and pitch in barrels (1 barrel of pitch = 2 barrels of tar) was estimated on the basis of export statistics and home market consumption. Information on the home market consumption was found in the replies of municipalities to the enquiry of Metsätalouden Ylihallitus (Board of Forestry) of 1851, in the report of the Private Forests Committee and in the railway statistics 1883–1900: volumes of goods arrived at and transported from railway stations.[14] The tar price trend is illustrated by the taxable price of tar, which is also supported by the tar prices paid to the peasants at Oulu, according to Kustaa Hautala.[15]

The material cost trend is assumed to follow the price index for sales of timber from state-owned forests. Labour input is estimated as an average on the basis of the examples presented by Soldan. The wage assumption is based on the man-day price according to the taxation statistics.[16]

1   International Standard Industrial Classification of All Economic Activities (ISIC), Statistical Papers, Series M, No. 4, Statistical Office of the United Nations, Lake Success, New York 1949.
2   REINO HJERPPE-RIITTA HJERPPE-KAUKO MANNTERMAA-O.E. NIITA-MO-KAARLO SILTARI Suomen teollisuus ja teollinen käsityö 1900–1965 (Finnish Industry and Industrial Handicrafts 1900–1965). Suomen Pankin jul-

kaisuja, Kasvututkimuksia VII (Bank of Finland Publications, Growth Studies VII), Helsinki 1976; HEIKKINEN-HJERPPE 1986.

3   HJERPPE et al., p. 16 and 59.

4   SAKARI HEIKKINEN Uusia numeroita Suomen teollisuuden historiasta, Eräiden teollisuudenalojen kehityksestä Suomessa vuosina 1871–1885 (New Figures on the History of Finnish Industry, The Development of Certain Industrial Branches in Finland, 1871–1885). Master's thesis in Economic and Social History, University of Helsinki 1977; RIITTA HJERPPE-SAKARI HEIKKINEN Suomen teollisuuden ja käsityön työllisyys 1860–1910 (Employment in Finnish Industry and Industrial Handicrafts 1860–1910). Historiallinen aikakauskirja 1978; HOFFMAN 1980; TIMO MYLLYNTAUS Suomen graafisen teollisuuden kasvu 1860–1905 (The Growth of the Graphics Industry in Finland 1860–1905). Helsingin yliopiston talous- ja sosiaalihistorian laitoksen tutkimuksia n:o 12, Helsinki 1981; SCHYBERGSON 1973, 1974a.

5   HEIKKINEN-HJERPPE 1986, p. 12–19.

6   HJERPPE et al. 1976, p. 63–68.

7   HOFFMAN 1980, Tables 1, 10, 16 and 19.

8   TOIVO VUORELA Suomalainen kansankulttuuri (The Finnish National Culture), Porvoo 1977, p. 470–471.

9   Suomen taloushistoria 3 (Economic History of Finland 3); HARRY A. RINNE Trävaruproduktion och trävaruhandel i Björneborgs distrikt 1856–1900 (The Production and Trading of Wooden Products in the District of Pori 1856–1900). Vammala 1952; ILMARI TALVE Suomen kansan kulttuuri (The National Culture of Finland). Mikkeli 1979; AHVENAINEN 1984.

10   SVT XX: Railway statistics.

11   PELTONEN 1986, p. 167.

12   Komiteanmietintö 1900/4: Yksityismetsäkomitean mietintö (Committee Report 1900/4: Report of the Committee on Private Forests).

13   Suomen taloushistoria 3 (Economic History of Finland 3).

14   Komiteanmietintö 1900/4: Yksityismetsän tutkimusta varten asetetun komitean mietinnön kunnittaiset selvitykset ja yhteenvedot (Committee Report 1900/4. Studies on Individual Municipalities and the Summary of the Report of the Committee Set Up to Examine Private Forests); Vuoden 1851 Metsätalouden Ylihallituksen kiertokirjeen kunnittaiset vastaukset (Replies of Individual Municipalities to the Board of Forestry Enquiry of 1851); SVT XX: Railway statistics 1883–1900.

15   Suomen taloushistoria 3 (Economic History of Finland 3), Tables 14.2.a and 5.8; KUSTAA HAUTALA Suomen tervakauppa 1856–1913 (The Finnish Tar Trade). Historiallisia tutkimuksia XLV, Helsinki 1956, Table 24.

16   PELTONEN 1986, p. 167; AUG. F. SOLDAN Om Finlands träindustri och dess möjliga förbättring (The Finnish Wood Industry and Its Possible Improvement). Helsingfors 1861; Suomen taloushistoria 3 (Economic History of Finland 3).

House construction

"House construction comprises the manufacture and assembly on the building site of such structures the immediate purpose of which is to provide shelter against climatic conditions or which constitute essentially fixed parts of such structures."[1] The gross value of this production equals the gross national investment in house construction. House construction does not include the value of the building site nor the value of buildings acquired second-hand; it does include the work done by the owners themselves in construction of and repairs on the building.

House construction covers both new building - defined as construction activity producing new cubic volume in buildings or essentially increasing the value of a standing building - and less extensive repairs on structures, intended to prevent dilapidation of buildings but not to be considered basic repairs. It does not, however, include minor repairs, such as may be done by tenants in their own dwellings, which are counted as consumption expenditure. House construction is divided into housing construction and other house construction.[2]

The growth study on house construction for the period 1900–1970 (Growth Studies IX) was written by Eero Heikkonen in 1977.[3] It presents investment in house construction plus repairs on and maintenance of buildings at current and 1926 prices. The residual values of buildings at current and 1926 prices are also given in it.

The study "Asuntopalvelukset Suomessa 1860–1965", Kasvututkimuksia III (Housing in Finland, Growth Studies III) by Eero Heikkonen further contains information on gross investment in new housing at current and constant prices for 1860–1900.[4]

A census of the Finnish building stock was taken in 1950 and 1960 in conjunction with the demographic and housing census (SVT VI). A quite detailed study covering all urban and rural municipalities is available for the year 1919 (SVT XXXII:2 Asuntolaskenta/Housing Census 25 April 1919. Calculations have also been made concerning the volume, quality and use of the housing stock in selected cities and market towns in 1870, 1880, 1890, 1900, 1910, 1920 and 1930 (SVT VI). A study on the number of dwellings and rooms in each of them in rural boroughs was conducted for 1901. Housing sector data were also found in committee reports, consumption studies and, for the 19th century, in the so-

called governors' reports.[5] Statistical data are available on the housing construction in certain cities and market towns in 1912.

The net investment series (volume) of house construction was arrived at on the basis of the age group distribution in the housing stock calculations, containing data on the number of houses and their cubic volumes. The value of the housing stock was estimated on the basis of the 1951 and 1958 investment enquiries, augmented by the building cost index calculated by Heikkonen for these studies (starting from 1860).[6]

The gross investment series of other house construction for 1860—1900 was calculated by Matti Peltonen. In determining the volume of government construction works, he has used Pihkala's study on central government incomes and expenditures as well as e.g. the accounting archives of the Senate and the National Board of Public Construction. The source for the level of municipal construction works data is the Municipal Fiscal Statistics of the early 20th century (SVT XXX, 1—2) and the trends were constructed on the basis of the governors' reports starting from 1877. The figures previous to those dates were deducted on the basis of the increase of primary schools receiving public support and the trends of the construction works of the parishes.[7]

The volume trends of agricultural and business buildings were interpolated on the basis of the production volume data used in the growth studies. The level corresponds with the house construction index with 1900 as the base year calculated by Heikkonen.

Peltonen's 1860—1900 series do not include repairs and maintenance, only new building. In this study the volume of repairs in public house construction is estimated to be 35 % of new building in 1860. After that year, the percentage is assumed to have steadily declined to 10 % by 1900. According to Pihkala's national economics study, repairs accounted for 35.6 % of the gross value of the government construction projects in 1860, 41.6 % in 1870, 8.3 % in 1880, 18.8 % in 1890 and 15.1 % in 1900.[8] In municipal and business construction, the percentage of repairs is assumed to be as high as in government construction. Viita's estimate, presented in his study "Maataloustuotanto Suomessa 1860—1960" (Agricultural Production in Finland 1860—1960), was accepted as the volume of repairs on agricultural buildings.[9] The gross value of house construction, excluding repairs and maintenance, was used as an index series.

The GDP contribution of house construction was calculated on the basis of the sector's gross output value including repairs and maintenance. The share of purchases in the gross value was assumed to have grown steadily during the period 1860—1948 from 30 % to 65 %, the latter being the share of purchases in the national accounts according to the old SNA in 1948. Some cost division data concerning public buildings from the archives of the National Building Board were used to determine the shares of purchases and wages during the last decades of the 19th century; the share of purchases in the total expenditure was a good third.[10] Weighted by Heikkonen's building cost index, the share of purchases in the late 1930s was about half of the gross value of house construction.[11] The cost division data of the British building cost index indicate a similar growth in purchases: less than half of the gross value of house construction in the early years of the 20th century, about half in 1924 and 1930 and slightly over half of all expenditures in 1935.

The share of the total wage bill of the gross production value, including repairs and maintenance costs, was estimated at 75 % of house construction's GDP contribution over the entire period. According to national accounts, it averaged 75 % in 1948—1960. In Sweden the share of the total wage bill of house construction was estimated by Ragnar Bentzell at 85 % of the GDP contribution in 1870—1975.[13] According to a study by Antti Häkkinen, the share of wages in the production costs of some 30 wooden houses, according to data in the National Building Board archives, was about 50 % (varying between 45—55 %) towards the end of the 19th century.

Labour input was estimated by dividing the total wage bill by the annual average wage. The daily wages in 1860—1900 were assumed to equal the manday conversion price, with a work-year of 300 days. The development of wages in 1900—1913 was assumed to have followed the trend of sawmill workers' daily wages and in 1913—1948 the wage trend of a carpenter in the employ of the City of Helsinki. The 1900 level was estimated on the basis of the man-day conversion price and the 1948 wage could be calculated from the national accounts data.[14]

The production volume index was calculated by deflating the gross value of house construction, including repairs and maintenance, by Heikkonen's building cost index. Here we may assume that the volume growth also includes improvement in the standard of equipment in the buildings as well.

As far as the reliability of the calculations is concerned, the housing stock data from the various periods may be considered fairly reliable, but they are by no means without gaps. The estimates concerning agricultural and business buildings are likely to be rough ones. The best data is available on public buildings. Here Heikkonen's partially verified building cost index was used over the entire period; it is close to the official building cost index.[15] When calculating this index, Heikkonen has used a constant weight structure to illustrate the longterm trends[16]; in it, however, the trends for labour costs and material prices in are quite similar to those in Maiwald's British building cost index. It goes without saying that the assumptions on the steadily declining trend of repairs and maintenance costs and the steadily rising trend of purchases as well as the constant wage bill contribution to the GDP are rough generalisations. The average trend may thus be considered reliable, although we know that year by year fluctuations are numerous in a sector as vulnerable to changes in the economic situation as construction.

Labour input, estimated by dividing the total wage bill by mean wage, is not suited for productivity assessment, because the total wage bill here depends on the GDP contribution. The labour input and wage bill series of the accident

statistics were not deemed satisfactory indicators of the long-term trends, because the data in them were variable.

1   EERO HEIKKONEN Talonrakennusinvestoinnit ja talorakennuskanta Suomessa 1900–1970 (Building Investment and the Building Stock in Finland, 1900–1970). Suomen Pankin julkaisuja, Kasvututkimuksia IX (Growth Studies IX), Helsinki 1977, p. 11.
2   HEIKKONEN 1977, p. 11; EERO HEIKKONEN - PIRKKO VALPPU Talonrakennustoimintaa Suomessa vuosina 1948–1964 koskeva kansantulotilasto (National Economics Statistics on Building in Finland, 1948–1964). Tilastokatsauksia 1966:10, p. 44–45; GRÖNLUND-NIITAMO 1968, p. 90–91.
3   HEIKKONEN 1977.
4   HEIKKONEN 1971.
5   HEIKKONEN 1971, p. 171.
6   MATTI PELTONEN Rakennustoiminnan kehityksestä Suomessa 1860–1913 (The Development of Construction in Finland), manuscript 1981 - the key results were published in the article RIITTA HJERPPE - MATTI PELTONEN - ERKKI PIHKALA Investment in Finland, 1860–1979. The Scandinavian Economic History Review 1984:1.
7   PELTONEN manuscript 1981, p. 10–12.
8   PIHKALA 1977.
9   VIITA 1965, p. 72–74.
10 Archives of the National Building Board: Cost estimates concerning public buildings.
11 HEIKKONEN 1977, p. 20.
12 K. MAIWALD An Index of Building Costs in the United Kingdom, 1845–1938. The Economic History Review 1954:2, p. 194.
13 RAGNAR BENTZEL Svensk ekonomisk tillväxt 1870 till 1975, Industriell utveckling i Sverige, Teori och verklighet under ett sekel. Uppsatser till ett IUI-symposium i anledning av Marcus Wallenbers 80-årsdag (Swedish Economic Growth, 1870–1975, Industrial Development in Sweden, Theory and Reality during the Century. Essays for the IUI Symposium on the occasion of Marcus Wallenberg's 80th Birthday), ed. Erik Dahmén and Gunnar Eliasson, Stockholm 1979, p. 177.
14 Suomen taloushistoria 3 (Economic History of Finland 3).
15 HEIKKONEN 1977, p. 19–20.
16 HEIKKONEN 1971, p. 189.

Land and water construction

"Land and water construction" denotes construction activities aimed at the improvement of transportation and communication as well as preparing the ground to suit especially production purposes, the construction object being the ground itself or the assembly of devices or structures serving the purposes mentioned above."[1] The maybe most striking characteristic of land and water construction is the longevity of the structures and devices achieved.

The growth study on land and water construction for 1900–1960 was conducted by Pertti Kohi in 1977 (Kasvututkimuksia - Growth Studies VIII).[2] Estimates on land and water construction in 1860–1900 were made by Matti Peltonen.[3] Separate studies were made on land and water construction in the sectors agriculture, forestry, industry, transports and municipal engineering. The largest of these sectors is construction serving transport purposes. It is divided into construction of roads, railways, waterways and other traffic leads.

Land and water construction is largely public - government and municipal - building activity (e.g. accounting for 60–80 % of the investments in roads and waterways), and relatively reliable data are available especially on the new-building activities of the government. The data on private land and water construction are scarce. It was possible to make estimates on the volume and development of the activities in the cases where government promoted land and water construction with credits and subsidies.

Agricultural land and water construction includes clearing of land for cultivation and pasture as well as basic drainage of arable land. The annual preparation of soil is included in agriculture. There are no reliable data on the area under cultivation until the report of the Subcommittee for the Landless People of 1901 and the Agricultural Census of 1910. By the same token the estimates on clearing of new arable must necessarily be rough ones before those years. The clearing costs also vary considerably, depending on what kind of land is to be cleared. Peltonen calls his assessment a minimum estimate, assuming that natural meadow was ploughed into arable land, which is cheap in comparison to clearing woodlands into arable. Since 1929 the source is data collected by the National Board of Agriculture on the extent of clearing subsidized from public funds and estimated unit costs. Before that time the clearing data are based on estimates concerning the extent of arable land. Towards the end of the 19th century it was a common practice to clear land for cultivation by draining waterlogged areas. Information on this activity is found in special studies.[4] Subsurface drainage, which properly started in the 1920s, was also subsidized from public funds and the subsidy records provide another source of information.

Land and water construction in forestry includes forest drainage and the building of roads in the forests. Neither of activities actually started until the

early years of the 20th century either in the state-owned or private forests. Information on the state-owned forests could be found in the balance sheets of public finances and in the reports of the National Board of Forestry and on the private ones in the Year Books of the Private Forestry Association. The cost trend on the private sector was assumed to follow the same lines as the on the public sector.

Most of the industrial investment in land and water construction consists of the building of power plants, mainly in the 20th century. The extent of this activity was interpolated by Kohi, based e.g. on the annual variations in the production of hydroelectric energy.

Data on government road building is found in the Road and water construction statistics from 1885 on (SVT XIX). Before that, the governors' reports contained information on new road building projects. The municipal financial statistics (SVT XXXI) record the municipal street and road building projects for those years in which they were published (for urban municipalities 1910—1919 and since 1925; for rural boroughs 1910—1912 and since 1930). Road-building subsidies included in the public finances balance sheets give indication on other road building projects. It may be worth mentioning that most of the road and bridge building work of the road maintenance associations before 1918 was done as taxes in kind (man- and horse-days performed by the members of the road maintenance associations).[5]

Here we deviated from Matti Peltonen's estimates on investment in land and water construction, including not only the new-building of roads but also the road maintenance and repair costs for 1860—1900 which, owing to the primitive road construction techniques, were significantly higher than the new building costs in the 19th century. One reason for the high cost was, naturally, that the whole network of roads was constantly under repair and the new buildings were only part of the network. The inclusion of road repairs multiplies the road construction investments quoted by Peltonen by five or seven in 1860—1900. This is about 30 % of the total land and water construction and at most slightly less than 10 % of the total capital formation. This solution is ambiguous, in a way, because one might with reason say that repairs should not be included in investments, especially as there is no information on the quality standard of the repaired road as compared to the new-built one. The road repair and maintenance figures are based on estimates by Hannes Gebhard. Their reliability is difficult to assess; in fact, there is not any very precise information available on the length of the road network in the 19th century.[6]

Data on railway construction can be found in the Road and water construction statistics until 1922 and after that in the Railway statistics (SVT XX). Special studies give information on the construction of tram lines in three cities.[7] Data on the land and water construction for telecommunication were found in the public financial balance sheets as well as since 1928 in the National Board of Post and Telecommunication statistics (SVT XIII), before that year in special studies.

Land and water construction for waterborne traffic includes the building of canals, inland waterways, sea routes, pilot housing, lighthouses and harbours. Among these projects, the municipalities mainly accounted for the harbours, the rest were built by the government. The data were mainly found in the Road and water construction statistics.

Data on construction for municipal engineering were taken from the financial statistics of the municipalities. It was presumed that at the end of the 19th century municipal engineering construction took place only in the towns and cities. The estimates concerning municipal engineering construction were based on Eino Kuusi's data from the balance sheets of the largest cities.[8]

To arrive at this sector's GDP contribution, purchases - relatively modest in all categories except in railway and tram line construction - were deducted from the gross production value. The purchase share estimates were based on the history of the Finnish railways, Road and water construction statistics as well as e.g. Suomen teiden historia I—II (History of Finnish Roads I—II). Wages were the major cost item, especially before the First World War.

The building cost index, published since 1922, served as a tool when tracing the price trends. For the preceding years, they were based on estimated wage and salary trends as well as price data concerning the intermediate products used. Kohi constructed and published a separate price index for land and water construction in 1900—1960.

Kohi also calculated the production volume of land and water construction by the so-called double deflation method: fixed-price intermediate product contribution is deducted from the fixed-price gross production value. To arrive at a production volume index, the 1860—1900 GDP contribution of land and water construction was deflated by Heikkonen's building cost index.

Labour input was mainly estimated on the basis of the total wage bill, with the man- and horse-day conversion rate in the 19th century as the mean wage. The 20th century data were found in the Road and water construction statistics which provides information on both labour input and wage bills in road and railway construction. Otherwise the estimates were based on wages paid. The similarity of the labour input and production volume trends is largely due to the fact that the use of machines in land and water construction was low until the 1950s; this means that changes in production are fairly directly reflected in the labour input trend.[9]

The construction series of the official national accounts were used from 1960 on.

1   PERTTI KOHI Maa- ja vesirakennustoiminta Suomessa 1900—1960 (Land and Waterway Construction in Finland, 1900—1960). Suomen Pankin julkaisuja, Kasvututkimuksia VIII (Growth Studies VIII), Helsinki 1977, p. 11.

2   KOHI 1977.

3   PELTONEN Manuscript 1981.

4   PELTONEN Manuscript 1981.

5   KOHI 1977, p. 31.

6   HANNES GEBHARD Underhållskostnaderna för vägar och broar i Finlands
    Landskommuner år 1894, Statistisk undersökning verkställd på uppdrag af
    kommunikationsexpedition i K. Senaten (Road and Bridge Maintenance
    Costs in Finnish Rural Boroughs, 1894, Statistical Study at the Request of the
    Communications Department of the Imperial Senate), Helsingfors 1897;
    Komiteanmietintö 1899/4: Tientekorasituksesta maalla (Committee Report
    1899/4: The Cost of Building Roads in Rural Areas); Suomen teiden historia
    I (The History of Finnish Roads I), Lahti 1974.

7   GEORG ESTLANDER Helsingin raitiotie- ja omnibussiosakeyhtiö 1891—1931
    (The Helsinki Tramway and Omnibus Company Ltd. 1891—1931), Helsinki
    1931; G. IDSTRÖM Spårvägarna i Finland intill år 1930 (The Railways in
    Finland up until the Year 1930). Tekniska föreningen i Finland förhandlingar
    1930:1.

8   KUUSI 1914.

9   KOHI 1977, p. 28.

Communications

Communications consist of transports and telecommunication. Communications here comprise the sales of professional services in passenger and goods transportation plus telecommunication. The warehousing category is not - contrary to the ISIC recommendation - included in the old SNA as an independent economic activity. Warehousing within each economic activity is considered part of that particular economic activity. Log floating is included in forestry, transportation by horse as a source of extra earnings for the farmers is part of agriculture.[1]

The growth study on communications for 1900—1965 was written by Seppo Leppänen (Kasvututkimuksia - Growth Studies V) and for 1860—1913 by Matti Peltonen (Kasvututkimuksia - Growth Studies XI).[2] Here we used Peltonen's data until 1913 and Leppänen's data for 1914—1947, becausewe found Peltonen's data more comprehensive. Both sets of data needed correction or complementing. For the period 1948—1960, data according to the old SNA were used. The series were continued with the new SNA data until 1985.

Communications were divided into rail transports, road transports, water transports and telecommunications; these were subdivided into smaller categories. A second type of division gives the categories goods transportation, passenger transportation and telecommunications. In addition to their gross value of production, Leppänen calculated their net GDP contribution, Peltonen their gross GDP contribution. The production volume indices are usually based on the GDP and the overall production volume index weighted by the gross production values. Both studies include data on the wage bill and employment; Leppänen, however, gives these only on some of the categories. The studies are not fully comparable as to their classification and calculation methods.

Comprehensive basic statistics on communications overall were not available. The data were collected from several sources and a synthesis by category compiled. There is relatively plentiful data available on communications, because they were either run or controlled by public authorities. It should, however, be noted that there are some categories where we were forced to rely on surrogate indicators.

From the very beginning, railways were mainly owned by the state. Statistics on them are available from 1871 onwards, archival information on the period before that. Statistical data since 1888 on private railways were taken from the Road and Water Construction Statistics (SVT XIX). The total number of employees and the wage bill were the categories where data were hardest to find in the railway statistics.

Only three cities had tram lines. Annual reports and statistics on these were available in the statistical yearbooks of the cities, but not on all of them and not on all years.

In horse transportation, the relay services in the countryside and cab and waggon services in the urban municipalities were included in the study. Statistics on the relay services were available from 1877 until the Second World War concerning the number and length of the drives as well as on the rates which, however, were so low that the obligation to provide the service must rather be regarded as a form of taxation. There are horse transporttation statistics in the study only until the Second World War; since then it has been of very modest economic significance.

In road transportation, commercial car transportation has been of economic significance only since the 1920s. There are no actual data available on the transport performance of the bus, taxi and lorry services; only the number of vehicles is recorded. The Committee Report 1954:6, "Development of the road works and its funding", contains estimates on the average kilometres driven. The yearbooks of the Bus Services Association and the Lorry Transport Association give some information on the cost division as well as price data on the decreed rates.

Under the heading water transportation, Leppänen only deals with commercial overseas shipping - not with the inland water transportation nor the so-called "peasant shipping" - between the Finnish ports and St. Petersburg and the Baltic harbour towns. Peltonen worked out estimates on these as well. The bases of the calculations vary to some degree. Overseas shipping data are available in

the Trade and Shipping Statistics (SVT I 1856–1902) and in the Maritime Trans-ports Statistics (SVT I B 1903–). Data on the gross tonnage shipped are available only since 1918. The volume of shipping before that time was estimated by Leppänen on the basis of exports and imports volumes; his projections of the gross production volume are based on British and Swedish freight and cost division data.[3] Peltonen's estimates on the gross volume of shipping are based on the number and type of vessels in the merchant fleet - data are available for some of the years, for the rest of the years, statistics on the capacities of Finnish vessels visiting Finnish ports serve as the basis. The freight rate development estimates are based on the total revenue per tonne of the Swedish merchant vessels as well as on the Swedish cost division data.[4]

The volume and development of inland water transports were estimated by Peltonen on the basis of the number of and the freight volumes carried by vessels passing the canals as well as the average distance of transport. His sources were the Canal Accounts in the archives of the National Board of Roads and Waterways (1879–1900) and other sources.[5] The freight rate data were found in the price lists of the steamship companies.

Pilotage and lighthouses as well as other public services supporting shipping were in the growth studies included in communications, in the old SNA they were included in the state and municipal services from 1948 on. The data were found in the public accounts balance sheets and pilotage statistics (SVT I C and XV). The ports were run by the municipalities and the data were mainly found in the financial statistics of municipalities (SVT XXXI; not for all the years concerned) and for the years 1860–95 by five-year periods in the report of the law-drafting committee dealing with the traffic charges of the cities.[6]

Among the functions supporting shipping, stevedoring became a separate trade as the steamship transports grew. The sailing vessels were for a long time loaded by their own crews. Most of the data on stevedoring were found in the accident statistics (SVT XXVI 1898–).

In telecommunications, the data source on the postal and telegraph services from 1885 on is the Postal and Telegraph Statistics (SVT XIII), before that time the source is the accounts of the National Board of Postal Services. The telegraph services before 1918 were not included in the study by Leppänen; he bases this exclusion on the fact that the telegraph services were owned by the Russian Imperium.[7] Peltonen has collected his telegraph data from "Suomen lennätin-laitoksen historia 1855–1955" (The History of the Telegraph Service in Finland 1855–1955).

Peltonen bases his estimates on the volume of telephone communications on the number of telephone apparatuses and the histories of a few of the telephone companies. Leppänen has found his data concerning the volume of private telephone calls from 1933 on from the National Board of Postal and Telegraph Services and from the company histories.

For the purposes of this study, the surpluses of the State Railways and the Post, here treated as indirect taxes, were deducted from the GDP contribution calculated by Peltonen. Their share in Peltonen's GDP contribution in the 1860s was only about 0.1 %, at its highest in the 1890s it was 16–23 %.

For this study, Leppänen's data were complemented. He only included the net domestic product (NDP) contribution, not the gross domestic production (GDP) contribution in his own growth study. To arrive at the GDP contribution, we estimated the value of depreciation at 10 % of the NDP contribution, the average value in the years 1948–1952, and added the depreciation to the NDP contribution for the years 1914–1947.

The telegraph traffic contribution, missing in Leppänen's study, was estima-ted on the basis of the number of telegraph messages sent, the wholesale price index and the GDP contribution of telegraph traffic in 1913, as calculated by Pel-tonen. Nor has Leppänen assessed the contribution of inland water transports. Here we based our estimates on a volume index of tonnages transported through the canals in 1914–1948 and a price index calculated on the basis of Leppänen's study on transports. The 1913 GDP contribution of inland water transports taken from Peltonen's study served as the basis on which the starting level was determined. We assumed that the quantity of goods shipped through the canals was a sufficiently precise indicator of the volume of inland water transports and that the price index of all communications would serve adequately in deter-mining the price development in inland water transports in 1914–1947.

The increase in telegraph traffic does not have an effect on the development of the production volume index. Inland water transports was growing at a lower rate in 1914–1947 than the rest of the communications; adding the inland water transports to the communications volume index caused a 0.09 % reduction in the growth of all communications per year in 1914–1947.

The concept of communications in the old SNA is narrower than the one used in the growth studies, also by Leppänen, because it does not include activities supporting the public transportation. These are included in the public economy output. Nevertheless, Leppänen's NDP contribution for 1948–1960 is slightly lower (by 2.0 %) than the NDP contribution according to the old SNA. The reason for this discrepancy could not be determined; the difference lies in the NDP contribution of the rest of the communications. No changes were made here in the series of the old SNA (1948–1960).

Leppänen did not calculate the employment rates of all communications, only those of the railways, water transports (overseas shipping and stevedoring), horse transports until 1940 and postal and telegraph services. Thus he left out the figures on motor vehicle and tram transports and, naturally, the inland water transports. No effort was made in the present study either to determine the employment rates in detail; a rough estimate was made by calculating an employment index on the basis of Leppänen's railway, shipping, horse transports and telecommunications data and using it to interpolate the figures for the

period 1913–1948. We thus assumed that employment on these subsectors increased, on average, at the same rate as on the whole communications sector.

In the main, the calculations may be considered reliable, although several subsectors of communications are lacking statistics directly related to them. Nevertheless, because these subsectors were owned or controlled by the public authorities, statistical data have been compiled which allow us to assess the development of communications. We were able in part to complement the slight inadequacies in Leppänen's treatment of communications (coastal shipping is still lacking, but it was not of a major importance from the viewpoint of total communications). Leppänen seems to have included the engineering works personnel in his railway employment figures. We were not, however, willing to make any deductions, because Leppänen's employment series were used only as indices in this study and the engineering works employment seems to have progressed in much the same way as the railway transports one.[8] Leppänen's calculations on lorry transports, based on confirmed freight rates, were criticized by Ilkka Nummela. According to Nummela's study, the confirmed rates were not applied; owing to tough competition conditions, considerable undercutting of the rates was a common practice. On the other hand, Nummela maintains that Leppänen underestimated the transport performance of commercial lorry traffic when supposing that the performances per lorry in private and commercial traffic were equal. These errors thus have effects in opposite directions.[9]

1 LEPPÄNEN, SEPPO, Liikenne Suomessa 1900–1965. Suomen Pankin julkaisuja, Kasvututkimuksia V (Transport and Communication in Finland, 1900–1965. Bank of Finland Publications, Growth Studies V), Helsinki 1973, p. 15–16; PELTONEN 1983, p. 12; GRÖNLUND–NIITAMO 1968, p. 99–100; VIITA 1965, p. 46
2 LEPPÄNEN 1973; PELTONEN 1983.
3 LEPPÄNEN 1973, p. 41–43.
4 PELTONEN 1983, p. 25–26.
5 PELTONEN 1983, p. 27–29.
6 PELTONEN 1983, p. 30
7 LEPPÄNEN 1973, p. 46.
8 RIITTA HJERPPE 1979, p. 170–171, 176–177.
9 ILKKA NUMMELA Kuorma-autoliikenteen vaiheet ja taloudellinen merkitys Suomen talvisotaan mennessä (The History of Heavy Goods Vehicle Traffic in Finland and Its Economic Significance up to the Winter War of 1940). Master's Thesis, University of Jyväskylä 1978, p. 101.

Trade

Trade is defined as activities related to the selling and purchasing of goods - not of securities and real estate. By this definition, trade consists of wholesale, agency, commission and brokerage, and retail trades, but not hotel and restaurant business.[1]

Osmo Forssell wrote the growth study "Kauppa Suomessa 1860–1960" - Kasvutukimuksia X (Finland's Domestic Trade, 1860–1960 - Growth Studies X). Tapani Mauranen looked into the inland trade and compiled the related time series in his Licentiate's Thesis "Kotimaankaupan rakennemuutos 1860–1913" (Restructuring of Domestic Trade, 1860–1913) and in his study "Kotimaankaupan kasvu ja rakenne 1860–1960" (The Growth and Structure of Domestic Trade, 1860–1960).[2] Here we used Mauranen's GDP, production volume and employment series 1860–1939, the corresponding series compiled by Forssell 1940–1960 - since 1948 identical with the official old SNA figures - and the official new SNA calculations from 1960 on.

Good statistical data on trade were very difficult to obtain before the 1953 census of enterprises (SVT XXXV). The cooperative retail societies, however, published statistics on their activities almost since the beginning of the 20th century; the retail trade compiles its own statistics since the 1920s.

Mauranen's study is based largely on archival data. He has used the rural trade tax lists to determine the number of rural shopkeepers. The tax was abolished in 1923. The sources for the number of urban shopkeepers in 1860–1885 are the tradesmen's lists kept by the town and city authorities and the income appropriation lists. The 1900 level is based on a study on municipal taxation; it also serves as basis for estimates concerning the years 1890–1913.[3] For the years 1914–1939 Mauranen uses cooperative retail and wholesale trade statistics and tax statistics as his source. These were also compared and complemented on the basis of address and trade calendars as well as demographic statistics and local histories. From 1931 on, the Statistical Yearbook of Finland has a relatively reliable series on rural shopkeepers.

For the early part of the period, Mauranen bases his estimate on the number of trade sector employees on the numbers of shop assistants given in the shopkeeper lists and for the years 1880 and 1910 on the demographic statistics figures concerning employees and independent shopkeepers. For the years 1913–1939, the sources were the cooperative retail trade statistics and labour inspection statistics.

Mauranen arrived at his GDP contribution by route of the income statistics method, by estimating the incomes of the shopkeepers, the wages of the assistants and other value-adding items. His main sources were the 1865–1885 income appropriation lists and, in part, municipal tax lists. The income appropriation data were upgraded with the help of trade almanacs and municipal tax data,

because the income levels quoted in the income appropriations were too low. Additional data, used as support, were found for some of the years in the sales figures of the rural shops and in part those of the urban shops, taken from the reports of the committees deliberating on the building of railways.[4] Since the 1920s, tax statistics, cooperative retail statistics and wholesale statistics were available for Mauranen.

Data on the shop assistants' wages were found in private archives, income appropriation statistics, in "Tutkimus Suomen konttori- ja kauppa-apulaisten oloista" (A Study on the Conditions of Finnish Office Staff and Shop Assistants), tax statistics and other sources.[5] The other expenditures were estimated on the basis of the balance sheet data concerning cooperative retail trade and wholesale trade; private archives also yielded some data.

E.g. income and property tax statistics, the balance sheet data concerning cooperative retail trade, census data and labour statistics were used by Forssell.[6]

Forssell calculated the total sales value change in the trade sector on the basis of the sales of the major wholesalers and retailers, the turnover tax statistics and the industrial and foreign trade statistics. The level is the turnover tax statistics level for 1952—1953. From this figure he deducted the estimated purchases and other expenditures, basing the deductions mainly on the balance sheet data concerning the cooperative retail trade. Furthermore, he included in the value-added the estimated incomes of the shopkeepers, the staff wages and other income statistics items.

The production volume index for the trade sector was calculated by Mauranen: he deflated the GDP contribution of the trade sector at current prices by a sales price index constructed by himself.[7] Forssell calculated the volume of the trade sector sales by deflating the sales value by the wholesale price index.

I did not want to use here the volume index of the value added of the trade sector for 1860—1900 in Forssell's study, because it was based on the published figures concerning the number of shopkeepers only, which are not considered reliable. There are no data on other trade sector staff in the Forssell study. Even for the years 1900—1939 we decided to use the figures calculated by Mauranen. For the years 1900—1913 Forssell had arrived at a GDP contribution of the trade sector 20—40 % higher and at employment figures twice as high as Mauranen. Even Forssell's figures for the 1930s are distinctly higher than Mauranen's estimates. It is difficult to see the reason for this, because the two researchers' descriptions of their estimation bases and methods are not sufficiently detailed. Forssell's estimate on the sales volume of small shops may be a rough one, because he calculated his sales index on the basis of the sales of the largest wholesalers and retailers as well as the industrial and foreign trade statistics.[8]

As a comparison series, Mauranen calculated the value of the goods passed through the trade channels by estimating the value of goods sold in domestic trade by product category, based on the growth study series covering foreign trade, industrial output and agricultural production. This series lends solid support to Mauranen's assessment of the development of the GDP contribution in 1860—1939. However, it goes without saying that a complete series could not be achieved, owing to the scarcity of the source material and the great amount of work required. Trade is a form of activity which may comprise several types of production or services within one company. It is likely, however, that Mauranen has e.g. in the 1860s data come relatively close to the correct level, because the rural trade tax was so high that nobody would have paid it unless they actually kept a shop. On the other hand, it is to be assumed that the control was efficient enough to force the shopkeeper to pay the tax. The source material for the 1940s, the period covered by Forssell's data, was fairly good, owing to e.g. the new turnover tax and the related statistics. It is to be assumed, therefore, that the levels in the series are relatively reliable.

1   FORSSELL 1979, p. 13.
2   FORSSELL 1979; MAURANEN 1985; TAPANI MAURANEN Kotimaan-kaupan kasvu ja rakenne 1860—1960, manuscript.
3   HJELT-BROMS 1904, 1905.
4   MAURANEN 1985, p. 46.
5   Työtilastoa VIII, Tutkimus Suomen konttori- ja kauppa-apulaisten oloista 1909 (Work Statistics VIII, Study of the Conditions of Work for Office and Shop Assistants, 1909). Teollisuushallitus (ed. by G.R. Snellman).
6   OSMO FORSSELL Kauppaa koskeva kansantulotilasto vuosilta 1926—1962 (National Income Statistics on Trade 1946—1962). Tilastokatsauksia 1964:1.
7   MAURANEN p. 51
8   FORSSELL 1979, p. 90.

Banking and insurance

Banking covers the activities of banks and credit institutions. Insurance institutions include life and pension insurance companies, pension societies and pension foundations plus general and local non-life insurance institutions.[1]

The production value and volume of banking and insurance is a concept wrought with problems. The old SNA defined the calculated value of banking services as interest revenue on lending + other interest and dividend revenue - interest paid on deposits. To this sum are also added the various fees actually charged to the clients. The calculated value of insurance institutions = insurance premium revenue + income from capital - indemnities paid - increase in underwriting reserves.

Banking has always been tightly controlled by the government for which reason the data available are relatively plentiful. There is a good survey on the history of banking statistics and studies in "Historiallinen tilasto" (Historical Statistics): Savings banks statistics (SVT VII A) start from the 1870s and they also contain data on banking activities in the 1860s.[2] Eero Aaku's "Suomen liikepankit 1862–1955" (Finnish Commercial Banks 1862–1955) studies the activities of commercial banks since their first beginning in 1862.[3] The "Historical Statistics" also contain data on the lending and deposits of the banks; these were used for calculating the GDP contribution of the banks for 1860–1900.[4] For the period after 1900 there are the calculations made by Antti Suvanto on the activities of banks and insurance institutions for the growth studies. Suvanto has not published his study, but he kindly placed its tables at my disposal. His calculation method is the same as used in the old SNA.

The calculated profit of the banks for 1860–1900 equals the differential between lending and deposit interests. On the basis of bank histories, the interests and fees related to lending are estimated at 7 %, the interest on deposits at 4 %, on the same basis. The GDP contribution is estimated at 60–65 % of the calculated profit, based on Suvanto's data for the early 20th century. The calculated wage bill is 25 % of the GDP contribution, according to Aaku's data.

The calculations for 1860–1900 concerning the insurance institutions were made by Antti Häkkinen for this study. For the years 1900–1948 we used Antti Suvanto's calculations, for 1948–1960 the old SNA data and from 1961 on the new SNA series data. Insurance statistics have been published since 1892 (SVT XXII A). The "Historical Statistics" contain data on years before 1892 as well.[5] On the basis of these, the development of the GDP contribution at current prices was estimated to have been similar to that of the banking GDP contribution. The level of insurance activities at the beginning of the 1880s was taken from the "Historical Statistics". The wage bill of insurance activities was estimated at 25 % of the GDP contribution, like in the case of the banks.

Data on pension foundations, pension societies and contributory sickness funds etc. for 1860–1910 are taken from Keijo Heikkonen's Master's Thesis and for the period after 1910 from the Statistical Yearbook of Finland.[6] The GDP contribution of these various funds and foundations was estimated at 3 % of their lending and their wage bill at 25 % of the GDP contribution.

In the labour input, the number of employees of the Bank of Finland was estimated as a separate post, based on the data found in the Bank's archives and on Hugo Pipping's data for the years 1878 and 1901.[7] The other banks' labour force was estimated as two employees per office (the Postal Savings Bank with its representatives is not included in the number of offices), on the basis of some scattered data found in the bank histories. The employment figures for 1900–1940 are based on the population census taken at ten year intervals; the 1948 level is calculated according to the old SNA. The figures for the intermediary years were calculated by estimating the average number of employees per bank office at ten

year intervals and assuming a linear change for the intermediary years. The average number of employees per office was then multiplied by the number of offices. The labour input of the insurance institutions was assumed to have followed the same trend as that of the banks.

The production volume index was calculated on the basis of the GDP contributions of the banks, insurance institutions and contributory funds by deflating it by the wholesale price index. This is the solution chosen by Suvanto, because employment was not included in his estimates. The method is different from the old SNA calculations, in which the labour input was used to indicate the production volume.

The calculations concerning the GDP contribution of the banks should be relatively reliable, because banking statistics or other time series material are available for the whole period. The labour input estimate should also be moderately accurate; data are available on the number of bank offices for the whole period under study.

1 GRÖNLUND-NIITAMO 1968, p. 107.
2 Suomen taloushistoria 3 (Economic History of Finland 3), p. 316–322.
3 EERO AAKU Suomen liikepankit 1862–1955 (The Commercial Banks of Finland 1862–1955). Duplicated hand-out, Helsingin Kauppakorkeakoulu, Helsinki 1956.
4 Suomen taloushistoria 3 (Economic History of Finland 3), p. 328–329, 334–335.
5 Suomen taloushistoria 3 (Economic History of Finland 3), p. 322.
6 KEIJO HEIKKONEN Yleisten eläkekassojen ja paikkakunnallisten yleishyödyllisten rahastojen pääomat ja niiden sijoitus 1860–1910 (The extent and Investment of Capital Held in General Pension and Other Local Non-Profit Funds, 1860–1910). Master's Thesis in Social History, University of Helsinki 1970.
7 Bank of Finland archives: Pankkivaltuusmiesten pöytäkirja 1867 (Minutes of the Parliamentary Trustees of the Bank of Finland, 1867); HUGO E. PIPPING Kultakannan turvissa, Suomen Pankki 1878–1914 (Under the Protection of the Gold Standard. The Bank of Finland 1878–1914). Helsinki 1969.

Ownership of dwellings

The ownership of dwellings covers the real and calculated business transactions related to people's living in actual dwellings. This item also includes business

transactions related to other uses of spaces in houses built as dwellings. On the other hand, not attention is paid to who owns the dwellings or whether the dwellings are located in houses built for the purpose or other buildings when determining the supply of housing services. The concept of dwelling does not, in this connection, cover housing of temporary nature from the viewpoint of households, such as hotels, hostelries, dormitories, barracks etc. The business transactions related to housing other than the ownership of dwellings as defined above are dealt with elsewhere. The buying and selling of dwellings and housing agency activities are also excluded from the ownership of dwellings.[1]

Eero Heikkonen conducted the growth study "Asuntopalvelukset Suomessa 1860–1965 - Kasvututkimuksia 3" (Housing in Finland 1860–1965 - Growth Studies 3).[2] His estimate on the number of dwellings served here as the bases of volume calculations concerning the ownership of dwellings (cf. Construction). The GDP contribution of the housing sector was calculated as the product of dwelling ownership volume times the housing rent index. Total housing cost (a component of private consumption, cf. below) is arrived at by adding heating costs and other purchases, including lighting and material costs for minor repairs in dwellings, to the GDP contribution of the housing sector. The rent sum includes repairs related to the real wear and tear of dwellings, writeoffs plus items contributing to the increase in value of dwelling ownership. Consequently, the rent sum does not include heating costs.[3]

On basis of the rent data he had collected, Heikkonen calculated a rent price index, used for computing the value of housing cost from the 1948 level backwards.[4] The value of housing cost, thus arrived at, seemed too high e.g. as compared to the corresponding data from other countries.[5] For this reason Sakari Heikkinen computed a new housing cost value for the years 1860–1913 in connection with his study on private consumption.[6] Heikkinen chose Heikkonen's production volume index as his own volume, but constructed a new rent index and level, because Heikkonen's rent data seemed too high. Heikkonen's rent index for the period 1913–1938 was corrected in line with Heikkinen's 1913 level data. The rent trend was calculated on the basis of the annual rent data collected by Heikkonen.[7] The index thus arrived at develops like Heikkonen's index until 1926, but grows after that year at a slower pace. The level calculated by Heikkonen was assumed as the 1948 level. The corrected housing cost index for 1938–1948 grows faster than Heikkonen's index. It may be possible that the rent level thus calculated for the exceptional war years has resulted in some cases in too high figures. The 1948 level was very low, owing to the rent control in force at the time. The corrections produced a new housing cost level series for 1860–1938 which seems more realistic; the levels are about a third lower than in the series calculated by Heikkonen. The rent level for e.g. 1913 is 66.7 %, for 1926 66.7 %, for 1938 60.4 and for 1948 100 % of Heikkonen's figures.

A new heating cost index for 1860–1913 was computed by Heikkinen[8], because Heikkonen's 1860 heating costs seem too high. According to Heikkonen

they were 60 % of the housing costs and fell to 33 % by 1913. The value of fuel used grew, according to Heikkonen, by 24 %, while the total housing cost increased by 121 %. This in spite of the fact that people during this period began increasingly to buy their fuels, and the price of firewood rose during the period 1860–1913. The figures for 1920–1948 were taken from Heikkonen. The level difference in 1913 and 1920 was corrected by changing Heikkonen's fuel price index for 1913–1920. The 1913 heating costs estimated by Heikkinen were 40 % lower than those of Heikkonen.

The employment figures of the housing sector include, in rather rough terms, the houseowners, house guards and caretakers. The sources used are population census figures for individual cities, the municipal tax study by Hjelt-Broms as well as income and property tax statistics for 1920–1948.[9] The figures for the intermediary years were arrived at by interpolation.

It is obvious that Heikkonen's calculations concerning the number of dwellings are as accurate as the available sources allow. The above-mentioned adjustments caused some changes in the rent index figures calculated by Heikkonen.

1   GRÖNLUND-NIITAMO 1968, p. 116.
2   HEIKKONEN 1971.
3   HEIKKONEN 1971, p. 183.
4   HEIKKONEN 1971, p. 186, 204–205.
5   LAURILA 1985, p. 238.
6   HEIKKINEN manuscript.
7   HEIKKONEN 1971, p. 186.
8   HEIKKINEN manuscript.
9   HJELT-BROMS 1904, 1905.

Public services

Public services include the activities of offices or institutions related to national or local administration, maintenance of internal and external security and order as well as the development and control of diverse trades and industries. They also include the social services produced by public institutions, such as education and research, health care and other activities furthering the well-being of citizens or groups of citizens. The government activities also include the National Pensions Institute, founded in 1938. All business concerns owned by the central government and the municipalities belong to the trades or industries indicated

by their field of activity and so do the state-owned companies. The major ones are the State Railways and the Post and Telegraph Office.[1]

The hallmark of the public activities is that the main purpose of any fees that may be charged for the services is not the cover the production costs and that any deficits ensuing will be covered from other public funds. The public activities carried out by the central government in Finland usually include measures financed through the government budget, extra-budgetary funds and accounts as well as the National Pensions Institute in so far as they meet the above-mentioned conditions. Likewise, the activities of municipalities or inter-municipal authorities include the measures financed through their budgets.

The growth studies differ from the trade and industry classifications of the old SNA in that the services provided by the government and the municipalities do not include functions supporting public transportation, such as the pilotage and lighthouse services, icebreakers and ports; they are here included in communications. Similarly, the National Road and Waterways Construction Board, the National Building Board and their regional activities as well as street and road repairs and maintenance carried out by the municipalities are here included in building. For the part of these functions, the time series before 1948 and after 1948 are not comparable.

In the old SNA, the public services were divided into general administration, national defence and services; the latter were published together with private services. The classification chosen for this study follows a different line: the activities of the government and the municipalities are dealt with as public services, and the private services are kept separate. The data according to the old SNA for 1948–1960 come from the Central Statistical Office, the series from 1960 on according to the new SNA.[2]

Central government activities

A study "Valtion tulojen ja menojen rakenne 1800-luvun jälkipuoliskolla" (The Structure of Government Revenues and Expenditure in the Second Half of the Nineteenth Century) on the central government activities, according to the principles of the growth studies, was conducted by Erkki Pihkala.[3] In it the public economy is studied at ten-year intervals. In conjunction to this study, Hilkka Taimio wrote a paper entitled "Valtion menojen ja julkisten palvelujen kasvu Suomessa 1900-luvun alkupuoliskolla" (The Growth of Central Government Expenditure and Public Services in Finland in the First Half of the Twentieth

Century).[4] Both Pihkala and Taimio give detailed accounts on their calculation methods and sources.

Sources for data on the government activities were the annual government balance sheets, for the 19th century also the provincial accounts, the accounts of government foundations and central administrative boards; all these are previously unpublished archival sources.[5] A significant change in the budget and accounting procedures was made in 1901. At that time it was ordered that one comprehensive budget be compiled covering the revenues and outlays of such foundations the funds of which were intended for regular annual use. Another important change in the notation of total outlays was made in 1931. The total revenues and outlays of government business concerns were until then included in the accounts (gross amount principle), but after that year only the surpluses or deficits of the businesses are included (net amount principle). For the years 1900–1931 Taimio included only the deficits of the government businesses in the total outlays, the surpluses correspondingly in the revenues.[6]

For the period during and after the Second World War, the government balance sheets do not give a correct picture of the total outlays of the central government, because they include a great number of calculated items. These were corrected by Taimio, according to Heikki Valvanne's instructions. In the same manner she has dealt with the outlays in arrears and deferred allocations.[7]

The GDP contribution of the central government is calculated as the sum of the wage and salary totals, the calculated interest on state-owned buildings or rents plus the depreciation on fixed capital. According to the old SNA, the depreciation is written off only on the buildings in government use. The central government employees include, in addition to regular and temporary civil servants, also the defence forces, for which reason the numbers of government employees soar during war years. War-time government economy was studied by Kari Nars.[8]

For this study, wage and salary totals were calculated at ten-year intervals, based on Pihkala's data. Hilkka Taimio used the same method to calculate the central government outlays also for the years 1865, 1875 and 1886. For these years, the number of employees was estimated by dividing the wage and salary totals, excluding pensions, by the average pay. The average salary of civil servants, calculated by Timo Kortteinen, and a nominal pay index for civil servants and workers in the employ of the central government, calculated by Luoma, were used to estimate the average pay (cf. below, footnote 9).

The employment rate in the intermediary years was estimated by interpolating and assuming that the growth during these years remained steady. The corresponding wage and salary totals were arrived at by multiplying the number of employees by the above-mentioned average pay and adding the estimated pensions. The pension sums for the above-mentioned years were found in the government balance sheets, for the intermediary years they were interpolated.

For her paper covering the years 1900–1948, Taimio studied the annual total outlays of the central government and classified the outlays in the government balance sheets at five-year intervals in detail according to function and economic character. The classification years are 1902, 1907, 1912, 1917, 1922, 1927, 1932, 1937, 1942 and 1947. These years include both so-called normal and quite exceptional ones.

Among the classified account data, wage and salary outlays are given at five-year intervals. They include pensions and social security payments plus bonuses in money or in benefits in kind, the salaries, daily allowances and benefits in kind of the regular army personnel and the daily allowances of the conscript soldiers. The pay sums for the intermediary years were interpolated on the basis of total outlays by calculating the share of wages and salaries at five-year intervals and assuming a linear development of this share for the other years. The wage and salary outlays of the defence forces for 1938–1947 were calculated in detail on the basis of government balance sheet data.

The government employment rate for 1900–1948 was calculated on the basis of the actual wage-bill by dividing the sum by the average pay based on Timo Kortteinen's, Väinö Luoma's and Verner Lindgren's data.[9] It is a highly calculatory estimate.

For the purpose of estimating calculatory interest and depreciation, the Central Statistical Office placed at our disposal some unpublished work-tables on the value of state-owned buildings (gross fixed capital) at constant prices for 1921–1948. These data were translated into current prices by using Heikkonen's building cost index. The same source gave the fixed-price value of depreciation, also translated into a current-price one by using the same index. For the years 1860–1920 a rough series on state-owned capital was calculated by using the accumulated investment method. These data were obtained from the gross investment figures in the accounts of the National Building Board and the central government. The reduction in the accumulated investment was assumed as 1 %, assuming an average age of 100 years for the buildings. The share of depreciation was assumed as 2 % and that of calculated interests as 5 % of the total capital stock.[10]

The production volume index was calculated by deflating the wage and salary totals by the civil servants' nominal pay index and, correspondingly, the calculated interests and depreciation were calculated by deflating by the building cost index. These indices were combined for 1860–1900, with the 1890 values as weights, and for 1900–1948, with the 1938 values as weights.

The calculations concerning the central government activities should be very reliable, because an accurate even though labourious and time-consuming mass of archival data and printed accounts were available. The classification of the material gave some problems. Owing to the surfeit of material, cross-section treatment was the only possible method which made it necessary to interpolate the intermediary years. Some fluctuations must thus have been evened out, but the error should be a marginal one.

A greater problem was estimating the employment rate by means of the total wage and salary bill and average pay for 1900–1948, during which period the fluctuations in some of the years are likely to be wider than in reality. The exaggeratedly even wage sum was divided by an in times heavily varying wage index, resulting in too wide fluctuations in the worker series. For this reason the employment series for 1903–1915 and 1923–1932 were evened out by using a moving average. The number of employees trend could be compared with the cross-section data in some other studies, although it was not possible to determine accurately a concept of employment in the sense of the old SNA. The comparisons show that the employment series in this study follows in main the level and trends of the other studies.[11]

The activities of municipalities and inter-municipal authorities

The activities of municipalities and inter-municipal authorities here include education and culture, health and medical care, social welfare services and administration, which includes general administration, judicial system, maintenance of order and protection functions as well as other social welfare services. The GDP contribution of the municipal activities is presented as the total sum of wages and salaries plus the calculated rents and depreciation on the buildings owned and used by the municipalities.

The volume of the GDP contribution was calculated on the basis of the number of employees index as well as the weighted average of calculated rents and depreciation; the productivity of labour is thus assumed constant. The weights used were the 1926 wage-bill, calculated rents and depreciation. The calculated interests and depreciation were deflated by Heikkonen's building cost index, the number of employees was estimated by branch of administration. The 1948 data, published in an article by Veikko Tattari in 1965, were chosen as the starting level for the 1860–1948 study.[12]

Data on the activities of municipalities are found in the Kuntien finanssitilasto (Municipal Finances - SVT XXXI), concerning urban municipalities for 1910–1919 and from 1925 on and concerning rural boroughs for 1910–1912 and from 1930 on, with the exception of 1944. Special studies containing statistical material are "Suomen maalaiskuntain finanssitilasto I–II" (Financial Statistics of Rural Boroughs in Finland I–II) and "Suomen maalaiskuntain talous vuonna 1904" (The Economy of Finland's Rural Boroughs, 1904) by Kyösti Järvinen.[13]

Furthermore, the governors' reports contain some data on the activities of the municipalities, but there are very little annual data or statistics in general before 1875. The Statistical Yearbook of Finland contains some data on the activities of urban municipalities from the late 1870s on and on the rural boroughs from 1888 on. The governors' reports and the Statistical Yearbook of Finland only contain items directly included in the municipal administration accounts; there are no data on transactions in kind nor on some money transactions in them.[14] Further sources used are special statistics on various branches of administration, such as education and poor relief statistics, National Board of Health reports as well as special studies and local histories.

The statistical data on municipalities available are, thus, relatively plentiful. The problem is that their classifications are not usually fit for the purposes of the growth studies without further work. It has been difficult to determine which of the revenue and outlay data concern the municipal activities as defined by the SNA, which of them belong to the categories debt servicing, building or port maintenance. The assets and liabilities are usually presented in more detail than the revenues and outlays in the municipal financial statistics.

The wage and salary totals data for 1937–1938 of the municipalities were found in the municipal financial statistics. For 1860–1936 they were calculated on the basis of the number of workers and office personnel in the employ of the municipalities. The wage and salary estimation was based on the pay level assessed on the basis of the 1937–1938 wage and salary totals and number of municipal employees plus the wage and salary index for the central government employees. The indices used were the one computed by Luoma for 1860–1913 and Lindgren's wage index for 1913–1937. According to Kortteinen, Lindgren's index illustrates better the salary trends of civil servants 1913–1937 than Luoma's index, based on a less voluminous mass of data. For the years 1860–1913, in Kortteinen's opinion, Luoma's index illustrates the wage and salary trends quite well. It was assumed that the pay of the municipal employees followed the same trend as that of the civil servants. For some of the years the average pay level could also be compared to the salaries paid e.g. to the primary school teachers and administrative staff of certain cities.

Calculated interests and depreciation computed as a certain percentage of the value of the buildings owned by the municipalities. The problem is, naturally, to estimate how close to the real value the sums given in the statistics are. There are data on the total value buildings and land owned by the urban municipalities in the Statistical Yearbook of Finland for 1882–1910. The value trend for buildings was estimated to follow that for the buildings and land and these data were used as an index illustrating the value of the buildings. The series is incomplete for 1882–1897, from 1897 on all the urban municipalities are included. The 1882–1897 data were here complemented by assuming that the values of buildings and land developed, on average, in a similar way in all the urban municipalities; the index is based on data from the urban municipalities

actually included in the statistics. For 1910–1919 and 1925 the municipal financial statistics contain data on the value of buildings owned by the towns and cities. It was assumed that the building values in 1919–1925 followed the same trend as the value of the school buildings owned by the towns and cities, obtained from the Primary School Education Statistics (SVT X).

Data on the value of buildings owned by rural boroughs are available only for 1904[15] and in the Municipal Financial Statistics for 1910–1912 and from 1930 on. Data on the market towns are sporadically available from as early as the latter half of the 19th century but systematically only in the Municipal Financial Statistics from 1930 on. The value of buildings owned by the rural boroughs is assumed to have followed the same trend as the number of primary school teachers in 1882–1903. For 1904–1910 the value of buildings was interpolated linearially; the trend illustrating the number of primary school teachers supports this assessment as well. The 1913–1930 trend is assumed to be similar to the urban one, although it was estimated to have grown steadily at a faster pace than in the cities. The values for primary school buildings quoted in the Primary School Statistics for certain years support this estimate very well.

The total calculated interests and depreciation were estimated at 8.5 % of the value of the buildings, the level quoted by Tattari for 1948. This percentage is higher than the 6.9 % used by Lindberg.[16] The difference is due to the fact that the buildings owned by inter-municipal authorities were not estimated separately. The value of these is assumed to have followed the same trend as the value of the buildings owned by individual municipalities. This assessment is supported by scattered data on the old people's homes, hospitals and schools jointly owned by municipalities since the 1880s. For 1860–1882, the calculated interests and depreciation were estimated to have been 33 % of the wage and salary totals. This percentage is slightly lower than the 1882–1912 average. It was supposed that the building activity picked up in the municipalities from the late 1870s on, at which time the status of the primary schools consolidated and more old people's homes and hospitals were built.

The calculations on the number of municipal employees were classified by the types of municipal jobs. Data on the teaching personnel were fairly easily available. The primary school teachers were here the largest category. The Primary Schools Statistics actually begin from 1883, but some earlier data are available as well.[17] Data on a few primary schools operating before that year were collected from Hannu Soikkanen[18], but the rural boroughs did not actually begin to found primary schools until 1865. The urban municipalities began to found primary schools in the 1870s; before that time the primary education was supported by either the central government or private individuals. In the primary school statistics for the 1940s the number of teachers grew rapidly, as the boys' and girls' handicrafts instructors working as part-time teachers were included. Here the part-time teachers are not included, only the so-called full-time ones are.

The urban Sunday schools can be seen more or less as the predecessors of municipal vocational schools. Their activities ended in the 1880s when the founding of actual vocational schools began. According to Ilona Järnefelt[19], there were 64 Sunday schools in 1860. The work year of the schools was relatively short (an estimated six months per year per school), which meant that the instructors taught part-time. The municipal and private vocational schools were picked out as a total sum from the Statistical Yearbook of Finland. The division into municipal and private ones is rather rough, in proportion to the state aid granted in certain years.

Annual data on the social welfare services personnel are available in the Köyhäinhoitotilasto (Care of the Poor Statistics - SVT XXI) for 1917–1937 (salaried personnel, servants and non-paid staff such as the Chairman of the Local Council, the municipal officer of health etc.). For 1938–1948 the number of social welfare services personnel was estimated on the basis of the wage and salary totals and average pay; a further data source was the development of the number of persons cared for in the municipal social welfare institutions (the number diminished in 1937–1948). The number of employees estimated for 1860–1917 is based on the number of poor houses, later called old people's homes, and orphanages and the number of persons taken care of in them.

Poor relief was not a municipal activity in the rural areas before 1877; it was handled by specific poor relief boards, which in practice operated within the parish system of the church. Here it is included in the municipalities' activities from 1860 on. The governors' reports contain data on the cost of poor relief from the 1860s on. However, salaried staff and poor relief institutions were rare before the 1880s when the municipalities began to found more of them. Soikkanen lists foundings of old people's homes by individual rural boroughs before 1893, the year from which Soikkanen's and Piirainen's annual data on the institutions and the number of their inmates begin.[20] Data on urban poor relief houses were found in town histories. The average number of staff per institution was roughly estimated on the basis of the Rasila[21] and A. Helsingius[22] studies. Other than salaried staff entered the field of social welfare services very slowly; from the 1870s on, the municipalities began to nominate poor relief supervisors.

Several sources had to be used also to find data on the health and medical care personnel of the municipalities and gaps had to be filled with estimates. The annual reports of the State Medical Board (SVT XI, Medical Care 1884–) give data on health care personnel by employer for 1916–1918. However, the hospital nurses and maintenance personnel are not included in these statistics. Data on midwives are available from 1886 on. A few midwives were in the employ of private organisations, but mainly they were employed by the municipalities. Information on ambulant and district nurses is available from the late 1910s on, only scattered data could be found before that. The estimate on the number of midwives and ambulant nurses before the beginning of the State Medical Board statistics is based on the study by Niilo Pesonen[23] and on local histories.

The rural boroughs began to appoint Medical Officers in 1882; information on them was found in the studies by Soikkanen and Pesonen. The State Medical Board statistics gave data on which the number of urban medical practitioners and hospital doctors in 1900 could be estimated; before that time, the sources were town histories and the study by Rasila.

Town and city hospitals were rare before the 1880s; they were mainly temporary fever hospitals. Based on Rasila's information, it was possible to estimate their number before 1900. Einar Palmén[24] has fairly good data on the hospitals of rural boroughs, the first of which was founded in 1881. Since the beginning of the 20th century data are available on the number of patient beds and days cared at municipal hospitals; the numbers of medical and other staff were then assessed on the basis of this information. Palmén quotes averages on the numbers of beds, nurses and other staff at municipal hospitals. The data collected by Marianne Tallberg on the personnel of the Surgical Hospital in Helsinki support this information.[25] Data on the number of nurses is available in the Statistical Yearbook of Finland since 1950.

Information on the administrative staff of the municipalities was hard to find. According to Oscar Nikula[26], the towns and cities had in 1860 about 10 and in 1900 about 15 persons on their regular administrative personnel. According to Jussi Kuusanmäki[27] the official staff of the towns and cities grew slowly until the 1890s. Kommunalkalender för Helsingfors (Municipal Calendar for the City of Helsinki) could be used to estimate the official staff of Helsinki in the 1870s. Town histories contain scattered data on the administrative staff in the 19th century. More plentiful data are available for the 20th century, especially in the larger cities; by combining the data of certain cities an index could be computed concerning the number of administrative staff 1900–1925.

In rural areas the municipal administration was long handled exclusively by elected officials. The borderline between the administrative staff of the central government, the municipalities and parishes was often difficult to determine. Some government offices were abolished as the municipal administration developed. Among such cases were the half municipal - half government posts of bridge and road maintenance and hunting officers employed by the jurisdictional districts - often combined to be held by one person.[28] The posts of the bridge and road maintenance and hunting officers were abolished in 1891 and one or more constables were appointed at each police district to assist with the carrying out of police functions.[29] In most towns and cities the policemen were city employees until 1903 when they were taken in the employ of the central government; even after that, part of the cost of policing was paid by the cities. In a few smaller towns the policemen were central government employees even before 1903.

According to Soikkanen's and K.V. Kaukovalta's information there were a few salaried municipal secretaries from the late 1870s on; at the turn of the century their number was 23.[30] The development of the number of municipal

secretaries in the rural areas is assumed to illustrate the growth of the other official staff in the 20th century as well. The Maalaiskunta (The Rural Borough) magazine contains some information on the administrative staff or rural boroughs in 1940 and 1948. The number of administrative employees of rural boroughs in 1938–1948 and urban municipalities in 1925–1937 was calculated on the basis of the salary totals contained in the Municipal Financial Statistics.

The activities of the municipalities were studied here in very much detail. The picture patched up on the basis of scattered information is likely to be reliable. There is, however, some definitional calculativeness in the calculation solutions, e.g. calculated interests, which means rents and depreciation. On the other hand, productivity on the service sectors is a diffuse quantity, because it is impossible to determine the value of non-sale services.

1   GRÖNLUND-NIITAMO 1968, p. 109–110.
2   Concerning the reclassification of the new SNA, see the explanation attached to the Appendix Table 4 in The Finnish Economy 1860–1985.
3   PIHKALA 1977.
4   HILKKA TAIMIO Valtion menojen ja julkisten palvelujen kasvu Suomessa 1900-luvun alkupuoliskolla (The Growth of Central Government Expenditure and Public Services in Finland in the First Half of the Twentieth Century). Master's Thesis in Economics, University of Helsinki, Political Sciences, 1986.
5   PIHKALA 1977, p. 139–150.
6   TAIMIO 1986, p. 35–37.
7   TAIMIO 1986, p. 38–43; HEIKKI VALVANNE Valtiontalous vuosina 1938–1951 (The Government Economy 1938–1951). Suomen Pankin taloustieteellisen tutkimuslaitoksen julkaisuja, Sarja B:10, Helsinki 1949. Martikainen did not take outlays in arrears and deferred allocations, nor the 1931 change in the treatment of business concerns into account in his calculations, cf. TUOMO MARTIKAINEN Julkisen sektorin kasvu Suomessa (The Growth of the Public Sector in Finland). Helsingin yliopiston yleisen valtio-opin laitoksen tutkimuksia, Sarja C, Helsinki 1975.
8   KARI NARS Suomen sodanaikainen talous ja talouspolitiikka. Taloudellisia selvityksiä 1966 (Finland's Wartime Economy and Economic Policy. Economic Studies 1966). Suomen Pankin taloustieteellisen tutkimuslaitoksen julkaisuja, Sarja A:29, Helsinki 1966.
9   TIMO KORTTEINEN Valtio ja palkkatyö - tutkimus valtiollisen palkkatyön eriytymisen muodoista Suomessa ennen II maailmansotaa (The State and Wage Work - A Study of the Forms of Specialization in State Wage Work in Finland before World War II). Licentiate's Thesis, University of Helsinki, Political Sciences, 1984; VERNER LINDGREN Valtion virkamiesten palkat, Kehitys vuosina 1914–1927 (The Development of Civil Service Pay 1914–1927). Suomen virkamiesyhdistysten keskusliiton julkaisuja, Helsinki 1928;

VERNER LINDGREN Valtion virkamiesten palkat, Kehitys vuosina 1927–1938 (The Development of Civil Service Pay 1927–1938). Suomen virkamiesyhdistysten keskusliiton julkaisuja, Helsinki 1938; LUOMA 1962.
10 KALEVI KOLJONEN Pääomakannan käsite ja mittaaminen sekä sovellutus Suomen rakennuskantaan vuosina 1950–1960 (The Concept and Measurement of the Capital Stock and Its Application to the Building Stock in Finland in the Years 1950–1960). Tilastollinen päätoimisto, Monistettuja tutkimuksia n:o 8, Helsinki 1968.
11 Cf. ANTTI TALKKARI Virkamieskunnan kasvu Suomessa (The Growth of the Civil Service in Finland). Tampereen yliopisto, Julkishallinnon laitoksen julkaisuja 2/1971, Tampere 1971.
12 VEIKKO TATTARI Julkista hallintoa koskeva kansantulotilasto vuosilta 1948–1962: Kunnat ja kuntainliitot (National Income Statistics concerning the Public Sector 1948–1962: Municipal and Inter-Municipal Authorities), Tilastokatsauksia 1965:2.
13 JÄRVINEN 1899; Suomen maalaiskuntain talous vuonna 1904, Keisarillisen Senaatin Valtionvaraintoimituskunnan toimittama tilastollinen tutkimus (The Economy of Finland's Rural Boroughs, 1904, A Statistical Study Requested by the Fiscal Department of the Imperial Senate), Helsinki 1910.
14 Cf. SVT XXX, Kuntien finanssitilastoa B, Kauppalain ja maalaiskuntien finanssit 1, vuosina 1930–1931 (Municipal Financial Statistics B, Finances of Market Towns and Rural Boroughs 1, 1930–1931), p. 7. AINO-ELINA MÄKIMATTILA has written a Master's Thesis in economics "Kuntien talous niiden tehtäväpiirien muutosten kuvaajana Suomessa vuosina 1930–1963" (The Economy of Finland's Municipalities as a Portrayer of the Changes in the Scope of Their Responsibilities, 1930–1963), University of Helsinki 1966, which resembles the Growth Studies in the treatment of its subject matter. Helsingin kaupungin tilastollinen vuosikirja (The Statistical Yearbook of the City of Helsinki) begins with the early years of the 20th century - it was preceded by printed municipal reports from the latter half of the 19th century. Turun kaupungin tilastollinen vuosikirja (The Statistical Yearbook of the City of Turku) begins with the year 1915. LEANDER IKONEN wrote a study "Viipurin kaupungin raha-asiat vuosina 1879–1915. Tilastollinen tutkimus" (Fiscal Affairs of the City of Viipuri, 1879–1915. A Statistical Study). Tilastollisia tiedonantoja 22, Helsinki 1916 - it contains data from the years 1879, 1887 and 1895–1915.
15 Suomen maalaiskuntain talous vuonna 1904 (The Economy of Finland's Rural Boroughs, 1904)
16 In the Primary Education Statistics, the calculated rent for the school houses was estimated at 5 %.
17 Underdånig berättelse om Folkskoleväsendets i Finland utveckling under läseåren 1865–1886 (Humble Report on the Development of the Primary Schools in Finland during the School Years 1865–1886). Öfverstyrelsen för

skolväsendet, Helsingfors 1887. Cf. also AIMO HALILA Suomen kansa-koululaitoksen historia II–IV (The History of Primary Education in Finland II–IV).

18 SOIKKANEN 1966.
19 ILONA JÄRNEFELT Suomen sunnuntaikoulut (Finnish Sunday Schools). Master's Thesis in economic and social history, University of Helsinki 1970.
20 SOIKKANEN 1966, p. 322, 521; VEIKKO PIIRAINEN Kylänkierrolta kunnalliskotiin (From Village Circuit to Old People's Home). Helsinki 1958, p. 336–337, 369.
21 RASILA 1983.
22 A. HELSINGIUS (ed.) Suomen vaivaistalojen matrikkeli (Register of Poor Houses in Finland). Helsinki 1897.
23 PESONEN 1980.
24 EINAR PALMÉN Suomen kunnansairaalalaitos 50-vuotias (Fifty Years of Municipal Hospitals in Finland). Helsinki 1933.
25 MARIANNE TALLBERG Sophie Mannerheim, En historisk beskrivning och analys av hennes verksamhet inom sjukvården och sjuksköterskeutbildningen 1904–1928 (Sophie Mannerheim, An Historical Description and Analysis of Her Activities in Nursing and Nursing Education 1904–1928). Helsingfors Sjukvårdsinstitut, Helsingfors 1981, Appendix 2.
26 OSCAR NIKULA Kaupunkilaitos 1721–1875, Suomen kaupunkilaitoksen historia 1, Keskiajalta 1870-luvulle (The Urban Municipalities 1721–1875, The History of Finnish Urban Municipalities 1, From the Middle-Ages to the 1870s). Vantaa 1981.
27 KUUSANMÄKI 1983.
28 ESKO AALTONEN Pitäjän toimihenkilöt (Parochial Employees). Historian aitta IX, ed. Historian ystäväin liitto, Jyväskylä 1939.
29 K. WILLGREN Suomen finanssioikeus (The Fiscal Law of Finland). Porvoo 1910, p. 336.
30 K.V. KAUKOVALTA Suomen maalaiskuntien kunnallisen itsehallinnon historia (The History of Municipal Self-Government in the Rural Boroughs of Finland). Helsinki 1940, p. 339.

Private services

Private services comprise those service producing sectors not included in communications, trade, banking and insurance, dwelling ownership and public services. The sector consists of a large variety of activities, grouped into six subsectors: education, health care, recreation and entertainment, restaurant and lodging services, personal services and other services.

The data on the value and volume of private services had to be collected from a great number of sources. With the exception of private education, the labour and pay data for this study were compiled by Kari Pitkänen. There are several subsectors on which no annual data were available. The first step was to determine the labour input on each subsector; on the basis of this information the wage and salary totals, GDP contribution and production volume were calculated.

Private education includes a few private primary and other preparatory schools, secondary schools (providing general all-round education), vocational schools, folk high schools plus private universities and colleges. The so-called ambulatory schools, gradually replaced by municipal primary schools, were here included in church activities in the group other services.[1]

There were separate private schools for girls with gradually expanding curriculum.[2] Co-educational secondary schools had been founded since the 1880s and they became the main type of private schools, especially in rural areas.[3] For 1860–1880 the number of schools and a rough estimate of the number of students were determined on the basis of the governors' reports and other written sources; the number of teachers was assessed on the basis of this information. From the 1880s on the number of teachers could be calculated on the basis of data contained in the Statistical Yearbook of Finland. The working papers for Pihkala's study on state finances provided further data on state aid granted to schools.

The first private school for commercial training was established in 1838 and the first school of agricultural training in the 1850s. Some articles provide information on the founding of schools before the 1880s.[4] Schools for training in horticulture, cottage industries, home economics, livestock raising on dairy farms etc. were established mainly from the 1880s on. There is data on their ownership in the Statistical Yearbook of Finland until the 1920s. From that decade on, the data were determined on the basis of state aid granted to the schools.

The establishment of folk high schools, classified as free adult education, began in 1889. Even here the data source since the early years of the 20th century is the Statistical Yearbook of Finland. Before that, information on the number of folk high schools is provided e.g. by Halila and Rope Kojonen.[5] Private colleges and universities can as a rule be found in the Statistical Yearbook of Finland. Some corroboration for the development and level in the number of private school teachers could be found in the ten-year interval tables of the population statistics (SVT VI).

The health and medical care services include the deaconesses, private doctors, private midwives and the staff of private hospitals. Health spas were included in the group saunas and bathing establishments of the subsector personal services. The data on the number of doctors was computed as the

difference between the total number of certified physicians and the number of doctors holding posts as state or municipal medical officers, with some downward adjustment, because the total number includes retired doctors and those residing outside Finland. Since 1918 the number of private doctors can be found in the reports of the National Board of Health; the same source gives the number of all doctors before 1918. All dentists were assumed to be private ones. The estimate on the number of dentists before 1900 is based on Gunvor Sivén's information.[6]

The number of private midwives 1860–1880 was counted from the reports of district medical officers (Medicinalstyrelsens årsberättelser - Annual Reports of the National Board of Health). For the years 1910, 1920 and 1930 the data are taken from Martti Siirala's article.[7] The figures are slightly too low, but give for this reason a more accurate picture of the actual years worked. The private hospital staff figures are based on an estimate of the number of private hospitals in 1860–1900 and since 1900 data on the patient days in private hospitals (Statistical Yearbook of Finland).

The recreation and entertainment services include radio, movies, theatres, orchestra musicians, independent artists and sports organisations. The radio staff data are based on the annual reports of the Finnish Broadcasting Company. The movie series is based on the number of movie theatres. The data for 1915–1950 were found in Jaakko Keto's study.[8] The number of movie theatres before 1915 was estimated on the basis of Sven Hirn's works.[9] On the basis of the 1953 General Economic Census the number of man-years per movie theatre could be determined as five - the figures include also the renting and production of movies. This coefficient was used before 1920, 1930–1939 and 1945–1950. The coefficient used 1940–1944 was 4.5. The coefficient for 1920–1930 was 6, to include the musicians accompanying the silent movies. The number of movie theatre musicians is estimated to have fallen by 300 in 1930 when the sound movies were introduced.[10]

The late 1940s data on theatres were found in the yearbooks of Suomen ...stöjen keskusliitto (Federation of Finnish Dramatic Arts).[11] The ....he earlier years are based on information concerning the theatres and their status as "professional" or "amateur" ones. The main ...ormation is Verneri Veistäjä.[12]

...ly decades in the series on orchestras are based on information ...g non-municipal symphony orchestras operating in various cities, with ...sional musicians as members. The data sources are mainly general reference books, especially Otavan musiikkitietosanakirja (Otava's Encyclopedia of Music). An effort was made to take the man-years into account, thus the estimate of the number of musicians was adjusted downwards. The estimate for 1926 is based on the number of members - 402 - in Suomen Muusikeriliitto (Association of Finnish Musicians); the number of those employed by private orchestras as professional musicians was assessed as 150. The figures for the rest of the period

are estimates based on the development of the Association's membership, taking into account the number of symphony orchestras transferred into the ownership of municipalities.

The data on independent artists are based on the general population census information and should be seen as rough estimates. The so-called folk artists are not included.

The number of salaried employees in the sports organisations was estimated on the basis of the 1950 population census and the annual reports and histories of the organisations.

The restaurant and lodging services include hotels, lodging-houses and inns plus restaurants and cafes. The starting level is the one determined for 1948 in Pertti Sorsa's and Jouko Kaartinen's article "Ravitsemus- ja majoitusliikkeiden kansantulotilasto vv. 1948–1964" (National Income Statistics on Restaurants and Hotels, 1948–1964).[14] The series is mainly based on the general and municipal population census data. The estimates for the intermediary years 1930–1948 are based on information concerning the fluctuations in the restaurant employment, with Suomen osuustoimintatilasto (Statistics on Cooperative Activities in Finland) and the 1933–1950 annual reports of Alkoholiliike Ltd (The State Alcohol Monopoly in Finland) as the sources.[15] Before 1920 the man-years at inns, which were connected with the relay service stations, have some importance, but they were not taken into account in the population census data. The work performed at the inns was assumed to correlate, not only with the number of inns, but also with the number of rides provided. The number of rides was taken into account by assuming that 600,000 rides year equal one man-year per each inn. The number of man-years W was arrived at by using the formula

$$W = K/600{,}000 \times M$$

in which K = the number of rides per year and M = the number of inns. The figure 600,000 is a hypothetical maximum number of rides per year. The estimates regarding the volume of services within this sector in the 19th century were checked by means of various tourist guides.

The personal services include housemaids, i.e. paid household work, plus photographers, chimney sweepers, barbers and hairdressers, saunas and bathing establishments as well as undertakers. The sources for the number of housemaids are the accident statistics for 1927–1944 and the 1950 population census, with an estimated 10 % reduction to turn the number of employees into man-years. The 1860–1920 figures are based on the population statistics, the intermediary years were interpolated. A substantial correction was made in 1900, because the category personal servants also included e.g. shop assistants.

Sven Hirn[16] provides information on the early photographer's shops. For the period 1885–1908, the figures were taken from the industrial statistics, for 1923 from the handicrafts statistics. The figure given in the 1913 handicrafts statistics

(238 employees) is clearly too low. The 1914–1916 issues of Suomen Kauppa- ja teollisuuskalenteri (Almanac of Finnish Trade and Industry) list an essentially higher number of photographer's shops than the 1913 handicrafts statistics. The 1953 level is based on the general economic census data.

The source for the number of chimney sweeps 1860–1871 is the governors' reports for 1880 the population census data and for 1885–1908 the industrial statistics. The figures for the intermediary years were interpolated. The 1948 level was estimated on the basis of the 1953 general economic census data.

The number of barber and hairdresser shops in 1880 is based on population census data. The data for 1885–1908 are taken from the industrial statistics. From the turn of the century on they are, however, too low when compared with the figures given in the Almanac of Finnish Trade and Industry. They were corrected on the basis of the 1913 handicrafts statistics. The 1923 and 1934 figures are from the handicrafts statistics. The 1942–1948 figures are based on the turnover tax statistics and the 1948 work tables of Tilastokeskus (Central Statistical Office). The intermediary years were interpolated here as well.

The sauna and bathing establishment figures for 1885–1908 were taken from the industrial statistics. The 1860–1885 data were calculated in relation to the growth in town populations. The 1923 and 1934 figures are based on the handicrafts statistics. The 272 employees quoted in the 1913 handicrafts statistics is clearly too low and was corrected on the basis of the data in the Almanac of Finnish Trade and Industry, listing as many as 114 bathing establishments for 1914–1916. The 1948 figures were estimated on the basis of the 1953 general economic census data.

Information on laundries (laundresses, ironers, cleaning workers) can be found in the industrial statistics for 1885–1908. However, it is obvious that especially the people in cities did not use the services of laundry establishments as much as those of laundresses, ironers and cleaning ladies, often part-time working housewives who do not appear in the statistics. For instance the address calendar of the City of Helsinki for 1900 lists 405 persons or establishments doing laundry and ironing. The number of man-years for 1910 was estimated on the basis of the municipal population census, with the assumption that those earning pay for laundry and cleaning work only achieved 1/5 of a man-year. The development in 1910–1930 was estimated to follow the urban population growth trend. The number of man-years 1950 was based on the number of persons in the population census data.

There are hardly any data available on undertaker's establishments before the late 1940s, the beginning of the old SNA series. According to the trade almanacs and address calendars there only were 3–5 undertaker's establishments in whole Finland at the turn of the century. There were a larger number of coffin sellers, but they hardly sold undertaking services to a significant degree.

Other private services include religious services, services to the trades and industries, legal services and services provided by organisations. The number of clergymen only includes those serving the parishes, not those serving associations or military forces. An effort was made to include estimates on the clergy of all religious nominations. The sources used were the population statistics 1880–1950, Kertomuksia evankelis-luterilaisen kirkon tilasta (The State of the Evangelical Lutheran Church of Finland) and Valtiokalenteri (Official Directory of Public Officials). The data on the number of sacristans was taken from Kertomuksia evankelis-luterilaisen kirkon tilasta 1900–luvulla (The State of the Evangelical Lutheran Church of Finland in the Twentieth Century), the 19th century data are based on the information concerning changes in the number of parishes. An effort was made to take into account that the annual working time of especially the lower church servants was relatively modest. The data on the parochial school teachers were collected from The State of the Evangelical Lutheran Church and the Statistical Yearbook of Finland. The 1860 level is based on the data collected by Kasvatusopillinen yhdistys (Association of Pedagogues) for 1869 and the trend on the numbers of schools (one teacher per school). The estimates take into account that the annual working time was shorter in the earlier years. On the other hand, it is obvious that the relevant figure for some cases in the 19th century is the number of school districts, because at that time one teacher took care of several "schools", i.e. school districts.

The late 19th century data on the Salvation Army staff are based on Elsa Könönen's work "Hengen miekka - auttava käsi" (The Sword of the Spirit - A Helping Hand)[17] Data on the other years were collected from several sources.[18] In the category Preachers and others: Subcategory others includes mainly personnel of the parish offices, bishoprics etc. The estimates are based on the level determined by the 1950 population census; for the years before 1950 it was taken into account that the non-church revivalist movements were generally established in the 20th century and that the number of office personnel did not begin to grow until this century.

Services to trades and industries also belong to the category other private services. They are provided by engineering offices and architects, advertising bureaus as well as certain associations operating in the fields of trade, agriculture and industry. The 1948 level was estimated on the basis of the 1953 general economic census. The level estimated for 1914 is the number of corporations and persons providing this kind of services according to the 1914–1916 Almanacs of Finnish Trade and Industry. The employment estimate was arrived at by assuming that the average number of employees in a company was slightly lower in 1914 than in 1953. The extrapolation from 1914 backwards is based on the assumption that the supply of these services in 1860 was very low. The volume assumed was 100 man-years.

The level of legal services in 1948 was estimated on the basis of the general economic census of 1953 and the general census of 1950. Town population census and trade and industry almanac data were used to estimate the development 1860–1948.

The numbers of employees providing association services were separately estimated in three association categories. The data sources for agricultural associations, farmers' associations, Forestry Centre Tapio, forestry boards and associations are the annual reports of the Federation of Agricultural Associations and Tapio in the 20th century. The estimates concerning the 19th century were made on the basis of information on the founding years of the associations as well as Gösta Grotenfelt's data.[19] The estimates concerning the rest of the agricultural advisory and other organisations, including the household advisory association Marttayhdistys, are based on the annual reports of the associations and federations (e.g. Federation of Small Farmers, Association of Young Farmers' Clubs), supported by data published in the report of the Committee for Agriculture.[20]

The number of employees in other associations was estimated on the basis of the 1950 general population census and the number of associations. The series was extrapolated backwards by using founding year data and the employee series contained in the annual reports of some of the associations.

The number of employees providing private services, calculated in the manner described above, was 96,600 in 1948 while the number of private service employees according to the old SNA was 81,200. There are differences especially in the health and medical care (38 %) and other service (39 %) employment figures. Even the other subsectors' figures are slightly lower in the old SNA, with the exception of the hotel and lodging services; here the old SNA figure was chosen as the starting level. Even for 1960 there are largely similar level differences between the old SNA and the series computed for this study. In health and medical care the difference in employment seems to equal the number of health care personnel in private hospitals; in other services it seems likely that there are gaps in the handling of the numerous associations in the old SNA. O.E. Niitamo published in 1959 his estimate "Työllisyyden kehitys Suomessa vuosina 1938–1959" (The Development of Employment in Finland 1938–1959).[21] According to this study private services employed 103,100 people in 1948. For 1938, Niitamo's employment estimate was 97,200, whereas the equivalent figure in the present study is 94,200. Niitamo's classification into subsectors deviates from the one used in this study which makes it impossible to make detailed comparisons to determine the cause of the difference. Here I decided to use the pre-1948 private sector employment level arrived at by the above-mentioned method and add a corresponding 20 % increase also to the private service sector figures according to the old SNA for 1948–1960. Not only were the employment figures thus raised, but also the wage and salary totals, GDP contribution and gross value of production (i.e. a corresponding correction in private consumption). The production volume trend was assumed to be similar for each year to that of the old SNA.

The basis for calculating the total wage and salary totals is the 1948 salary/wage per employee level by subsector, with the exception of health care.

Then the wage and salary totals were extrapolated backwards by using employment indices and the average wage or salary and pay indices: the civil servants' salary index (Luoma 1860–1915 and 1938–1948 and Lindgren 1915–1938) and female (farm) workers' wage index plus an index computed as a combination of these. The female servants' pay index for 1926–1948 was calculated on the basis of domestic servants' wage trend in accident statistics (1927–1949 data; the wage totals were assumed to represent the wage level of the previous year). For 1860–1877 we used the rate of converting a rent work-day into money compensation and for 1878–1925 the wage of female farm workers on annual contract, with cost and lodging included.[22] The third wage and salary index was calculated as an average of the former two.

In the subcategories private education, health care, recreation and entertainment and other private services, the above-described civil servants' salary index was used. In the health care category, however, the average salary was calculated separately for doctors (400,000 Finnish markka in 1948) and the rest of the staff (120,000 Finnish markka in 1948) on the basis of fiscal statistics and government balance sheet statistics. The pay level of recreation and entertainment would have been too low for the period 1860–1920 if only the civil servants' salary index had been used. Full time artists during that period were relatively highly paid elite ones; the low-salaried employees of movie theatres etc. are a later phenomenon within this category. A more realistic level was achieved by multiplying the average pay in 1860–1900 by 1.6 and for 1900–1920 by a coefficient gradually reduced from 1.6 to 1; these coefficients were calculated on the basis of fiscal statistics etc. In the category other private services the same method with a coefficient gradually reduced from 1.6 to 1 was used to raise the average pay for 1860–1880, because clergymen constituted a major group within it at the time; their average salary was higher than the total one calculated on the basis of the civil servants' pay index, in which also the low-salaried employees were included. The combined index was used as pay index in the categories restaurant and lodging services and personal services. In all categories the pay level could be compared to actual salaries and wages paid in certain individual years; this comparison proved that the average wages and salaries calculated with the indices were relatively realistic.

The GDP contributions were calculated by estimating the operational margin by subcategory mainly as the average of the 1948–1953 data in the following manner: in education, salaries constituted 80 % of the GDP contribution; in health care in 1860–1913 50 %, 1918–1948 33 %, with declining contribution in 1913–1918; in recreation and entertainment 67 %; in personal services 85 % in 1860–1913, 75 % in 1918–1948, with declining contribution in 1913–1918; in other private services 60 % of the GDP contribution.

The gross value of production (in private consumption) was calculated on the basis of the above-mentioned data also as a fixed ratio to the GDP contribution.

on as follows: in education the GDP contribution is 85 % and in the other sub-categories 60 % of the gross value of production.

The employment index was chosen as the production volume index, i.e. constant productivity was assumed.

Data on the private services were gathered from diverse sources. They should be relatively reliable, because they are detailed.

1   The state school system during the period 1840–1870 consisted of ala-alkeiskoulu (lower primary school), yläalkeiskoulu (higher primary school) and lukio (higher secondary school). In the 1870s yläalkeiskoulu and lukio were merged as lyseo (lyceum). In the 1870s a parallel system of real or bourgeoisie schools was established; the pupils of these schools were not allowed to continue their studies at lukio. Their operations were terminated already in the 1880s or they were turned into primary schools. The first keskikoulu (lower secondary school) was founded in 1891. Private schools for boys were established as a parallel to the public ones from the 1870s on.

2   The first state schools for girls were founded in the 1840s, but the first actual secondary schools preparing the girls for enrolment into the university were not founded until 1906.

3   Municipal secondary schools were founded from the early years of the 20th century on. In the 1970s the old secondary school system was replaced by a new one, consisting of peruskoulu (basic school) and lukio (high school). Cf. AIMO HALILA Oppikoululaitos. Suomen kulttuurihistoria 2, Autonomia (Secondary Education. The Cultural History of Finland 2, Autonomy). Ed. Päiviö Tommila et al. Porvoo 1980.

4   AIMO HALILA Kansanopetus. Suomen kulttuurihistoria 2 (General Education. The Cultural History of Finland 2), 1980; KYÖSTI JÄRVINEN Kotimainen kauppa (Domestic Trade). Oma Maa VI, Porvoo 1925.

5   HALILA Kansanopetus, 1980; ROPE KOJONEN Kansanopisto (The Folk High School). Oma Maa IV, Porvoo 1923.

6   GUNVOR SIVÉN Suomen hammaslääkäriseuran historia 1892–1942 (History of the Finnish Association of Dentists, 1892–1942). Helsinki 1942.

7   MARTTI SIIRALA Kätilölaitoksemme viimeaikaisesta kehityksestä 1900–1930 (Recent Development of the Finnish Midwifery System, 1900–1930). Duodecim, Vol. 49, 1933.

8   JAAKKO KETO Elokuvalippujen kysyntä ja siihen vaikuttaneet tekijät Suomessa 1915–1972 (The Demand for Cinema Tickets in Finland between 1915 and 1972 and the Factors that Have Influenced It). Helsinki 1974.

9   SVEN HIRN Kuvat kulkevat (Moving Pictures). Hyvinkää 1981.

10 Finnish Association of Musicians data, published in Musiikkilehti (The Music Journal).

11 Teattereiden nykyhetki II ja III (The Theatre Today II and III). Suomen teatterijärjestöjen julkaisuja, Helsinki 1944 and 1947.

12 VERNERI VEISTÄJÄ Teatterimaailma, Maamme teatterit ja niiden taiteilijat (The World of Theatre, Our Country's Theatres and Their Artists). Helsinki 1950.

13 EERO LINNALA Suomen muusikkojen liitto 1917–1967 (The Finnish Association of Musicians, 1917–1967). Kotka 1967.

14 PERTTI SORSA - JOUKO KAARTINEN Ravitsemus- ja majoitusliikkeiden kansantulotilasto vv. 1948–1964 (National Income Statistics on Restaurants and Hotels, 1948–1964). Tilastokatsauksia 1966:4.

15 Suomen osuustoimintatilasto, Pellervon vuosikirjat 1930–1933 (Statistics on Cooperative Activities in Finland, Pellervo Yearbooks 1930–1933); Alkoholiliikkeen vuosikertomukset 1933–1960 (Annual Reports of Alkoholiliike Ltd - The State Alcohol Monopoly of Finland - 1933–1960).

16 HIRN 1981.

17 ELSA KÖNÖNEN Hengen miekka - auttava käsi. Pelastusarmeijan vaiheet Suomessa (The Sword of Spirit - A Helping Hand, The History of the Salvation Army in Finland). Porvoo 1964.

18 The Salvation Army Year Book (1939, 1949); Tietosanakirja (Encyclopedia) 1935; Suomen evankelis-luterilaisen kirkon tila, 1921 (The State of the Evangelic Lutheran Church in Finland, 1921) etc.

19 GÖSTA GROTENFELT Suomen maanviljelys, Yleiskatsaus (Farming in Finland, A General Review). Porvoo 1897.

20 Komiteanmietintö 1932:6: Maatalouskomitean mietintö (Committee Report 1932:6: Report of the Committee for Agriculture).

21 NIITAMO 1959.

22 Suomen tilastollinen vuosikirja (Statistical Yearbook of Finland); ARVO M. SOININEN Maataloustyöväen palkkakehitys 1800-luvun lopussa ja 1900-luvun alussa, Ajanjakso 1878–1913 (The Development of Agricultural Wages at the End of the Nineteenth Century and the Beginning of the Twentieth Century, Time Period 1878–1913). Helsingin yliopiston talous- ja sosiaalihistorian laitoksen tiedonantoja, N:o 11, 1981; SAKARI HEIKKINEN ym. (et al.) Palkat, toimeentulo ja sosiaalinen rakenne Suomessa 1850–1913 (Wages, Livelihood and Social Structure in Finland 1850–1913). Helsingin yliopiston talous- ja sosiaalihistorian laitoksen tiedonantoja, N:o 13, 1983.

Foreign trade

Imports and exports were in this study included in the total supply and total demand balance. Exports and imports of merchandise by main product category

are given at five-year intervals. Furthermore, the tables show export and import price indices. No other foreign transaction items in the national accounts were studied.

"Suomen ulkomaankauppa 1860–1917" (Finland's Foreign Trade, 1860–1917) by Erkki Pihkala and "Suomen ulkomaankauppa 1917–1949" (Finland's Foreign Trade, 1917–1949) by Heikki Oksanen and Erkki Pihkala were published in the Growth Studies series.[1] The time series used here were taken from Oksanen-Pihkala's appendix tables, but the values of timber exports were corrected for the period 1860–1900. The series give merchandise exports at f.o.b. prices and imports at c.i.f. prices.

It was not possible here to estimate the exports or imports of services in 1860–1948. The national accounts series since 1948 also include these; for this reason the series in Appendix Table 3A are not fully comparable. However, the volume indices in Appendix Table 3C covering the entire period are just merchandise exports and imports indices.

For the Growth Study, Pihkala reclassified the foreign trade statistics[2] (which begin from 1856), harmonized the units of measurement and translated the import prices into c.i.f. values. Pihkala had to do a great deal of complementing in the 1860–1890 statistics: only volume data were available on the trade with Russia, cross-border transactions are partly missing etc.[3] Oksanen and Pihkala classified the foreign trade statistics in a manner slightly different from the one used by Pihkala in his earlier study and calculated volume and unit price indices for imports and exports.[4]

Kai Hoffman made corrections in the sawn timber value series computed by Pihkala; the figures as corrected by Hoffman were used in this study.[5] The prices Pihkala used in his work were either taken direct from the foreign trade statistics or computed from the statistics, based on standard values quoted by experts, since the 1890s also on the value declarations made by importers and exporters.[6] According to Hoffman these differ from the actual sales prices charged by the exporters. A new price series was computed by Hoffman on the basis of the payments received by the exporters. "The discrepancy is relatively small in the 1860s and early 1870s (10 % at the most), but grows more markedly after that (the 1875 figure is 22 % too high, 1877 29 %, 1878 already as much as 48 %; In the 1880s the error for several years was 30–40 % and 15–25 % discrepancies occur towards the end of the century). Obviously there was not enough change from year to year in the price data received by the National Board of Customs. Since the prices were generally falling during that period, the statistical data are as a rule too high."[7]

The export price index was also altered by dividing the corrected value series by the export volume index.

The foreign trade data are obviously quite reliable, at least as far as volumes are concerned. The application of centrally confirmed value standards in the statistical value series may have caused some distortion, other than that cor-

rected by Hoffman, in Pihkala's study.[8] On the other hand it is possible that the correction of Pihkala's data by Hoffman's figures may cause problems when studying the overall development of e.g. the current account or the balance of total supply and demand.

1   PIHKALA 1970; OKSANEN-PIHKALA 1975.
2   SVT I. Kauppa ja merenkulku (Trade and Navigation); SVT IA. Kauppa (Trade).
3   PIHKALA 1970, p. 14–31.
4   OKSANEN-PIHKALA 1975, p. 29–36.
5   HOFFMAN 1980, p. 211.
6   OKSANEN-PIHKALA 1975, P. 29
7   HOFFMAN 1980, P. 111
8   HOFFMAN 1980, P. 111

Private consumption

Private consumption includes the current expenditures of households and private non-profit institutes and organisations. The net value of material gifts received from abroad is added to the expenditure and the value of second-hand consumer goods sold is deducted from it. The purchases of all commodities - not including land and buildings - irrespective of the life-time of the articles in question, are counted as current expenditure of the households.[1]

In principle, the private consumption can be studied by two methods: by using data on the supply of consumption goods or the consumption expenditure itself. If we use the supply method, the data will include a few products and services of which we cannot know whether they were purchased by the private or the public sector. The detailed consumption figures by product category in the old NSA also include some commodities used by the public sector in the supply of its services as well as some purchased by business companies for use in their production. It was not possible to keep these separate from the commodities used in private consumption proper (termed here extended private consumption expenditure).[2] In the total demand balance, however, private consumption estimates do not include these public spending items (= narrower private consumption expenditure). This is not true any more of the new SNA; The concept of private consumption expenditure according to the new SNA is slightly different from that of the old SNA.[3]

The data on private consumption expenditure for 1860–1913 used in this study were taken from Sakari Heikkinen's work.[4] The purchases of private services were estimated on the basis of a private services survey conducted for this study; the financial service data for 1860–1900 were from bank and insurance institution statistics compiled for this study, for 1900–1913 from the study by Laurila.

The source for 1913/1914–1960 data is a study conducted by Eino H. Laurila "Kulutus Suomen kansantaloudessa 1900–1975" (Consumption in Finnish Economy in the Years 1900–1975).[5] The new SNA series were used from 1960 on. The works of Heikkinen and Laurila are mainly based on the supply of commodities, but the data available on consumption expenditure and its distribution were also used.

The concept on which Heikkinen's figures are based is the so-called extended private consumption expenditure. He did not provide an estimate in which the commodities used by the public sector would have been deducted. The difference during the period 1860–1913 is a small one, because the share of the public sector at that time was very low. Laurila, on the other hand, gives estimates on both narrower and extended private consumptions. The narrower concept, according to Laurila, gives for 1913 a 5 % lower figure than the extended one.[6] The concept used here for 1913–1960 is the narrower one, because the objective was to present a balance of total supply and total demand.

Heikkinen also corrected Heikkonen's figures for dwelling services as well as the heating and lighting series for 1860–1913 (cf. dwelling service calculations). The correction was based on Heikkinen's data on the number of dwelling rooms. The series at constant prices was computed by multiplying the number of rooms by the average rent of 1913 (63 markka/room). The current price series was computed by multiplying the fixed-price series by a rent index constructed by Heikkinen. Expenditure on heating and lighting was estimated by assuming that it was half of the value of dwelling services (rent) in 1913 and applying the same principle over the period 1860–1913 at constant prices. The heating and lighting expenditure series at current prices was computed by multiplying the fixed-price series by a price index for heating and lighting constructed by Heikkinen.[7]

The dwelling services and private services sections of Laurila's time series were corrected for this study (cf. above: Dwelling Ownership, Private Services). A corrective position of 25 % of the GDP contribution of private services was added to Laurila's estimate of private services consumption in 1914–1960, because the level of private services in the old SNA during the period 1948–1960 was estimated to be about 20 % too low. The private services consumption as quoted by Laurila equals the level of the old SNA for 1948–1960. It has been assumed that Laurila's calculations on private services consumption for 1914–1948 is based on an unpublished work on private services production which was on the same level as the 1948–1960 one. The correction raises the figures in

Laurila's series on private consumption by 1.0 – 2.5 % for the years 1914–1960. The consumption of dwelling services was corrected on the basis of the recalculated dwelling ownership GDP contribution for 1914–1948. For the years 1948–1960, the old SNA series was used in this study as well as in Laurila's work.

Heikkinen's figures were used for the years 1900–1913, not those of Laurila, because Heikkinen applies the new data in the new growth studies on industry and transport in his work.[8] The level of private consumption at the beginning of the 20th century, according to Laurila, seems quite high in comparison to e.g. the gross domestic product. Laurila does note that his figures on grain consumption are higher than those of the household enquiries. Pihkala assumes that Laurila did not account for storage loss to a sufficient degree. Laurila estimates that the intake of food in the early years of the 20th century amounted to 3400 calories per day, Heikkinen's estimate is 3000 calories per day.[9]

Heikkinen has computed fixed-price series by deflating the figures by indices calculated for individual consumption expenditure categories (19 indices in all). In constructing his series, Laurila uses value, volume and price data from various sources as a basis. His study methods vary according to the consumption category. He also constructed several price indices for the deflation of subseries.

The volume index of private consumption was here computed by chaining Heikkinen's and Laurila's indices. It was assumed that the corrections made in the market price series of Laurila did not interfere with the volume index.

1   Cf. GRÖNLUND-NIITAMO 1968, p. 124–125 for more details on the concept.
2   Finnish national accounts for 1948–1960, p. 57
3   SOURAMA-SAARIAHO 1980, p. 22–25.
4   HEIKKINEN manuscript.
5   LAURILA 1985.
6   LAURILA 1985, p. 457 and 464.
7   HEIKKINEN manuscript.
8   HEIKKINEN-HJERPPE 1986; PELTONEN 1983.
9   LAURILA 1985, p. 390, 392, 612; HEIKKINEN 1981, p. 120; PIHKALA 1986, p. 79.

After the completion of the manuscript for this study, Laurila published his work "Yksityinen kulutus Suomessa ajanjaksona 1880–1980" (Private Consumption in Finland during the period 1880–1980), ETLA B52, Helsinki 1987.

Laurila's volume index for private consumption is compared below to Heikkinen's equivalent for 1880–1900:

GROWTH

	Laurila	Heikkinen
1880–1890	34.5 %	38.7 %
1890–1900	36.6 %	48.9 %
1880–1900	83.7 %	106.5 %

LAURILA 1987, p. 49; HEIKKINEN manuscript. Heikkinen's figures, used here, coincide better with the figures indicating accelerating growth, arrived at by other means. According to Laurila, the growth rate of the 1880s equals that of the 1890s. The trend of total demand is largely determined by this private consumption series.

In Laurila's private consumption figures, the share of food declined by 8 % in 1880–1890 and rose back on the 1880 level in 1900. A decline of this magnitude is not plausible, although the food prices went down during that period. However, the food price fall was almost as deep as the decline in the total consumption price index.

Public consumption

In the national accounts, public consumption expenditure covers those services produced by the public authorities for which no fees are charged. These services are not charged as costs to the sectors actually benefiting from them; they are treated as if the public sector itself would have consumed them (production for own use).[1]

The sources of data on central government's consumption expenditure at ten-year intervals for 1860–1900 are Erkki Pihkala's work[2] and calculations made for this study by Hilkka Taimio for the years 1865, 1875 and 1886. Taimio used material found in the government balance sheets as well as the accounts of provinces and central administrative boards. In addition to the GDP contribution the data include repair and maintenance costs as well as purchases of goods and services from other sectors (value of total production); the value of goods and services sold to enterprises and households is deducted from the total. Such goods and services include beaconage, pilotage, ice dues, towage dues, hospital fees, tutoring fees of schools, rents, pharmacy fees. The figures for the intermediary years were interpolated on the basis of steady growth assumption.

The consumption expenditure of the central government data for 1900–1948 were taken from Hilkka Taimio's work "Valtion menojen ja valtion julkisten palvelujen kasvu Suomessa 1900-luvun alkupuoliskolla" (The Growth of Central Government Expenditure and Public Services in Finland in the First Half of the Twentieth Century). This survey of the central government expenditure is based on balance sheets of the government and was made, in principle, in the same way as the calculations concerning the periods 1860–1900 and 1948–1960. Repair and maintenance costs as well as purchases of goods and services were found in the balance sheets for the years mentioned and the estimates for the intermediary years were interpolated on the basis of the total expenditure trends, with the exception of the years 1938–1947, for which the survey was based on annual balance sheet data. The sales of goods and services were calculated annually on the basis of the government balance sheets. The descriptor of central government expenditures from 1960 on is the central government consumption expenditure series in the new SNA plus the consumption expenditures of the social security funds.

To arrive at the volume index of the central government consumption expenditure, the sales of goods aand services at constant prices were deducted from the total expenditure at constant prices. The latter was arrived at by adding the fixed-price GDP contribution to the purchases of intermediary products deflated by the wholesale price index. On the basis of these items and the respective series in current prices, a total production price index of the government consumption expenditure was computed and used to deflate sales to other sectors.

The consumption expenditure of the municipalities include, in principle, wages and salaries plus other labour-related costs, calculated interest and depreciation, repair and maintenance costs as well as the purchases of goods and services minus the sales of goods and services.[3] In practice it was impossible, on the basis of the financial statistics of the municipalities, to absolutely determine which items should be counted as consumption expenditure, income transfers or capital expenditure and correspondingly the municipal revenues from the sales of goods and services. The consumption expenditure was mainly constructed as an index of the items containing consumption expenditure, with the 1948 level as the starting point. Revenue from the sale of goods and services was not estimated, but a constant ratio to consumption expenditure was assumed. This was more or less the case in the 1930s and 1940s.[4]

The municipal consumption expenditure for 1860–1888 was estimated on the basis of an index constructed from the wage and salary totals, the poor relief expenditure index and an index computed from the total expenditure of certain cities. The poor relief index was estimated on the basis of the governors' reports data on certain provinces and Nikula's[5] data on the poor relief expenditure in the

largest cities. The 1888–1910 data on the total expenditure of cities and rural boroughs were taken from the Statistical Yearbook of Finland. However, it is likely that only about half of the total expenditure of the rural boroughs was included in these data.[6] The consumption expenditure index was computed on the basis of the total expenditure trend. The wage and salary totals and poor relief expenditure trends were used as a comparatory series.

For 1910–1948, an index computed mainly on the basis of items containing consumption expenditure was used for those years for which municipal financial statistics were available. For cities, such data are missing for the period 1920–1924, and a surrogate index was computed on the basis based on the cities' expenditure on schools and poor relief and the consumption expenditure of the largest cities.

For rural boroughs, total expenditure could be estimated on the basis of financial statistics for 1910–1912. The total expenditure of rural municipalities was used as basis for estimation for the period 1913–1916. The 1916–1930 index was computed on the basis of eg. primary school and poor relief expenditure plus the total expenditure of the cities. The consumption expenditure thus estimated accounted for 68 % of the total expenditure in 1880, 70 % in 1910 and 60 % in 1930.

The volume index of the total municipal consumption expenditure was computed as a weighted one on the basis of the volume index of the GDP contribution and the volume index of service purchases with 1926 as the base year. The purchases of goods and services were deflated by the cost of living index.

1   GRÖNLUND-NIITAMO 1968, p. 138; TAIMIO, p. 33.
2   PIHKALA 1977.
3   Cf. MÄKIMATTILA, p. 41–43 and TATTARI, p. 63–64.
4   MÄKIMATTILA appendix tables.
5   NIKULA 1981.
6   Cf. JÄRVINEN 1899; Suomen maalaiskuntain talous vuonna 1904 (The Economy of Finland's Rural Boroughs 1904); Maalaiskuntien finanssitilastot 1910–1912 (Financial Statistics of Rural Boroughs, 1910–1912).

Gross fixed capital formation

The formation of capital is divided into the following main categories according to types of capital goods: 1) residential buildings, including all expenditure on the construction of new dwellings, the value of major alteration plus the value of buildings in construction; 2) other buildings, including expenditure on all other building construction; 3) land and water constructions, including all expenditure on structures intended to improve transport, telecommunications or road or rail communications as well as the improvement of the ground for production or entertainment purposes; in these cases the construction involves either reforming the ground itself or installing in or on it equipment serving the above-mentioned purposes; 4) machinery and equipment, including expenditure on machinery and equipment with a life-cycle of more than one year plus expenditure on improvement and alteration measures intended to essentially lengthen the life-cycle and/or increase the productivity of these commodities.[1] The formation of fixed capital does not included the acquisition of capital used for these purposes not the acquisition of land property.

It is often difficult to distinguish actual capital formation from repairs and alterations. As repair costs we have counted expenditure on the maintenance of the operational efficiency of constructions. In principle, capital formation includes all alterations or repairs which increase the ability of the capital goods to produce services.

The formation of fixed capital has been studied in two earlier articles, referred to here: Riitta Hjerppe-Matti Peltonen-Erkki Pihkala: "Investoinnit ja niiden rahoitus Suomessa 1860–1979" (Investments and Their Financing in Finland 1860–1979) and Riitta Hjerppe–Matti Peltonen-Erkki Pihkala: "Investment in Finland 1860–1979".[2]

Consistent investment statistics covering the whole Finnish economy are only available for the years 1951 and 1958 when investment enquiries were carried out. These have served as basis for determining the level of investment according to the old NSA. In the above-mentioned articles we studied the development of investment in Finland with the aid of the investment series for 1860–1948 constructed by Matti Peltonen, but no investment data have been published earlier. For the years 1948–1960, the time series of the old SNA were used and from 1960 on those of the new SNA.

The source for the investment series on residential buildings for 1860–1948 is Eero Heikkonen's study "Asuntopalvelukset Suomessa 1860–1965" (Housing in Finland, 1860–1965). The time series 1900–1948 for other house construction is from Eero Heikkonen's study "Talorakennusinvestoinnit ja talorakennuskanta Suomessa 1900–1970" (Investment in House Construction and the Stock of Buildings in Finland, 1900–1979). Heikkonen also placed some of his working papers at our disposal. The investment series on other house construction for 1860–1900 are based on Matti Peltonen's manuscript "Rakennustoiminnan kehityksestä Suomessa 1860–1913" (The Development of Construction in Finland, 1860–1013) and the working papers related to it. Other construction is in this work divided into agricultural, business and public house construction.

The data source for 1900–1948 on investment in land and water construction is Pertti Kohi's study "Maa- ja vesirakennustoiminta Suomessa 1900–1960" (Land and water construction in Finland, 1900–1960) and the working papers related to it. Some completions were made in the data for the early years of the 20th century. The time series for 1860–1900 were published in the articles by Hjerppe, Peltonen and Pihkala. In these studies, investments in land and water construction were divided into three categories: construction of roads, railways, canals and other waterways; land and water construction for agricultural and forestry purposes; and municipal engineering. The road building data for 1860–1900 include, in addition to the construction of new ones, also repairs and maintenance work, because the primitive roads of that time required frequent repairs and maintenance that cost more than new construction.[3]

Investment in machinery and equipment was determined by gathering data on the production of machinery, equipment and vehicles for 1914–1947 from industrial statistics and for 1860–1913 from the industrial growth study and the working papers related to it; imports were added on the basis of import statistics and exports deducted on the basis of export statistics.[4] Other deductions were the value of war materials exported to the Russian army during the First World War which does not appear in the export statistics (value estimated on the basis of industrial statistics) and the relevant war reparation shipments after the Second World War which are not considered exports, either, but are included in the production figures.[5]

By definition, the purchases of machinery and equipment by the defence forces are not treated as investments but as public consumption. They are included in Hjerppe-Peltonen-Pihkala's investment series; in this study they were deducted from the total for 1919–1947.[6] Neither are they included in the old SNA series for 1958–1960. Their share varied between 8 % and 27 % in the 1920s and 1930s, but accounted for as much as 80 % of the investment in machinery and equipment during the war years of the 1940s.

The fixed-price series were computed by deflating the value of house construction by Heikkonen's cost of building index, the value of lang and water construction by Kohi's land and water construction price index for 1900–1948 and by Heikkonen's cost of building index for 1860–1900. Investment in machinery and equipment at constant prices was calculated by deflating the figures by an metal and engineering industry price index for 1860–1900 computed by Birger Rabb, by Heimer Björkqvist's import price index for 1900–1917 and Oksanen-Pihkala's unit price index for investment goods imports for 1917–1948.[7]

The reliability problems related to the subseries in the investment category were mentioned earlier when discussing the calculation of the said series. There were some classification problems with the construction of machinery and equipment series, because the branch categories of the industrial statistics and the industrial growth study include some production not accountable as capital goods and, correspondingly, some capital goods have been left out in them.

1   GRÖNLUND-NIITAMO 1968, p. 140–141.
2   HJERPPE-PELTONEN-PIHKALA 1981 and 1974.
3   HJERPPE-PELTONEN-PIHKALA 1974, p. 57.
4   PIHKALA 1970; OKSANEN-PIHKALA 1975.
5   OKSANEN-PIHKALA 1975, p. 24–28.
6   For the years 1919–1938, the sum deducted also includes some building activities which could not be distinguished from the basic material purchases of the defence forces. Cf. MARTTI V. TERÄ-VILHO TERVASMÄKI Puolustushallinnon perustamis- ja rakentamisvuodet 1918–1939, Puolustusministeriön historia I (The Administration of Defence during the Years of Establishment and Building, 1918–1939, History of the Ministry of Defence I). Helsinki 1973, p. 202 and VILHO TERVASMÄKI Puolustushallinto sodan ja rauhan aikana 1939–1978, Puolustusministeriön historia II (The Administration of Defence during War and Peace 1939–1978, History of the Ministry of Defence II). Hämeenlinna 1878, p. 120–121, 233–235.
7   HJERPPE-PELTONEN-PIHKALA 1984, p. 58.

Indirect taxes and subsidies

In the old SNA, indirect taxes comprise the taxes included in the purchases of goods and services by business enterprises and as well as taxes on goods and services owned or used by households. Major categories are customs tariffs, excise duties and turnover tax, entertainment taxes, licence and concession fees, stamp duty and motor vehicle taxes. The profits of business enterprises holding a state monopoly - e.g. the surplus of the state alcohol production and selling monopoly Alkoholiliike - are also counted as indirect taxes.[1] In the new SNA, the category most closely corresponding to the indirect taxes is commodity taxes.[2]

Subsidies include actual subsidies, price equalization expenditure of various funds and the deficits of state-owned business enterprises. The corresponding concept in the new SNA is commodity subsidies. In this study, the old SNA series for indirect taxes and subsidies were used for 1948–1960, the commodity taxes and subsidies of the new SNA from 1960 on.

The data for the indirect tax and subsidy series for 1860–1948 were gathered from government balance sheets, the annual reports of state-owned companies, statistical yearbooks and official statistics. In addition to the categories mentioned above, we included the price equalization fees and import levies collected by the Price Equalization Fund, the Import Levy Fund and Agricultural Marketing Fund plus the surpluses of the State Railways, the Post and Telegraph Office and the

State Grain Storage Centre. The deficits of the said funds and enterprises were counted as subsidies.

The annual surplus of Alkoholiliike was counted as follows: the previous year's surplus plus income and property tax plus dividends. For the years 1917 and 1918 it also contains liquor license fees and alcohol testing fees. All other taxes related to the production of alcohol are included in the excise duties. The so-called gross margin was chosen to be used as the surplus of the State Railways.

Actual subsidies include the premiums used to stabilize the livestock produce prices and the related subsidies in 1938—1940 as well as diverse measures in support of the Finnish agriculture during the war years 1943—1947.

1   GRÖNLUND-NIITAMO 1968, p. 43
2   SOURAMA-SAARIAHO 1980, p. 17—18, 75.

Gross domestic product, volume of the gross domestic product, employment and wage and salary totals

To arrive at the gross domestic product at producer prices, the contributions by kinds of economic activity were added together annually. Indirect taxes were added to and subsidies subtracted from this sum to arrive at the gross domestic product at market prices.

The volume index of the entire gross domestic product was computed by using a Laspeyres type index formula. Sectoral volume indices were added together at 11 year periods, weighted by the value-added of the middle year (e.g. for the period 1860—1870, with 1865 as the base year, for 1870—1880, with 1875 as base year,... 1940—1948, with 1944 as base year). These were chained to arrive at sectoral GDP contributions and total gross domestic product at fixed prices. These were used to compute the volume indices with 1926 = 100. For the years 1948—1960, the volume index of the GDP according to the old SNA was used (1954 = 100), chained at 1948 with the index computed for this study. The volume of private services was assumed to have followed the same trend as in the old SNA figures 1948—1960, although a level correction was made in its GDP contribution. The volume index of the value-added according to the new SNA for 1960—1978 was chained with the GDP volume index for 1860—1960 as well and to this the 1990 = 100 volume ind ex from 1978 on.[1]

To arrive at total employment, the labour input series by sector were added together year by year; for 1860—1960 the employment was estimated as man-years according to the old SNA. Based on these data, an employment index was computed, with 1926 = 100. The labour input according to the new SNA is given in hours worked and persons employed, that is as the number of persons who had employment during each year. The hours worked and persons employed series of the new SNA are not published in this study. Instead, a labour input index, based on the hours worked, is given by sector and for the entire economy. It is chained with the labour input index for 1860—1960.

For some of the sectors, the wage and salary total is given. Because the wage and salary total of primary production could was not determined, it was not possible to compute a wage and salary total for the entire economy.

1   Cf. the footnote on page 89 concerning the equivalence of the old and new SNAs.

Aggregate supply and aggregate demand

Appendix Table 3 in the main book gives the balance of aggregate supply and aggregate demand. The aggregate supply consists of the gross domestic product at market prices plus imports of goods and services. Aggregate demand consists of private consumption expenditure, public consumption expenditure, gross fixed capital formation, exports of goods and services plus increase in stocks and statistical discrepancy.

The methods of constructing the series have been discussed earlier in the appropriate chapters. The continuity of the series is not complete. For 1860—1948 it only was possible to determine the imports and exports of goods. From 1948 on, the imports and exports of services are included in the market price series of the aggregate supply and demand balance (Table 3A), likewise in Table 3B, with the ratios of aggregate demand and aggregate supply to components to gross domestic product at market prices. On the other hand, Table 3C, with the volume indices of aggregate demand and aggregate supply components, only gives the volume indices of the exports and imports of goods. Furthermore, data according to the new SNA were used for the post—1960 period; owing to the corrections made, the market price level of these data differs slightly from the data according to the old SNA. The 1960 figures at market prices are given here according to both the old and the new SNA, enabling the reader to determine the extent of the difference. However, we decided to display the volume indices according to the old and the new SNAs chained into each other; we presume

that they sufficiently well illustrate the volume development of these components (Table 3C).

The so-called residual in Table 3 contains for 1860—1948 the increase in stocks, statistical discrepancy as well as the balance of service exports and imports, and from 1948 on the increase in stocks and statistical discrepancy. During the period 1860—1948, the residual is quite extensive at times and should be studied in more detail.

When we subtract the difference between the goods export and import components we arrive at a figure that corresponds to the stock increase plus statistical discrepancy according to the old SNA. This difference should normally be relatively small. However, for 1860—1873 this residual differs too much on the positive side; either, part of the use of the aggregate supply remains unexplained or the aggregate supply is too high. At the beginning of the 20th century, the residual turns too negative and becomes too positive again in the early 1930s and remains so, with the exception of a few war years, until 1948.

The positive residual of the post-World War II years is caused by the war reparations shipments, i.e. unpaid exports; they were produced or imported, but do not appear in the regular export figures.

The low GDP contribution of private consumption in the 1860s and early 1870s brought up some questions as to its cause, and so did the large value-added of the forestry. Furthermore, there were difficulties in determining the prices in the foreign trade components until the 1890s. For the early years of the 20th century, some of Laurila's private consumption figures seem too high, although their dwelling expenditure ones were reduced for this study.

It is difficult to say what caused the too high residuals. It seems obvious, however, that the main development trends emerge, in spite of the problems. It is most likely that further studies will bring the aggregate supply and aggregate demand components on a higher level of precision. No essential changes in the picture we get of the main trends are, however, likely to be caused by them, although new interpretations and explanations may be arrived at in details.

Note on The Comparability of the old and revised (1968) national accounts

Economic activity in the old SNA	Groups included in economic activities of the revised SNA
Agriculture	Agriculture (private and public sectors)
Forestry	Forestry and logging
Hunting and fishing	Fishing and hunting
Mining and quarrying	Mining and quarrying
Manufacturing	Manufacturing
- Wood industry, furniture and carpentry industry and paper industry	- Manufacture of wood and wood and cork products, except furniture; Manufacture of furniture and fixtures, except primarily of metal; Manufacture of paper and paper products
- Basic metals industry, metal products industry, engineering industry, electrical goods industry and transport equipment industry	- Basic metal industries; Manufacture of fabricated metal products including machinery except electrical; Manufacture of electrical machinery, apparatus, appiliances and supplies and professional and scientific and measuring and controlling equipment n.e.c. and of photographic and optical goods; Manufacture of transport equipment
- Other manufacturing industries	- Other manufacturing groups
Electricity,gas,water and other utilities	Electricity, gas and water
House construction	Building
Land and water construction	Other construction
Transport and communication	Transport, storage and communication (private and public sectors)
Trade	Wholesale and agency trade; Retail trade
Banking and insurance	Financial institutions and insurance (private and public sectors)
Ownership of dwellings	Letting and operating of dwellings and use of owner-occupied dwellings

Private services*	Real estate and business services (private sector);
	Community, sociai and personal servi ces (private sector);
	Restaurants and hotels;
	Non-profit institutions
	Personal and household services;
Public services	Community, social and personal servi ces (public sector);
	Real estate and business services (public sector)
	Imputed bank service charges

* The old SNA's "Public administration and defence" and "Services" (private and public) have been divided up between private services and public services in this study.

1. Population and Gross Domestic Product Volume Index, 1860-1994; Population in Thousands, Indices 1926=100

Year	Population	Index of population	Gross domestic product volume index	GDP/capita index
1860	1747	52,1	20,9	40,1
1861	1771	52,8	21,0	39,8
1862	1786	53,2	19,9	37,4
1863	1797	53,6	21,5	40,1
1864	1827	54,5	22,0	40,4
1865	1843	54,9	21,8	39,7
1866	1838	54,8	22,1	40,4
1867	1824	54,4	20,3	37,4
1868	1728	51,5	22,3	43,3
1869	1740	51,8	23,9	46,2
1870	1769	52,7	25,0	47,4
1871	1804	53,8	25,2	46,9
1872	1835	54,7	26,1	47,7
1873	1860	55,4	27,6	49,8
1874	1886	56,2	28,2	50,1
1875	1913	57,0	28,8	50,5
1876	1943	57,9	30,4	52,5
1877	1971	58,8	29,7	50,6
1878	1995	59,4	29,1	49,0
1879	2033	60,6	29,4	48,6
1880	2061	61,4	29,6	48,1
1881	2083	62,1	28,8	46,5
1882	2113	63,0	31,6	50,1
1883	2146	64,0	32,8	51,2
1884	2181	65,0	33,0	50,7
1885	2209	65,8	33,8	51,3
1886	2239	66,7	35,5	53,2
1887	2278	67,9	36,1	53,1
1888	2314	69,0	37,4	54,2
1889	2348	70,0	38,7	55,3
1890	2380	70,9	40,9	57,7
1891	2408	71,8	40,5	56,4
1892	2423	72,2	39,3	54,4
1893	2437	72,6	40,8	56,2
1894	2466	73,5	44,0	59,9
1895	2500	74,5	46,4	62,3
1896	2531	75,4	49,4	65,5
1897	2568	76,5	51,8	67,7
1898	2610	77,8	54,1	69,5
1899	2635	78,5	52,8	67,2
1900	2656	79,2	55,3	69,8
1901	2679	79,8	54,6	68,4
1902	2694	80,3	53,5	66,7
1903	2717	81,0	57,1	70,5
1904	2752	82,0	59,3	72,3

Year	Population	Index of population	Gross domestic product volume index	GDP/capita index
1905	2773	82,6	60,2	72,9
1906	2804	83,6	62,6	75,0
1907	2839	84,6	64,8	76,6
1908	2883	85,9	65,5	76,3
1909	2915	86,9	68,4	78,8
1910	2943	87,7	69,9	79,7
1911	2980	88,8	71,9	80,9
1912	3016	89,9	75,9	84,4
1913	3036	90,5	80,0	88,4
1914	3070	91,5	76,5	83,6
1915	3096	92,3	72,6	78,6
1916	3114	92,8	73,6	79,3
1917	3134	93,4	61,8	66,2
1918	3115	92,8	53,6	57,7
1919	3118	92,9	64,7	69,7
1920	3148	93,8	72,4	77,2
1921	3193	95,2	74,8	78,6
1922	3228	96,2	82,7	85,9
1923	3259	97,1	88,8	91,4
1924	3286	97,9	91,1	93,1
1925	3322	99,0	96,3	97,2
1926	3355	100,0	100,0	100,0
1927	3381	100,8	107,8	106,9
1928	3412	101,7	115,1	113,2
1929	3435	102,4	116,5	113,8
1930	3463	103,2	115,1	111,5
1931	3490	104,0	112,3	108,0
1932	3516	104,8	111,8	106,7
1933	3537	105,4	119,3	113,2
1934	3562	106,2	132,8	125,1
1935	3590	107,0	138,5	129,4
1936	3612	107,7	147,8	137,3
1937	3640	108,5	156,2	144,0
1938	3672	109,4	164,3	150,1
1939	3700	110,3	157,3	142,7
1940	3696	110,1	149	135
1941	3708	110,5	154	139
1942	3709	110,5	155	140
1943	3733	111,2	172	155
1944	3737	111,4	172	155
1945	3779	112,6	163	144
1946	3833	114,2	176	154
1947	3885	115,8	180	155
1948	3938	117,4	194	165
1949	3988	118,9	206	173

Year	Population	Index of population	Gross domestic product volume index	GDP/capita index
1950	4030	120,1	213	178
1951	4065	121,1	232	191
1952	4116	122,7	239	195
1953	4163	124,1	241	194
1954	4211	125,5	262	209
1955	4259	126,9	276	217
1956	4305	128,3	284	221
1957	4343	129,4	297	230
1958	4376	130,4	299	229
1959	4413	131,5	317	241
1960	4446	132,5	346	261
1961	4476	133,4	372	279
1962	4507	134,3	383	285
1963	4540	135,3	395	292
1964	4558	135,8	416	307
1965	4570	136,2	438	322
1966	4592	136,9	449	328
1967	4620	137,7	459	333
1968	4633	138,1	469	340
1969	4614	137,5	514	374
1970	4598	137,0	553	403
1971	4626	137,9	564	409
1972	4653	138,7	607	438
1973	4679	139,4	648	465
1974	4702	140,2	667	476
1975	4721	140,7	675	480
1976	4731	141,0	672	477
1977	4747	141,5	674	476
1978	4758	141,8	688	485
1979	4771	142,2	736	518
1980	4788	142,7	775	543
1981	4812	143,4	790	551
1982	4842	144,3	815	565
1983	4870	145,1	837	577
1984	4894	145,9	863	591
1985	4911	146,4	892	609
1986	4926	146,7	913	622
1987	4932	146,9	950	647
1988	4954	147,6	997	675
1989	4974	148,3	1053	710
1990	4999	149,0	1053	707
1991	5029	149,9	979	653
1992	5055	150,7	944	627
1993	5078	151,3	933	617
1994	5099	152,0	974	641

2A. Gross Domestic Product per capita in Finland, in Sweden, in the United Kingdom and in the Unites States, Geary-Khamis 1990-dollars

Year	Finland	Sweden	United Kingdom	United States
1870	1107	1664	3263	2457
1871	1094	1684	3421	2508
1872	1112	1746	3394	2545
1873	1159	1885	3441	2604
1874	1169	1938	3463	2531
1875	1176	1835	3511	2599
1876	1223	1935	3508	2574
1877	1176	1851	3503	2594
1878	1139	1818	3479	2646
1879	1134	1769	3428	2915
1880	1122	1846	3556	3193
1881	1078	1851	3649	3223
1882	1168	1924	3725	3341
1883	1194	1937	3726	3338
1884	1184	1976	3704	3326
1885	1196	1952	3654	3269
1886	1239	1929	3681	3295
1887	1239	1926	3797	3372
1888	1265	1971	3936	3284
1889	1288	2065	4115	3416
1890	1341	2086	4099	3396
1891	1311	2106	4065	3471
1892	1243	2144	3933	3732
1893	1302	2143	3897	3482
1894	1359	2171	4120	3318
1895	1449	2257	4211	3648
1896	1525	2367	4345	3509
1897	1577	2429	4360	3774
1898	1620	2457	4528	3784
1899	1561	2491	4670	4056
1900	1620	2561	4593	4096
1901	1589	2515	4551	4469
1902	1545	2496	4628	4426
1903	1637	2669	4540	4556
1904	1681	2680	4528	4415
1905	1692	2691	4623	4648
1906	1743	2845	4736	5085
1907	1782	2885	4784	5071
1908	1776	2853	4550	4566
1909	1830	2809	4612	5023
1910	1852	2980	4715	4970
1911	1883	3002	4815	5052
1912	1964	3064	4868	5207
1913	2050	3096	5032	5307
1914	1943	3048	5038	4805
1915	1827	3028	5408	4870
1916	1838	2968	5506	5465
1917	1535	2594	5544	5254
1918	1330	2533	5583	5666
1919	1610	2669	4980	5687
1920	1792	2802	4651	5559
1921	1830	2674	4238	5329
1922	1999	2906	4427	5546
1923	2124	3047	4545	6171
1924	2160	3130	4698	6240
1925	2261	3233	4912	6290
1926	2323	3404	4713	6610
1927	2483	3500	5075	6584
1928	2629	3657	5115	6577
1929	2639	3869	5255	6907
1930	2589	3937	5195	6220
1931	2506	3782	4906	5698
1932	2476	3666	4916	4914
1933	2624	3722	5039	4783
1934	2902	3992	5354	5120
1935	3004	4233	5537	5473
1936	3184	4466	5762	6211
1937	3342	4664	5937	6438
1938	3486	4725	5983	6134
1939	3310	5029	5979	6568
1940	3128	4858	6546	7018
1941	3226	4914	7143	8215
1942	3231	5179	7294	9753
1943	3590	5360	7394	11532
1944	3578	5484	7071	12348
1945	3350	5568	6737	11722
1946	3577	6103	6440	9207
1947	3610	6176	6306	8896
1948	3843	6293	6441	9075
1949	4024	6455	6641	8954
1950	4131	6738	6847	9573
1951	4440	6951	7022	10338
1952	4540	6996	6987	10596
1953	4518	7145	7242	10810
1954	4858	7403	7509	10549
1955	5047	7566	7759	10948
1956	5143	7797	7823	10970
1957	5332	8089	7913	10981
1958	5317	8077	7864	10746
1959	5588	8279	8137	11145
1960	6051	8688	8571	11193
1961	6468	9137	8780	11285
1962	6614	9468	8789	11796
1963	6782	9917	9070	12137
1964	7097	10515	9486	12687
1965	7449	10815	9668	13316
1966	7597	10937	9800	14017
1967	7720	11218	9962	14225
1968	7864	11562	10320	14719
1969	8622	12055	10487	15028

2A cont.

Year	Finland	Sweden	United Kingdom	United States
1970	9302	12717	10694	14854
1971	9485	12749	10852	15158
1972	10147	13003	11194	15846
1973	10768	13494	11992	16607
1974	11034	13885	11787	16362
1975	11098	14185	11701	16060
1976	11109	14282	12023	16773
1977	11090	14006	12308	17461
1978	11299	14209	12742	18168
1979	12089	14720	13087	18489
1980	12693	14935	12777	18270
1981	12840	14910	12599	18569
1982	13226	15055	12826	18027
1983	13537	15315	13299	18547
1984	13878	15920	13603	19597
1985	14282	16618	14046	20050
1986	14534	16533	14614	20426
1987	15071	16996	15265	20880
1988	15838	17301	15988	21463
1989	16676	17593	16288	21783
1990	16604	17695	16302	21866
1991	15299	17380	15867	21366
1992	14646	16927	15738	21558
1993	14316	16456	15915	21972
1994	14779	16710	16371	22569

Source: Maddison 1995: Monitoring the World Economy, 1820-1992.
OECD Development Centre Studies, Paris, p. 194-197.

2B. Gross Domestic Product, 1860-1994; 1860-1960 in Thousands of FIM, 1960-1994 in Millions FIM

Year	Gross domestic product at factor cost	Indirect taxes (+)	Subsidies (-)	Gross domestic product at market prices
1860	3069	71	0	3140
1861	3309	81	0	3390
1862	3172	87	0	3259
1863	3330	92	0	3422
1864	3318	85	0	3403
1865	3459	75	0	3534
1866	3308	66	0	3374
1867	2898	62	0	2960
1868	3290	66	0	3356
1869	3485	86	0	3571
1870	3631	98	1	3727
1871	3825	110	0	3935
1872	4081	131	0	4212
1873	4460	145	0	4605
1874	4834	176	0	5010
1875	4841	185	0	5026
1876	5155	201	1	5355
1877	4991	192	0	5183
1878	4291	178	0	4469
1879	4105	160	0	4265
1880	4515	210	0	4725
1881	4553	205	0	4758
1882	4838	244	0	5082
1883	4917	230	0	5147
1884	4810	247	0	5057
1885	4717	249	0	4966
1886	4623	235	0	4858
1887	4616	230	0	4846
1888	4804	269	0	5073
1889	5328	295	0	5623
1890	5620	334	0	5954
1891	5965	314	0	6279
1892	5830	294	0	6124
1893	5886	298	0	6184
1894	6060	327	0	6387
1895	6287	360	0	6647
1896	6782	426	0	7208
1897	7489	466	0	7955
1898	8248	510	0	8758
1899	8526	515	0	9041
1900	9118	586	0	9704
1901	8996	441	0	9437
1902	8771	439	0	9210
1903	9637	501	0	10138
1904	9865	499	0	10364
1905	10345	522	0	10867
1906	10937	639	0	11576
1907	11587	672	0	12259
1908	11817	660	0	12477

3 A1. Aggregate Supply and Aggregate Demand, 1860-1948, Thousands of FIM

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1860	3140	380	2308	214	331	269	398	3520
1861	3390	491	2530	221	331	327	471	3881
1862	3259	625	2665	225	316	321	357	3884
1863	3422	614	2714	229	327	392	374	4036
1864	3403	506	2649	236	350	376	298	3909
1865	3534	651	2715	240	409	411	410	4185
1866	3374	508	2577	242	385	380	298	3882
1867	2960	575	2312	246	345	430	202	3535
1868	3356	620	2616	243	407	475	234	3976
1869	3571	700	2752	242	473	496	308	4271
1870	3727	680	2898	237	462	503	307	4407
1871	3935	755	3051	239	483	606	311	4690
1872	4212	925	3259	247	542	682	407	5137
1873	4605	1067	3523	252	593	881	424	5672
1874	5010	1367	4089	258	613	930	488	6377
1875	5026	1455	4394	265	619	803	401	6481
1876	5355	1284	4464	273	568	1004	330	6639
1877	5183	1375	4290	278	497	983	511	6558
1878	4469	1178	3739	279	425	819	385	5647
1879	4265	1050	3546	292	409	849	220	5315
1880	4725	1271	3956	302	451	1129	159	5996
1881	4758	1418	4098	317	485	990	286	6176
1882	5082	1528	4419	324	504	1162	201	6610
1883	5147	1473	4439	332	565	1017	267	6620
1884	5057	1369	4352	342	507	994	231	6426
1885	4966	1082	4081	357	551	896	162	6048
1886	4858	974	3943	366	560	787	175	5832
1887	4846	1049	3952	372	481	760	329	5895
1888	5073	1112	4091	393	527	896	277	6185
1889	5623	1324	4522	409	641	1020	356	6947

3A1 cont.

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1890	5954	1402	4906	434	724	937	355	7356
1891	6279	1461	5285	455	721	982	298	7740
1892	6124	1451	5215	483	723	896	258	7575
1893	6184	1258	5076	493	649	1096	128	7442
1894	6387	1384	5220	513	641	1249	148	7771
1895	6647	1500	5462	521	695	1315	154	8147
1896	7208	1722	5869	524	829	1504	204	8930
1897	7955	2021	6533	540	945	1631	327	9976
1898	8758	2364	7184	588	1243	1682	426	11122
1899	9041	2510	7443	622	1316	1719	452	11551
1900	9704	2701	8257	664	1270	1915	299	12405
1901	9437	2150	7753	659	1150	1841	184	11587
1902	9210	2331	7702	655	1145	1991	48	11541
1903	10138	2675	8289	714	1199	2122	489	12813
1904	10364	2671	8490	738	1257	2145	405	13035
1905	10867	2682	8719	704	1342	2467	318	13549
1906	11576	3139	9505	764	1456	2801	189	14715
1907	12259	3791	10489	843	1578	2654	487	16050
1908	12477	3635	10817	914	1650	2430	301	16112
1909	12852	3671	10956	982	1509	2545	531	16523
1910	13315	3841	11311	1135	1419	2881	410	17156
1911	14126	4445	11972	1211	1577	3177	633	18571
1912	15237	4700	12844	1255	1748	3377	712	19937
1913	15967	4954	13459	1322	1913	4018	209	20921
1914	15746	3802	13088	1401	2085	2822	152	19548
1915	17282	5784	16379	1343	2062	2559	723	23066
1916	24277	9628	23995	1693	2926	4979	311	33905
1917	37657	12319	43950	2223	4260	4396	-4853	49976
1918	54020	5046	51774	5263	5546	1896	-5413	59066
1919	85800	25099	81264	7347	8661	8506	5120	110899

Year	Gross domestic product at factor cost	Indirect taxes (+)	Subsidies (-)	Gross domestic product at market prices
1910	12565	750	0	13315
1911	13319	807	0	14126
1912	14330	907	0	15237
1913	15014	953	0	15967
1914	14948	798	0	15746
1915	16454	828	0	17282
1916	23172	1105	0	24277
1917	37144	670	157	37657
1918	53732	520	232	54020
1919	81742	4100	42	85800
1920	129831	6880	50	136661
1921	152607	8440	0	161047
1922	164975	11920	0	176895
1923	174568	15340	0	189908
1924	186653	14580	0	201233
1925	200106	16860	0	216966
1926	210535	15790	0	226325
1927	234349	18930	0	253279
1928	251825	21580	0	273405
1929	245275	19930	0	265205
1930	220702	19410	0	240112
1931	196838	16310	0	213148
1932	200026	14920	50	214896
1933	210742	19800	0	230542
1934	236674	24600	0	261274
1935	248844	26120	0	274964
1936	274536	28370	0	302906
1937	325459	32370	1202	356627
1938	352446	33740	1530	384656
1939	342715	33070	1460	374325
1940	397702	30920	20	428602
1941	475440	56660	1040	531060
1942	573128	88130	2890	658368
1943	740511	110610	7690	843431
1944	844036	118620	16270	946386
1945	1324834	161040	27859	1458015
1946	1917367	312820	42292	2187894
1947	2648673	393970	68479	2974164
1948	3591956	625850	115200	4102606
1949	3811535	726700	99800	4438435
1950	4820587	763600	111600	5472587
1951	7056125	1132200	206100	7982225
1952	7258205	1221600	200800	8279005
1953	7178219	1124400	151700	8150919
1954	8022066	1213300	194000	9041366
1955	9076950	1262400	332500	10006850
1956	10006386	1611200	491200	11126386
1957	10706926	1853600	380300	12180226
1958	11600969	1962400	385100	13178269
1959	12615242	1990400	415000	14190642
1960	14212630	2180400	438300	15954730

Year	Gross domestic product at factor cost	Commodity taxes (+)	Commodity subsidies (-)	Gross domestic product at market prices
1960	14600	2017	418	16199
1961	16567	2222	427	18362
1962	17679	2410	428	19661
1963	19418	2496	562	21352
1964	22039	2779	735	24083
1965	24218	3186	770	26634
1966	25883	3493	822	28554
1967	27992	4123	794	31321
1968	31840	4905	837	35908
1969	36624	5412	1050	40986
1970	41078	5864	1199	45743
1971	44915	6617	1275	50257
1972	52335	7711	1421	58625
1973	63799	9136	1571	71364
1974	81760	10949	2654	90055
_1975_	_95276_	_12565_	_3632_	_104209_
1975	94239	12381	3446	103174
1976	106438	14013	3807	116644
1977	115800	16663	3918	128545
1978	127234	18859	3804	142289
1979	148589	21531	4570	165550
1980	171320	24698	4642	191376
1981	193488	28510	5338	216660
1982	217200	31860	5475	243585
1983	242662	35362	6417	271607
1984	270227	41452	7082	304597
1985	293418	45373	7163	331628
1986	313261	49634	7901	354994
1987	340116	54549	7810	386855
1988	377197	63693	6549	434341
1989	422606	72128	7736	486998
1990	448112	75443	8125	515430
1991	427776	72299	9207	490868
1992	415712	69444	8378	476778
1993	421242	69410	8255	482397
1994	445244	72340	8520	509064

Year	Gross domestic product at market prices	Imports of goods and services	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods and services	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1970	45743	12310	25901	6613	12010	11745	1784	58053
1971	50257	13139	28116	7618	13817	12226	1619	63396
1972	58625	14797	33042	8959	16359	14946	116	73422
1973	71364	18603	39269	10694	20566	18153	1285	89967
1974	90055	28094	47812	13686	26859	24799	4993	118149
1975	104291	30923	57236	17799	32667	24757	2755	135214
1975	103174	30923	57496	17585	32720	24758	1538	134097
1976	116644	31823	65714	21019	32974	29537	-777	148467
1977	128545	34727	72648	23735	35259	36974	-5344	163272
1978	142289	37390	80377	25941	34475	43037	-4151	179679
1979	165550	49948	91314	29414	38787	52546	3437	215498
1980	191376	65016	103551	34392	48703	63489	6257	256392
1981	216660	69250	117277	40177	54782	72357	1317	285910
1982	243585	73762	134225	45840	61647	75801	-166	317347
1983	271607	81361	149624	52451	69546	82735	-1388	352968
1984	304597	86137	165149	58842	73010	94190	-457	390734
1985	331628	94893	180887	66967	79423	98034	956	426267
1986	354994	89898	194007	72849	82908	95634	-506	444892
1987	386855	97775	211534	80046	92541	100048	461	484630
1988	434341	109866	232580	87199	109258	108750	6420	544207
1989	486998	125996	254588	96019	136148	116702	9537	612994
1990	515430	126600	269754	108535	139144	118828	5769	642030
1991	479011	112422	274709	118719	110061	109289	-9488	603290
1992	462003	121878	272114	118453	87953	128272	-8136	598656
1993	456571	133450	275252	112190	71194	159438	-2227	615847
1994	476588	149659	283993	114049	74436	182259	3986	658723

1. Aggregate supply = gross domestic product + imports (of goods).
2. Aggregate demand = private consumption expenditure + public consumption expenditure + gross fixed capital formation + exports (of goods) + increase in stocks + statistical discrepancy.
3. Increase in stocks + statistical discrepancy for the period 1860 - 1948 includes net exports of services.

4. Volume indices of Aggregate Demand and Aggregate Supply Components, 1860-1994, 1926=100

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods
1860	20,9	6,3	18,9	19,1	15,4	7,8
1861	21,0	8,1	19,2	19,1	15,3	8,5
1862	19,9	9,0	18,3	19,6	16,2	8,5
1863	21,5	9,0	19,2	20,4	17,0	12,0
1864	22,0	8,1	19,7	20,6	17,2	10,6
1865	21,8	9,0	19,5	20,5	18,5	12,7
1866	22,1	7,2	20,0	21,0	17,4	12,7
1867	20,3	7,2	17,5	21,5	16,9	12,0
1868	22,3	8,1	19,1	21,5	20,4	14,1
1869	23,9	9,0	21,4	21,5	22,8	14,1
1870	25,0	9,0	23,6	21,2	23,0	13,4
1871	25,2	9,9	23,6	21,1	23,3	15,6
1872	26,1	12,7	23,4	21,0	25,1	16,7
1873	27,6	13,6	25,0	21,1	26,2	17,9
1874	28,2	17,2	26,8	20,7	26,1	19,1
1875	28,8	18,1	28,7	21,2	27,2	17,7
1876	30,4	17,2	29,2	21,1	24,9	19,8
1877	29,7	18,1	29,0	21,3	22,8	21,2
1878	29,1	16,3	28,4	22,4	20,6	18,4
1879	29,4	14,5	28,9	23,7	21,0	19,8
1880	29,6	16,3	29,2	23,2	21,9	26,2
1881	28,8	19,0	28,9	23,5	23,1	21,9
1882	31,6	20,8	32,4	24,6	24,6	24,7
1883	32,8	19,9	33,3	24,9	26,6	23,3
1884	33,0	22,6	33,7	26,6	26,7	24,0
1885	33,8	21,7	33,4	27,7	29,1	24,0
1886	35,5	20,8	35,3	28,7	29,2	20,5
1887	36,1	22,6	36,6	29,5	26,1	20,5
1888	37,4	25,3	37,1	30,4	28,2	23,3
1889	38,7	27,1	38,5	29,4	29,4	24,7
1890	40,9	29,8	40,5	31,8	35,2	24,0
1891	40,5	29,8	40,0	32,6	36,1	26,2
1892	39,3	28,9	37,8	34,4	36,9	24,0
1893	40,8	28,0	38,8	35,7	33,2	29,0
1894	44,0	33,4	43,4	37,9	33,9	33,2

3A1 cont.

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1920	136661	36265	114898	10571	15552	28961	2944	172926
1921	161047	35857	137864	14667	17035	33419	-6081	196904
1922	176895	39699	149234	16064	20970	44368	-14041	216594
1923	189908	46003	155226	17285	26194	43654	-6448	235911
1924	201233	47155	161577	18794	28460	48849	-9292	248388
1925	216966	55195	172630	20757	28336	55552	-5115	272161
1926	226325	56678	182508	20989	34132	56158	-10784	283003
1927	253279	63859	191544	22014	38689	62865	2025	317138
1928	273405	80129	217632	24613	53260	61906	-3877	353534
1929	265205	70014	207635	27777	43816	63768	-7777	335219
1930	240112	52477	180916	29424	33192	53454	-4397	292589
1931	213148	34648	155713	28921	22935	44031	-3803	247796
1932	214896	35023	150818	29689	24777	45516	-880	249919
1933	230542	39280	156727	28312	23815	52592	8375	269822
1934	261274	47765	174046	29382	31170	61714	12726	309039
1935	274964	53444	187894	30709	38873	61929	9002	328408
1936	302906	63690	205087	32820	46414	71595	10680	366596
1937	356627	93064	242921	41547	64293	92825	8104	449691
1938	384656	86073	257969	40376	70431	83349	18604	470729
1939	374325	75726	256137	61703	74513	77103	-19405	450051
1940	428602	91642	265955	173874	96470	28746	-44801	520244
1941	531060	102011	312445	173553	53549	43215	50309	633071
1942	658368	117315	392615	230086	72494	59906	20582	775683
1943	843431	128804	484380	247407	90501	87127	62820	972235
1944	946386	89185	491329	299494	78331	63321	103095	1035571
1945	1458015	68205	878046	206688	179664	52278	209544	1526220
1946	2187894	242740	1367347	224579	365956	230505	242247	2430634
1947	2974164	469705	1856179	279528	530548	452281	325333	3443869
1948	4102606	663692	2719975	406730	887100	565048	253552	4766298

3A2. Aggregate Supply and Aggregate Demand, 1948-1960, Thousands of FIM

Year	Gross domestic product at market prices	Imports of goods and services	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods and services	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1948	4102606	729800	2719975	406730	887100	827900	-9300	4832405
1949	4438435	786900	2856130	470800	987300	951900	-40795	5225335
1950	5472587	1021300	3550310	627900	1220300	1084900	10477	6493887
1951	7982225	1780400	4826130	806700	1820400	2285700	23695	9762625
1952	8279005	2056800	5309290	904700	2156100	1973300	-7585	10335805
1953	8150919	1429400	5270620	989400	2202000	1567600	-449301	9580319
1954	9041366	1689700	5608570	992100	2354900	1845800	-70304	10731066
1955	10006850	1991300	6070720	1141600	2534700	2157000	94130	11998150
1956	11126386	2281900	6941720	1359100	2865300	2173000	69166	13408286
1957	12180226	2581800	7565990	1506000	2919600	2587900	182536	14762026
1958	13178269	2641400	7904700	1659400	3217900	2925300	112369	15819669
1959	14190642	3047800	8577520	1855700	3586900	3153800	64522	17238442
1960	15954730	3834700	9410390	1996800	4325500	3711900	344840	19789430

3A3. Aggregate Supply and Aggregate Demand 1960-1994, Millions of FIM

Year	Gross domestic product at market prices	Imports of goods and services	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods and services	Increase in stocks + statistical discrepancy 1)	Aggregate supply= aggregate demand 2) 3)
1960	16199	3755	9857	1931	4589	3640	-63	19954
1961	18362	4092	10905	2156	5133	3911	349	22454
1962	19661	4393	12030	2463	5419	4169	-27	24054
1963	21352	4319	13190	2862	5461	4335	-177	25671
1964	24083	5321	15019	3249	6068	4863	205	29404
1965	26634	5842	16534	3637	7016	5390	-101	32476
1966	28554	6140	17579	4087	7559	5683	-214	34694
1967	31321	6460	19148	4658	7862	6176	-63	37781
1968	35908	7572	20935	5482	8290	8143	630	43480
1969	40986	9517	23679	5934	9768	9905	1217	50503

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods
1965	438	594	388	484	688	391
1966	449	621	398	506	724	418
1967	459	621	406	529	700	442
1968	469	594	407	560	666	491
1969	514	736	450	579	754	573
1970	553	886	484	611	845	604
1971	564	875	493	646	895	586
1972	607	908	534	696	945	669
1973	648	1030	566	735	1015	716
1974	667	1107	576	768	1050	716
1975	675	1107	594	821	1120	592
1976	672	1063	599	868	1021	693
1977	674	974	593	905	993	764
1978	688	925	607	938	922	822
1979	736	1135	638	972	946	901
1980	775	1228	651	1013	1043	979
1981	790	1144	660	1054	1056	1008
1982	815	1176	692	1089	1110	979
1983	837	1207	714	1130	1151	1018
1984	863	1204	736	1161	1127	1117
1985	892	1276	764	1213	1153	1128
1986	913	1350	794	1251	1148	1135
1987	950	1468	836	1305	1204	1150
1988	997	1597	878	1334	1322	1188
1989	1053	1768	916	1365	1518	1186
1990	1053	1697	916	1418	1456	1219
1991	979	1413	883	1453	1161	1112
1992	944	1385	840	1421	965	1213
1993	933	1337	815	1346	780	1441
1994	974	1610	830	1358	778	1929

5. Gross Domestic Product by Kind of Economic Activity, 1860-1994; 1860-1960 in Thousands of FIM, 1960-1994 in Millions of FIM

PRIMARY PRODUCTION

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1860	1133	589	170	1893
1861	1210	696	164	2070
1862	1179	548	168	1896
1863	1280	592	162	2034
1864	1263	552	162	1976
1865	1195	693	159	2046
1866	1165	605	167	1937
1867	963	457	181	1601
1868	1328	448	163	1939
1869	1355	505	173	2033
1870	1426	497	173	2095
1871	1479	544	179	2202
1872	1591	600	176	2367
1873	1700	712	166	2579
1874	1824	814	168	2806
1875	1884	756	184	2824
1876	1976	853	201	3030
1877	1711	922	204	2837
1878	1487	687	191	2365
1879	1490	589	194	2273
1880	1739	610	193	2543
1881	1646	604	210	2460
1882	1777	665	212	2654
1883	1875	663	213	2751
1884	1793	642	217	2651
1885	1727	626	216	2569
1886	1635	632	221	2488
1887	1609	655	221	2485
1888	1671	642	222	2535
1889	1808	749	223	2780
1890	1935	747	226	2909
1891	2219	765	233	3217
1892	2090	746	232	3068
1893	2173	762	230	3165
1894	2168	819	230	3216
1895	2245	838	233	3316
1896	2376	890	245	3512
1897	2509	1059	249	3817
1898	2589	1274	249	4111
1899	2482	1411	253	4146
1900	2658	1525	257	4439
1901	2679	1397	248	4325
1902	2456	1377	258	4092
1903	2539	1807	265	4611
1904	2664	1707	263	4634
1905	2836	1748	259	4843
1906	2845	1862	272	4980
1907	3079	1809	284	5171
1908	3357	1616	285	5258
1909	3392	1699	280	5371

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods
1895	46,4	36,1	46,4	38,3	35,6	34,6
1896	49,4	40,7	49,1	37,9	40,4	36,8
1897	51,8	47,0	53,1	37,7	44,0	37,5
1898	54,1	53,3	56,0	39,5	54,5	36,8
1899	52,8	55,1	55,6	40,5	55,1	38,2
1900	55,3	56,9	60,3	45,3	53,8	36,8
1901	54,6	46,1	57,4	45,5	50,6	36,8
1902	53,5	49,7	56,7	45,4	50,3	38,9
1903	57,1	56,9	62,1	47,2	52,4	40,3
1904	59,3	56,9	62,6	49,8	53,7	43,8
1905	60,2	55,1	64,5	46,7	54,8	48,1
1906	62,6	62,3	67,7	49,4	56,5	51,6
1907	64,8	71,4	71,8	51,7	62,5	48,1
1908	65,5	70,5	71,4	55,9	70,4	46,7
1909	68,4	68,7	73,6	60,3	64,3	48,8
1910	69,9	74,1	75,5	68,9	58,9	53,0
1911	71,9	82,2	77,7	69,0	66,1	57,3
1912	75,9	84,9	80,8	69,9	84,3	61,5
1913	80,0	90,4	84,7	73,1	80,6	70,7
1914	76,5	66,0	78,9	76,0	79,9	48,1
1915	72,6	65,1	79,5	64,1	61,3	33,2
1916	73,6	76,8	83,6	62,1	56,3	33,9
1917	61,8	42,9	73,2	44,7	46,6	20,5
1918	53,6	11,4	56,1	70,9	45,5	7,9
1919	64,7	58,9	70,3	77,2	57,9	35,9
1920	72,4	51,5	73,2	76,6	57,9	54,4
1921	74,8	45,9	76,5	81,2	58,9	50,8
1922	82,7	61,0	85,0	86,2	70,3	72,1
1923	88,8	83,1	91,5	89,9	80,7	76,2
1924	91,1	80,4	92,2	90,5	85,2	87,7
1925	96,3	84,3	93,5	98,3	83,2	97,6
1926	100,0	100,0	100,0	100,0	100,0	100,0
1927	107,8	114,3	105,5	105,5	109,0	112,4
1928	115,1	142,3	116,0	110,6	145,8	109,3
1929	116,5	124,8	114,6	124,2	121,5	113,3

Year	Gross domestic product at market prices	Imports of goods	Private consumption expenditure	Public consumption expenditure	Gross fixed capital formation	Exports of goods
1930	115,1	100,3	107,3	138,0	96,7	98,8
1931	112,3	76,2	100,6	143,0	79,1	95,6
1932	111,8	66,6	96,1	150,6	83,7	99,8
1933	119,3	77,7	101,1	145,4	86,6	118,1
1934	132,8	95,8	112,0	148,4	105,3	130,5
1935	138,5	105,0	116,4	149,6	125,5	137,7
1936	147,8	126,8	125,4	158,1	142,0	153,0
1937	156,2	161,7	138,7	184,4	163,1	164,0
1938	164,3	150,6	145,8	178,6	177,5	141,4
1939	157,3	136,1	139,3	262,0	175,5	140,8
1940	149	133	117	639	187	44
1941	154	104	114	548	81	59
1942	155	101	113	595	94	60
1943	172	98	121	547	109	69
1944	172	64	111	622	87	48
1945	163	30	129	260	116	24
1946	176	77	139	220	163	67
1947	180	124	151	183	194	93
1948	194	152	169	217	216	102
1949	206	142	178	237	237	123
1950	213	159	194	247	248	141
1951	232	207	209	245	278	178
1952	239	246	222	258	322	157
1953	241	189	218	276	331	176
1954	262	249	233	277	358	206
1955	276	289	253	301	391	223
1956	284	316	264	310	426	219
1957	297	306	259	323	415	239
1958	299	274	252	334	431	235
1959	317	329	270	358	477	268
1960	346	411	292	371	561	311
1961	372	441	315	392	610	327
1962	383	463	334	424	615	345
1963	395	455	348	453	586	349
1964	416	548	368	462	626	374

Year	House construction	Construction Land and water construction	All construction
1860	186	70	256
1861	191	70	261
1862	183	58	240
1863	187	59	246
1864	194	59	252
1865	218	61	278
1866	195	59	254
1867	164	60	224
1868	164	109	273
1869	196	108	305
1870	207	116	323
1871	212	116	327
1872	225	117	342
1873	241	120	361
1874	262	116	377
1875	258	113	371
1876	262	97	359
1877	267	74	341
1878	238	76	314
1879	208	87	295
1880	209	98	307
1881	228	98	326
1882	226	100	326
1883	253	102	355
1884	234	105	339
1885	235	133	368
1886	229	149	378
1887	207	111	318
1888	213	113	326
1889	254	129	382
1890	250	161	411
1891	260	156	417
1892	275	155	430
1893	249	152	401
1894	244	159	403
1895	267	143	410
1896	291	153	444
1897	331	178	510
1898	369	183	552
1899	373	190	563
1900	395	197	592
1901	380	192	572
1902	403	173	576
1903	411	157	568
1904	421	152	573
1905	428	183	611
1906	470	174	644
1907	484	201	685
1908	468	209	677
1909	408	193	601

Year	House construction	Construction Land and water construction	All construction
1910	391	215	606
1911	435	222	657
1912	453	237	690
1913	475	257	732
1914	520	336	856
1915	505	352	857
1916	715	410	1125
1917	1103	524	1627
1918	1810	677	2487
1919	2358	902	3260
1920	4027	1167	5194
1921	4145	1637	5782
1922	5930	2287	8217
1923	7824	2546	10370
1924	8604	2893	11497
1925	8180	3249	11429
1926	9372	3520	12892
1927	10188	4184	14372
1928	14765	5026	19791
1929	11355	5447	16802
1930	8647	5763	14410
1931	5663	5144	10807
1932	6108	5508	11616
1933	4925	5842	10767
1934	6629	6269	12898
1935	8150	6467	14617
1936	9753	7278	17031
1937	11983	7545	19528
1938	15367	8013	23380
1939	14808	8221	23029
1940	15082	7424	22506
1941	15263	8347	23610
1942	14953	8506	23459
1943	13567	10076	23643
1944	13831	10719	24550
1945	40531	26031	66562
1946	73778	35697	109475
1947	102725	51533	154258
1948	199600	94200	293800
1949	228100	130000	358100
1950	312500	161000	473500
1951	440700	185000	625700
1952	456800	226000	682800
1953	444200	292400	736600
1954	502700	288300	791000
1955	527200	304600	831800
1956	555000	371400	926400
1957	582400	409900	992300
1958	590700	503100	1093800
1959	634900	555900	1190800
1960	781900	532000	1313900

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1910	3285	1833	294	5412
1911	3365	2133	287	5785
1912	3767	2190	285	6242
1913	3760	2390	309	6460
1914	3837	2176	306	6318
1915	3913	1999	323	6234
1916	5125	2948	382	8455
1917	12709	4806	548	18063
1918	21833	5081	1240	28154
1919	29823	9099	1204	40126
1920	42942	16330	1159	60431
1921	53664	16489	1321	71474
1922	46503	21977	1285	69765
1923	39391	25465	1353	66209
1924	43674	25071	1389	70134
1925	47859	26168	1572	75599
1926	43449	30264	1560	75273
1927	46280	37058	1550	84888
1928	45839	37163	1620	84622
1929	42970	32323	1790	77083
1930	39805	23399	1760	64964
1931	34426	17837	1920	54183
1932	36610	20809	1840	59259
1933	35698	25793	1970	63461
1934	40291	31974	1860	74125
1935	43579	32655	1820	78054
1936	46643	37024	2190	85857
1937	52888	52247	2290	107425
1938	54162	61127	2350	117639
1939	59628	41725	2030	103383
1940	61971	36403	2600	100974
1941	75009	51594	3920	130523
1942	100532	53748	7000	161280
1943	134534	100127	7040	241701
1944	183850	95010	6280	285140
1945	316980	222970	13600	553550
1946	417210	299910	27200	744320
1947	603060	361570	26900	991530
1948	694500	410000	34000	1138500
1949	688300	338400	28000	1054700
1950	759800	445200	29400	1234400
1951	885400	959800	32900	1878100
1952	937400	1155100	40600	2133100
1953	951900	761000	46500	1759400
1954	958900	880600	50800	1890300
1955	1044400	1035100	53100	2132600
1956	1142300	937700	57700	2137700
1957	1212600	874400	63300	2150300
1958	1372700	925700	62900	2361300
1959	1468800	894300	61700	2424800
1960	1530100	1183100	61900	2775100

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1960	1355	1263	60	2678
1961	1586	1475	80	3141
1962	1492	1409	73	2974
1963	1535	1531	85	3151
1964	1746	1784	72	3602
1965	1805	1978	86	3869
1966	1883	1721	90	3694
1967	1988	1672	93	3753
1968	2451	1794	107	4352
1969	2564	2163	109	4836
1970	2335	1628	99	4062
1971	2717	2718	120	5555
1972	2982	2662	135	5779
1973	3166	3467	172	6805
1974	3419	4697	226	8342
1975	5152	4748	257	10157
1975	5229	4697	257	10183
1976	5887	4674	303	10864
1977	6020	5261	347	11628
1978	6484	5143	451	12078
1979	6901	6627	505	14033
1980	8217	8096	558	16871
1981	8240	8876	613	17729
1982	10057	8992	665	19714
1983	11863	8834	672	21369
1984	12806	10006	768	23580
1985	12864	10700	746	24310
1986	13794	9717	728	24239
1987	11319	10553	740	22612
1988	11741	12140	858	24739
1989	14191	13070	816	28077
1990	15175	13058	810	29043
1991	13089	10167	817	24073
1992	10900	9637	931	21468
1993	11838	9277	966	22081
1994	11750	11439	988	24177

| Year | Mining and quarrying | Manufacturing and industrial handicrafts | | | | Electricity gas, water and other utilities | Total industry and industrial handicrafts |
		Wood and paper industry	Metal and engineering industries	Other manufacturing	Total		
1910	29	846	415	1052	2312	51	2393
1911	36	905	435	1085	2425	61	2522
1912	48	935	487	1169	2591	69	2708
1913	45	956	529	1234	2719	89	2852
1914	53	819	385	1317	2521	143	2717
1915	73	871	659	1737	3267	153	3493
1916	77	1629	1214	2652	5495	226	5798
1917	86	1399	1530	3520	6449	360	6895
1918	53	1444	1306	4575	7325	488	7866
1919	128	3483	2205	6898	12586	760	13474
1920	266	8552	3512	11763	23827	1363	25456
1921	249	10350	4257	12682	27289	2145	29683
1922	324	11732	4731	15645	32108	2570	35002
1923	363	13625	5118	16744	35487	2883	38733
1924	403	13189	5238	17213	35640	3499	39542
1925	423	14880	5485	18415	38780	3589	42792
1926	565	16758	5826	19181	41765	4156	46486
1927	749	19107	5919	22876	47902	4755	53406
1928	930	18192	7692	25878	51762	5197	57889
1929	1132	16712	9012	24172	49896	5932	56960
1930	911	13913	6665	22793	43371	5126	49408
1931	697	12300	5543	19883	37726	4724	43147
1932	701	14315	5644	18446	38405	3698	42804
1933	538	16888	6276	20197	43361	4155	48054
1934	673	19710	7919	23038	50667	4347	55687
1935	1029	17832	9024	24981	51837	4511	57377
1936	1136	22226	10510	25868	58604	4862	64602
1937	1663	27176	14200	32993	74369	5709	81741
1938	1610	19796	16879	37176	73851	6162	81623
1939	1818	17052	18128	37032	72212	5850	79880
1940	2049	14469	23872	44072	82413	6466	90928
1941	2943	20159	27585	47373	95117	8313	106373
1942	3861	30707	37553	51321	119581	9569	133011
1943	9362	42060	44918	66228	153206	11717	174285
1944	4951	37451	49579	74031	161061	10675	176687
1945	7590	73327	80134	120694	274155	15579	297324
1946	10744	126364	130940	197241	454545	28690	493979
1947	15406	210971	175048	254635	640654	50483	706543
1948	22787	268715	269542	432631	970888	74419	1068094
1949	25215	262877	290848	495626	1049351	83489	1158055
1950	26236	348784	314387	662074	1325245	99866	1451347
1951	40633	691725	531754	832575	2056054	145178	2241865
1952	39796	359512	531904	814230	1705646	140723	1886165
1953	40475	339051	531030	928271	1798352	165072	2003899
1954	43440	508075	609222	1042399	2159696	198830	2401966
1955	46895	543519	674756	1199014	2417289	240286	2704470
1956	58205	528666	725555	1333897	2588118	269343	2915666
1957	63833	646745	766819	1372486	2786050	304103	3153986
1958	73979	772640	760847	1398701	2932188	345162	3351329
1959	93731	800024	889669	1559318	3249011	371520	3714262
1960	96598	996644	1084386	1692400	3773430	411082	4281110

| Year | Mining and quarrying | Manufacturing and industrial handicrafts | | | | Electricity gas, water and other utilities | Total industry and industrial handicrafts |
		Wood and paper industry	Metal and engineering industries	Other manufacturing	Total		
1960	97	941	1073	1624	3638	439	4174
1961	104	1045	1210	1860	4115	486	4705
1962	101	972	1303	2011	4286	537	4924
1963	110	1091	1352	2180	4623	584	5317
1964	145	1229	1507	2423	5159	615	5919
1965	171	1285	1653	2619	5557	658	6386
1966	176	1257	1780	2888	5925	746	6847
1967	188	1301	1931	3154	6386	798	7372
1968	228	1633	2273	3651	7557	871	8656
1969	324	2425	2826	4171	9422	940	10686
1970	365	2806	3323	4741	10870	1091	12326
1971	222	2622	3649	5304	11575	1174	12971
1972	264	2979	4531	6317	13827	1398	15489
1973	382	4218	5601	7361	17180	1695	19257
1974	488	6103	7743	9816	23662	2178	26328
1975	365	4734	9403	11059	25196	2764	28325
1975	377	4429	8956	11781	25166	2773	28316
1976	473	4436	10553	13438	28427	2989	31889
1977	524	5253	9996	14994	30243	3820	34587
1978	573	6905	11247	16391	34543	4206	39322
1979	814	9518	13038	19162	41718	4912	47444
1980	928	11655	14977	21931	48563	4976	54467
1981	873	11310	16767	25090	53167	6692	60732
1982	1015	9943	20364	27104	57411	7515	65941
1983	1085	11946	21767	29783	63496	7826	72407
1984	1185	15022	23978	31911	70911	8050	80146
1985	1258	14238	27194	34212	75644	8429	85331
1986	1227	14209	26997	36991	78197	9522	88946
1987	1246	16606	31464	39075	87145	10018	98409
1988	1603	20291	34161	41520	95972	10065	107640
1989	2037	21715	38649	44861	105225	9245	116507
1990	1733	20020	39777	45586	105383	9504	116620
1991	1729	14749	32215	42703	89667	11059	102455
1992	1800	17404	34583	40439	92426	11003	105229
1993	1687	21586	38933	41297	101816	11334	114837
1994	1909	25396	43429	43618	112443	12076	126428

Year	House construction	Construction Land and water construction	All construction
1960	923	512	1435
1961	1096	500	1596
1962	1211	530	1741
1963	1328	580	1908
1964	1490	666	2156
1965	1738	714	2452
1966	1841	807	2648
1967	2003	857	2860
1968	2033	975	3008
1969	2371	1030	3401
1970	2952	1062	4014
1971	3227	1175	4402
1972	4040	1388	5428
1973	5123	1668	6791
1974	6572	2087	8659
1975	7859	2560	10419
1975	7860	2573	10433
1976	7375	2764	10139
1977	7849	2815	10664
1978	7971	2840	10811
1979	8908	3078	11986
1980	10128	3564	13692
1981	11533	4000	15533
1982	13420	4386	17806
1983	16220	4667	20887
1984	17602	5148	22750
1985	17496	5726	23222
1986	18692	6507	25199
1987	20699	6762	27461
1988	25539	7401	32940
1989	33348	8687	42035
1990	34103	9364	43467
1991	27847	9115	36962
1992	17737	8304	26041
1993	13205	7793	20998
1994	15348	8227	23575

Year	Mining and quarrying	Manufacturing and industrial handicrafts Wood and paper industry	Metal and engineering industries	Other manufacturing	Total	Electricity, gas, water and other utilities	Total industry and industrial handicrafts
1860	9	33	62	129	223	0	232
1861	7	41	56	151	247	0	255
1862	8	42	63	169	274	1	284
1863	8	50	69	136	256	1	265
1864	7	59	80	134	273	1	280
1865	7	58	96	134	289	1	297
1866	7	59	98	124	281	1	288
1867	6	45	83	128	257	1	263
1868	6	44	83	123	250	1	258
1869	7	43	93	153	288	1	296
1870	8	46	91	164	301	1	310
1871	9	66	98	172	336	1	346
1872	9	89	133	192	414	1	424
1873	12	141	159	200	500	2	513
1874	12	168	168	222	558	2	572
1875	10	126	164	230	520	2	532
1876	11	162	148	232	542	2	554
1877	9	237	121	226	584	2	595
1878	7	134	95	202	431	2	440
1879	7	91	97	195	383	2	392
1880	9	139	120	224	482	2	493
1881	8	182	121	249	552	2	563
1882	8	224	127	258	610	3	621
1883	7	161	137	258	556	3	565
1884	7	163	129	257	549	4	559
1885	5	129	130	262	522	4	531
1886	7	119	110	259	488	4	499
1887	7	113	107	295	515	5	527
1888	8	144	119	311	574	5	587
1889	12	205	140	366	711	5	728
1890	13	186	174	408	767	6	786
1891	14	123	177	437	737	7	758
1892	14	142	162	394	698	7	720
1893	12	146	148	373	667	7	687
1894	13	186	146	416	748	8	769
1895	17	176	171	464	811	8	837
1896	19	233	195	521	949	10	978
1897	18	280	227	584	1090	10	1119
1898	19	324	269	658	1251	12	1282
1899	21	337	314	687	1338	12	1372
1900	29	447	305	724	1476	14	1519
1901	27	371	287	705	1363	19	1410
1902	23	386	281	673	1339	18	1380
1903	26	464	281	744	1489	24	1538
1904	24	474	329	763	1566	25	1614
1905	29	484	393	836	1712	27	1769
1906	23	569	433	940	1943	29	1996
1907	29	641	392	1048	2081	33	2144
1908	34	565	377	1047	1989	40	2064
1909	27	716	360	1079	2155	55	2238

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1960	1167	1421	300	1085	1186	5159
1961	1306	1595	321	1254	1348	5824
1962	1423	1781	400	1466	1533	6603
1963	1567	2009	417	1648	1725	7366
1964	1840	2305	504	1795	1956	8400
1965	1974	2547	593	1994	2222	9330
1966	2163	2744	629	2174	2496	10206
1967	2347	2867	706	2455	2782	11157
1968	2724	3032	815	2725	3144	12440
1969	3040	3459	913	2948	3550	13910
1970	3394	3889	1021	3197	4022	15523
1971	3735	4290	1212	3440	4591	17268
1972	4200	5036	1530	4090	5335	20191
1973	4967	6255	2030	4881	6349	24482
1974	6116	7956	2823	5953	7877	30725
1975	6968	9554	3345	6873	9563	36303
1975	6799	10626	2549	6309	8485	34768
1976	8526	12050	3093	7070	9879	40618
1977	9547	12674	3451	7835	10893	44400
1978	10672	13887	3817	8629	12095	49100
1979	12665	16254	4383	9442	14088	56832
1980	13928	19245	5749	10170	16740	65832
1981	15794	21886	6184	12139	19351	75354
1982	17350	24757	6856	14206	22179	85348
1983	19384	27387	7604	15725	25240	95340
1984	21860	30248	8717	17373	28900	107098
1985	23977	33528	9836	18722	32561	118624
1986	25933	34804	11498	20599	36719	129553
1987	27816	38853	13662	20865	41346	142542
1988	30774	43133	13824	22889	47985	158605
1989	34049	47828	15897	25540	54789	178103
1990	36921	48797	20098	28225	60308	194349
1991	36705	43549	17984	33127	58046	189411
1992	37076	40616	12983	37384	55225	183284
1993	37850	40139	17388	41109	55160	191646
1994	39524	42454	16082	42394	57354	197808

Year	Public services			Imputed bank service charges	Gross domestic product at factor cost
	Central government	Local government	Total public services		
1860	146	10	156	-8	3069
1861	151	11	162	-9	3309
1862	153	11	164	-10	3172
1863	155	11	167	-9	3330
1864	160	12	172	-9	3318
1865	162	12	174	-8	3459
1866	163	13	175	-7	3308
1867	162	13	174	-8	2898
1868	161	13	174	-8	3290
1869	161	14	174	-7	3485
1870	161	14	175	-7	3631
1871	162	15	177	-7	3825
1872	166	18	184	-8	4081
1873	168	19	187	-8	4460
1874	172	21	193	-9	4834
1875	177	23	199	-9	4841
1876	183	25	208	-9	5155
1877	186	27	213	-9	4991
1878	188	28	216	-8	4291
1879	195	31	226	-7	4105
1880	202	33	235	-8	4515
1881	210	36	246	-8	4553
1882	213	38	251	-8	4838
1883	218	40	258	-8	4917
1884	223	44	267	-7	4810
1885	231	48	279	-7	4717
1886	235	49	284	-6	4623
1887	243	52	295	-6	4616
1888	257	56	312	-6	4804
1889	264	58	323	-7	5328
1890	273	61	333	-7	5620
1891	281	65	346	-7	5965
1892	286	65	350	-7	5830
1893	295	70	364	-7	5886
1894	300	73	373	-7	6060
1895	304	78	382	-7	6287
1896	309	82	392	-7	6782
1897	318	89	407	-7	7489
1898	332	99	432	-7	8248
1899	342	108	450	-7	8526
1900	332	117	449	-8	9118
1901	338	125	462	-8	8996
1902	335	133	467	-8	8771
1903	348	148	496	-7	9637
1904	369	148	517	-7	9865
1905	385	156	541	-7	10345
1906	399	167	566	-8	10937
1907	429	188	617	-8	11587
1908	496	214	710	-8	11817
1909	515	231	746	-8	12149

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1860	117	90	11	215	101	534
1861	118	106	13	218	107	562
1862	130	123	16	211	108	588
1863	146	136	20	208	109	619
1864	140	135	21	228	113	637
1865	154	130	24	242	114	664
1866	150	121	22	242	117	652
1867	148	125	24	230	108	635
1868	164	129	22	226	104	646
1869	178	134	22	233	110	677
1870	160	138	21	243	165	727
1871	179	153	19	252	168	772
1872	191	158	23	265	127	764
1873	203	180	20	284	133	820
1874	209	209	26	298	145	886
1875	198	227	29	309	151	914
1876	236	258	33	317	159	1003
1877	234	248	36	320	167	1005
1878	219	225	36	314	164	957
1879	188	218	33	307	173	919
1880	195	219	30	310	183	938
1881	196	217	33	316	197	959
1882	193	235	35	323	202	988
1883	171	257	35	318	207	988
1884	172	254	38	314	215	992
1885	165	240	35	307	224	971
1886	170	233	36	309	225	973
1887	173	233	38	313	235	992
1888	175	250	43	333	243	1044
1889	179	276	63	347	251	1116
1890	182	303	59	361	275	1180
1891	202	335	60	351	280	1228
1892	198	358	67	355	283	1262
1893	202	353	68	354	293	1270
1894	211	357	67	362	302	1299
1895	228	345	85	375	310	1343
1896	248	377	108	403	320	1457
1897	279	449	135	435	338	1635
1898	322	539	172	473	366	1872
1899	350	586	175	501	383	1995
1900	386	610	178	540	405	2119
1901	433	635	183	555	421	2227
1902	433	598	200	594	432	2256
1903	457	682	219	596	470	2424
1904	481	712	232	619	483	2527
1905	496	739	219	626	502	2582
1906	546	755	272	648	531	2752
1907	637	804	301	636	593	2970
1908	668	846	339	618	638	3109
1909	665	894	370	605	659	3193

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1910	699	993	398	637	688	3414
1911	715	1012	441	686	745	3599
1912	781	1106	480	748	789	3904
1913	869	1213	479	781	815	4157
1914	812	1295	485	800	844	4235
1915	1068	1516	461	1024	939	5008
1916	1534	2151	564	1475	1106	6831
1917	2173	2888	692	1757	1764	9274
1918	1722	3472	1131	2589	2646	11560
1919	4492	5030	2433	3417	3817	19189
1920	7046	8570	4001	4590	6395	30602
1921	7403	10250	4666	5261	8607	36188
1922	8207	12560	4539	6894	9427	41626
1923	9060	13290	5051	9040	10546	46987
1924	10006	14200	5053	10410	11871	51540
1925	10895	15360	5932	11617	12427	56230
1926	11498	17050	6443	13172	12954	61116
1927	12700	18050	7138	14692	14275	66855
1928	13606	19560	8146	16609	14707	72628
1929	13836	20860	8244	17461	15349	75750
1930	13370	19320	7778	17205	15498	73171
1931	12540	17500	7180	16442	16084	69747
1932	12727	16830	6843	16398	14963	67761
1933	13207	17640	6651	16081	15620	69199
1934	15015	19210	6608	16614	16356	73802
1935	15633	21210	6613	17208	17210	77873
1936	17439	24970	6510	17893	18769	85582
1937	21007	28020	7127	18809	19318	94281
1938	21963	32350	8196	19871	21453	103832
1939	23978	32220	8003	21398	22317	107916
1940	24825	32890	8269	20905	21700	108590
1941	23308	38370	9697	22817	26704	120896
1942	27176	45180	11312	26179	30372	140219
1943	32716	53290	13436	27760	35937	163138
1944	34481	56960	15006	28688	42878	178013
1945	60319	91300	20707	32137	91307	295770
1946	97587	142700	35715	35245	103167	414414
1947	150832	201900	38418	45613	178200	614964
1948	199700	299300	55600	58400	219462	832462
1949	236100	374900	68400	73600	197880	950880
1950	313100	492200	94900	87300	255840	1243340
1951	471900	675400	124300	143100	350760	1765460
1952	482900	758300	139700	186200	388440	1955540
1953	486000	738700	154800	251300	408720	2039520
1954	534200	804700	162900	324300	442800	2268900
1955	656800	934900	178600	387200	482880	2640380
1956	770400	1059200	202700	504800	559320	3096420
1957	806100	1077500	216700	661900	612840	3375040
1958	843900	1136200	226800	785500	645240	3637640
1959	916200	1247900	251000	880400	710280	4005780
1960	1042600	1405200	280300	949300	783120	4460520

6. Volume Indices of Production by Kind of Economic Activity, 1860-1994, 1926=100

PRIMARY PRODUCTION

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1860	45,9	31,4	166,5	42,8
1861	45,1	32,4	145,4	42,2
1862	38,4	32,3	127,2	37,9
1863	43,9	33,8	131,6	41,7
1864	45,9	33,2	138,5	42,8
1865	42,3	36,4	133,5	41,9
1866	45,7	33,3	152,1	43,0
1867	36,4	31,8	153,3	37,2
1868	44,7	31,6	139,4	41,5
1869	50,1	31,6	162,6	45,2
1870	53,8	30,5	171,4	47,1
1871	52,7	31,3	167,0	46,7
1872	53,6	33,6	152,8	47,7
1873	57,0	35,2	144,1	50,2
1874	56,7	36,6	134,8	50,4
1875	57,6	35,1	148,1	50,6
1876	59,8	40,2	161,2	54,1
1877	55,1	40,9	169,3	51,9
1878	56,6	36,0	175,6	51,0
1879	58,0	34,3	192,6	51,5
1880	58,3	34,5	171,1	51,3
1881	52,5	33,8	175,8	47,7
1882	60,1	35,9	190,0	53,3
1883	64,9	36,1	198,4	56,4
1884	63,4	35,1	204,4	55,2
1885	65,0	35,0	216,9	56,4
1886	70,8	37,0	244,3	61,2
1887	71,8	37,7	251,5	62,2
1888	72,5	37,5	248,8	62,4
1889	74,7	41,2	236,2	64,9
1890	78,2	40,9	230,3	66,7
1891	74,4	40,5	209,4	63,9
1892	67,1	40,2	198,9	59,4
1893	73,5	40,7	208,7	63,5
1894	81,2	42,4	230,5	69,0
1895	89,1	44,8	240,2	74,7
1896	92,5	46,0	249,7	77,4
1897	93,1	49,0	243,6	78,9
1898	92,7	50,5	234,1	79,1
1899	81,4	51,3	229,6	72,9
1900	85,3	56,0	227,8	77,1
1901	86,1	53,9	222,7	76,4
1902	78,1	54,0	231,9	72,3
1903	84,7	60,5	240,3	79,1
1904	87,2	64,6	236,0	82,4
1905	90,7	61,3	235,6	82,6
1906	90,7	63,9	235,9	83,9
1907	94,9	65,8	237,7	87,1
1908	93,8	65,2	229,0	86,1
1909	97,2	69,7	227,3	90,1

6 cont.

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1910	93,3	72,6	238,9	89,6
1911	91,7	77,1	223,6	90,3
1912	98,5	78,5	217,6	94,6
1913	99,7	84,8	235,9	98,5
1914	100,8	73,1	233,0	93,9
1915	97,5	63,8	205,3	87,3
1916	94,8	64,3	182,1	85,6
1917	94,8	57,3	134,9	81,4
1918	88,6	46,8	89,2	72,3
1919	91,9	55,5	97,7	78,2
1920	104,1	70,0	94,0	91,3
1921	108,7	71,0	86,1	94,4
1922	108,3	79,5	86,0	97,2
1923	99,6	89,8	89,8	95,8
1924	100,0	90,9	90,6	96,4
1925	105,6	96,0	98,3	101,9
1926	100,0	100,0	100,0	100,0
1927	105,8	111,0	97,7	107,5
1928	98,7	108,0	99,7	102,1
1929	101,9	99,6	111,0	101,3
1930	112,7	88,5	118,8	103,9
1931	114,8	83,2	140,8	102,9
1932	117,7	82,1	136,3	103,8
1933	117,6	92,8	150,3	109,2
1934	129,3	108,5	143,3	122,8
1935	131,3	105,5	138,8	122,3
1936	131,0	110,9	167,1	125,3
1937	140,0	121,6	166,4	135,1
1938	141,6	105,2	166,0	128,0
1939	147,6	86,3	140,8	121,5
1940	114	58	151	90
1941	106	66	193	90
1942	100	62	292	86
1943	119	92	259	110
1944	129	79	219	109
1945	117	128	338	126
1946	121	117	423	124
1947	110	114	323	116
1948	117	95	303	111
1949	133	80	245	110
1950	130	87	226	112
1951	131	106	217	121
1952	143	105	257	127
1953	138	88	291	118
1954	138	106	323	127
1955	126	114	350	125
1956	126	105	340	121
1957	135	107	329	126
1958	144	108	300	131
1959	152	107	290	134

Year	Public services Central government	Public services Local government	Total public services	Imputed bank service charges	Gross domestic product at factor cost
1910	494	247	740	-9	12565
1911	485	269	755	-9	13319
1912	491	295	785	-9	14330
1913	494	319	813	-9	15014
1914	485	336	821	-10	14948
1915	488	375	863	-13	16454
1916	560	403	962	-19	23172
1917	707	578	1285	-31	37144
1918	2730	936	3666	-53	53732
1919	4223	1471	5693	-67	81742
1920	5784	2364	8148	-108	129831
1921	6272	3209	9481	-116	152607
1922	6803	3562	10365	-112	164975
1923	7903	4366	12269	-101	174568
1924	8820	5120	13940	-101	186653
1925	8764	5292	14055	-104	200106
1926	9030	5738	14768	-100	210535
1927	8412	6416	14828	-101	234349
1928	9909	6987	16895	-102	251825
1929	10899	7781	18680	-97	245275
1930	10685	8065	18749	-89	220702
1931	10649	8306	18955	-84	196838
1932	10326	8261	18587	-90	200026
1933	10774	8487	19261	-89	210742
1934	11373	8788	20161	-89	236674
1935	11768	9155	20923	-90	248844
1936	11990	9474	21464	-93	274536
1937	12594	9890	22484	-110	325459
1938	15464	10508	25972	-103	352446
1939	17363	11144	28507	-108	342715
1940	64450	10254	74704	-145	397702
1941	82356	11682	94037	-177	475440
1942	102249	12910	115159	-219	573128
1943	121819	15924	137743	-249	740511
1944	162581	17064	179645	-275	844036
1945	81463	30165	111628	-395	1324834
1946	110345	44834	155179	-618	1917367
1947	111658	69721	181379	-743	2648673
1948	149900	109200	259100	-982	3591956
1949	160000	129800	289800	-989	3811535
1950	235700	182300	418000	-1151	4820587
1951	292300	252700	545000	-1605	7056125
1952	314500	286100	600600	-1620	7258205
1953	318500	320300	638800	-1565	7178219
1954	326400	343500	669900	-1542	8022066
1955	370200	397500	767700	-1512	9076950
1956	442700	487500	930200	-1605	10006386
1957	480400	554900	1035300	-1738	10706926
1958	509900	647000	1156900	-1882	11600969
1959	545800	733800	1279600	-1894	12615242
1960	600400	781600	1382000	-173	14212630

Year	Public services Central government	Public services Local government	Total public services	Imputed bank service charges	Gross domestic product at factor cost
1960	523	804	1327	-173	14600
1961	598	902	1500	-199	16567
1962	656	1009	1665	-228	17679
1963	765	1167	1932	-256	19418
1964	890	1380	2270	-308	22039
1965	968	1582	2550	-369	24218
1966	1092	1808	2900	-412	25883
1967	1225	2113	3338	-488	27992
1968	1459	2468	3927	-543	31840
1969	1595	2755	4350	-559	36624
1970	1755	3054	4809	-656	41078
1971	1965	3498	5463	-744	44915
1972	2235	4104	6339	-891	52335
1973	2557	5040	7597	-1133	63799
1974	3196	6414	9610	-1904	81760
1975	4084	8405	12489	-2350	95276
1975	4488	8401	12889	-2350	94239
1976	5221	10436	15657	-2729	106438
1977	5660	11881	17541	-3020	115800
1978	6143	13061	19204	-3281	127234
1979	6913	15020	21933	-3639	148589
1980	7881	17259	25140	-4682	171320
1981	9152	20325	29477	-5337	193488
1982	10588	23409	33997	-5606	217200
1983	12222	26848	39070	-6411	242662
1984	13365	30728	44093	-7440	270227
1985	14757	35197	49954	-8023	293418
1986	15679	38634	54313	-8989	313261
1987	17669	41999	59668	-10576	340116
1988	20017	45436	65453	-12180	377197
1989	21791	50966	72757	-14873	422606
1990	24210	57423	81633	-17000	448112
1991	27536	62668	90204	-15329	427776
1992	27905	62298	90203	-10513	415712
1993	26431	59454	85885	-14205	421242
1994	26653	60035	86688	-13432	445244

Year	Manufacturing	House construction	Construction Land and water construction	Total construction	Total secondary production
1910	52,0	59,6	75,0	65,5	54,3
1911	56,0	60,9	76,0	66,7	57,8
1912	58,0	81,9	83,0	83,3	62,4
1913	65,0	65,6	87,0	73,5	66,4
1914	62,0	71,4	92,0	79,2	65,0
1915	60,0	59,6	85,0	68,8	61,5
1916	66,0	52,1	92,0	66,1	65,9
1917	48,0	46,4	63,0	52,5	48,8
1918	30,0	53,5	55,0	54,7	34,3
1919	44,0	53,3	52,0	53,6	45,6
1920	58,0	59,5	48,0	56,4	57,7
1921	58,0	62,1	61,0	61,8	58,8
1922	69,0	76,5	75,0	76,1	70,5
1923	81,0	83,6	80,0	82,6	81,3
1924	83,0	91,4	88,0	90,5	84,6
1925	90,0	88,0	96,0	90,1	90,0
1926	100,0	100,0	100,0	100,0	100,0
1927	110,0	106,5	116,0	109,1	109,8
1928	127,0	149,0	125,0	142,6	130,3
1929	133,0	116,0	140,0	122,4	130,8
1930	121,0	93,9	164,0	112,6	119,2
1931	111,0	76,5	178,0	103,9	109,5
1932	113,0	90,1	211,0	122,8	115,4
1933	123,0	75,3	224,0	115,7	121,5
1934	147,0	92,0	225,0	128,0	142,8
1935	163,0	107,9	225,0	139,4	157,8
1936	183,0	122,1	227,0	150,2	175,7
1937	214,0	122,3	205,0	144,3	198,3
1938	228,0	154,1	202,0	166,4	214,1
1939	217,0	150,5	194,0	161,6	204,6
1940	165	113	153	123	156
1941	177	97	128	105	160
1942	181	79	109	87	158
1943	210	69	114	82	179
1944	198	67	108	79	169
1945	204	111	136	117	183
1946	238	132	144	133	213
1947	261	154	153	150	234
1948	297	183	220	191	272
1949	308	207	274	225	289
1950	327	222	272	234	305
1951	371	233	265	237	340
1952	362	238	295	252	336
1953	378	244	374	285	356
1954	426	265	359	291	394
1955	470	259	369	292	428
1956	482	259	415	309	441
1957	495	262	438	320	454
1958	480	262	511	347	449
1959	523	270	554	368	487
1960	591	315	503	375	540
1961	643	350	466	389	579
1962	673	349	476	391	599
1963	700	357	499	404	622
1964	747	365	517	415	656
1965	790	408	524	448	698
1966	828	411	535	453	725
1967	853	427	536	465	745
1968	899	400	548	450	767
1969	1017	449	538	481	855
1970	1126	502	518	513	938
1971	1144	486	520	502	944
1972	1276	535	550	546	1047
1973	1361	596	571	595	1123
1974	1419	619	556	606	1164
1975	1357	646	574	631	1137
1976	1361	580	550	576	1107
1977	1352	600	516	581	1105
1978	1405	592	501	572	1129
1979	1554	596	503	575	1215
1980	1676	646	521	617	1309
1981	1743	627	533	606	1340
1982	1757	666	545	638	1366
1983	1805	709	530	665	1409
1984	1886	682	536	647	1445
1985	1965	677	572	653	1493
1986	2003	687	594	666	1523
1987	2123	701	588	675	1595
1988	2209	785	588	737	1680
1989	2292	910	632	840	1788
1990	2282	879	644	821	1771
1991	2061	764	606	726	1590
1992	2095	633	561	618	1546
1993	2204	525	526	529	1555
1994	2452	510	516	516	1688

Year	Agriculture	Forestry	Hunting and fishing	Total primary production
1960	159	127	281	146
1961	173	134	351	157
1962	161	125	304	146
1963	159	125	308	145
1964	165	135	260	153
1965	157	137	279	151
1966	159	117	280	141
1967	155	121	294	141
1968	164	126	327	148
1969	165	138	287	155
1970	152	144	317	153
1971	162	133	350	151
1972	158	129	361	147
1973	152	131	384	146
1974	149	121	431	139
1975	156	107	472	135
1976	166	102	499	137
1977	158	109	540	137
1978	152	112	690	137
1979	152	140	750	153
1980	165	147	812	163
1981	153	140	810	154
1982	165	131	843	155
1983	182	125	838	159
1984	183	131	873	163
1985	173	137	843	162
1986	172	122	803	153
1987	135	132	760	141
1988	142	139	897	148
1989	162	143	808	160
1990	180	135	758	164
1991	170	111	759	145
1992	148	125	869	144
1993	156	130	874	150
1994	156	150	847	161

Year	Manufacturing	Construction			Total secondary production
		House construction	Land and water construction	Total construction	
1860	4,6	21,4	25,1	23,2	8,1
1861	4,7	21,9	24,7	23,6	8,2
1862	4,8	23,6	23,0	24,5	8,5
1863	4,7	24,8	23,8	25,6	8,6
1864	5,0	24,5	22,5	25,0	8,7
1865	5,6	25,2	21,2	25,2	9,3
1866	5,6	23,5	21,3	23,9	9,1
1867	5,5	21,8	23,9	23,3	8,9
1868	6,0	22,7	45,0	29,4	10,4
1869	5,9	26,3	42,8	31,6	10,7
1870	6,3	27,8	45,6	33,6	11,4
1871	6,9	28,2	44,9	33,7	11,9
1872	8,5	29,4	44,3	34,5	13,3
1873	9,9	30,5	43,8	35,2	14,6
1874	11,0	31,7	40,1	35,1	15,4
1875	12,0	32,5	40,6	35,9	16,4
1876	12,0	32,6	34,1	34,1	16,1
1877	12,0	32,9	25,5	32,1	15,7
1878	10,0	31,7	28,0	31,8	14,0
1879	10,0	29,9	34,8	32,2	14,1
1880	11,0	29,3	37,8	32,6	15,0
1881	12,0	31,5	36,9	34,0	16,1
1882	13,0	32,4	39,0	35,2	17,1
1883	13,0	35,3	38,4	37,3	17,5
1884	13,0	36,8	44,5	40,1	18,0
1885	13,0	37,4	56,4	43,9	18,6
1886	13,0	36,2	62,5	44,7	18,8
1887	14,0	34,0	48,0	39,0	18,6
1888	16,0	35,4	49,0	40,3	20,5
1889	18,0	34,5	45,4	38,7	22,0
1890	20,0	38,0	63,1	46,3	25,0
1891	21,0	40,7	62,6	48,1	26,1
1892	20,0	43,6	62,5	50,2	25,7
1893	20,0	40,1	61,8	47,4	25,2
1894	23,0	40,5	65,9	48,9	27,9
1895	24,0	42,9	57,0	48,1	28,5
1896	28,0	44,8	58,0	49,7	32,0
1897	31,0	48,0	63,4	53,7	35,2
1898	34,0	51,8	62,6	56,2	38,1
1899	36,0	49,3	60,6	53,8	39,2
1900	37,0	52,6	63,0	56,9	40,6
1901	36,0	53,2	74,0	60,4	40,4
1902	36,0	57,6	70,0	62,6	40,9
1903	37,0	54,0	58,0	56,5	40,5
1904	39,0	60,2	58,0	61,2	43,0
1905	41,0	57,0	65,0	60,8	44,5
1906	44,0	62,2	61,0	63,5	47,5
1907	46,0	63,7	69,0	66,9	49,7
1908	46,0	67,9	74,0	71,4	50,6
1909	50,0	60,6	69,0	64,6	52,5

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1960	554	509	201	246	206	364
1961	593	555	216	260	219	390
1962	619	597	237	274	229	413
1963	634	618	258	289	242	432
1964	677	654	271	303	249	454
1965	714	702	299	319	262	482
1966	752	718	317	335	274	503
1967	757	730	330	353	282	516
1968	795	711	335	371	287	525
1969	866	796	348	389	301	564
1970	932	862	358	410	325	604
1971	955	900	374	430	339	628
1972	1032	987	396	453	356	672
1973	1110	1085	419	477	370	717
1974	1169	1117	427	506	385	746
1975	1150	1152	454	534	391	763
1976	1121	1152	469	561	391	767
1977	1122	1069	468	588	391	757
1978	1155	1089	464	615	404	777
1979	1268	1170	472	638	426	826
1980	1338	1212	516	651	453	867
1981	1372	1208	542	676	466	887
1982	1372	1272	540	712	488	919
1983	1408	1300	587	742	504	951
1984	1439	1358	645	770	528	994
1985	1493	1418	710	787	550	1038
1986	1505	1473	810	819	574	1085
1987	1610	1579	859	849	599	1146
1988	1711	1669	867	885	630	1202
1989	1858	1806	929	925	664	1283
1990	1970	1759	922	960	677	1302
1991	1898	1526	895	994	623	1220
1992	1888	1333	740	1032	600	1167
1993	1948	1257	786	1058	607	1156
1994	2037	1310	715	1080	626	1175

Year	Central government	Local government	Total public services	Total services	Total gross domestic product
1860	31,1	4,2	21,1	14,8	22,0
1861	31,4	4,3	21,3	15,5	22,2
1862	33,7	4,5	22,8	16,0	21,0
1863	34,5	4,7	23,4	16,9	22,6
1864	34,2	4,7	23,2	17,4	23,2
1865	33,2	4,7	22,6	17,2	23,0
1866	33,3	4,9	22,7	17,4	23,4
1867	34,6	5,1	23,6	17,6	21,4
1868	34,9	5,3	23,8	17,8	23,6
1869	33,8	5,4	23,1	18,6	25,1
1870	33,3	5,6	23,0	19,0	26,2
1871	33,3	5,8	23,0	19,5	26,4
1872	33,1	6,5	23,1	19,6	27,2
1873	32,8	6,9	23,1	20,4	28,8
1874	32,2	7,4	22,9	21,2	29,4
1875	33,0	7,8	23,5	21,8	30,0
1876	32,9	8,2	23,6	23,6	31,7
1877	32,9	8,6	23,7	24,2	30,9
1878	34,3	9,1	24,8	24,6	30,2
1879	35,9	9,8	26,0	24,9	30,5
1880	35,6	10,2	25,9	24,3	30,5
1881	36,1	10,7	26,4	24,7	29,8
1882	37,0	11,3	27,3	25,7	32,4
1883	36,9	11,8	27,4	26,3	33,8
1884	39,7	13,4	29,7	27,1	33,9
1885	40,3	14,1	30,3	27,5	34,6
1886	40,7	14,3	30,6	28,0	36,4
1887	42,4	15,3	32,1	29,0	37,0
1888	43,4	15,9	32,9	30,1	38,2
1889	40,4	15,5	30,9	30,3	39,6
1890	43,4	16,6	33,2	31,8	41,7
1891	44,9	18,0	34,6	32,8	41,5
1892	45,8	17,9	35,1	33,8	40,2
1893	47,2	19,2	36,5	34,6	41,7
1894	48,4	20,3	37,6	36,0	44,9
1895	48,0	21,4	37,8	36,6	47,3
1896	47,7	22,3	37,9	38,8	50,1
1897	47,1	23,3	37,9	41,2	52,5
1898	47,1	25,0	38,5	44,8	54,8
1899	46,8	26,5	38,9	46,0	53,5
1900	51,2	28,0	42,2	47,4	55,9
1901	52,5	30,3	43,9	48,7	56,0
1902	52,5	32,5	44,7	49,0	54,8
1903	50,5	33,4	43,8	52,2	58,2
1904	55,0	34,5	47,0	53,6	60,6
1905	55,5	35,4	47,7	54,4	61,4
1906	56,7	37,4	49,2	56,4	63,5
1907	57,7	40,3	50,9	58,0	65,8
1908	66,2	46,7	58,5	60,5	66,6
1909	68,9	50,9	61,9	63,4	69,6

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1860	7,9	5,8	2,2	32,8	24,4	14,8
1861	8,9	6,6	2,4	33,3	25,1	15,6
1862	8,9	6,8	2,6	33,7	25,8	15,9
1863	9,9	7,7	3,5	34,3	26,4	16,8
1864	9,9	8,9	3,7	34,7	27,2	17,4
1865	9,9	7,7	4,6	35,4	27,9	17,4
1866	9,9	7,8	4,6	35,8	28,8	17,7
1867	9,9	7,9	5,0	36,2	27,9	17,6
1868	10,9	8,0	4,5	36,6	26,4	17,5
1869	11,9	9,0	4,7	37,3	27,6	18,5
1870	11,9	9,6	4,6	37,8	29,3	19,2
1871	12,8	10,2	4,1	38,4	29,8	19,8
1872	12,8	9,5	4,6	39,3	30,4	19,9
1873	14,8	10,5	3,9	39,9	30,9	20,9
1874	15,8	11,3	4,4	40,6	31,5	21,7
1875	15,8	12,2	4,8	41,4	32,1	22,3
1876	19,8	13,7	5,5	42,0	32,9	24,0
1877	20,7	14,0	6,2	42,7	33,8	24,7
1878	19,8	14,6	7,3	43,1	34,6	25,1
1879	17,8	15,6	7,5	43,9	35,2	25,3
1880	18,8	13,5	5,9	44,3	36,2	24,9
1881	19,8	12,8	6,0	45,0	37,2	25,3
1882	19,8	14,7	6,9	45,6	38,3	26,4
1883	17,8	17,1	7,2	46,2	39,2	27,1
1884	17,8	17,5	7,8	46,9	40,2	27,6
1885	17,8	17,6	7,8	47,8	40,6	27,9
1886	17,8	18,1	8,6	48,3	41,6	28,5
1887	18,8	18,9	9,4	49,1	42,8	29,5
1888	19,8	20,3	10,7	49,3	44,2	30,6
1889	19,8	20,4	14,1	50,0	45,3	31,4
1890	20,7	22,4	13,2	50,7	46,6	32,7
1891	22,7	23,0	12,6	51,4	47,3	33,5
1892	22,7	25,0	14,7	52,3	48,1	34,6
1893	22,7	25,5	16,0	53,1	48,8	35,2
1894	23,7	28,5	15,7	53,7	49,5	36,5
1895	24,7	27,6	20,2	54,5	50,6	37,3
1896	28,7	30,1	25,2	55,4	51,6	39,8
1897	30,6	35,0	30,1	56,4	52,8	42,6
1898	35,6	40,9	37,1	57,5	53,9	46,5
1899	37,5	42,7	36,2	58,6	54,9	47,9
1900	41,5	42,0	35,3	59,5	56,0	48,8
1901	39,5	45,2	37,1	60,6	57,0	49,9
1902	40,5	42,6	40,4	62,0	58,0	50,2
1903	45,5	49,1	45,4	63,3	59,0	54,0
1904	44,5	50,8	48,2	64,5	60,0	55,0
1905	45,5	52,0	46,0	65,7	61,2	55,8
1906	50,4	50,8	53,8	66,8	62,4	57,8
1907	54,3	50,6	55,7	68,2	63,7	59,3
1908	53,4	51,1	64,2	69,6	64,9	60,6
1909	54,3	56,3	68,5	70,9	66,1	63,1

Year	Transport and communication	Trade	Banking and insurance	Ownership of dwellings	Private services	Subtotal
1910	59,3	61,8	72,1	72,1	67,3	66,5
1911	65,2	61,7	78,4	73,1	68,7	68,8
1912	69,2	64,7	82,8	75,6	70,4	71,7
1913	81,0	71,7	82,5	77,1	71,7	76,4
1914	69,0	72,6	76,0	78,8	73,0	74,5
1915	84,4	69,1	56,7	80,2	74,3	74,5
1916	100,7	71,4	46,3	81,2	76,4	77,6
1917	80,3	54,1	35,1	81,9	77,2	68,1
1918	42,8	41,7	33,0	82,9	76,0	57,6
1919	69,7	44,9	56,6	83,9	78,6	66,6
1920	69,1	49,6	57,4	85,2	80,4	68,7
1921	69,6	59,8	62,3	86,8	83,2	73,1
1922	87,5	71,2	63,1	89,0	86,1	80,5
1923	90,4	77,4	77,7	91,6	89,0	85,5
1924	95,9	86,7	77,7	94,4	92,4	90,4
1925	95,3	90,9	88,9	97,2	96,4	94,1
1926	100,0	100,0	100,0	100,0	100,0	100,0
1927	109,0	106,5	109,8	103,3	104,3	106,1
1928	121,6	112,8	124,2	107,8	104,7	112,5
1929	121,0	125,7	131,5	110,5	105,3	117,2
1930	117,7	125,3	135,4	112,3	105,0	117,2
1931	112,3	128,3	133,0	113,5	109,4	118,2
1932	110,3	124,2	117,9	115,3	102,4	114,0
1933	121,9	131,4	115,8	116,3	106,3	118,8
1934	139,7	135,2	115,0	117,9	111,1	124,4
1935	147,5	145,6	113,9	119,9	118,3	130,5
1936	161,4	169,6	108,9	122,4	130,8	142,0
1937	182,8	166,7	100,6	125,3	132,6	145,4
1938	198,0	192,8	123,9	129,0	139,8	159,2
1939	206,7	158,2	114,9	132,9	137,3	151,9
1940	174	155	88	122	127	138
1941	170	137	85	124	130	132
1942	181	121	80	131	121	126
1943	218	129	84	131	112	131
1944	211	115	85	125	115	125
1945	199	133	81	130	134	135
1946	225	151	90	135	138	147
1947	256	177	80	141	141	160
1948	277	221	88	147	143	180
1949	281	243	94	152	151	191
1950	314	283	106	158	159	214
1951	367	306	118	164	173	237
1952	360	331	128	172	175	245
1953	375	319	133	179	173	246
1954	408	355	142	186	179	267
1955	456	427	149	196	180	302
1956	462	445	157	206	189	312
1957	465	427	163	216	194	310
1958	462	410	169	226	185	304
1959	502	459	184	236	196	332

7. Distribution of Private Consumption at Five-Yearly Intervals, 1860-1994, Percentage shares

Year	Food	Nutrition and Beverages	stimulants Tobacco	Total	Clothing	Housing	Other private consumption	Total
1860	58,9	2,0	1,0	61,9	6,1	16,8	15,2	100,0
1865	59,3	1,5	1,1	61,9	6,0	15,3	16,8	100,0
1870	56,5	3,3	1,0	60,7	7,7	13,9	17,6	100,0
1875	58,0	4,8	1,3	64,1	8,3	12,1	15,5	100,0
1880	55,6	3,8	1,7	61,1	8,1	12,6	18,3	100,0
1885	55,5	5,2	1,4	62,1	6,3	12,8	18,8	100,0
1890	53,0	4,8	1,5	59,3	9,4	12,2	19,1	100,0
1895	54,2	4,0	1,6	59,8	8,7	11,4	20,1	100,0
1900	52,2	4,7	2,8	59,6	8,8	11,2	20,3	100,0
1905	49,3	3,8	2,2	55,2	9,8	12,0	23,0	100,0
1910	47,9	3,7	2,3	53,9	10,0	10,0	26,0	100,0
1915	48,2	1,8	2,1	52,1	13,0	10,4	24,5	100,0
1920	47,6	0,9	4,3	52,8	15,6	9,2	22,4	100,0
1925	45,5	1,4	3,2	50,1	13,4	11,3	25,2	100,0
1930	38,1	1,6	3,0	42,7	12,9	13,7	30,7	100,0
1935	37,5	3,0	2,6	43,1	14,2	12,7	30,0	100,0
1940	35,6	4,1	3,7	43,3	14,0	12,6	30,1	100,0
1945	37,9	10,0	2,6	50,5	9,6	9,3	30,5	100,0
1950	35,6	4,4	3,1	43,1	18,4	8,0	30,5	100,0
1955	31,7	4,7	2,6	39,0	13,7	11,9	35,4	100,0
1960	30,1	3,2	3,2	36,4	10,7	18,2	34,7	100,0
1965	28,4	3,5	3,2	35,2	8,1	18,1	38,6	100,0
1970	24,2	5,0	2,9	32,1	8,3	17,9	41,7	100,0
1975	22,2	5,0	2,1	29,3	6,2	18,8	45,7	100,0
1980	20,9	4,5	2,1	27,6	6,3	18,4	47,7	100,0
1985	19,8	4,4	2,0	26,2	5,2	18,1	50,5	100,0
1990	16,2	5,0	2,1	23,3	5,7	18,7	52,3	100,0
1994	15,7	4,6	2,1	22,4	4,5	25,0	48,1	100,0

8. Public Consumption 1860-1994, 1860-1960 in Thousands of FIM, 1960-1994 in Millions of FIM, 1960-1994 includes social security funds and municipals.

Year	Central government	Local government	Total
1860	173	41	214
1861	178	43	221
1862	181	44	225
1863	184	45	229
1864	189	47	236
1865	192	48	240
1866	192	50	242
1867	191	55	246
1868	189	54	243
1869	188	53	242
1870	188	49	237
1871	189	50	239
1872	194	53	247
1873	195	57	252
1874	199	58	258
1875	204	61	265
1876	210	63	273
1877	213	65	278
1878	214	65	279
1879	220	72	292
1880	226	76	302
1881	236	81	317
1882	240	84	324
1883	246	86	332
1884	253	89	342
1885	262	96	357
1886	267	99	366
1887	277	95	372
1888	292	101	393
1889	302	107	409
1890	311	123	434
1891	321	133	455
1892	329	155	483
1893	340	153	493
1894	347	166	513
1895	354	167	521
1896	362	162	524
1897	374	166	540
1898	391	197	588
1899	403	218	622
1900	404	260	664
1901	415	244	659
1902	412	242	655
1903	413	302	714
1904	440	299	738
1905	408	296	704
1906	446	318	764
1907	479	364	843
1908	487	427	914
1909	513	469	982

Year	Central government	Local government	Total public services	Total services	Total gross domestic product
1910	66,5	54,6	61,9	66,4	71,0
1911	61,3	55,3	58,9	67,8	72,9
1912	60,9	59,3	60,2	70,5	76,8
1913	61,0	63,8	62,0	75,0	81,0
1914	59,8	66,7	62,3	73,3	78,4
1915	54,7	67,2	59,4	72,7	74,9
1916	51,9	58,1	54,2	74,4	76,4
1917	40,6	52,0	44,9	63,9	65,7
1918	106,9	56,2	87,2	62,1	57,4
1919	122,0	64,6	99,8	72,3	66,7
1920	105,8	66,2	90,4	72,4	74,9
1921	88,6	73,5	82,8	74,5	77,0
1922	91,0	75,6	85,0	81,1	83,8
1923	95,6	82,1	90,4	86,3	88,2
1924	97,7	89,5	94,5	91,1	91,1
1925	97,1	92,6	95,4	94,2	95,8
1926	100,0	100,0	100,0	100,0	100,0
1927	87,7	106,2	94,9	104,0	106,9
1928	102,3	113,4	106,6	111,7	113,7
1929	111,5	120,7	115,0	117,4	115,5
1930	109,1	131,4	117,7	117,9	113,3
1931	111,7	145,1	124,6	120,1	111,5
1932	114,5	154,1	129,8	117,9	112,3
1933	120,1	159,5	135,2	122,8	117,7
1934	124,1	157,3	136,9	127,6	129,6
1935	123,4	156,3	136,1	132,3	135,1
1936	124,7	158,5	137,7	141,8	144,4
1937	126,0	154,7	137,1	144,4	154,5
1938	147,9	160,1	152,7	158,8	161,8
1939	161,9	154,9	159,4	154,2	155,3
1940	602	145	428	198	150
1941	640	139	450	197	151
1942	662	143	465	195	148
1943	638	147	452	197	165
1944	798	148	552	211	168
1945	211	144	183	149	159
1946	201	148	178	158	168
1947	193	158	177	169	172
1948	177	165	169	184	184
1949	179	181	179	195	191
1950	189	189	188	216	203
1951	187	206	195	236	222
1952	190	224	206	245	227
1953	186	245	214	247	230
1954	189	260	224	267	251
1955	194	282	237	298	267
1956	198	294	245	309	272
1957	201	313	256	309	279
1958	202	339	270	307	282
1959	206	364	284	334	301

Year	Central government	Local government	Total public services	Total services	Total gross domestic product
1960	217	368	292	361	329
1961	228	387	308	385	352
1962	237	408	322	407	361
1963	249	426	338	426	373
1964	258	444	349	445	392
1965	266	467	362	470	410
1966	279	484	376	490	420
1967	290	506	392	505	430
1968	306	531	411	518	443
1969	321	561	432	553	480
1970	335	590	453	589	511
1971	345	623	475	614	522
1972	362	665	504	656	560
1973	367	729	537	699	593
1974	384	786	574	732	613
1975	396	834	604	755	616
1976	404	902	641	771	619
1977	407	958	669	775	621
1978	420	1005	698	800	636
1979	431	1054	727	844	681
1980	444	1095	753	883	719
1981	458	1148	786	909	734
1982	480	1187	816	942	755
1983	500	1218	841	974	779
1984	506	1250	860	1010	803
1985	516	1291	884	1050	830
1986	514	1323	898	1087	847
1987	534	1366	930	1141	879
1988	547	1402	954	1189	918
1989	557	1438	976	1253	970
1990	567	1458	991	1272	976
1991	577	1472	1003	1220	909
1992	578	1425	981	1167	881
1993	562	1349	936	1156	877
1994	563	1352	938	1175	919

Year	Central government	Local government	Total
1910	597	537	1135
1911	618	593	1211
1912	623	632	1255
1913	670	652	1322
1914	664	738	1401
1915	656	687	1343
1916	783	910	1693
1917	914	1309	2223
1918	2803	2460	5263
1919	4346	3001	7347
1920	6138	4433	10571
1921	8623	6044	14667
1922	9101	6963	16064
1923	9380	7905	17285
1924	10108	8687	18794
1925	11376	9381	20757
1926	11460	9529	20989
1927	12302	9713	22014
1928	13494	11119	24613
1929	15391	12386	27777
1930	15858	13566	29424
1931	15274	13647	28921
1932	16462	13227	29689
1933	14650	13662	28312
1934	15639	13743	29382
1935	16031	14678	30709
1936	17287	15533	32820
1937	25069	16478	41547
1938	22873	17503	40376
1939	42788	18915	61703
1940	155264	18610	173874
1941	152403	21150	173553
1942	206626	23460	230086
1943	218057	29350	247407
1944	266474	33020	299494
1945	154018	52670	206688
1946	140259	84320	224579
1947	157738	121790	279528
1948	215900	190830	406730
1949	234600	236200	470800
1950	320000	307900	627900
1951	401600	405100	806700
1952	444300	460400	904700
1953	464400	525000	989400
1954	450800	541300	992100
1955	518800	622800	1141600
1956	635800	723300	1359100
1957	709900	796100	1506000
1958	741900	917500	1659400
1959	812300	1043400	1855700
1960	885100	1111700	1996800

Year	Central government	Local government	Total
1960	866	1065	1931
1961	1000	1156	2156
1962	1125	1338	2463
1963	1317	1545	2862
1964	1505	1744	3249
1965	1653	1984	3637
1966	1840	2247	4087
1967	2034	2624	4658
1968	2410	3072	5482
1969	2559	3375	5934
1970	2840	3773	6613
1971	3235	4383	7618
1972	3687	5272	8959
1973	4224	6470	10694
1974	5271	8415	13686
1975	6785	11014	17799
1975	6605	10980	17585
1976	7564	13455	21019
1977	8288	15447	23735
1978	9066	16875	25941
1979	10235	19179	29414
1980	11942	22450	34392
1981	13531	26646	40177
1982	15727	30113	45840
1983	18237	34214	52451
1984	19411	39431	58842
1985	21813	45154	66967
1986	23255	49594	72849
1987	25763	54283	80046
1988	28323	58876	87199
1989	30397	65622	96019
1990	34521	74014	108535
1991	39561	79158	118719
1992	41230	77223	118453
1993	39037	73153	112190
1994	40730	73319	114049

9. Gross Fixed Capital Formation by Type of Capital Goods, 1860-1994, Percentage Shares

Year	Residential buildings	Non-residential buildings	Land and water construction	Machinery and equipment	Total
1860	38.0	23.1	22.6	16.3	100.0
1865	38.6	23.0	13.5	24.9	100.0
1870	33.3	21.1	26.7	18.8	100.0
1875	30.4	22.1	18.8	29.2	100.0
1880	32.2	25.8	18.3	24.4	100.0
1885	29.0	27.8	17.6	20.0	100.0
1890	24.6	23.0	23.2	30.9	100.0
1895	27.5	27.8	21.4	26.7	100.0
1900	21.4	25.7	17.9	35.2	100.0
1905	22.4	27.1	17.7	33.8	100.0
1910	19.5	24.5	16.7	36.2	100.0
1915	19.7	19.8	22.8	37.6	100.0
1920	19.4	23.3	10.9	46.3	100.0
1925	24.8	28.7	16.9	29.7	100.0
1930	19.4	30.0	23.9	26.7	100.0
1935	18.4	23.8	25.6	32.2	100.0
1940	15.9	16.7	12.3	55.1	100.0
1945	24.7	25.1	21.4	28.8	100.0
1950	24.7	31.5	21.3	22.5	100.0
1955	24.7	19.8	21.6	34.0	100.0
1960	20.2	20.3	18.6	41.0	100.0
1965	22.6	23.2	19.7	34.5	100.0
1970	25.9	22.3	14.9	39.0	100.0
1975	25.7	22.2	14.5	37.5	100.0
1980	28.9	22.4	12.7	36.0	100.0
1985	26.7	23.7	11.8	37.8	100.0
1990	27.6	25.7	9.9	36.8	100.0
1994	25.1	19.4	14.9	40.6	100.0

10. Foreign Trade, 1860-1994, 1860-1960 in Thousands of FIM, 1960-1994 in Millions of FIM, Current Prices, Indices 1926=100
Indices 1926=100

Year	Exports of goods	Imports of goods	Balance of trade of goods	Export price index	Imports price index	Terms of trade	Ratios of Imports to GDP at Market Prices,	Ratios of Exports to GDP at Market Prices, %
1860	269	380	-111	6,15	0,00	..	12,1	8,6
1861	327	491	-164	6,86	0,00	..	14,5	9,6
1862	321	625	-304	6,73	0,00	..	19,2	9,8
1863	392	614	-222	5,81	0,00	..	17,9	11,5
1864	376	506	-130	6,31	0,00	..	14,9	11,0
1865	411	651	-240	5,75	12,52	46	18,4	11,6
1866	380	508	-128	5,31	11,75	45	15,1	11,3
1867	430	575	-145	6,36	12,19	52	19,4	14,5
1868	475	620	-145	5,99	12,31	49	18,5	14,2
1869	496	700	-204	6,24	11,41	55	19,6	13,9
1870	503	680	-177	6,67	10,65	63	18,2	13,5
1871	606	755	-149	6,94	11,19	62	19,2	15,4
1872	682	925	-243	7,26	12,86	56	22,0	16,2
1873	881	1067	-186	8,75	13,52	65	23,2	19,1
1874	930	1367	-437	8,67	13,30	65	27,3	18,6
1875	803	1455	-652	8,08	12,97	62	28,9	16,0
1876	1004	1284	-280	9,03	13,19	68	24,0	18,7
1877	983	1375	-393	8,25	11,98	69	26,5	19,0
1878	819	1178	-359	7,93	10,86	73	26,4	18,3
1879	849	1050	-201	7,63	9,86	77	24,6	19,9
1880	1129	1271	-142	7,68	11,61	66	26,9	23,9
1881	990	1418	-428	8,04	11,72	69	29,8	20,8
1882	1162	1528	-366	8,36	10,90	77	30,1	22,9
1883	1017	1473	-456	7,76	10,15	76	28,6	19,8
1884	994	1369	-375	7,36	9,51	77	27,1	19,7
1885	896	1082	-186	6,64	9,09	73	21,8	18,0
1886	787	974	-187	6,83	8,87	77	20,1	16,2
1887	760	1049	-289	6,60	8,51	78	21,6	15,7
1888	896	1112	-216	6,84	8,51	80	21,9	17,7
1889	1020	1324	-304	7,34	9,65	76	23,5	18,1

Year	Exports of goods	Imports of goods	Balance of trade of goods	Export price Index	Imports price index	Terms of trade	Ratios of Imports to GDP at Market Prices,	Ratios of Exports to GDP at Market Prices, %
1960	3165	3403	-238	1810	1454	124	21,0	19,5
1961	3374	3690	-316	1837	1465	125	20,1	18,4
1962	3533	3929	-396	1824	1486	123	20,0	18,0
1963	3678	3867	-189	1878	1502	125	18,1	17,2
1964	4132	4817	-685	1970	1532	129	20,0	17,2
1965	4566	5265	-699	2070	1546	134	19,8	17,1
1966	4817	5524	-707	2042	1546	132	19,3	16,9
1967	5231	5794	-563	2097	1635	128	18,5	16,7
1968	6874	6711	163	2480	1963	126	18,7	19,1
1969	8345	8505	-160	2571	2007	128	20,8	20,4
1970	9687	11071	-1384	2845	2185	130	24,2	21,2
1971	9897	11734	-1837	3029	2346	129	23,3	19,7
1972	12082	13107	-1025	3240	2529	128	22,4	20,6
1973	14605	16601	-1996	3635	2811	129	23,3	20,5
1974	20686	25666	-4980	5163	4045	128	28,5	23,0
1975	20247	28002	-7755	6073	4398	138	27,1	19,6
1976	24505	28555	-4050	6256	4705	133	24,5	21,0
1977	30931	30708	223	7228	5452	133	23,9	24,1
1978	35206	32338	2868	7653	6069	126	22,7	24,7
1979	43430	44222	-792	8624	6992	123	26,7	26,2
1980	52795	58250	-5455	9596	8179	117	30,4	27,6
1981	60308	61269	-961	10629	9146	116	28,3	27,8
1982	63026	64751	-1725	11395	9553	119	26,6	25,9
1983	69692	71528	-1836	12161	10208	119	26,3	25,7
1984	80904	74682	6222	12831	10698	120	24,5	26,6
1985	84028	81520	2508	13214	11025	120	24,6	25,3
1986	82579	77602	4977	12927	9881	131	21,9	23,3
1987	85516	82807	2709	13214	9718	136	21,4	22,1
1988	92902	92118	784	13884	9963	139	21,2	21,4
1989	99782	105519	-5737	14937	10290	145	21,7	20,5
1990	101327	103027	-1700	14746	10453	141	20,0	19,7
1991	92842	87744	5098	14746	10698	138	17,9	18,9
1992	107463	94947	12516	15703	11841	133	19,9	22,5
1993	134112	103167	30945	16469	13311	124	21,4	27,8
1994	154163	120611	33552	16757	12903	130	23,7	30,3

11. Volume Indices of Exports by commodity group, 1860-1994, 1926=100

Year	Exports of goods	Agriculture	Forestry	Wood industry	Paper industry	Metal and engineering industry	Total industry
1860	7.8	29.0	4.7	5.3	..	..	6.6
1861	8.5	36.3	5.6	5.9	..	..	6.6
1862	8.5	30.8	4.7	5.3	..	..	6.0
1863	12.0	40.0	4.7	7.8	..	..	9.4
1864	10.6	43.7	3.2	7.2	..	..	8.2
1865	12.7	40.0	4.7	9.9	..	..	10.9
1866	12.7	41.8	4.7	9.2	..	..	9.8
1867	12.0	47.2	4.7	8.6	..	..	9.8
1868	14.1	61.8	7.2	9.9	..	..	9.4
1869	14.1	67.2	6.3	9.9	..	..	9.8
1870	13.4	70.8	5.6	8.6	..	..	9.4
1871	15.6	90.8	6.3	..	..	..	9.8
1872	16.7	70.8	9.6	..	..	..	:
1873	17.9	70.8	12.7	..	..	..	14.2
1874	19.1	65.3	11.9	..	..	..	13.1
1875	17.7	60.0	11.2	..	..	..	13.1
1876	19.8	69.0	0.0	..	..	..	14.8
1877	21.2	56.3	14.3	..	..	..	13.1
1878	18.4	65.3	12.7	..	0.5	..	13.1
1879	19.8	92.7	10.3	..	0.8	..	13.7
1880	26.2	98.2	12.7	25.6	0.8	293.0	19.7
1881	21.9	72.7	11.2	..	0.8	..	16.4
1882	24.7	69.0	11.9	..	1.0	..	20.7
1883	23.3	81.8	11.2	22.4	1.3	249.4	18.0
1884	24.0	81.8	11.2	23.6	1.3	337.3	19.1
1885	24.0	78.2	11.9	23.6	1.6	233.5	18.6
1886	20.5	81.8	12.7	19.1	1.0	150.6	14.8
1887	20.5	96.3	9.6	17.7	1.6	184.2	14.2
1888	23.3	112.7	11.2	19.7	1.8	155.7	14.2
1889	24.7	112.7	11.2	22.4	1.8	160.8	17.6
1890	24.0	109.0	11.9	19.7	1.8	186.7	16.4
1891	26.2	109.0	11.9	25.0	1.8	228.5	19.7
1892	24.0	96.3	13.5	22.4	1.8	163.3	17.6
1893	29.0	119.8	17.5	25.6	2.6	184.2	20.7
1894	33.2	143.5	23.1	30.2	2.9	267.1	23.5
1895	34.6	143.5	27.1	29.6	2.9	267.1	24.0
1896	36.8	152.7	27.1	34.1	3.1	257.0	26.2
1897	37.5	152.7	33.4	34.1	3.4	275.3	26.2
1898	36.8	132.7	33.4	34.9	3.9	316.5	26.8
1899	38.2	110.8	34.2	37.4	4.2	272.8	28.9
1900	36.8	107.2	40.5	37.4	5.5	215.2	27.9
1901	36.8	107.2	39.0	36.1	5.5	353.2	27.9
1902	38.9	112.7	35.8	40.7	5.7	197.5	29.5
1903	40.3	116.0	57.3	42.1	6.5	129.7	30.1
1904	43.8	130.8	66.0	41.4	7.8	148.1	31.2
1905	48.1	169.0	59.6	42.1	8.6	360.8	32.8
1906	51.6	169.0	48.5	47.3	9.4	290.5	38.8
1907	48.1	154.5	52.4	43.3	11.2	241.1	35.0
1908	46.7	138.0	62.8	42.1	11.7	103.8	34.0
1909	48.8	147.2	58.9	46.0	12.2	119.6	36.1

Year	Exports of goods	Imports of goods	Balance of trade of goods	Export price index	Imports price index	Terms of trade	Ratios of Imports to GDP at Market Prices,	Ratios of Exports to GDP at Market Prices, %
1890	937	1402	-465	6,94	9,60	72	23,5	15,7
1891	982	1461	-479	6,68	9,62	69	23,3	15,6
1892	896	1451	-555	6,64	9,29	71	23,7	14,6
1893	1096	1258	-162	6,73	8,98	75	20,3	17,7
1894	1249	1384	-135	6,69	8,08	83	21,7	19,6
1895	1315	1500	-185	6,76	8,19	82	22,6	19,8
1896	1504	1722	-218	7,28	8,20	89	23,9	20,9
1897	1631	2021	-390	7,75	8,00	97	25,4	20,5
1898	1682	2364	-682	8,14	8,23	99	27,0	19,2
1899	1719	2510	-791	8,02	8,26	97	27,8	19,0
1900	1915	2701	-786	9,27	8,84	105	27,8	19,7
1901	1841	2150	-309	8,82	8,32	106	22,8	19,5
1902	1991	2331	-340	8,35	8,43	99	25,3	21,6
1903	2122	2675	-553	9,11	8,58	106	26,4	20,9
1904	2145	2671	-526	8,67	8,72	99	25,8	20,7
1905	2467	2682	-215	8,51	8,88	96	24,7	22,7
1906	2801	3139	-338	9,30	9,49	98	27,1	24,2
1907	2654	3791	-1137	9,94	10,30	96	30,9	21,6
1908	2430	3635	-1205	9,16	9,75	94	29,1	19,5
1909	2545	3671	-1126	9,71	9,79	99	28,6	19,8
1910	2881	3841	-960	10,0	9,9	101	28,8	21,6
1911	3177	4445	-1268	10,1	10,0	101	31,5	22,5
1912	3377	4700	-1323	9,8	10,6	93	30,8	22,2
1913	4018	4954	-936	10,2	10,4	98	31,0	25,2
1914	2822	3802	-980	10,5	11,1	95	24,1	17,9
1915	2559	5784	-3225	13,6	17,0	80	33,5	14,8
1916	4979	9628	-4649	25,9	23,7	109	39,7	20,5
1917	4396	12319	-7923	38,3	50,7	76	32,7	11,7
1918	1896	5046	-3150	42,5	77,7	55	9,3	3,5
1919	8506	25099	-16593	42,1	75,3	56	29,3	9,9
1920	28961	36265	-7304	94,6	124,3	76	26,5	21,2
1921	33419	35857	-2438	117,1	137,9	85	22,3	20,8
1922	44368	39699	4669	109,5	114,9	95	22,4	25,1
1923	43654	46003	-2349	101,9	97,7	104	24,2	23,0
1924	48849	47155	1694	99,2	103,5	96	23,4	24,3

Year	Exports of goods	Imports of goods	Balance of trade of goods	Export price index	Imports price index	Terms of trade	Ratios of Imports to GDP at Market Prices,	Ratios of Exports to GDP at Market Prices, %
1925	55552	55195	357	101,4	115,5	88	25,4	25,6
1926	56158	56678	-520	100,0	100,0	100	25,0	24,8
1927	62865	63859	-994	99,6	98,6	101	25,2	24,8
1928	61906	80129	-18223	100,8	99,4	101	29,3	22,6
1929	63768	70014	-6246	100,2	99,0	101	26,4	24,0
1930	53454	52477	977	96,2	92,3	104	21,9	22,3
1931	44031	34648	9383	82,1	80,3	102	16,3	20,7
1932	45516	35023	10493	81,2	92,8	87	16,3	21,2
1933	52592	39280	13312	79,3	89,2	89	17,0	22,8
1934	61714	47765	13949	84,2	88,1	96	18,3	23,6
1935	61929	53444	8485	80,1	89,9	89	19,4	22,5
1936	71595	63690	7905	83,3	88,7	94	21,0	23,6
1937	92825	93064	-239	100,7	101,6	99	26,1	26,0
1938	83349	86073	-2724	104,9	100,9	104	22,4	21,7
1939	77103	75726	1377	97,5	98,2	99	20,2	20,6
1940	28746	91642	-62896	118	122	96	21,4	6,7
1941	43215	102011	-58796	130	174	75	19,2	8,1
1942	59906	117315	-57409	177	204	87	17,8	9,1
1943	87127	128804	-41677	226	232	97	15,3	10,3
1944	63321	89185	-25864	236	245	96	9,4	6,7
1945	52278	68205	-15927	387	404	96	4,7	3,6
1946	230505	242740	-12235	616	558	110	11,1	10,5
1947	452281	469705	-17424	867	671	129	15,8	15,2
1948	565048	663692	-98644	982	773	127	16,2	13,8
1949	656062	662776	-6714	953	823	116	14,9	14,8
1950	814787	891475	-76688	1021	984	104	16,3	14,9
1951	1868830	1554640	314190	1865	1315	142	19,5	23,4
1952	1568290	1821860	-253570	1769	1294	137	22,0	18,9
1953	1315550	1218600	96950	1334	1133	118	15,0	16,1
1954	1566180	1521370	44810	1361	1070	127	16,8	17,3
1955	1812590	1769600	42990	1443	1070	135	17,7	18,1
1956	1779860	2035580	-255720	1443	1123	128	18,3	16,0
1957	2123850	2279270	-155420	1579	1198	132	18,7	17,4
1958	2479340	2333030	146310	1878	1496	126	17,7	18,8
1959	2673220	2673000	220	1769	1422	124	18,8	18,8

12. Structure of Exports by Type of Goods, 1860-1994, Percentage Shares *

Year	Agriculture	Forestry	Wood industry	Paper Industry	Textile Industry	Metal and engin. Industries	Other manufacturing	Total manufacturing	Other products	Total
1860	26,8	7,7	28,7	0,8	5,6	14,2	12,2	61,5	4,0	100,0
1865	18,9	5,4	42,1	1,1	4,7	12,3	11,3	71,5	4,2	100,0
1869	31,3	3,9	27,2	3,2	8,7	14,1	9,7	62,9	1,8	100,0
1875	22,5	6,2	35,5	7,3	12,1	8,4	7,4	70,7	0,6	100,0
1880	27,2	5,3	36,2	8,7	7,7	8,0	6,3	66,9	0,6	100,0
1885	21,1	5,0	39,8	10,0	6,1	9,6	7,9	73,4	0,5	100,0
1890	29,1	5,2	35,2	9,2	5,1	6,3	9,8	65,6	0,1	100,0
1895	28,7	6,7	33,9	9,8	5,5	5,9	9,5	64,6	0,0	100,0
1900	17,8	11,0	46,5	11,3	3,9	4,8	4,6	71,1	0,1	100,0
1905	22,0	10,4	40,0	13,9	2,2	7,5	4,0	67,5	0,0	100,0
1910	17,5	9,5	46,5	17,4	2,9	1,4	4,7	73,0	0,0	100,0
1913	17,0	11,1	45,4	17,7	2,4	2,0	4,4	71,9	0,0	100,0
1920	2,8	6,1	50,3	37,3	0,0	0,8	2,7	91,1	0,0	100,0
1925	13,7	10,3	44,0	27,7	0,7	0,9	2,7	76,0	0,0	100,0
1930	11,8	8,1	41,0	34,5	0,5	1,4	2,7	80,1	0,0	100,0
1935	8,9	7,0	36,5	40,6	1,1	2,4	3,4	84,0	0,0	100,0
1938	10,1	9,0	31,3	41,7	1,0	3,7	3,2	80,9	0,0	100,0
1950	4,1	10,0	35,1	41,6	0,8	4,9	3,5	85,9	0,0	100,0
1955	2,1	11,0	28,3	41,8	1,1	13,7	1,9	86,8	0,0	100,0
1960	5,0	6,8	26,9	42,2	1,3	14,4	3,4	88,2	0,1	100,0
1965	5,5	1,3	20,1	47,4	2,9	17,5	5,3	93,2	0,0	100,0
1970	4,4	0,9	15,9	39,1	6,5	25,2	7,8	94,5	0,2	100,0
1970	1,7	1,0	15,9	40,1	2,1	25,0	13,5	96,6	0,4	100,0
1975	1,6	0,3	10,8	35,7	9,1	32,1	10,0	97,7	0,4	100,0
1980	1,7	0,6	14,7	29,8	7,8	28,6	16,2	97,1	0,6	100,0
1985	2,8	0,0	8,0	29,8	6,3	29,1	23,5	96,7	0,5	100,0
1990	0,7	0,2	7,7	28,5	3,3	43,0	16,2	98,7	0,4	100,0
1994	1,5	0,4	9,2	23,9	2,2	44,6	17,7	97,6	0,5	100,0

* It has not been possible to take the classification change of 1974 into account here. The most significant difference resulting from the change has arisen out of the transference of butter and cheese from agricultural exports to exports of the food industry (See Official Statistics of Finland I A:94, Foreign Trade II, pp. 10-12.)

13. Structure of Imports by Type of Goods, 1860-1994, Percentage Shares *

Year	Raw materials	Fuels and lubricants	Investment goods	Consumer goods	Other goods	Total
1860	58,9	1,3	1,6	36,9	1,3	100,0
1865	66,8	1,2	0,6	26,5	4,8	100,0
1869	63,3	1,4	4,7	30,3	0,3	100,0
1875	52,6	1,2	2,2	42,7	1,3	100,0
1880	52,3	1,8	1,8	42,3	1,8	100,0
1885	54,1	2,5	3,0	36,7	3,6	100,0
1890	56,1	2,5	6,1	35,5	0,0	100,0
1895	58,8	2,4	4,8	33,9	0,0	100,0
1900	61,1	3,8	7,7	27,5	0,0	100,0
1905	62,4	3,5	7,0	26,9	0,0	100,0
1910	62,2	3,7	6,2	28,0	0,0	100,0
1913	60,0	5,2	8,2	26,6	0,0	100,0
1920	69,6	5,9	9,3	15,2	0,0	100,0
1925	69,7	5,4	7,0	18,0	0,0	100,0
1930	63,7	8,9	8,6	18,9	0,0	100,0
1935	61,3	7,8	12,3	18,7	0,0	100,0
1938	53,2	9,6	15,8	21,4	0,0	100,0
1950	56,8	11,5	14,1	17,6	0,0	100,0
1955	53,6	12,2	19,3	14,9	0,0	100,0
1960	48,9	9,7	27,4	14,0	0,0	100,0
1965	44,8	9,8	28,7	16,7	0,0	100,0
1970	44,4	11,3	26,2	18,2	0,0	100,0
1970	62,2	3,8	17,6	15,8	0,6	100,0
1975	60,9	6,0	18,7	14,3	0,1	100,0
1980	66,3	7,0	13,7	12,8	0,2	100,0
1985	62,5	6,8	14,3	15,9	0,5	100,0
1990	53,8	3,5	18,8	23,2	0,7	100,0
1994	60,3	4,3	14,3	20,4	0,7	100,0

* It has not been possible to take the classification change of 1974 into account here. It caused significant differences in the distribution of imports. The biggest differences arose out of the transference of crude oil from fuels to raw materials, automobiles from investment goods to consumer goods, and machinery and equipment components from investment goods to raw materials (See Official Statistics of Finland I A:94, Foreign Trade 1974 II, pp. 10 - 12).

Year	Exports of goods	Agriculture	Forestry	Wood industry	Paper industry	Metal and engineering industry	Total industry
1910	53,0	143,5	55,7	49.3	15,6	124,7	41,0
1911	57,3	167,2	63,6	48,6	18,5	200,0	43,2
1912	61,5	167,2	64,4	53,8	20,3	321,5	48,1
1913	70,7	181,7	79,5	65,7	21,4	259,5	54,7
1914	48,1	174,3	54,9	29,6	19,5	197,5	34,4
1915	33,2	138,0	30,2	8,6	19,5	480,4	22,4
1916	33,9	92,7	40,5	9,9	22,1	544,9	24,6
1917	20,5	36,3	27,1	5,3	14,3	306,3	16,4
1918	7,9	6,3	2,9	5,9	11,5	58,9	8,8
1919	35,9	13,0	28,3	49,8	19,8	63,3	37,8
1920	54,4	16,8	43,8	66,2	50,5	70,9	61,2
1921	50,8	67,3	29,5	55,3	46,9	89,2	53,7
1922	72,1	77,2	64,5	73,7	70,1	87,3	73,2
1923	76,2	53,7	91,0	79,2	69,0	55,7	75,5
1924	87,7	77,3	89,3	89,5	87,0	65,2	88,5
1925	97,6	108,8	100,4	92,5	95,3	110,1	95,5
1926	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1927	112,4	109,0	118,2	113,8	108,3	93,0	111,4
1928	109,3	90,3	103,8	104,9	131,8	101,9	112,7
1929	113,3	107,5	83,2	111,7	137,5	127,8	120,6
1930	98,8	109,5	71,3	85,4	137,0	157,6	103,9
1931	95,6	123,0	42,8	75,3	162,5	117,1	104,2
1932	99,8	128,7	41,7	71,7	185,9	121,5	109,2
1933	118,1	135,8	59,8	93,9	199,0	165,2	129,1
1934	130,5	128,5	88,8	105,0	211,7	139,9	140,1
1935	137,7	125,8	87,1	103,5	239,1	267,1	150,4
1936	153,0	142,2	87,3	110,7	198,2	391,1	168,8
1937	164,0	150,3	102,6	107,1	306,0	672,8	179,3
1938	141,4	166,7	76,5	91,2	260,4	632,9	143,9
1939	140,8	154,0	55,4	81,6	276,3	800,6	148,9
1940	44	..	24	29	63	509	46
1941	59	..	24	33	114	511	64
1942	60	..	21	50	84	794	70
1943	69	..	24	54	97	663	77
1944	48	..	6	36	65	552	56
1945	24	..	6	17	44	130	28
1946	67	..	28	52	130	246	77
1947	93	..	47	74	167	302	103
1948	102	..	51	87	188	344	117
1949	123	39	61	104	201	716	136
1950	141	57	110	103	231	972	147
1951	178	55	157	145	267	1637	184
1952	157	88	142	109	219	2303	155
1953	176	75	76	116	258	4708	190
1954	206	80	112	126	304	5117	219
1955	223	61	149	123	355	5271	236
1956	219	108	129	98	371	5782	232
1957	239	173	120	108	404	6192	252
1958	235	165	114	109	407	5424	249
1959	268	198	112	133	441	7063	287

Year	Exports of goods	Agriculture	Forestry	Wood industry	Paper industry	Metal and engineering industry	Total industry
1960	311	207	138	162	498	7880	333
1961	327	210	168	159	565	6703	348
1962	345	195	108	147	611	10747	376
1963	349	218	64	145	668	10184	372
1964	374	277	44	152	741	9772	425
1965	391	294	28	141	778	12184	451
1966	418	298	28	133	839	13392	482
1967	442	313	25	131	821	16886	509
1968	491	322	23	151	875	20266	570
1969	573	367	30	171	960	24608	666
1970	604	502	34	177	25215	25215	689
1971	586	629	26	177	23347	23347	658
1972	669	633	16	187	29068	29068	758
1973	716	681	16	199	33153	33153	812
1974	716	666	13	157	1103	33737	812
1975	592	707	11	120	766	33569	671
1976	693	1004	16	151	874	38940	778
1977	764	1053	27	166	927	48004	859
1978	822	848	19	202	1057	51864	926
1979	901	954	31	237	1188	56060	1013
1980	979	1068	41	255	1264	55389	1100
1981	1008	1473	53	216	1226	60651	1122
1982	979	1313	22	196	1176	63144	1100
1983	1018	1591	15	196	1277	68129	1144
1984	1117	2103	22	188	1416	75329	1244
1985	1128	1751	22	188	1467	79206	1266
1986	1135	2188	32	191	1492	80591	1266
1987	1150	1697	33	199	1618	83638	1299
1988	1188	1484	23	191	1707	84468	1343
1989	1186	1996	17	173	1745	86130	1332
1990	1219	1676	12	163	1757	93885	1376
1991	1112	1505	10	148	1719	91115	1255
1992	1213	1153	13	158	1808	102193	1376
1993	1441	1633	25	219	1985	119087	1629
1994	1629	1580	45	267	2213	130995	1849

Year	Primary production	Manufacturing	Construction	Trade, banking, transport and communication, ownership of dwellings, private		Total employment
1895	96,4	35,6	82,6	34,1		71,3
1896	98,9	38,9	82,5	35,6		73,6
1897	98,4	42,8	85,9	37,7		74,6
1898	97,8	47,3	78,5	40,2		75,0
1899	96,8	49,8	74,9	41,9		75,0
1900	94,9	50,6	78,3	43,4		74,7
1901	92,9	48,6	76,4	47,0		73,7
1902	92,6	48,0	80,7	47,1		73,7
1903	93,7	50,0	75,6	48,5		74,7
1904	94,4	51,2	76,1	50,0		75,6
1905	95,2	54,3	79,1	51,7		77,1
1906	96,2	56,4	78,8	53,7		78,4
1907	97,5	58,8	77,5	57,6		80,2
1908	98,2	57,8	74,7	59,6		80,7
1909	99,2	57,8	67,5	60,1		80,9
1910	100,2	59,9	64,8	60,8		81,9
1911	101,9	62,4	70,9	61,9		83,8
1912	101,9	65,2	72,0	64,3		84,7
1913	102,1	68,7	70,6	67,2		85,9
1914	99,2	70,0	83,6	67,4		85,4
1915	99,0	69,0	80,0	68,2		85,0
1916	97,1	75,4	81,4	71,7		85,8
1917	96,1	71,1	59,1	71,5		83,0
1918	94,6	56,0	61,1	70,0		81,8
1919	95,5	64,3	61,3	75,9		85,4
1920	97,5	79,4	69,8	84,4		90,5
1921	96,5	81,3	58,5	84,0		89,1
1922	97,1	89,4	81,4	88,8		93,1
1923	98,4	96,0	93,6	93,4		96,7
1924	98,8	92,7	97,9	96,4		97,3
1925	98,7	93,4	92,3	97,6		97,2
1926	100,0	100,0	100,0	100,0		100,0
1927	100,5	107,3	108,0	103,0		102,6
1928	98,5	117,8	135,9	108,4		106,0
1929	95,9	114,5	113,2	109,6		102,9

Year	Primary production	Manufacturing	Construction	Trade, banking, transport and communication, ownership of dwellings, private		Total employment
1930	93,9	102,8	102,6	107,6		99,0
1931	92,2	91,7	95,2	106,2		95,7
1932	93,3	90,0	113,3	103,6		96,7
1933	95,2	96,1	101,7	105,9		98,7
1934	97,1	109,3	119,4	111,3		104,1
1935	96,9	118,1	126,6	115,8		106,7
1936	98,4	125,9	132,5	125,4		110,8
1937	99,6	142,8	134,7	133,1		116,0
1938	97,7	145,7	150,1	140,0		118,2
1939	92,1	135,6	134,8	140,8		112,9
1940	87,6	123,2	120,7	124,8		119,5
1941	88,9	121,5	106,0	125,7		120,4
1942	86,8	120,9	87,1	123,6		118,5
1943	91,0	125,2	75,4	123,3		120,0
1944	92,3	125,9	71,7	121,3		125,6
1945	102,1	146,8	93,7	133,9		118,8
1946	104,1	159,8	116,4	141,8		124,6
1947	99,6	167,1	112,2	149,4		124,2
1948	102,8	171,9	165,7	157,6		131,2
1949	94,9	169,1	193,4	166,4		129,8
1950	92,0	171,5	200,7	175,3		131,1
1951	97,0	183,5	193,6	188,3		138,0
1952	95,7	178,6	200,6	196,3		138,5
1953	90,3	175,4	218,5	195,5		136,0
1954	91,0	187,3	223,3	202,8		140,2
1955	92,4	195,9	216,5	215,0		144,6
1956	90,7	200,4	218,0	222,8		146,1
1957	88,3	196,4	221,3	224,7		144,9
1958	86,9	189,7	238,1	221,2		143,9
1959	85,4	194,5	248,4	229,6		146,4
1960	83,1	209,1	255,4	241,9		150,2
1961	82,8	216,4	252,7	249,5		153,0
1962	78,5	218,2	248,7	256,5		151,8
1963	78,5	214,3	246,7	259,7		152,1
1964	77,8	217,4	251,3	265,8		154,0

14. Total Labour Input 1860-1994, 1860-1960 in Thousands of work-years, 1960-1994 in Millions of hours

Year	Labour Input	Year	Labour Input	Year	Labour Input	Year	Labour Input	Year	Labour Input
1860	576	1890	828	1920	1139	1950	1650	1979	4094
1861	579	1891	826	1921	1121	1951	1736	1980	4169
1862	565	1892	838	1922	1171	1952	1743	1981	4233
1863	561	1893	843	1923	1216	1953	1712	1982	4246
1864	560	1894	865	1924	1224	1954	1764	1983	4220
1865	566	1895	898	1925	1223	1955	1819	1984	4215
1866	562	1896	926	1926	1258	1956	1838	1985	4216
1867	555	1897	939	1927	1291	1957	1823	1986	4150
1868	577	1898	944	1928	1334	1958	1810	1987	4181
1869	594	1899	944	1929	1295	1959	1842	1988	4221
1870	623	1900	940	1930	1246	_1960_	_1891_	1989	4247
1871	647	1901	928	1931	1204	1960	4378	1990	4147
1872	660	1902	928	1932	1217	1961	4458	1991	3869
1873	676	1903	940	1933	1242	1962	4425	1992	3611
1874	683	1904	951	1934	1310	1963	4433	1993	3399
1875	682	1905	970	1935	1342	1964	4488	1994	3395
1876	681	1906	987	1936	1395	1965	4540		
1877	682	1907	1009	1937	1459	1966	4495		
1878	661	1908	1015	1938	1488	1967	4375		
1879	651	1909	1018	1939	1421	1968	4283		
1880	666	1910	1030	1940	1504	1969	4307		
1881	686	1911	1055	1941	1515	1970	4363		
1882	693	1912	1066	1942	1491	1971	4260		
1883	706	1913	1081	1943	1510	1972	4267		
1884	730	1914	1074	1944	1580	1973	4314		
1885	748	1915	1070	1945	1494	1974	4320		
1886	766	1916	1080	1946	1568	_1975_	_4239_		
1887	779	1917	1045	1947	1562	1976	4184		
1888	806	1918	1030	1948	1651	1977	4089		
1889	828	1919	1074	1949	1633	1978	4061		

15. Employment indices, 1860-1994, 1920=100

Year	Primary production	Manufacturing	Construction	Trade, banking, transport and communication, ownership of dwellings, private	Total employment
1860	65,3	15,9	59,2	16,3	45,8
1861	65,1	16,4	60,4	17,0	46,0
1862	62,9	16,8	57,4	18,0	44,9
1863	62,2	17,3	55,1	18,9	44,6
1864	61,7	17,7	56,5	19,3	44,5
1865	61,1	18,8	66,8	19,2	45,0
1866	60,5	18,2	65,6	20,3	44,6
1867	60,7	17,5	57,6	19,9	44,1
1868	62,8	17,2	68,4	19,8	45,8
1869	64,0	17,7	77,3	20,3	47,2
1870	67,3	18,3	81,6	21,2	49,5
1871	70,1	19,3	82,6	21,6	51,4
1872	71,0	21,2	86,4	21,7	52,5
1873	71,9	22,9	91,4	22,3	53,7
1874	71,8	24,0	96,6	22,8	54,2
1875	71,2	24,8	95,4	24,1	54,2
1876	70,7	25,2	94,7	25,4	54,1
1877	71,3	24,1	92,6	25,7	54,2
1878	70,8	22,2	75,4	25,6	52,6
1879	70,2	21,2	69,7	25,6	51,8
1880	71,7	22,7	70,5	25,8	53,0
1881	73,7	23,6	75,2	25,8	54,5
1882	74,5	24,3	73,2	26,4	55,1
1883	75,4	23,9	80,1	27,6	56,1
1884	78,9	24,2	75,7	28,0	58,0
1885	81,5	23,7	79,6	27,2	59,5
1886	83,5	24,1	82,2	27,5	60,8
1887	85,9	25,2	73,9	27,8	61,9
1888	88,6	26,6	75,3	28,9	64,0
1889	89,4	30,1	84,6	30,0	65,8
1890	88,0	32,9	84,9	31,3	65,8
1891	87,9	33,4	78,6	32,2	65,6
1892	88,8	32,0	89,4	32,4	66,6
1893	90,1	31,6	82,5	33,2	67,0
1894	92,6	33,2	82,8	33,8	68,7

Year	Primary production	Secondary production	Services	Total
1910	67,9	17,3	14,8	100,0
1911	67,5	17,8	14,7	100,0
1912	66,7	18,3	15,0	100,0
1913	66,0	18,6	15,4	100,0
1914	64,5	19,9	15,6	100,0
1915	64,6	19,5	15,8	100,0
1916	62,8	20,7	16,5	100,0
1917	64,3	18,9	16,8	100,0
1918	64,2	16,2	19,7	100,0
1919	62,1	17,2	20,7	100,0
1920	59,8	19,6	20,6	100,0
1921	60,1	19,6	20,3	100,0
1922	57,9	21,7	20,4	100,0
1923	56,5	22,8	20,7	100,0
1924	56,4	22,3	21,3	100,0
1925	56,4	22,1	21,5	100,0
1926	55,5	23,1	21,4	100,0
1927	54,4	24,2	21,4	100,0
1928	51,6	26,7	21,7	100,0
1929	51,7	25,6	22,7	100,0
1930	52,6	24,0	23,4	100,0
1931	53,5	22,4	24,2	100,0
1932	53,6	22,9	23,5	100,0
1933	53,5	22,8	23,6	100,0
1934	51,7	24,8	23,4	100,0
1935	50,4	26,1	23,5	100,0
1936	49,3	26,6	24,1	100,0
1937	47,7	28,0	24,3	100,0
1938	45,9	28,7	25,4	100,0
1939	45,3	27,7	27,0	100,0
1940	40,7	23,7	35,6	100,0
1941	41,0	22,6	36,5	100,0
1942	40,7	21,9	37,5	100,0
1943	42,1	21,6	36,3	100,0
1944	40,8	20,6	38,6	100,0
1945	47,7	25,9	26,4	100,0
1946	46,4	27,5	26,1	100,0
1947	44,5	28,4	27,1	100,0
1948	43,5	30,0	26,6	100,0
1949	40,6	31,2	28,2	100,0
1950	39,0	31,6	29,5	100,0
1951	39,0	31,2	29,8	100,0
1952	38,4	30,7	30,9	100,0
1953	36,8	31,7	31,5	100,0
1954	36,0	32,4	31,6	100,0
1955	35,5	32,2	32,4	100,0
1956	34,5	32,4	33,1	100,0
1957	33,8	32,4	33,8	100,0
1958	33,5	32,5	34,0	100,0
1959	32,4	32,9	34,7	100,0

Year	Primary production	Secondary production	Services	Total
1960	34,0	31,4	34,6	100,0
1961	33,3	31,4	35,2	100,0
1962	31,9	31,7	36,5	100,0
1963	31,8	31,1	37,1	100,0
1964	31,1	31,2	37,7	100,0
1965	30,4	31,4	38,2	100,0
1966	29,4	31,5	39,1	100,0
1967	28,8	31,4	39,7	100,0
1968	27,9	31,3	40,8	100,0
1969	26,9	32,1	41,0	100,0
1970	25,9	33,0	41,1	100,0
1971	24,4	33,1	42,5	100,0
1972	22,5	34,3	43,2	100,0
1973	21,0	34,9	44,1	100,0
1974	20,2	35,0	44,7	100,0
1975	19,2	35,3	45,5	100,0
1976	19,2	34,2	46,6	100,0
1977	19,0	33,6	47,4	100,0
1978	18,5	33,1	48,4	100,0
1979	17,7	33,7	48,6	100,0
1980	16,4	34,5	49,1	100,0
1981	16,8	33,7	49,5	100,0
1982	16,5	33,2	50,2	100,0
1983	15,9	33,1	51,1	100,0
1984	15,4	32,8	51,8	100,0
1985	15,0	32,3	52,7	100,0
1986	14,4	31,8	53,8	100,0
1987	13,7	31,4	54,9	100,0
1988	13,4	31,0	55,6	100,0
1989	12,3	31,2	56,5	100,0
1990	11,6	30,9	57,5	100,0
1991	11,5	29,1	59,3	100,0
1992	12,1	27,5	60,4	100,0
1993	12,2	27,0	60,8	100,0
1994	11,9	26,9	61,2	100,0

15 cont.

Year	Primary production	Manufacturing	Construction	Trade, banking, transport and communication, ownership of private dwellings.	Total employment
1965	76,8	219,7	258,5	273,3	155,8
1966	73,6	219,0	254,4	273,8	154,3
1967	70,3	213,3	245,6	269,6	150,1
1968	66,6	212,0	229,7	267,3	147,0
1969	64,5	221,2	233,0	266,7	147,8
1970	62,9	233,3	234,5	270,4	149,7
1971	57,8	232,7	221,2	270,5	146,2
1972	53,4	240,6	231,7	273,5	146,4
1973	50,5	245,4	242,7	280,0	148,1
1974	48,7	248,1	240,5	280,9	148,2
1975	44,9	243,9	238,4	279,6	145,7
1976	44,2	241,0	210,9	277,7	143,8
1977	42,8	229,4	206,8	271,4	140,6
1978	41,5	225,0	199,7	271,8	139,6
1979	39,9	234,1	199,6	276,0	140,7
1980	37,8	243,3	208,4	281,9	143,3
1981	39,3	241,0	206,7	286,8	145,5
1982	38,7	235,2	212,6	289,5	146,0
1983	36,9	230,3	216,1	290,4	145,1
1984	35,8	227,7	214,6	294,3	144,9
1985	35,0	225,0	209,0	298,4	145,0
1986	33,1	216,5	206,7	298,3	142,7
1987	31,6	213,6	209,6	306,9	143,7
1988	31,2	207,3	221,8	313,7	145,1
1989	28,8	203,4	240,2	321,8	146,0
1990	26,5	196,2	233,2	318,3	142,6
1991	24,6	176,1	197,1	297,7	133,0
1992	24,1	159,7	163,4	278,7	124,1
1993	22,9	149,7	145,6	264,0	116,9
1994	22,3	152,7	135,9	266,0	116,7

16. Distribution of employment, 1860–1994, %

Year	Primary production	Secondary production	Services	Total
1860	79,1	13,7	7,2	100,0
1861	78,5	14,0	7,5	100,0
1862	77,9	14,1	8,0	100,0
1863	77,5	14,1	8,4	100,0
1864	76,9	14,4	8,7	100,0
1865	75,3	16,1	8,6	100,0
1866	75,2	15,8	9,0	100,0
1867	76,4	14,7	8,9	100,0
1868	76,1	15,4	8,5	100,0
1869	75,3	16,3	8,5	100,0
1870	75,4	16,2	8,3	100,0
1871	75,7	16,1	8,2	100,0
1872	75,1	16,8	8,1	100,0
1873	74,4	17,5	8,1	100,0
1874	73,5	18,3	8,2	100,0
1875	72,9	18,4	8,6	100,0
1876	72,4	18,5	9,1	100,0
1877	72,9	17,9	9,2	100,0
1878	74,7	15,8	9,4	100,0
1879	75,3	15,1	9,6	100,0
1880	75,2	15,3	9,5	100,0
1881	75,0	15,7	9,3	100,0
1882	75,1	15,5	9,4	100,0
1883	74,5	15,9	9,6	100,0
1884	75,5	15,0	9,5	100,0
1885	76,1	14,9	9,0	100,0
1886	76,1	14,9	9,0	100,0
1887	76,9	14,2	8,9	100,0
1888	76,8	14,1	9,0	100,0
1889	75,4	15,6	9,1	100,0
1890	74,2	16,3	9,5	100,0
1891	74,3	15,9	9,8	100,0
1892	74,0	16,3	9,7	100,0
1893	74,7	15,5	9,8	100,0
1894	74,7	15,5	9,8	100,0
1895	75,0	15,5	9,6	100,0
1896	74,6	15,8	9,7	100,0
1897	73,2	16,7	10,0	100,0
1898	72,3	17,1	10,6	100,0
1899	71,6	17,4	11,0	100,0
1900	70,5	17,9	11,6	100,0
1901	69,9	17,5	12,6	100,0
1902	69,7	17,7	12,6	100,0
1903	69,6	17,5	12,8	100,0
1904	69,3	17,6	13,1	100,0
1905	68,5	18,2	13,3	100,0
1906	68,1	18,3	13,6	100,0
1907	67,4	18,3	14,2	100,0
1908	67,5	17,8	14,7	100,0
1909	68,0	17,2	14,8	100,0

17. Selected Price Indices, 1860-1994, 1926=100

Year	Cost-of-living index	Wholesale-price index	Index of buildings costs	Gross domestic product price index
1860	6,6	8,0	5,8	6,6
1861	7,2	8,7	5,8	7,1
1862	8,5	9,6	5,2	7,2
1863	7,9	8,8	5,1	7,0
1864	7,5	8,7	5,4	6,8
1865	7,6	8,3	5,9	7,2
1866	7,1	7,3	5,7	6,7
1867	7,6	7,6	5,2	6,4
1868	7,5	7,7	5,0	6,6
1869	6,8	7,1	5,2	6,6
1870	6,5	7,0	5,2	6,6
1871	6,9	7,3	5,3	6,9
1872	7,4	7,8	5,4	7,1
1873	7,4	8,0	5,7	7,4
1874	8,0	9,1	6,0	7,9
1875	8,0	9,2	5,8	7,7
1876	8,0	9,5	5,9	7,8
1877	7,7	9,1	6,0	7,7
1878	7,0	7,6	5,6	6,8
1879	6,5	6,8	5,2	6,4
1880	7,2	8,0	5,3	7,1
1881	7,6	8,5	5,5	7,3
1882	7,1	7,8	5,3	7,1
1883	6,9	7,6	5,5	6,9
1884	6,8	7,5	4,9	6,8
1885	6,4	6,9	4,9	6,5
1886	5,8	6,5	4,9	6,1
1887	5,6	6,3	4,8	5,9
1888	5,7	6,3	4,8	6,0
1889	6,1	6,9	5,8	6,4
1890	6,3	6,9	5,3	6,4
1891	7,1	7,4	5,2	6,9
1892	7,5	7,1	5,1	6,9
1893	7,1	6,6	5,1	6,7
1894	6,4	6,6	5,0	6,4
1895	6,2	6,6	5,2	6,3
1896	6,3	6,7	5,4	6,4
1897	6,6	6,9	5,8	6,8
1898	6,8	7,2	6,0	7,2
1899	7,1	7,5	6,5	7,6
1900	7,2	7,8	6,5	7,8
1901	7,1	7,7	6,2	7,6
1902	7,1	7,7	6,1	7,6
1903	7,1	7,5	6,7	7,8
1904	7,1	7,5	6,2	7,7
1905	7,1	7,4	6,7	8,0
1906	7,4	7,8	6,8	8,2
1907	7,6	8,4	6,9	8,4
1908	8,0	8,2	6,3	8,4
1909	7,9	8,4	6,2	8,3

17 cont.

Year	Cost-of-living index	Wholesale-price index	Index of buildings costs	Gross domestic product price index
1910	7,9	8,6	6,1	8,4
1911	8,2	8,7	6,7	8,7
1912	8,4	9,0	6,8	8,9
1913	8,4	9,0	6,9	8,8
1914	8,4	9,9	7,0	9,1
1915	10,1	12,6	8,2	10,5
1916	13,4	18,9	13,4	14,6
1917	26,1	30,6	23,4	26,9
1918	89,1	53,2	33,6	44,5
1919	79,0	66,7	44,3	58,6
1920	79,0	108,1	68,4	83,4
1921	98,3	116,2	68,1	95,1
1922	95,8	111,7	79,8	94,6
1923	96,6	100,9	97,2	94,5
1924	98,3	100,9	98,6	97,6
1925	102,5	103,6	98,3	99,6
1926	100,0	100,0	100,0	100,0
1927	101,7	100,9	103,0	103,9
1928	104,2	101,8	107,7	104,9
1929	103,4	97,3	107,4	100,6
1930	95,0	89,2	102,0	92,2
1931	87,4	83,8	82,8	83,9
1932	86,6	90,1	76,3	84,9
1933	84,0	89,2	74,6	85,4
1934	83,2	89,2	83,0	86,9
1935	84,0	90,1	87,9	87,7
1936	84,0	92,8	93,9	90,5
1937	88,2	109,9	116,4	100,9
1938	90,8	102,7	119,7	103,4
1939	92,4	108,1	128,6	105,1
1940	110	145	164	127
1941	130	177	196	152
1942	154	219	236	188
1943	174	249	249	216
1944	184	275	262	243
1945	258	395	473	396
1946	412	618	734	551
1947	534	743	886	732
1948	719	982	1416	935
1949	732	989	1428	954
1950	834	1151	1697	1133
1951	971	1605	2314	1522
1952	1011	1620	2501	1528
1953	1024	1565	2440	1494
1954	1008	1542	2402	1523
1955	973	1512	2434	1605
1956	1087	1605	2580	1732
1957	1233	1738	2732	1810
1958	1345	1882	2698	1948
1959	1366	1894	2762	1981

Year	Cost-of-living index	Wholesale-price index	Index of buildings costs	Gross domestic product price index
1960	1410	1964	2836	2040
1961	1435	1979	2952	2149
1962	1499	2013	3060	2234
1963	1572	2078	3255	2349
1964	1735	2241	3463	2518
1965	1818	2334	3675	2644
1966	1890	2382	3761	2769
1967	1997	2457	3982	2973
1968	2164	2723	4385	3331
1969	2213	2817	4560	3470
1970	2274	2941	4818	3603
1971	2421	3090	5180	3878
1972	2594	3347	5609	4203
1973	2898	3936	6550	4794
1974	3403	4896	8129	5872
1975	4009	5558	9031	6723
1976	4582	6186	9862	7633
1977	5164	6841	11149	8392
1978	5554	7190	11761	9098
1979	5959	7830	12932	9897
1980	6648	9098	14669	10862
1981	7448	10326	16151	12072
1982	8140	11101	17266	13145
1983	8835	11756	18880	14272
1984	9453	12461	20039	15537
1985	10015	13087	21168	16364
1986	10305	12747	22092	17111
1987	10736	12917	23090	17913
1988	11277	13375	24629	19171
1989	12021	14042	26545	20342
1990	12749	14500	28471	21527
1991	13297	14544	29098	22060
1992	13693	14936	28585	22216
1993	13986	15632	28671	22745
1994	14139	15878	29098	22994

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