DUTCH GNP AND ITS COMPONENTS, 1800-1913

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TABLE OF CONTENTS

LIST OF TABLES iv
LIST OF GRAPHS vi
LIST OF TABLES IN APPENDICES viii
PREFACE xii

Chapter 1 **INTRODUCTION** **1**

Chapter 2 **THE SYSTEM OF HISTORICAL NATIONAL ACCOUNTS** **4**

Chapter 3 **POPULATION, EMPLOYMENT, AND LABOUR INPUT** **12**
1. *Population* 12
2. *Employment* 12
a. Female Labour in Agriculture 13
b. Domestic Servants 17
c. Total Employment 19
3. *Labour Input* 20

Chapter 4 **PRODUCT** **25**
1. *Agriculture* 25
a. Agricultural Output 1850-1913 25
b. Arable Output 1812-1851 26
c. Livestock Production 1807-1850 32
2. *Fisheries* 34
3. *Mining* 35
a. Coal Mining 35
b. Peat Extraction 35
4. *Industry* 37
a. Ceramics and Glass, Diamond Cutting, Printing, and Chemicals 38
b. Construction, Metals, Engineering, and Shipbuilding 39
c. Textiles and Clothing 40
d. Foodstuffs 42
e. Leather, Woodworking, and Paper 45

5. *Services* 46

Chapter 5 **INCOME** **51**
1. *Wage Income* 51
2. *Income from Capital and Profits* 56

Chapter 6 **EXPENDITURE** **58**
1. *Private Consumer Expenditure* 58
2. *Private Investment* 63
a. Buildings 65
b. Infrastructure 66
c. Machinery and Transport Equipment 66
3. *Public Consumption and Investment* 67
4. *Changes in Inventories and Work in Progress* 69
5. *Depreciation* 70

Chapter 7 **BALANCE OF PAYMENTS** **71**
1. *Imports and Exports of Merchandise* 71
2. *Imports and Exports of Services* 72
a. Merchant Shipping 73
b. International River Shipping 74
c. Port Activities 75
d. Banking and Insurance 76
3. *Net Primary Income from Abroad* 77
a. Public Incomes 78
b. Private Incomes 82
4. *The Aggregate Balance of Payments* 87

Chapter 8 **INDIRECT TAXES AND SUBSIDIES** **89**

Chapter 9 **DEFLATION** **92**

Chapter 10 **RELIABILITY OF THE ESTIMATES** **97**

APPENDICES

Appendix A **POPULATION** 109
Appendix B **EMPLOYMENT** 112
Appendix C **LABOUR INPUT** 115
Appendix D **OUTPUT** 121
Appendix E **EXPENDITURE** 160
Appendix F **INCOME** 172
Appendix G **INDIRECT TAXES AND SUBSIDIES** 175
Appendix H **BALANCE OF PAYMENTS** 180
Appendix I **SUMMARY** 216
Appendix J **RELIABILITY OF THE ESTIMATES** 237

REFERENCES 239

LIST OF TABLES

Table 2.1 The Terms of Expression for Product, Income and Expenditure

Table 3.1 The Calculation of Female Employment in Agriculture 1889-1909

Table 3.2 Estimates of the Total Number of Women Employed in Agriculture, 1849-1909

Table 3.3 Adjustments to the Number of Domestic Servants in 1849 and 1859 by Province

Table 3.4 The Structure of Employment, 1807-1909

Table 4.1 Regression Equations for the Relationship Between National Yields and Yields in Groningen, Zeeland, and The Veluwe Region by Product, 1851-1870

Table 4.2 Regression Equations for the Relationship Between Sown Acreage in Groningen and in the Entire Netherlands by Product, 1851-1870

Table 4.3 Coefficients of Variation of the Estimated Yields and Amounts of Sown Hectares per Product, 1817/50 And 1851/70

Table 4.4 A Comparison Between Yields and Sown Acreage Estimated for 1812/13 and Calculated with Backward Projection For 1817

Table 4.5 Value Added by Economic Branch, 1807, 1850 and 1913 (millions of guilders at current prices; percentage of GDP)

Table 6.1 The Composition of Private Consumer Expenditure at Current Prices, 1807-1913 (%)

Table 7.1 The Share of Belgium in the Revenues and Expenditure of the Central Government of the United Netherlands, the Value of the Net Transfers from Belgium to the Netherlands as well as Their Share in Dutch GDP, 1816-1830

Table 7.2 Benchmark Estimates of the Value of the National Wealth and its Ratio to Inheritance Tax Revenues, 1807-1908/12

Table 7.3 The Composition of the Current Account of the Balance of Payments of the Netherlands, 1806/07-1911/13 (millions of guilders)

Table 9.1 Paasche Deflators for Gross Domestic Product Using Fixed Weights, 1807-1913 (1913=100)

Table 9.2 Comparison between Paasche, Laspeyres and Fisher Price Indices for GDP, 1807-1913 (1913-100)

Table 10.1 Share of Identical Components in Gross Domestic Product, Income and Expenditure at Current Prices, 1807, 1850 and 1913

Table 10.2 Difference between the Estimates of Gross Domestic Product, Income and Expenditure at Current and Constant Prices, 1807-1913 (%)

Table 10.3 Correlations between Gross Domestic Product, Income and Expenditure at Current Prices, 1815-1913

Table 10.4 Growth Rates of Gross Domestic Product, Income and Expenditure at Current and Constant Prices, 1807-1913 (%)

Table 10.5 Aggregate Reliability of the Dutch Historical National Accounts

LIST OF GRAPHS

Graph 3.1 Unemployment, 1800-1913 (%)
Graph 3.2 Labour Input by Sector, 1800-1913 (millions of man-hours)

Graph 4.1 Input-Output Ratios in Agriculture by Type of Input, 1807-1913 (%)
Graph 4.2 The Share of Coal in the Output Value of Mining, 1802-1913 (%)
Graph 4.3 Ratio Between the Inputs and Output of Cotton Textile Manufacturing, 1805-1913 (inputs as a percentage of output; %)

Graph 5.1 Nominal and Real Industrial Daily Wage, 1800-1913 (guilders per day)
Graph 5.2 National Wealth of the Netherlands, 1807-1913 (thousand millions of guilders)

Graph 6.1 Real Per Capita Private Consumer Expenditure, 1807-1913 (1913 guilders)
Graph 6.2 Gross Fixed Capital Formation by Type of Asset, 1800-1913

Graph 7.1 Net Merchandise Exports, 1802-1913 (current prices; millions of guilders)
Graph 7.2 Net Service Exports by Component, 1800-1913 (current prices; millions of guilders)
Graph 7.3 Share of Foreign Assets in Dutch National Wealth, 1806-1913 (%)
Graph 7.4 Primary Incomes from Abroad by Source and Recipient, 1807-1913 (current prices; millions of guilders)

Graph 8.1 Revenues of Indirect Taxes, 1806-1913 (current prices; millions of guilders)

Graph 9.1 Deflators for Gross Domestic Product and Expenditure, 1807-1913 (1913=100)

Graph 10.1 Gross Domestic Product, Income and Expenditure Per Capita at Current Prices, 1807-1913 (guilders)
Graph 10.2 Gross Domestic Product, Income and Expenditure Per Capita at Constant 1913 Prices, 1807-1913 (guilders)
Graph 10.3 Difference Between GDP and GDE as a Percentage of GDP, 1815-1913 (%)
Graph 10.4 Difference Between GDP and GDI as a Percentage of GDP, 1815-1913 (%)
Graph 10.5 Difference Between GDI and GDE as a Percentage of GDE, 1815-1913 (%)

LIST OF TABLES IN THE APPENDICES

Table A.1 Population Size and Vital Demographic Rates, 1800-1913

Table B.1 Male, Female and Total Employment by Sector and Branch, 1807 and 1849

Table B.2 Male, Female and Total Employment by Sector and Branch, 1859 and 1889

Table B.3 Male, Female and Total Employment by Sector and Branch, 1899 and 1909

Table C.1 Annual Series of Labour Input, 1800-1913: Labour Force and Input in Man-Days

Table C.2 Annual Series of Labour Input, 1800-1913: Adjusted Input in Man-Hours

Table D.1A The Value of Output, Inputs, and Value Added in Agriculture, 1807-1913 (millions of guilders, current prices)

Table D.1B Agricultural Price Indices and Real Value Added, 1807-1913

Table D.1C Value Added of the Fisheries, 1807-1913

Table D.2A Industrial Value Added by Branch, 1807-1913: Mining, Ceramics, Diamond Cutting, and Paper (millions of guilders, current prices; price index 1913=100)

Table D.2B Industrial Value Added by Branch, 1807-1913: Printing, Woodworking, Food Processing, and Textiles (millions of guilders, current prices; price index 1913=100)

Table D.2C Industrial Value Added by Branch, 1807-1913: Clothing, Leather, Chemicals, and Metal (millions of guilders, current prices; price index 1913=100)

Table D.2D Industrial Value Added by Branch, 1807-1913: Shipbuilding, Utilities, Construction, and Total Industry (millions of guilders, current prices; price index 1913=100)

Table D.3A Value Added in Services by Branch, 1807-1913: Trade and International Transport (millions of guilders, current prices; price index 1913=100)

Table D.3B Value Added in Services by Branch, 1807-1913: Domestic Transport and Communication (millions of guilders, current prices; price index 1913=100)
Table D.3C Value Added in Services by Branch, 1807-1913: Finance, Government, and Domestic Servants (millions of guilders, current prices; price index 1913=100)
Table D.3D Value Added in Services by Branch, 1807-1913: Education, Catering, Housing, and Remaining Services (millions of guilders, current prices; price index 1913=100)
Table D.3E Total Value Added in Services, 1807-1913
Table D.4 Value Added Per Worker and Per Man-Hour at Constant 1913 Prices, 1807-1913 (guilders)

Table E.1 Consumer Expenditure, 1800-1913
Table E.2 Gross Fixed Capital Formation by Type of Asset, 1800-1913
Table E.3 Public Consumption and Investment, 1800-1913 (millions of guilders at current prices)
Table E.4 Changes in Stocks, Work in Progress, and Depreciation, 1800-1913

Table F.1 Gross National Income by Component, 1807-1913 (millions of guilders, current prices)

Table G.1 The Revenues of Indirect Taxes Levied by Local and Central Government, 1806-1913 (millions of guilders, current prices)
Table G.2 Central Government Subsidies, 1825-1868 (millions of guilders)

Table H.1 Imports, Exports, and Net Merchandise Exports, 1802-1913 (millions of guilders at current prices)
Table H.2 Ratios Applied in the Calculation of the Imports and Exports of Port Services, 1800-1913
Table H.3 Dutch Merchant Shipping Between Foreign Ports, 1800-1913
Table H.4 Imports of Merchant Shipping, 1800-1913
Table H.5 Exports of Merchant Shipping, 1800-1913
Table H.6 Imports of International River Shipping, 1800-1913
Table H.7 Exports of International River Shipping, 1800-1913
Table H.8 Imports and Exports of Financial Services, 1802-1913 (millions of guilders at current prices)

Table H.9 Summary of Net Service Exports (millions of guilders at current prices)
Table H.10 The Estimated Amount of National Wealth, 1806-1913
Table H.11 Estimated Primary Income Paid to Foreign Investors, 1870-1921 (millions of guilders at current prices)
Table H.12 The Share of Belgium in the Revenues and Expenditure of the Central Government of the United Netherlands, the Value of the Net Transfers from Belgium to the Netherlands as well as Their Share in Dutch GDP, 1816-1830
Table H.13 Estimates of Colonial Remittances from the East Indies (thousands of guilders at current prices)
Table H.14 Net Primary Income by Origin and Receiver, 1806-1913 (millions of guilders at current prices)

Table I.1 Deflators for Expenditure and Product, 1807-1913 (1913=100)
Table I.2 Nominal Domestic and National Product, Gross and Net, at Market Prices and Factor Costs, 1807-1913 (millions of guilders at current prices)
Table I.3 Nominal Domestic and National Income, Gross and Net, at Market Prices and Factor Costs, 1807-1913 (millions of guilders at current prices)
Table I.4 Nominal Domestic and National Expenditure, Gross and Net, at Market Prices and Factor Costs, 1807-1913 (millions of guilders at current prices)
Table I.5 Nominal and Real Gross Domestic Product and Gross National Product Per Capita, 1807-1913
Table I.6 Nominal and Real Gross Domestic Expenditure and Gross National Expenditure Per Capita, 1807-1913
Table I.7 Nominal and Real Gross Domestic Income and Gross National Income Per Capita, 1807-1913

Table J.1 Classification of Industries by Reliability
Table J.2 Classification of Income Components by Reliability
Table J.3 Classification of Items of Expenditure by Reliability

PREFACE

Measurement is just the first step towards a comprehensive analysis of economic development. And yet, the construction of reliable historical estimates of macroeconomic variables requires special skills and extraordinary effort. We have once estimated that it would take an individual researcher at least half a century to repeat what the project 'Reconstruction of the National Accounts of the Netherlands' has done in only eight years. This working paper should therefore be considered the collective achievement of all project members. We would like to thank Bart van Ark, Gert den Bakker, Ronald van der Bie, Ary Burger, Alain Callewaert, Adrian Clemens, Rainer Fremdling, Peter Groote, Michael Jansen, Joost Jonker, Merijn Knibbe, Angus Maddison, C.A. Oomens, Arthur van Riel, Wybren Verstegen, and René van der Voort for their invaluable contribution to the project. Gert Pons and Ithar Gielisse supplied us with data on the output of Dutch fisheries, while Ben Gales gave us his research material on coal mining. We owe a special word of gratitude to Ronald Albers and Annelies Vermaas, who promptly provided us with a complete set of their data and a detailed description of their work on nineteenth-century investments (Ronald) and wages (Annelies).

Earlier versions of a number of technical explanations were previously published in the *Scandinavian Economic History Review* (43:1, 1995, 53-76), *Economic and Social History in the Netherlands* (7, 1995, 8-40), *Research Memorandum nr. 1* (N.W. Posthumus Institute; Utrecht, 1997), and *Economisch- en Sociaal-Historisch Jaarboek* 62 (1999) 51-110. This project would have been impossible without the generous financial support of the *Nederlandse Organisatie voor Wetenschappelijk Onderzoek*.

dedicated to Angus Maddison

Chapter 1

INTRODUCTION

In 1983 Richard Griffiths and Jan de Meere published an influential article entitled *The growth of the Dutch economy in the nineteenth century: back to basics?* in which they denounced the available national income estimates for the Netherlands in the period before 1920.[1] They revealed the dubious nature of the assumptions and data that were used in the calculations. The authors concluded that 'the current national income estimates can tell us absolutely nothing about the timing of Dutch economic growth in the nineteenth century' and 'that we have to go right back to basics'. Griffiths and De Meere's judgement of the state of quantitative economic history in the Netherlands is especially devastating because the nineteenth-century development of the Dutch economy and its slow industrialization had been the main focus of research since 1945. Yet, it cleared the ground for a gradual reorientation of economic historiography.

In a number of earlier publications Griffiths and De Meere had already demonstrated that there was a host of quantitative sources to make a detailed study of the nineteenth century. Their books on economic growth and industrialization –published in 1979 and 1982– provided new information about the development of the Dutch economy during the first half of the nineteenth century.[2] Despite their initial aim to apply the concepts of national accounting and to construct time series relating to the entire economy, the data which they presented remained fairly selective. They overemphasized the development of the (well-documented) growth industries, without paying due attention to stagnation and decline in other parts of the economy.

Van Zanden was the first to apply the methodology of growth accounting to the period prior to 1921. In 1988 he published an article in

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[1] Griffiths and De Meere, 'The growth of the Dutch economy'.
[2] Griffiths, *Industrial retardation*. De Meere, *Economische groei*.

which he presented benchmark estimates of GDP. His paper formed the starting point of new research into the development of the Dutch economy in the nineteenth century. In 1990 the Dutch Science Foundation (NWO) granted Van Zanden a subsidy for the programme '*Reconstruction National Accounts of the Netherlands and the Analysis of the Development of the Dutch Economy in the Period 1800-1940*'. The project was complemented by two research projects. In 1988 the Central Bureau of Statistics published revised national income estimates for the interwar period.[3] Its research became embedded in the larger NWO project. And at the University of Groningen Fremdling set up a project on the development of capital formation in the nineteenth century. His research group worked in close cooperation with the NWO project.

Since the early 1990s the *National Accounts* programme has resulted in a large number of articles and dissertations which have resulted in a deeper understanding of the dynamics of long-term economic growth. Since most of the work was done within a national accounting framework, it was possible to integrate the results and give a detailed account of economic growth in the Netherlands in the 'long' nineteenth century. The various estimates were consolidated by Jan-Pieter Smits, the coordinator of the national accounts project. Furthermore, Edwin Horlings made additional estimates for parts of the national accounts that were not covered by other research (balance of payments, labour input and government finances in the period before 1850).

The calculations of product were the starting point of the project. The work was initially focussed on estimating value added in agriculture, industry and services, which involved extensive research into the movement of output, inputs and prices in the various sectors of the economy. The work on capital formation has been of equal importance. Other categories of expenditure were estimated either directly from primary source material (e.g. government expenditure) or indirectly by combining data on output and foreign trade (private consumer

[3] CBS, *Macro-economische ontwikkelingen*.

expenditure). The income side of the accounting system was the object of two separate projects, one on wages, salaries and income inequality and another on income from capital.

This monography presents the final estimates of the project '*Reconstruction National Accounts*'. The methods of estimation of the various components of product, income, and expenditure will be explained in a fair amount of detail. Only when data were taken directly from previous studies –such as doctoral theses– the explanation will be more concise.

Chapter 2

THE SYSTEM OF HISTORICAL NATIONAL ACCOUNTS

The system of national accounts (SNA) is a closed system of macroeconomic bookkeeping. It measures the sum of economic activities by means of three complementary approaches: product, income, and expenditure. The product or value added of agriculture, industry, and services is equal to the value of gross output minus intermediate purchases from other sectors. This avoids the double-counting of production and includes only that which each sector adds to national income. The value added that is generated is used to pay the factors of production: wages for labour, interest for capital, rent for land, and profits for entrepreneurs. Income is then used to invest in capital goods, to buy consumer goods and services, and to finance government expenditure. National product, income and expenditure can be expressed in different terms: gross or net, national or domestic, at market prices or factor costs (table 2.1). The SNA thus describes the cyclical functioning of the economy: from production to income to expenditure and back to production. National income is by definition equal in each of the three approaches.

Table 2.1
The Terms of Expression for Product, Income and Expenditure

gross	*national*	*market prices*
minus depreciation	minus net primary income from abroad	minus indirect taxes plus subsidies
net	*domestic*	*factor costs*

National income is by no means an objective and generally accepted concept. The SNA has clear limitations that have resulted in severe objections to its application in historical research. As this regards four subjects prevail: the emphasis on the market sector, the degree of national

economic integration, national income as an indicator for well-being, and the apparent lack of statistical information.

National accounts only measure monetary transactions and fail to capture the 'traditional' non-market sector

The definitions of the SNA only consider activities as part of national income when they are market-oriented. The system is, however, not entirely consistent. Some examples of non-market activities that are considered as part of national income are the production of agricultural goods for consumption in the agrarian household, the production of capital goods for use within the firm, and the services of residential buildings occupied by their owner. The services of government and semi-public organizations that do not involve the market are nonetheless included in the estimates. For every activity that is considered as part of the national economy a value must be calculated even when the good or service has no actual market price. Many of the apparent exceptions originate in attempts to avoid sudden unrealistics breaks in historical time series, such as the shift from renting to ownership of houses, from payment in kind to wage payment, and from home production to retail purchases. The outcome is accepted as given, but the decision which activities generate value and must therefore be included in national income is to some extent arbitrary.[4]

Household labour is a popular example of an economically useful activity that is nonetheless excluded from national income. Given the SNA's preference for consistency there is every reason to include it: the substitution of household labour by family members for the work of domestic servants constitutes a conceptual break in the national accounts. The omission of household labour is, however, understandable given the absence of statistical data on working hours and 'wage' levels. In addition, it is very difficult to adjust each of the three approaches of the SNA to the

[4] Harris, 'Critiques', 337. Simon Kuznets, *National Income and its composition, 1919-1938* (New York, 1941) 3-60.

inclusion of household labour, especially on the expenditure side (households would presumably consume household labour, value added would equal an implicit income). There is nonetheless general consensus that the national accounts must be revised where it concerns household labour.[5]

One of the essential changes of the past centuries concerns the increasing role of the market in economic life and the diminishing importance of non-market activities such as barter trade and home production. If the calculations are strictly limited to production, income and expenditure in the market sector then the degree of economic growth will be overestimated. As the estimates are extended further back in time the national accounts will cover an ever smaller proportion of total production. Shifts of producers and consumers from the non-market sector to the market sector will be registered as new activities and add to economic growth, whereas this was really a case of substitution within the economy. Furthermore, since average productivity in the market sector is presumably higher than in the traditional sector of the economy the national accounts will overstate productivity growth.

The objections are to some extent met by the actual practice of constructing the national accounts. It is rarely if ever possible to distinguish market and non-market activities (e.g. in employment figures). Many components are calculated indirectly on the basis of the total availability of crude materials and semi-manufactures, on employment and average wages, etcetera. Rather than to isolate market-oriented activities historical national accounts assign the same price and productivity to non-market activities. The historical national accounts that are presented here count all production, income and consumption both inside and outside the market sector.

The provision of public services presents a similar problem in that they have neither a clearly defined volume of output nor a market price.

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[5] Robert Eisner, 'Extended accounts for national income and product', *Journal of Economic Literature* 26 (1988) 1611-1684.

Their contribution to national income is defined as the sum of wages and salaries, but the productivity of such branches as government, education, and medical services cannot be determined.

The problem of tertiary productivity cannot easily be solved other than by making bold assumptions. It is generally assumed that productivity in the public services remained constant. This obviously has significant downward effects on the growth rate of present-day western industrialized nations that have a large quarternary sector.[6] Other than the development of alternative productivity indicators –such as the number of patients per doctor in health care or the number of pupils per teacher in education– the only workable solution thusfar has been to introduce new assumptions, for example by setting the productivity growth of the public services to one percent per annum. In our calculations we have refrained from making such assumptions, because any percentage other than zero is essentially arbitrary.

National income can only be calculated for integrated national economies

Some historians state that national income cannot or should not be calculated for an economy when it is neither politically nor economically fully integrated.[7] In a 'fragmented' economy the national context that is superimposed by the SNA is meaningless and 'national income' is in principle non-existent.

On the other hand, the definitions of the SNA make no presumptions on the nature of the region for which national income is calculated. It is no more or less than a system of bookkeeping. The boundaries of the economy are determined by the economist or historian, who is generally guided by hypotheses on economic growth and development, by the need for comparability with international and present-day estimates, and by the

[6] Elfring, *Service employment*, 36-37.
[7] Van der Woude, *Het Noorderkwartier*, 606-609.

availability of statistical information. The choice for nations rather than regions is only natural.

However, this is not to say that the analysis should inevitably remain at the national level. Especially in the early modern period when the degree of economic integration was lower and economies were characterized by stark regional contrasts national income will have been a fairly meaningless concept. A regional breakdown of income estimates and a regional analysis of long-term developments is therefore preferable.

National income is not a good indicator for well-being

Real per capita GDP is generally accepted not only as a measure for economic performance but also as an indicator for the standard of living of nations. However, growth does not necessarily equal a higher level of well-being. The shortcomings of the national accounts concern both measurement problems and their restriction to market activities.

The nature of activities and their prices as defined by the SNA does not always match conceptions of the quality of life. Activities such as military production and the trade in currencies may not seem to contribute to the quality of life, but the income they generate does trickle down into the general economy. It is therefore not really useful to judge individual activities on their social merits. The problem actually concerns a conflict between the formal measurement of national income and moral or ideological questions about the social value of activities.

The costs of urbanization provide an example of the dilemmas that such questions can create. Urban growth is a key component of Kuznets' theory of modern economic growth, especially since it provides additional economies of scale.[8] Yet, the increase in urban population also entailed an increase in the costs of maintaining the quality of life (e.g. such public services as police and garbage collection). This urban expenditure can be

[8] S.W. Kuznets, *Modern economic growth. Rate, structure and spread* (New Haven/London, 1966).

considered an input in modern economic growth. Instead, the SNA includes the value added of the related services in national product.

The environment presents a similar case. Growth goes at the expense of environmental damage and the depletion of natural resources. However, the national accounts do not adjust for such effects since there is no market for and, hence, no price attached to pollution and resource depletion. On the other hand, the value added of specialized environmental firms is included.[9]

The benefits of growth are not necessarily distributed evenly among the population. According to Kuznets income inequality increased during the early stages of modern economic growth. National income as such measures well-being at the highest level of aggregation and ignores its distribution with the possible exception of the development of factor shares in national income.

Finally, national income does not measure the non-monetary aspects of the quality of life, such as life expectancy, health, political and economic freedom, and the quality of education. This limitation has prompted researchers to develop alternative standards of measurement. The Human Development Index of the UN was developed as a way to combine GDP with data on life expectancy and schooling to internationally compare levels of the standard of living in a wider definition.[10] The Index of Sustainable Economic Welfare adjusts GDP for the negative effects of growth such as environmental damage and resource depletion and for the positive contributions that are not captured by the definitions of the SNA, most notably the value of household labour.[11]

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[9] Smits, 'Economische groei en de aantasting van natuurlijke hulpbronnen'.
[10] *Cf* UN, *Human Development Report* 1999.
[11] Daly and Cobb, *For the common good*, 401-455.

There is insufficient statistical information to construct the national accounts for the nineteenth century

The traditional view on the possibility of calculating national income for the nineteenth century was that there was simply not enough statistical information to calculate something as complex and elaborate as a system of national accounts.[12] There is indeed much less quantitative source material than we have today. Moveover, statistical coverage of the nineteenth-century economy is skewed towards specific branches of the economy, such as foreign trade and shipping, railway transport, and agriculture. Less 'dynamic' or 'inspiring' industries –e.g. domestic trade, inland navigation, or ceramics manufacturing– received much less attention from public and other statistical institutions.

Yet, given the statistical shortcomings of the nineteenth century there is every reason to use the concept of national accounting. The SNA has a considerable advantage in the construction of historical growth estimates. Every component of the economy has a place and its contribution is calculated according to identical definitions. The estimates consequently cannot be biased towards an individual branch unless it truly contributes significantly more than other branches. And the SNA approaches the economy from three vantage points that yield an identical outcome –product, income and expenditure– which makes it possible to crosscheck the results and to supplement missing data by referring to one of the other two approaches.[13] Gerschenkron was right to state that historical growth estimates made outside the framework of the national accounts are nothing more than unverifiable empirical generalizations.[14]

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[12] An extreme view is that modern concepts cannot be used for period when they had not yet been conceived. This argument is invalid, since similar concepts as well as theories are constructions imposed on the past as observed in contemporary source material, quantitative and otherwise.

[13] For example, there is no information on the actual output or market price of education or medical services. Value added was therefore calculated from the income side of the national accounts.

[14] Gerschenkron, *Economic Backwardness*, 436-444.

A further advantage is the comparability of the SNA through time and space. All historical and contemporary systems of national accounts are based on the same set of definitions as outlined by the United Nations.[15] Our estimates of national income, product and expenditure closely follow the methods and definitions that were used by the Central Bureau of Statistics for the Interbellum period and that are in turn based on the UN's System of National Accounts of 1993.

The SNA has undeniable advantages for the study of long-term economic development. They provide a complete picture of the economy without disproportionate emphasis on individual branches or components. This picture can be constructed independently from three different approaches – product, income and expenditure– that produce an identical result, which allows researchers to crosscheck their estimates and to make an integrated analysis of economic growth and development. The concept does have its shortcomings –both in measurement and in interpretation– but these can easily be solved by extending the analysis to include welfare effects, regional differences, market integration, and other such subjects. There is therefore every reason to apply the system of national accounts to the economic history of the Netherlands.

[15] UN, *System of National Accounts 1993* (Brussel/Luxemburg, 1993).

Chapter 3

POPULATION, EMPLOYMENT AND LABOUR INPUT

3.1 Population

The official population data for the nineteenth century suffer from a number of shortcomings.[16] Especially the inadequate registration of migration and –to a lesser degree– changes in national and provincial borders undermine the consistency of the official figures.[17] The nineteenth-century population figures were adjusted on basis of revised census data and annual series of births and deaths published by C.A. Oomens in 1989.[18] First, Oomens data were used to calculate the total natural increase between two successive census years. This increase was added to the number of inhabitants in the first year. The difference between this figure and the population size in the second census year was ascribed to net migration and divided equally among the years between the censuses. The result is a consistent series of population size in the Netherlands between 1796 and 1913.

3.2 Employment

Occupational censuses are among the main sources of Dutch economic historiography, especially since they cover the entire range of economic

[16] The series published by E.W. Hofstee (Hofstee, *De demografische ontwikkeling*) show the inconsistency of population data in the first half of the nineteenth century. Between 1829 and 1831 the population of both the Netherlands and Belgium increased very rapidly (4.5 and 2.7 percent respectively). This development cannot have been the result of migration or similar demographic influences.

[17] Cf Oomens, 'De loop der bevolking', 12. Oomens has adjusted the census data for border changes.

[18] This method is described in detail in Horlings, *The economic development*, appendix I. Oomens data were only adjusted for the number of inhabitants in Amsterdam in 1815.

activities and provide a regional perspective.[19] During the second half of the nineteenth century five censuses were held, namely in 1849, 1859, 1889, 1899 and 1909. The population censuses of 1869 and 1879 did not involve occupations.

As is usual with nineteenth-century statistics the main shortcoming of the censuses is their lack of consistency. The individual censuses cannot easily be compared. Oomens and Den Bakker have risen to the challenge.[20] They have tried to make comparable all the Dutch occupational censuses that were held between 1849 and 1990. To that end they have redistributed the working population according to an industrial (rather than an occupational) classification.[21] Casual labourers –which involved a particularly large number of people in the first two censuses– were assigned to their 'actual' industry of occupation. Oomens and Den Bakker have also adjusted for the dramatic changes in the definition of female labour.

For the most part their estimates are reliable. Yet, in two areas the figures of Oomens and Den Bakker fall short. A second and less important shortcoming concerns the number of domestic servants in 1849 and 1859.

3.2.a Female labour in agriculture

The main inconsistency in the censuses of the nineteenth century stems from changes in the definition of female labour. In 1849 all employed women were counted, but starting in 1859 married women in agriculture were no longer considered a part of the labour force. As a result the female rate of participation fell, on aggregate from 23 percent in 1849 to 18

[19] Cf De Jonge, *De industrialisatie*. Van Zanden, *De economische ontwikkeling*. Smits, 'The size and structure'.
[20] Oomens and Den Bakker, 'De beroepsbevolking'.
[21] In 1849 the difference between the occupational and industrial classification was slight.

percent in 1859 and in agriculture from 29 percent in 1849 to a mere 14 percent in 1859.[22]

In his study of the development of Dutch agriculture during the nineteenth century Van Zanden has demonstrated that the censuses of 1849 and 1909 present an accurate picture of female employment. The intervening censuses underestimate female labour.[23] On the other hand, Oomens and Den Bakker have adopted the definitions of 1859-1899 and have a large number of women from the labour force. As a consequence their new employment figures show a low female participation rate, a comparatively low share of agriculture in the total labour force (around a third), and a slow and gradual pattern of occupational change between 1849 and 1909. The strong decline in agriculture between 1849 and 1909 has altogether disappeared. However, other estimates show that the higher estimates of the censuses of 1849 and 1909 were closer to the truth.[24]

A correction can only be made on basis of the original census or by means of additional information on agricultural employment. Van Zanden has made a detailed construction of agricultural employment in 1810, 1850, 1880 and 1910. His estimates consist of (i) the number of women employed on their own farm (set equal to one woman per farm), (ii) '*werkboden*' or living-in servants, and (iii) female casual labour.[25] His figures are invariably higher than those of Oomens and Den Bakker. What's more, for 1849 an independent estimate by Horlings arrives at almost the same result as Van Zanden (172,506 compared to 175,200). Horlings adds (i) the number of women according to the census itself to (ii) the number of women that Oomens and Den Bakker transferred out of casual labour into the group of women without occupation and (iii) to a small number of women that was previously recorded as domestic servants.[26]

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[22] *Beroepstelling* 1849 and 1859.
[23] Van Zanden, *De economische ontwikkeling*, 67-69.
[24] Van Zanden, *De economische ontwikkeling*, 69. Horlings, *The economic development*, 68-69 and appendix II.
[25] Van Zanden, *De economische ontwikkeling*, 67-76.
[26] Horlings, *The economic development*, appendix II.

The censuses of 1859 to 1899 cannot be adjusted in an equally sophisticated way. There are nonetheless sufficient data to adequately revise the figures of Oomens and Den Bakker. For 1849 we have accepted the estimates of Horlings. The recalculation of the agricultural labour force in 1889 and 1899 is based on Van Zanden's methods and data. Only for 1859 was it necessary to resort to a somewhat cruder method.

1859: The starting point of the estimate was the concentration of women relative to men in 1849 according to the revised employment figures. The development of the male-female ratio between 1849 and 1859 was charted by measuring the number of female '*werkboden*' (living-in servants or workers) per 100 male '*werkboden*' according to the wealth tax statistics.[27] For every Dutch province the development of this ratio between 1849 and 1859 was projected onto the actual male-female ratio in 1849 in order to estimate the actual ratio in 1859. The outcome shows an aggregate national ratio of 53.6 women per one hundred men in 1849 and 50.1 in 1859. The total female labour force in agriculture was consequently revised upwards from 58,847 according to Oomens and Den Bakker to 174,787.

1889-1909: For 1909 we have accepted the figure of 176,100 women suggested by Van Zanden. The close correspondence between the independent estimates of Van Zanden and Horlings for 1849 shows that Van Zanden's method leads to plausible results. His estimate for 1880 cannot simply be adopted to fill in the two remaining census years 1889 and 1899. Instead we have tried to replicate his method for these benchmark years.[28] The number of married women can be estimated by projecting the figure of 101,100 women onto an index of the number of farmers as mentioned in the *Jaarcijfers*.[29] The statistics of the wealth tax

[27] *Bescheiden betreffende de geldmiddelen* 1846/59-1896.

[28] In 1880 Van Zanden's estimate of female agriculture labour consists of 101,100 women working on their own farm (married women), 33,000 '*werkboden*', and 37,600 female casual labourers (Van Zanden, *De economische ontwikkeling*, 377).

[29] The number of livestock farmers with 6 or more cows, arable farmers with one horse or cow, arable farmers with 2 or 3 horses, and arable farmers with 4 or more horses

provide us with an estimate of the number of '*werkboden*' in 1889 and 1896. By means of the average annual rate of change between 1890 and 1896 (-0.8 percent) the figure for 1896 was used to calculate the number of '*werkboden*' in 1899.[30] Finally, no alternative information was available for the number of casual labourers. The only data are the data presented by Van Zanden for 1850 and 1910 (his figure for 1880 is an average of these two figures). By exponentially interpolating between 1850 and 1910 the share of casual labourers in the total female labour force in agriculture was calculated. Table 3.1 presents the results of these calculations.

Table 3.1
The Calculation of Female Employment in Agriculture
1889-1909

	1889	1899	1909
working on the family farm	107,109	114,165	118,900
'werkboden'	29,892	27,856	28,500
female casual labourers	32,830	30,800	28,700
total female employment in agriculture	169,831	172,821	176,100

Sources: Van Zanden, *De economische ontwikkeling*, 75 and 377. *Jaarcijfers* (1891) 100, (1901) 141. *Bescheiden betreffende de geldmiddelen* 1883-1900.

A comparison between our figures on female employment in agriculture and those provided by Oomens and Den Bakker shows the effects of the revision (table 3.2). The difference between the estimates was subtracted from the group of women without occupation.

(Jaarcijfers (1891) 100, (1901) 141). The total number of these farmers was 105,806 in 1883, 112,095 in 1889 and 119,479 in 1899.

[30] *Bescheiden betreffende de geldmiddelen* 1883-1900.

Table 3.2
Estimates of the Total Number of Women Employed in Agriculture, 1849-1909

	Oomens and Den Bakker	present estimate	difference
1849	55,877	172,506	116,629
1859	58,847	174,787	115,940
1889	72,866	169,831	96,965
1899	79,584	172,821	93,237
1909	94,345	176,100	81,755

Sources: Oomens and Den Bakker, 'De beroepsbevolking'. Horlings, *The economic development*, appendix II. Tables 2 and 3.

3.2.b Domestic servants

The domestic services constitute one of the few industries for which there is additional information on employment. In addition to the occupational censuses there are statistics that show the number of servants subject to the wealth tax.[31] Van Zanden noted that both sources present an inaccurate picture of the actual size of the labour force: the census overestimates the number of domestic servants –due to the inclusion of female labourers or '*werkboden*'– whereas the tax statistics undervalue this number –due to evasion and wrongful declaration.[32] Van Zanden starts from the wealth tax data. He assumes that 75% of male servants was actually employed in agriculture, and that the number of female servants was underestimated by 25%.[33] Finally, Horlings has refined the corrections proposed by Van Zanden for female servants by estimating the degree of underestimation in the wealth tax statistics on basis of a comparison with data on Friesland in

[31] *Bescheiden betreffende de geldmiddelen* 1846-1896.
[32] Van Zanden, *De economische ontwikkeling*, 428-429. Oomens and Den Bakker simply accept the figures recorded in the census (Oomens and Den Bakker, 'De beroepsbevolking').
[33] Van Zanden, *De economische ontwikkeling*, 426 and 429. He only adjust the number of male servants in Gelderland, Noord-Brabant and Limburg in 1849, and Drenthe, Overijssel, Gelderland, Noord-Brabant, Limburg and Utrecht in 1859 (ibidem, 427).

1859, and by distinguishing between cities and countryside. He states that domestic servants were presumably properly taxed in urban areas and sets the degree of underestimation of the wealth tax at 50 percent for rural areas.[34] This method was used to adjust the number of female domestic servants in 1849 and 1859 on a provincial basis; Van Zanden's method was used to adjust the provincial number of male servants. Table 3.3 presents the conversion ratios and the revised employment estimates for the entire Netherlands in 1849 and 1859.

Table 3.3
Adjustments to the Number of Domestic Servants in 1849 and 1859 by Province

	1849	1859
percentage of female servants in cities	35%	30%
correction for female servants	32%	35%
correction for male servants	75%	75%
adjusted number of servants		
-male	12,515	13,103
-female	101,753	100,587
-total	114,268	113,690
transfers into (-) or from (+) agriculture		
-male	+4,128	+3,674
-female	-11,789	-31,910
total	-7,611	-28,236

Sources: Horlings, *The economic development*, appendix XIII. *Beroepstelling* 1849 and 1859. *Bescheiden betreffende de geldmiddelen* 1846/59.

The difference between the adjusted census figures of Oomens and Den Bakker and these revised estimates was transferred into agriculture. This correction was not actually carried out for 1859, since the size of female agricultural employment was already set (see section 3.2.a). The difference was therefore assigned to the group of women without occupation.

[34] Horlings, *The economic development*, appendix XIII. The conversion ratios therefore amount to 50% multiplied by one minus the rate of urbanization.

3.2.c Total employment

Since most industries are left untouched, the figures of Oomens and Den Bakker can easily serve as a basis for the revised estimates of employment. The only adjustments concern agriculture (1849-1909) and domestic servants (1849-1859). Table 3.4 provides a summary view of total employment –with a distinction between the three main sectors of the economy– before and after revision.

Table 3.4
The Structure of Employment, 1807-1909

	1807	1849	1859	1889	1899	1909
Revised figures						
participation rate	40.5	41.2	40.6	39.0	39.6	39.7
sectoral shares[a]						
-agriculture	42.7	40.3	40.4	36.5	34.2	30.4
-industry	26.0	31.0	31.3	31.6	32.7	34.3
-services	30.5	28.7	28.3	31.9	33.1	35.4
-total	100	100	100	100	100	100
Oomens and Den Bakker						
participation rate		37.8	38.0	36.8	37.9	38.3
sectoral shares[a]						
-agriculture		34.2	33.9	32.8	30.9	27.8
-industry		33.8	33.5	33.4	34.2	35.5
-services		32.0	32.6	33.8	34.9	36.7
-total		100	100	100	100	100

[a] Excluding casual labour.
Sources: *Beroepstelling* 1849-1909. Oomens and Den Bakker, 'De beroepsbevolking'. *Bescheiden betreffende de geldmiddelen* 1846/59-1895. Van Zanden, *De economische ontwikkeling*, 78-82. Horlings, *The economic development*, appendix II.

The male labour force was hardly affected by our recalculation. In 1849 and 1859 less than one percent of male employment in agriculture and services was shifted between sectors. On the other hand, the size and composition of the female labour force has changed dramatically. Rates of participation are substantially higher, especially in 1849 and 1859 (the percentage of women that was employed in 1849 increased from 16.7% to 23.4%). And the centre of female employment has been shifted towards

agriculture and away from services and industry. As a result the smooth development that was observed by Oomens and Den Bakker –with a gradual and comparatively small shift from agriculture and industry into services– has been replaced with a picture of more radical change.

3.3 Labour Input

The calculation of labour input involves estimates of unemployment, the number of working days per year, and the average length of a working day. The final decade of the nineteenth century witnessed the rise of organized strikes, but they had only a marginal effect on labour input and will be left out of consideration.[35]

Until 1913 mass unemployment –with large numbers of people out of work for long periods of time– was almost impossible. Poor relief was inadequate for long-term survival.[36] Instead, estimates of nineteenth-century unemployment refer to the underutilization of the available labour force.

The number of people on permanent poor relief can serve as an indicator for the development of 'unemployment' or the underutilization of

[35] We have estimated the effect of strikes on labour input in 1909 and 1920. The statistics show the total number of strikes and exclusions, the number for which data were collected (usually the greater part), the number of workers involved, and the number of working days lost (*Jaarcijfers* (1919) 102-103. *Jaarcijfers* (1922) 86-87. The ratio between the total number of strikes and exclusions and the number for which data were collected is used to raise all relevant statistics to include all strikes and exclusions for which no data were collected.). The total number of man-days lost is estimated at 311,087 in 1909 and 2,435,181 in 1920. These figures are then compared with two crude estimates of labour input: a maximum figure equal to the total labour force multiplied by 300 working days per year and a minimum figure in which employment is adjusted for differences in age and sex and in which the working year is set at 275 days. The ratios to adjust for differences in the age and sex of workers are derived from Van Zanden, *De economische ontwikkeling*, 81. Strictly speaking they relate only to agriculture. The effect of strikes on labour input is estimated at -.05 to -.06 percent in 1909 and at -.30 to -.39 percent in 1920.

[36] Horlings, *The economic development*, 227. In a time of uncertain employment the absence of a strong social safety net may have strengthened the economic role of the household.

labour.[37] A series of the number of so-called housebound poor (‘*huiszittende armen*’) on permanent relief is constructed for the period 1815-1913. Yet, this series reflects more than unemployment. The most serious distortion is caused by fluctuations in the cost of living: in years of high food prices poverty will have reflected a lack of income rather than a lack of employment. To eliminate this effect the poverty index is deflated with a cost-of-living index.[38]

The absolute level of unemployment is calculated separately on the basis of CBS estimates for 1913-1921. The Central Bureau of Statistics has constructed series of the level and development of unemployment in the period 1913-1921. Their revised estimates for 1920-1921 are used to adjust the level in 1921 and arrive at a reliable figure for 1913.[39] The unemployment percentage of 1913 is then projected onto an index of ‘unemployment’ based on poverty data (graph 3.1).

[37] For a discussion of the problems surrounding the use of poor relief data for estimates of unemployment, see Horlings, *The economic development*, 227-228.
[38] Van Riel, *Postponed conformity*.
[39] Den Bakker and Van Sorge, ‘Het onbenut arbeidsvolume’. De Bie, *“Een groote doorlopende roes”*.

Graph 3.1
Unemployment, 1800-1913 (%)

The resulting series is only used for industry and services. No adjustment is made for unemployment in agriculture. In his estimates of agricultural labour input Van Zanden tries to determine the number of working days per year per type of worker; actual agricultural unemployment cannot be measured.[40] To each type of worker he assigns a weight, which represents the amount of labour relative to that of an adult male worker, namely women 45%, children 25%, and seasonal migratory workers (a very small group) 25%. Van Zanden uses these percentages to convert his employment figures into estimates of labour input. We have applied the ratios between his estimates of labour input and total employment to the revised employment figures for the nineteenth century.[41]

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[40] Van Zanden, *De economische ontwikkeling*, 78-82.
[41] The ratios were .7793 in 1810, .7910 in 1850, .8104 in 1880, and .8247 in 1910 (Van Zanden, *De economische ontwikkeling*, 81).

On basis of her research in company archives and the 1890 inquiry of the *Staatscommissie* [State Commission] into labour conditions Vermaas has set the average working day at 12 hours in 1850, 11 hours in 1880, and 10 hours in 1913.[42] In 1899 the average working day in industry was about 10½ hours.[43] The estimates of Vermaas are used for industry and services; for the first half of the nineteenth century the average working day is set at 12 hours. The length of the agricultural working day is assumed to have remained stable at 12 hours during the entire nineteenth century.

The available estimates are combined in order to construct an annual series of labour input in the economy of the Netherlands in the period 1800-1913. Actual annual series are only available for population and unemployment. All other data relate to benchmark estimates (1807, 1849, 1859, 1889, 1899, 1909) or interpolated values. The following procedure is used to calculate labour input. The share of agriculture, industry and services in the total labour force is given for the six benchmark years. These shares are interpolated between benchmark years. The resulting percentages are adjusted to add up to one hundred percent. The participation rate is given for the benchmark years and interpolated for the intervening years. The product of population size, participation rates, and sectoral shares results in estimates of the size of the labour force in each of the three economic sectors. The sum of employment in agriculture, industry and services gives the total labour force of the Netherlands.[44]

A rather crude method will have to suffice to calculate the number of working days per year. For agriculture Van Zanden's conversion ratios – with which he adjusts for differences in age and sex– are applied before calculating the number of man-days. The average working year is set at 275 days for each sector. This should account for sundays, holidays, and seasonal unemployment. The product of the total size of the labour force and the number of working days per year results in a series of total

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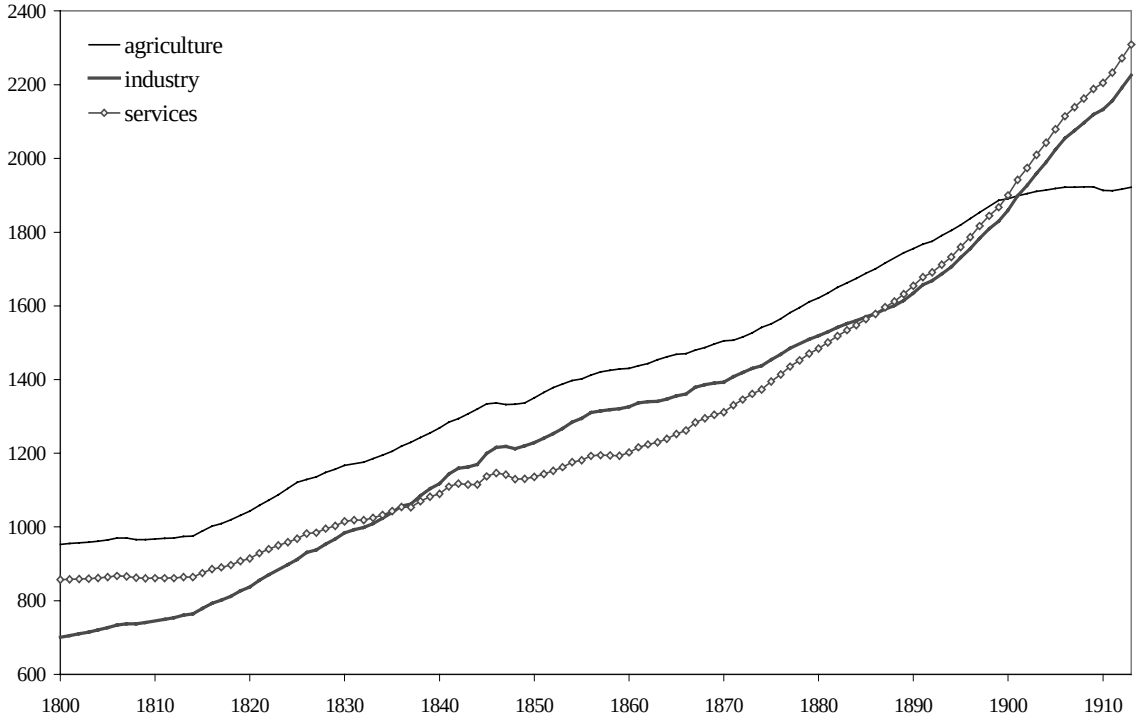
[42] Vermaas, *Wages*.
[43] *Jaarcijfers* (1899) 60-61: 10.7 in 1899.
[44] Casual labourers were divided among the three economic sectors according to the relative weight of each sector in total employment.

unadjusted labour input in man-days. The average length of the working day is given for the benchmark years and interpolated for the intervening years. The product of total unadjusted labour input in man-days and the average length of a working day yields total unadjusted labour input in man-hours. Finally, the annual series of estimated rates of 'unemployment' is used to convert the series of unadjusted labour input into a series of adjusted or actual labour input in man-hours.

Graph 3.2
Labour Input by Sector, 1800-1913 (millions of man-hours)



Chapter 4

PRODUCT

4.1 Agriculture

The estimates of agricultural value added are based on the work of Knibbe (1851-1950) and Van Zanden (1812/13-1850). The calculations of Knibbe are based on a wide variety of annual data.[45] However, Smits had to thoroughly revise the results to account for a number of shortcomings. Fewer data are available for the first half of the nineteenth century.

4.1.a Agricultural Output 1850-1913

Knibbe has made a number of mistakes in calculating the volume of arable output. He has omitted the output estimates for a number of commercial crops in the 1850s and 1860s, which resulted in an underestimation of the value of arable output. This error has been repaired.

The prices used by Knibbe to value output are not reliable. Regional variations in price levels are not adequately reflected in his data. We have therefore re-estimated the value of agricultural production by means of price data taken from the work of Van Riel.[46]

The most important part of the revision concerns the recalculation of inputs. Knibbe has undervalued intermediate expenditure and, hence, overestimated agricultural value added by approximately 25 percent. Especially his calculations on fodder had to be adjusted. The use of grain and potatoes as fodder was calculated by confronting data on their total disposable quantity (domestic production minus net exports) with estimates of human and industrial consumption. The other inputs have also been revised. We have used Ebels estimates for the years 1909/1912 to determine

[45] Knibbe, *Agriculture.*
[46] Van Riel, *Postponed Conformity*.

the actual level of intermediate expenditure by item.[47] The use of manure was partly taken from the work of Van Zon and –insofar as artificial fertilizer was concerned– from the estimates of Knibbe.[48] Following Ebels we have set the so-called current inputs at 5.8 percent of the combined value of expenditure on fodder, seed, and manure. In 1909/12 the final group of remaining inputs amounted to 55 million guilders of which 16.9 million guilders or 30.8 percent consisted of expenses relating to machinery and equipment. This sum was extrapolated backwards by means of time series on total capital formation.[49] The remaining expenses constituted 5.8 percent of total agricultural output in 1909/12, which was assumed constant throughout the nineteenth century.

The series of output value and intermediate expenditure were linked to the information published by the Ebels commission on agriculture in 1909/1912. Finally, the deflator for agricultural value added was constructed on the basis of output prices. Notwithstanding the elaborate data on inputs, no attempt has been made to double-deflate value added.

4.1.b Arable Output 1812-1851

There are few national statistics on agriculture for the first half of the nineteenth century. Arable output is therefore calculated indirectly. First, the Napoleonic enquiries for 1812/13 are used to calculate total national output. The years between 1812/13 and 1851 are interpolated on the basis of partial series relating to a number of regions in the Netherlands.

The estimates of output in 1812/13 were primarily based on Napoleonic surveys that have been done for every province. Two regions were not covered by the enquiries, namely Twente in the province of Overijssel and Zeeuws–Vlaanderen in the province of Zeeland. It was assumed that arable productivity in these districts was comparable to that in

[47] *Verslag van de Staatscomissie*.
[48] Van Zon, *Een zeer onfrisse geschiedenis*. Knibbe, *Agriculture*.
[49] Ronald Albers, *Capital formation*.

neighbouring districts.[50] The '*États des Recoltes*' have been used to estimate the percentage share of each crop in the total sown area, its yield per hectare, and the amount of seed used. The surveys also provide information on the final destination of the various crops, i.e. their use for human consumption, fodder, seed, inputs in breweries and distilleries, etcetera. However, the information is sometimes incomplete, especially where it concerns potatoes and minor crops. Additional estimates are therefore necessary.

The quality of the information is nevertheless relatively high.[51] The total amount of arable acreage is estimated by means of the cadastral surveys of the 1820s, which can be considered more reliable. The cadastral data had to be adjusted for changes in total acreage as a result of land reclamations.[52]

The output of a number of cash crops was estimated with alternative data. The production of tobacco was derived from the work of Jansen.[53] The exports of madder were used as a proxy for the development of madder output, which was mainly produced for the world market.[54]

Three regional sets of agricultural data were used to fill in the blanks between the '*États des Recoltes*' of 1812/13 and Knibbe's annual data for the second half of the nineteenth century, namely:

(i) The sown area and yield of the main grains (except rye and buckwheat) in the province of Groningen between 1817 and 1870.[55]
(ii) The yield of rye and buckwheat on four farms in the Veluwe region between 1812 and 1863.[56]
(iii) The yield of grain and potatoes on a very large farm in the Wilhelminapolder in Zeeland between 1813 and 1870.[57]

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[50] For a review of the Napoleonic surveys see Van Zanden, 'Regionale verschillen'.
[51] For specific parts of the country -Drenthe in particular- this is disputed by Jan Bieleman. See the debate between Van Zanden and Bieleman in 1988 (Van Zanden, 'De landbouw', Bieleman, 'Boeren en rekenmeesters').
[52] *Cf* Van Zanden, *De economische ontwikkeling*, 86-88.
[53] Jansen, *De industriële produktie*, appendix 4.
[54] Horlings, *The economic development*, 363.
[55] Priester, *De economische ontwikkeling*, 539-44.
[56] Verstegen and Van Zanden, 'Boeren als ondernemers'.
[57] Kuperus, 'Honderd jaar'.

The first step was to establish the relationship between the partial series and the national data on the yields and sown areas of the main crops in the period 1851-1870. Table 4.1 shows that for most crops there was a relatively close relationship between the yields of Groningen and those of the entire the Netherlands. The Groningen yields are only bad 'predictors' for fluctuations in the national harvest of rye and buckwheat. This is hardly surprising considering that both crops were mainly grown on sandy soils and under different conditions than in Groningen. The Veluwe (sandy soils) series perform much better. The explanation of yield fluctuations in wheat and potatoes between 1851 and 1870 improves when the Zeeland series is introduced into the equation. For wheat we have produced two estimates, one including and the other excluding the Zeeland series. Table 4.1 also shows that the coefficients of the partial series are all below one (with the exception of peas), which is the result of the fact that national harvest fluctuations were smaller than provincial or local fluctuations.

Table 4.1
Regression Equations for the Relationship Between National Yields and Yields in Groningen, Zeeland, and The Veluwe Region by Product, 1851-1870

	constant	Groningen	Zeeland	Veluwe	R^2	N
wheat						
-series 1	8.05*	.538*			.35	20
-series 2	-2.43	.536**	.348*		.61	20
rye[a]	6.79*			.197**	.61	12
barley	14.17*	.520**			.50	20
oats	9.76*	.595**			.86	20
buckwheat[a]	11.36**			.152*	.54	12
potatoes	43.55*	.376**	.091		.60	20
coleseed	9.20**	.561**			.66	20
beans	11.35**	.432*			.36	20
peas	2.15	1.020**			.55	20

[a] 1851-1863.

Notes:

-The two series for wheat indicate (1) regression excluding Zeeland and (2) regression including Zeeland.

-* t-statistic greater than 2. ** t-statistic greater than 4.

Sources: National averages: Knibbe, *Agriculture*. Groningen: Priester, *De economische ontwikkeling*. Veluwe region: Verstegen and Van Zanden, 'Boeren'. Zeeland: Kuperus, 'Honderd jaar'.

Table 4.2
Regression Equations for the Relationship Between Sown Acreage in Groningen and in the Entire Netherlands by Product, 1851-1870

	constant	Groningen	R^2
wheat	73.3**	3.383**	.51
rye	188.6**	1.813*	.34
barley	38.8**	.607*	.19
oats	53.6**	1.793**	.83
buckwheat	67.3**	.846	.07
potatoes	100.3**	3.282**	.62
coleseed	12.3**	1.813**	.69
beans	24.5**	1.459*	.31
peas	9.5**	7.537**	.65

Note: N=20.
Sources: National averages: Knibbe, *Agriculture*. Groningen: Priester, *De economische ontwikkeling*.

Table 4.3
Coefficients of Variation of the Estimated Yields and Amounts of Sown Hectares per Product, 1817/50 And 1851/70

	yields		sown area	
	1817/50	1851/70	1817/50	1851/70
wheat				
-series 1	.091	.147	.062	.031
-series 2	.171	.147	-	-
rye	.171	.144	.012	.017
barley	.085	.130	.023	.045
oats	.113	.110	.037	.085
buckwheat	.172	.197	.010	.022
potatoes	.143	.203	.047	.064
coleseed	.122	.168	.138	.283
beans	.107	.176	.045	.101
peas	.220	.191	.154	.179

Note:
-The two series for wheat indicate (1) regression excluding Zeeland and (2) regression including Zeeland.
Sources: The method is explained in the text. National averages: Knibbe, *Agriculture*. Groningen: Priester, *De economische ontwikkeling*. Veluwe region: Verstegen and Van Zanden, 'Boeren'. Zeeland: Kuperus, 'Honderd jaar'.

The regression equations in tables 4.1 and 4.2 have been used to interpolate the development of national harvest yields and the amount of sown land

between 1812/17 and 1851.[58] The relative share of individual crops in total acreage changed little between 1812 and 1851, which reduces the margins of error of the land estimates.

We have used three methods to test the outcome of our methods. First of all, we have compared the coefficients of variation of the annual data on yields and sown acreage in 1817/50 with those in 1851/70 (table 4.3). It emerges that the coefficients of variation were generally lower before 1851. This is probably incorrect: in the long run the annual variation in yields is expected to fall. Moreover, there were especially large fluctuations in yields during the 1840s. The low coefficients of variation were probably a side-effect of the way in which yields and areas were estimated. Our method only captures fluctuations insofar as they occurred in Groningen, Zeeland, and the Veluwe region, which may lead to differences with developments at a national level. Peas, rye, oats, and the second wheat series are the exceptions. The high degree of variation in rye yields before 1850 was partly caused by an extremely bad harvest in the Veluwe region in 1841, which cannot be extrapolated to the country as a whole. This was corrected on basis of data on total rye production in four provinces (Groningen, Zuid Holland, Limburg and Zeeland).[59] The result was a coefficient of variation for rye of .157, which is more in line with the results for the period 1850. Since the two series of wheat yields were somewhat 'extreme', they were replaced by a third series that equals the unweighted average of the two other wheat series. Yet, the general conclusion must be that our method of calculation slightly underestimates harvest fluctuations.

[58] The estimates of acreage were based solely on the data for Groningen.
[59] Van Hall, 'Bijdragen tot de statistiek'.

Table 4.4
A Comparison Between Yields and Sown Acreage Estimated for 1812/13 and Calculated with Backward Projection For 1817

	yields (hl/hectare)		sown area (thousands of hectares)	
	1812/13	1817	1812/13	1817
wheat	18.9	17.5	94.9	92.7
rye	15.4	15.7	198.3	205.6
barley	27.7	29.8	49.9	44.3
oats	28.8	28.7	79.5	92.9
buckwheat	15.9	15.5	72.2	68.9
potatoes	153.4	126.1	45.6	110.5
peas	•	16.5	•	42.4

Sources: 1812/13: Van Zanden, 'Regionale verschillen'. 1817: The method is explained in the text. National averages: Knibbe, *Agriculture*. Groningen: Priester, *De economische ontwikkeling*. Veluwe region: Verstegen and Van Zanden, 'Boeren'. Zeeland: Kuperus, 'Honderd jaar'.

The second check concerns a comparison between the estimated (extrapolated) yields and sown areas of 1817 with those of 1812/13 (table 4.4). The comparison reveals that the differences were relatively small, even for rye.[60] The main problem is that our method does not capture the strong increase in potato cultivation that occurred between 1812/13 and 1851. The reason may be that the increase was not as strong in Groningen as it was elsewhere. This discrepancy was corrected by assuming that the amount of land used for potato cultivation annually increased by an additional 1,500 hectares over and above the amount estimated by means of our method.

The confrontation of the output of food grains (rye and wheat) with the consumption of rye and wheat according to the excise statistics constitutes the final check of our results. The intermediate use of wheat and rye in bakeries, breweries, and distilleries was calculated by Jansen.[61] Total domestic consumption was defined as output plus net imports, minus seed, and a five-percent reduction for wheat and rye lost in the process of transport, storage, and trade. The difference between the two estimates

[60] See the discussion on the development of rye yields in the first half of the nineteenth century between Van Zanden and Bieleman (Van Zanden, 'De landbouw', Bieleman, 'Boeren en rekenmeesters').
[61] Jansen, *De industriële produktie*.

consists of (i) the use of food grains as cattle fodder and (ii) statistical discrepancies. For wheat the results are fairly close together; the two estimates differ by only 4.8 percent. In the case of rye the difference is more pronounced and less constant. Between 1817 and 1835 the difference was an average of c. 40,000 hectoliters, it declined to about 10,000 hectoliters between 1835 and 1846, after which it increased to 20,000 hectoliters. These long-term averages can be considered as estimates of the use of rye as cattle fodder, which was already quite important during this period. The comparison with excise statistics also made possible the construction of rough estimates of net output between 1813-1817 and before 1812. It was assumed that the net output of wheat and rye was equal to the amount consumed minus net import and plus a five-percent loss in storage and trade.

4.1.c Livestock production 1807-1850

The two main types of data that underlie the estimates of livestock production in the first half of the nineteenth century are the consumption of meat according to the excise tax and the statistics on the cattle stock. Until 1852 the Dutch government laid a heavy tax on the consumption of beef, veal, pork, and mutton (in 1852 the excise on pork and mutton was abolished).[62]

The size of the cattle stock is known for many years between 1807 and 1850. Statistics are available for 1814-1828 (until 1825 for sheep) and for 1840-1844, while additional censuses are available for 1807, 1812/13 and 1851.[63] Since the number of cattle usually changed only gradually, it is possible to interpolate between 1828 and 1840 as well as between 1845 and 1851 in order to construct an annual series of the size of the cattle stock.[64]

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[62] *Cf* Jansen, *De industriële produktie*.
[63] *Staat van den Landbouw* 1816-1828, *Algemeen Verslag van den Landbouw* 1841-1844, *Staatkundig en Staathuishoudkundig Jaarboekje* (1850) 232, (1854) 77. Van Zanden, *De economische ontwikkeling*, 100.
[64] For example, the number of cattle stayed almost the same between 1821 and 1828 and increased by only 5 percent between 1828 and 1840.

Meat production equalled the amount of meat consumed according to the excise statistics plus the exports of live animals.[65] Only for a few years (1810-1813) was it necessary to interpolate rather than to calculate. The production of wool was estimated by assuming an average wool yield of two kilogrammes per sheep per year.[66]

The output of dairy farming was more difficult to estimate. First, the share of cows in the total cattle stock was estimated for 1807 (67 percent) and 1851 (64.6 percent).[67] It was assumed that the apparent decline between 1807 and 1851 was spread evenly among the intervening years. The milk yield per cow was determined on the basis of the estimates of Van Zanden for 1810 (1,930 liter) and Knibbe for 1851 (2,350 liter).[68] The first half of the nineteenth century was divided into two periods: a slow increase in milk yields between 1810 and 1840 (0.4 percent per year) and slightly faster growth between 1840 and 1851 (0.6 percent per year). The acceleration in the 1840s was related to the rapid growth of the exports of butter and cheese and to the favourable development of relative prices. Cheese sales also accelerated after 1840. We have used a series of cheese sales on the markets of Alkmaar and Hoorn to simulate annual fluctuations in total milk output.[69] Half of the ratio between the amount that was sold annually and a seven-year moving average of the series of cheese sales was projected onto the series of milk production that was constructed in the above.[70] This does not influence the long-term trend of milk output. The available milk was turned into butter and cheese: 65 percent of the available milk was applied to the production of

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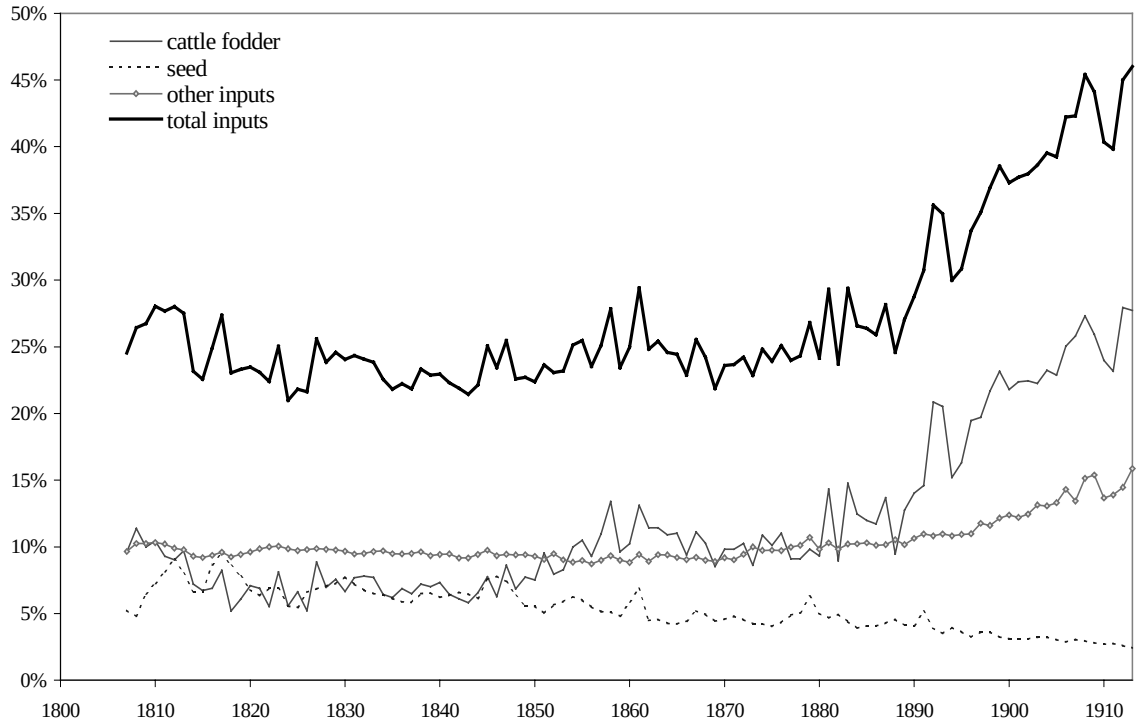
[65] Livestock exports were found in Horlings, *The economic development*, 362.
[66] Jansen, *De industriële produktie*.
[67] ARA, Collectie Goldberg, no. 193. Van Zanden, *De economische ontwikkeling*, 100.
[68] Van Zanden, *De economische ontwikkeling*. Knibbe, *Agriculture*. In 1985 Van Zanden published the estimate of 1,900 liters in 1810 (Van Zanden, *De economische ontwikkeling*, 106) but a detailed breakdown of the regional c.q. provincial estimates for the same year resulted in a somewhat higher estimate of 1,930 liters (Van Zanden, 'Regionale verschillen').
[69] *Verslag van den toestand der provincie Noord-Holland* (1853) 192-197.
[70] For example, in 1839 actual sales on the markets of Alkmaar and Hoorn were 4 percent below the seven-year moving average (1836/42). The result was a two-percent reduction in the 1839 estimate of dairy production.

butter while the rest (35 percent) was assigned to cheese production. A number of fixed technical coefficients was used to convert the amounts of milk into quantities of butter and cheese.[71]

Graph 4.1
Input-Output Ratios in Agriculture by Type of Input, 1807-1913 (%)



4.2 Fisheries

For the period 1814-1885 the data on fisheries were derived from the thesis of Gert Pons.[72] Production after 1885 was calculated on the basis of data from the *Jaarcijfers* and the *Jaarverslagen voor de Visserij-inspectie* [Annual Reports of the Inspectorate of Fisheries]. The result was a series of the value of output in the nineteenth century. Information on the value and composition of inputs were derived from the work of Pons.[73]

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[71] The coefficients were .028 for butter and .07 for cheese (Van Zanden, *De economische ontwikkeling*, 104). We have used slightly lower technical coefficients than those estimated by Van Zanden.
[72] Pons, *De bakens verzet*.
[73] Pons, *De bakens verzet*, chapter 11.

4.4 Mining

Notwithstanding its well-known lack of mineral resources the Netherlands did have a mining industry. For centuries peat had been the main indigenous fuel. In the course of the nineteenth century and especially after the abolition of the excise on fuel coal became dominant. Other types of natural resource – such as metal ores– were virtually non-existent.

4.4.a Coal Mining

Ben Gales has used the data collected by the *Staatstoezicht tot de Mijnen* [State-Supervision of the Mines] to estimate and analyse the output of the Dutch coal mines.[74] Additional data on output and sales prices were derived from the *Rapport van de commissie voor de mijnen* [Report of the Commission for the Mines] (1901) for the *Domaniale mijn* [Royal Mine] and from De Graaf for all mines.[75] For the period before 1846 we have used an implicit price equal to the gross value of sales divided by the gross output of coal.[76] It was assumed that gross value added was 75 percent of gross output.

4.4.b Peat Extraction

For the period 1834-1863 there are annual statistics on the amount of peat extracted in the Netherlands as a result of the excise on peat.[77] The other major source of information was the study of Gerding on the peat industry of the northern parts of the Netherlands.[78] We have combined Gerding's estimates of the development of production in a large number of companies

[74] Gales, 'Mijnbouw'. He was kind enough to make his data available.
[75] *Rapport van de commissie voor de mijnen* 1901. De Graaff, *De kolenvoorziening*.
[76] Gales, 'Mijnbouw'.
[77] *Bescheiden betreffende de Geldmiddelen* (1861 and 1869).
[78] Gerding, *Vier eeuwen turfwinning.*

in the first half of the century to estimate the growth of output between 1807 and 1834. The outcome is an output volume of about 14 million peat-tonnes in 1807. Two contemporary estimates by Gogel and Metelerkamp arrive at a slightly lower figure of 12 million peat-tonnes.[79] However, the excise on peat that was introduced in 1806 produced a higher yield than Gogel had expected, which confirms that he had originally underestimated output.[80] Therefore the Gerding series probably gives an accurate picture of the development of peat production between 1807 and 1834.

It is far more difficult to estimate peat output after 1863. The calculations cannot be based on Gerding's data alone, because the share of the northern provinces in total output increased rapidly after the abolition of the peat excise in 1864. His estimates are therefore not representative for total Dutch peat extraction. In the framework of his study of energy consumption in the second half of the nineteenth century Teijl has made a number of 'independent' estimates of the development of peat output between 1863 and 1913.[81] He has also assembled a number of detailed estimates of peat production between 1898 and 1910 which demonstrate that output declined substantially after 1863. We have therefore combined the estimates of Teijl and Gerding. Teijl's data for the period 1863-1888 have been used to simulate the decline in output after 1863. After 1888 peat production was almost entirely concentrated in the northern parts of the country, so that it became possible to apply Gerding's series to estimate output in the period 1889-1913. The resulting output estimate for 1910 is almost identical to the independent data collected by Teijl. Output was valued with a peat price index of Van Riel. Gross value added was set at 75 percent of the value of output.

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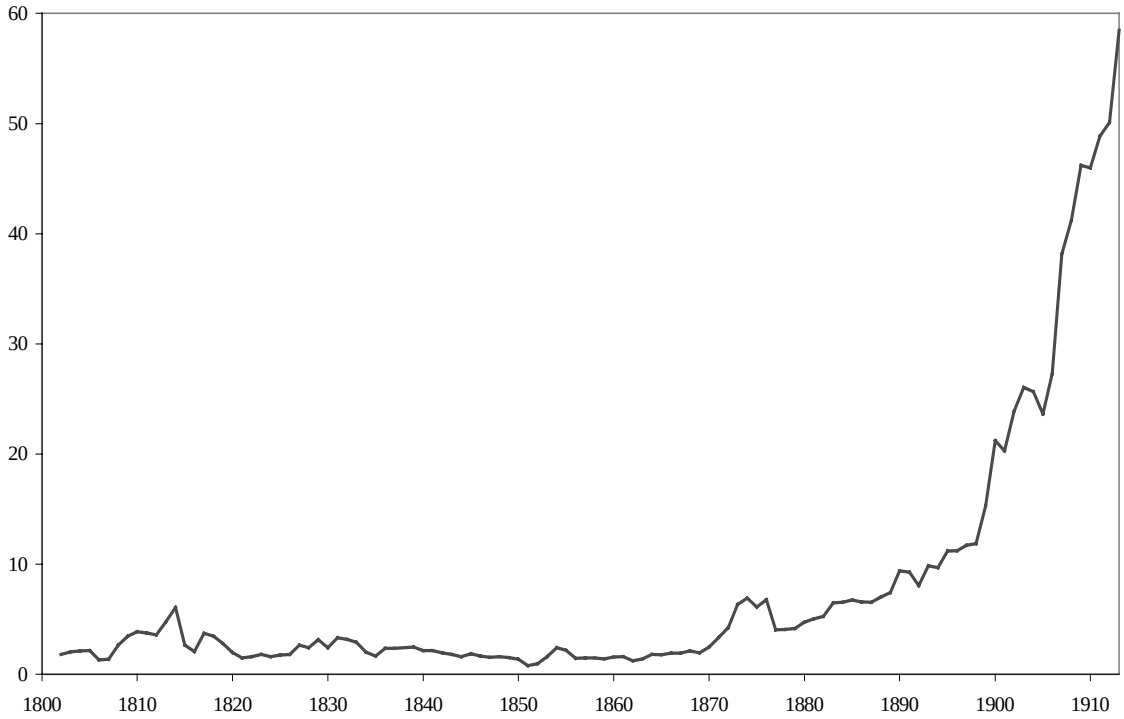
[79] Estimate for 1806 from Gogel, *Memoriën*, 139. Estimate for 1804 from Metelerkamp, *De toestand*, 90.
[80] Gogel, *Memoriën*, 139ff.
[81] Teijl, 'Nationaal inkomen'. Teijl, 'Brandstofaccijns'. The underlying data are available in the NEHA, personal archive J. Teijl.

Graph 4.2
The Share of Coal in the Output Value of Mining, 1802-1913 (%)



4.5 Industry

The calculation of industrial value added in the nineteenth century comprises two steps, namely (i) estimates of value added in 1913 and (ii) annual series of the value of output and –whenever possible– inputs in the period 1807-1913. Van der Bie used the first production census (*Statistiek van Voortbrenging en Verbruik*) to estimate industrial value added in 1913.[82] His estimates have been revised in a number of instances. For construction, metal and engineering, shipbuilding, and utilities we have applied the more reliable and detailed figures of Albers.[83] The estimates for 1913 were projected onto indices of output and value added in 1807-1913.

[82] Van der Bie, *"Eene doorlopende groote roes"*, chapter 3.
[83] Albers, *Capital formation*.

All price data were taken from the work of Van Riel.[84] The estimates of the volume of production and information on technical coefficients were derived from the research of Alain Callewaert (1850-1913) and Michael Jansen (1807-1850).

4.5.a Ceramics and Glass, Diamond Cutting, Printing, and Chemicals

Annual series of the value added of ceramics and glass, diamond cutting, the printing industry, and chemicals were constructed indirectly. Value added in 1913 was given. An independent estimate of value added in 1850 was made by adding up income from wages and profits. Wage income was calculated by multiplying the number of employees in the industry with an average wage level.[85] The share of profit income was determined on the basis of extensive research in company archives.[86] Value added in the intervening years was calculated by interpolating with a consistent index of output value.

The index of output value in ceramics and glass was constructed by means of data on the number of bricks produced and a corresponding price series. The index of the output value of the printing industry was constructed by combining data on the number of books and magazines printed in the Netherlands with an index of paper prices. The indices of ceramics and glass as well as paper were used to interpolate between the benchmark estimates for 1850 and 1913.

There is no information on the volume or value of output in diamond cutting. The estimates for the period 1850-1913 were made by interpolating with the estimated wage income. The data on employment in census years was interpolated for the intervening years; the wage series

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[84] Van Riel, *Postponed Conformity*.
[85] See appendix B for information on the adjusted structure of employment. Wage data were derived from Vermaas, *Wages*.
[86] The data on profit income were collected and processed by Jansen, *De industriële produktie*.

was taken from the work of Vermaas. Value added in diamond cutting was adjusted with the deflator for the entire industrial sector.

The series of output in the chemical industry was based on the production of soap and white lead, its two most important products.[87] The price of soap was constructed by Van Riel, while a price index of dyes was taken from Spiethoff.[88]

No separate estimates was made for ceramics and glass, diamond cutting, and printing during the period 1807-1850. It was assumed that the share of these three small industries in industrial value added in 1850 (4.2 percent) remained constant during the first half of the century.

4.5.b Construction, Metals, Engineering, and Shipbuilding

The calculation of the value added of construction followed naturally from the estimates of gross fixed capital formation. Albers has constructed an index of value added in construction for the entire nineteenth century (1800-1913) using data on new capital formation in infrastructure as well as residential and non-residential buildings with a mark-up for repair and maintenance (about 10 percent).[89] The actual level of value added was determined by combining the index of nominal value added with the estimated value added in 1913 (123.6 million guilders). Albers' series of value added at current and constant prices were used to construct an implicit deflator for the industry.

As part of his work on investments in machinery and equipment Albers has also estimated the development of value added in the metal industry, engineering, and shipbuilding in the second half of the nineteenth century.[90] For the first half of the century Jansen has constructed detailed

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[87] *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Statistiek der Rijksinkomsten* 1903-1913.
[88] Van Riel, *Postponed Conformity*. Spiethoff, *Die wirtschaftlichen Wechsellagen*.
[89] Albers, *Capital formation*. The data on capital formation in buildings were collected and processed by Clemens. For investments in infrastructure see Groote, *Kapitaalvorming*.
[90] Albers, *Capital formation*.

series for the various components of this industrial branch.[91] He distinguishes between such items as cast iron, wrought iron, merchant ships, barges for inland navigation, fishing ships, and steam engines and has even estimated the value of repair and maintenance. Each item has been combined with a representative price series to calculate the value of output. Jansen has estimated the value of inputs as well as output, so that value added can be calculated directly.

4.5.c Textiles and Clothing

The value added of textile manufacturing was estimated directly by calculating the value of output and inputs at current prices. The first step in the calculation concerned the amount of crude materials –cotton, wool, flax– employed in the production process. The volume of domestic output (wool, flax) was added to the amount of net imports (cotton, wool, flax). The estimated quantities were combined with technical coefficients taken from the production census of 1913 and from the work of Callewaert and Jansen.[92] The resulting series of yarn production was added to the net imports of yarn to estimate total yarn inputs. Using a fixed coefficient these inputs were then converted to an estimate of the total production of cotton, woollen, and linen textiles. Van Riel's textile prices were used to value the output volume. Since our information covers every aspect of the production process, value added can be calculated directly, that is, by subtracting the value of inputs from the value of output.

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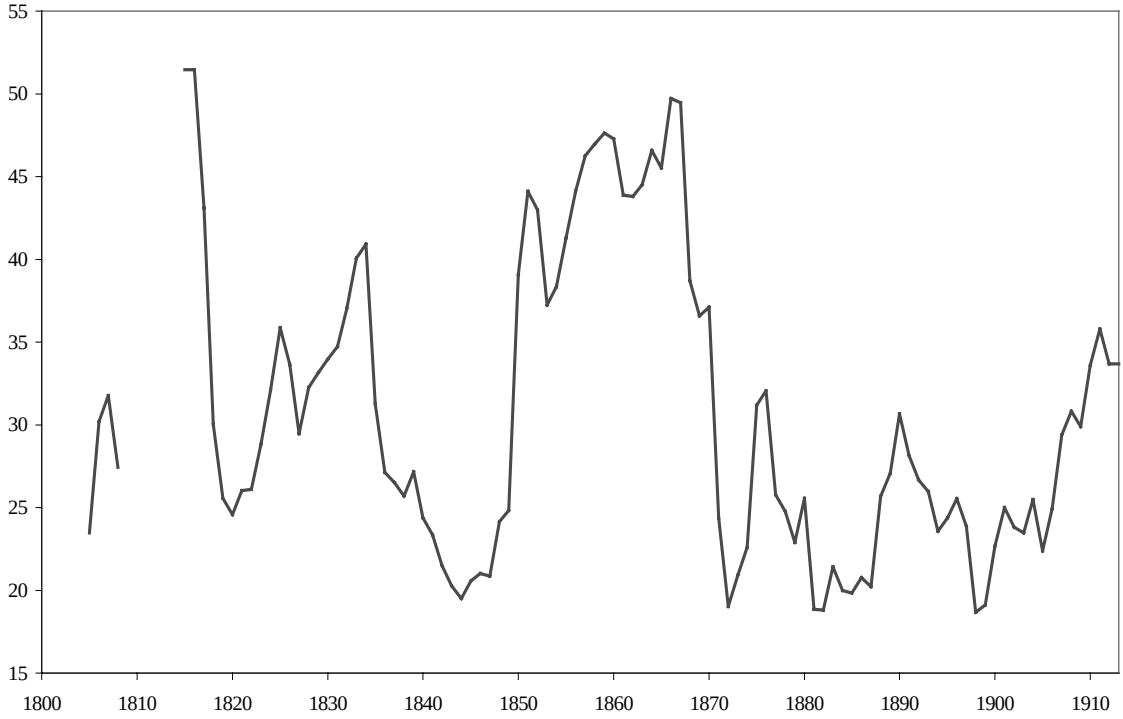
[91] Jansen, *De industriële produktie*.
[92] *Cf* Jansen, *De industriële produktie*, appendix 2. *Statistiek van Voortbrenging en Verbruik* 1913.

Graph 4.3
Ratio Between the Inputs and Output of Cotton Textile Manufacturing, 1805-1913 (inputs as a percentage of output; %)



There is unfortunately no information on the domestic production of flax in the first half of the nineteenth century, which seriously hampers the calculation of value added in linen textile manufacturing. It is well-known from the literature that during the period 1830-1850 linen textiles were rapidly substituted by cotton goods.[93] The output volume of 1807 was derived from the French enquiries.[94] Production during the intervening years was estimated by means of exponential interpolation, taking into account the acceleration in the substitution between cotton and linen after 1830.

The development of the clothing industry was constructed by means of data on the domestic production of textiles and the value of net textile

[93] Boot, *De Twentse katoennijverheid*.
[94] See Michael Jansens work on industrial growth during the first half of the nineteenth century (Jansen, *De industriële produktie*).

imports. We have assumed that the relationship between these inputs and gross value added remained constant throughout the century.

4.5.d Foodstuffs

The food processing industries are probably the best-documented part of Dutch manufacturing. For every branch of the industry we have constructed annual series of the quantities produced. The output volumes were combined with Van Riel's price series to produce annual series of the value of production. Whenever possible separate estimates of the value of inputs were used to calculate value added; in the remaining instances we have applied the input-output ratio of 1913.

• *Bread and flour*: For the first half of the nineteenth century the output volume of bread and flour was calculated directly on the basis of the statistics of the excise on grain milling (1807-1855). For the period after 1855 we have had to construct output series in a more indirect fashion. We have first estimated the total amount of disposable grain (notably wheat and rye) by adding up net imports and domestic production. The quantities used as seed or cattle fodder as well as the industrial use of grains in breweries and distilleries was deducted from this total.[95] The amount of flour that was extracted from the available grain was calculated with technical coefficients that were changed at regular intervals to account for technical changes in the production process. Finally, the output volume of bread was estimated, once again taking into account changes in input-output ratios.[96] Value added was estimated directly as the difference between the value of bread (and flour) production and the input of grains.

[95] For industrial inputs see *Verbruik van voeding en genotmiddelen*. See our comments on the estimates of inputs in agriculture.
[96] *Statistiek van Voortbrenging en Verbruik* 1913. Jansen, *De industriële produktie*, appendix 2.

• *Cocoa and chocolate, coffee, and rice*: Since the products in this branch were not produced domestically, the calculations could be based entirely on the volume of net imports. Value added was calculated by means of the input-output ratio of 1913.

• *Tobacco*: Net imports were also the basis for the calculations of tobacco production, while all technical coefficients were derived from the industrial census of 1913. In addition, we have adjusted for changes in the output structure of the tobacco industry. In the course of the century –and especially after 1850– the share of cigars in the total value of output increased markedly: in 1850 the share of cigars was about 5 percent as against 37.2 percent in 1913.[97] The value of output was calculated by linking the estimated quantities to representative price series. Value added was estimated by subtracting the value of inputs (raw tobacco) from the value of production.

• *Sugar*: First, the estimates of the production of cane sugar were based on the net imports of raw sugar. Intensive research into the archives of sugar companies enabled us to trace changes in the average yields of the production process.[98] These yields were used to convert the amounts of crude cane sugar into an output of refined sugar. Finally, data on the volume of inputs and output were linked to price data for crude and refined sugar to arrive at an annual series of value added. In addition, the production of beet sugar had to be estimated. Knibbe provides a time series on the domestic production of sugar beets during the period 1865-1913. These data were combined with figures on the average yield of sugar beets. Inputs and output were valued at representative price series, i.e. a series of sugar beet prices and a series of the price of refined sugar. The value added of beet sugar was calculated as the difference between the value of beet sugar production and the value of the sugar beets used in sugar factories.

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[97] De Jonge, *De industrialisatie*, 57-59. *Statistiek van Voortbrenging en Verbruik* 1913.
[98] Jansen, *De industriële produktie*, appendix 2.

• *Spirits and beer*: The output volume of breweries and distilleries was derived from the excise statistics, supplemented with data on the volume of exports.[99] Until 1874 the excise statistics did not distinguish between beer and vinegar. The share of beer in the total excise revenues for beer and vinegar in the years 1874-1880 was 86 percent. This percentage was used to calculate the yield of the beer excise during the earlier years.

• *Meat*: Our estimates of livestock production yield information on the number of cattle delivered to slaughterhouses. Net exports of (live) animals were deducted from total domestic livestock production. Next, estimates of the average weight of animals were used to estimate the volume of meat production. Knibbe's data were used insofar as beef and pork were concerned. However, his estimates for veal are flawed. Knibbe has clearly overestimated the average weight of slaughtered calves. Fortunately, the excise statistics provide more reliable information. Finally, the data on the volume of inputs (the number of cattle slaughtered) and the figures relating to the volume of output (the quantities of meat produced) were linked to the price of animals (per head) and meat (per ton). Value added was thus calculated in a direct way.

• *Margarine*: The volume of production was calculated by means of data on the volume of exports. These data were related to estimates of actual production according to the industrial census of 1913 and to the production estimates for the period 1874-1880.[100] A comparison between the data on exports and output revealed that the export coefficient of margarine amounted to about 60 percent before 1880, whereas in 1913 it had reached a level of 79.5 percent. We have therefore estimated the production

[99] Exports were exempt from excise taxation. The excise data can be found in the *Bescheiden betreffende de geldmiddelen* 1846/59-1902 and the *Statistiek der Rijksinkomsten* 1903-1913.
[100] Van Stuyvenberg, *Honderd jaar margarine*, 27. *Bijdragen van het Statistisch Instituut*, 5 (1889) 136-137.

volume of margarine before 1880 on the assumption that exports were 60 percent of total output. For the years between 1880 and 1913 the ratio between exports and output was exponentially interpolated; when combined with the data on exports this produced an annual series of margarine production.

• *Other foodstuffs*: The value added of all other foodstuffs in 1913 was derived from the *Statistiek van Voortbrenging en Verbruik*. It was assumed that this branch underwent the same pattern of growth as the other branches of the foodstuffs industry.

4.5.e Leather, Woodworking, and Paper

The development of leather manufacturing was based on the consumption of raw materials (hides), which was calculated by adding up the value of the net imports and domestic output of hides. Domestic supply was estimated by multiplying the number of cattle that was slaughtered with the average weight of hides.[101]

The index of value added in woodworking was constructed on the basis of the net imports of wood. However, this method could only be applied to the second half of the nineteenth century. It was not possible to construct series of the imports and exports of wood for the period 1800-1850.

The volume of output in the paper industry was estimated on the basis of a series of the number of papermills and information relating to the average output per mill, which was derived from the records of a number of companies.[102] Output was valued at an average paper price – derived from the database of Van Riel– and converted to value added by applying the input-output ratio of 1913.

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[101] The excise statistics in *Bescheiden betreffende de Geldmiddelen*. Jansen, *De industriële produktie*, appendix 5.
[102] Jansen, *De industriële produktie*, appendix 5.

4.6 Services

We were able to construct annual estimates of value added for the greater part of the service sector: c. 85 percent for the second half of the nineteenth century and c. 75 percent for the first half of the century.[103]

• *Transport*: For most branches of transport data on tonnages, average distances, and freight rates were found with which the output value of freight transport was calculated. Estimates of the size and structure of inputs were made for benchmark years (1850, 1890, and 1913). Annual series were constructed for the transport of passengers by railways and tramways. Additional benchmark 'guesstimates' were made for shipping and road transport. In a number of instances the development of output before 1850 was approximated with a representative index (for example, toll revenues as an indicator for inland shipping).

• *Foreign trade*: The *Statistiek van de In-, Uit- en Doorvoer* provides annual series of imports and exports from 1846 on. However, a number of adjustments was required before these data could be applied. Lindblad and Van Zanden have devised a method to revise the foreign trade statistics and arrive at reliable estimates of imports and exports.[104] Smits has applied their methods to adjust the trade statistics of the period 1850-1913 for the presence of disguised transit, i.e. the declaration of transit as special imports and exports.[105] Furthermore, the official statistics valued imports and exports with a fixed set of prices that had no relation with actual market prices. Smits has combined the revised quantities of imports and exports with the prices of Van Riel in order to construct reliable series of the value of trade.

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[103] Horlings, *The economic development*. Smits, *Economische groei*.
[104] Lindblad and Van Zanden, 'De buitenlandse handel'.
[105] Smits, *Economische groei*, appendix VI.

Before 1846 trade statistics were fragmentary and inconsistent. For the first half of the nineteenth century Horlings was able to meticulously reconstruct the value of imports and exports using a variety of statistical sources.[106] He has constructed annual series of the imports and exports of 24 selected groups of products by combining the official foreign trade statistics with additional information taken from government reports, price lists of merchant companies, foreign trade returns, and a host of other sources.

However, in both cases the foundation of the calculations consisted only of products that contributed more than one percent to the value of imports or exports. After the construction of revised trade series it was consequently necessary to calculate the value of the imports and exports of all other goods (each with a share lower than one percent). Fortunately, from 1917 on we have detailed information on the value of imports and exports for all categories. We have linked the post-1917 data to the time series for the earlier period (i.e. the revised quantities and prices) to arrive at annual series of the total value of the imports and exports of all commodities.

Benchmark estimates of trade margins were made by means of data on the costs of distribution for a number of Amsterdam and Rotterdam trading companies.

• *Domestic trade*: The construction of sound estimates of value added in domestic trade was hampered by a lack of data. There are no statistics on the costs of distribution for the nineteenth century. Therefore, an indirect method of calculation had to be employed. Agricultural and industrial output figures were combined with foreign trade data to estimate the total value of turnover. The final step was to link the value of turnover to average margins of trade. There were statistics on the costs of distribution during the early 1920s. The relative development of nineteenth-century

[106] Horlings, *The economic development*, appendix III.

trade margins was established by comparing the level of wholesale versus retail prices.

• *Other services*: The value added of most other services was calculated by multiplying revised employment figures with an average wage.[107] The value added of housing was defined as the gross rental value of all residential buildings minus expenditure on repair and maintenance. The rental value of houses was assessed in the wealth tax and its statistics were used to estimated value added. Banking and insurance could only be included with fairly crude estimates. Since their share in national income is rather modest this does not lead to serious problems.

All data were derived from the studies of Horlings and Smits. Smits data were used for the period 1850-1913, while Horlings data for the period 1800-1850 were linked to the series for the second half of the nineteenth century. It should be mentioned that the methods of calculation as well as the outcome of the estimates of the two authors are virtually identical.

The only considerable difference between the estimates of Horlings and Smits occurs in housing. We have decided to accept Horlings' figure for 1850 as well as Smits' estimates for the period 1880-1913. The series for the period 1850-1880 has been re-estimated; the old output index has been used to interpolate between the new figures for 1850 and 1880.

A new series of value added was constructed for government. A thorough analysis of public finance in the first half of the nineteenth century has enabled us to calculate the total sum of wages and salaries paid by the central government.[108] Additional estimates for provinces, municipalities, and drainage authorities were made on basis of the studies of Van der Voort, Horlings, and Smits.[109]

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[107] Oomens and Den Bakker, 'De beroepsbevolking'. See appendix B for the revision. Vermaas, *Wages*.
[108] Horlings and Van Zanden, 'Exploitatie en afscheiding'.
[109] Van der Voort, *Overheidsbeleid*. Horlings, *The economic development*. Smits, *Economische groei*.

Finally, the estimates of value added in foreign trade have been revised. In his study on the development of services in the second half of the nineteenth century Smits already indicated that around 1870 there began a process of diversification in imports and exports. In their original estimates Horlings and Smits calculated the value of imports and exports for all products that contributed one percent or more to the value of either imports or exports. Detailed research into the development of prices enabled us to make more reliable estimates for the trade in the remaining categories. This recalculation resulted in an increase in the value added of foreign trade.

Table 4.5
Value Added by Economic Branch, 1807, 1850 and 1913
(millions of guilders at current prices; percentage of GDP)

	1807		1850		1913	
	mln*f*	%	mln*f*	%	mln*f*	%
Primary Sector						
agriculture	119.3	24.3	139.5	24.9	364.9	15.1
fisheries	1.4	0.3	1.7	0.3	18.8	0.8
total primary	*120.7*	*24.6*	*141.3*	*25.2*	*383.7*	*15.9*
Secondary Sector						
mining	3.1	0.6	0.0	0.0	14.4	0.6
ceramics and glass		0.0	3.8	0.7	28.2	1.2
diamond cutting		0.0	1.7	0.3	16.0	0.7
paper	1.0	0.2	0.7	0.1	9.2	0.4
printing		0.0	0.7	0.1	20.1	0.8
woodworking		0.0	2.2	0.4	37.1	1.5
foodstuffs	41.9	8.6	55.8	10.0	208.7	8.6
textiles	22.0	4.5	18.2	3.2	66.6	2.8
clothing	30.9	6.3	18.6	3.3	57.1	2.4
leather	10.0	2.0	7.1	1.3	22.1	0.9
chemicals	3.9	0.8	2.2	0.4	13.2	0.5
metal and engineering	4.3	0.9	6.6	1.2	89.8	3.7
shipbuilding	0.3	0.1	4.9	0.9	33.9	1.4
utilities	0.1	0.0	1.6	0.3	42.2	1.7
construction	16.9	3.5	17.4	3.1	123.6	5.1
other industries	8.2	1.7	4.2	0.7	0.0	0.0
total secondary	*142.7*	*29.1*	*145.7*	*26.0*	*782.3*	*32.4*
Tertiary Sector						
foreign trade	57.0	11.6	63.4	11.3	235.5	9.8
domestic trade	25.1	5.1	41.1	7.3	181.5	7.5
maritime shipping	0.8	0.2	18.6	3.3	44.9	1.9
internat. river shipping	2.4	0.5	2.4	0.4	11.7	0.5
railways		0.0	1.2	0.2	58.2	2.4
inland navigation	30.8	6.3	28.7	5.1	19.2	0.8
other transport	13.7	2.8	13.9	2.5	90.9	3.8
communication	0.9	0.2	1.0	0.2	18.1	0.7
banking	2.8	0.6	4.4	0.8	35.0	1.4
insurance	1.2	0.2	2.6	0.5	7.0	0.3
government	32.0	6.5	23.0	4.1	85.3	3.5
domestic servants	17.6	3.6	20.4	3.6	78.7	3.3
education	1.9	0.4	2.7	0.5	48.4	2.0
remaining services	8.0	1.6	13.4	2.4	125.0	5.2
catering	12.9	2.6	9.2	1.6	40.1	1.7
housing	19.7	4.0	28.0	5.0	169.0	7.0
total tertiary	*226.9*	*46.3*	*274.0*	*48.8*	*1248.5*	*51.7*
GDP	***490.3***	***100***	***561.0***	***100***	***2414.4***	***100***

Chapter 5

INCOME

5.1 Wage Income

A calculation of total wage income requires two types of data, namely an estimate of labour input and a comprehensive series of the average wage. The calculation of labour input by sector is discussed in section III.A.3. In the system of national accounts the wage sum includes the imputed wage income of non-wage earners. It was consequently not necessary to isolate actual wage labourers from total labour input. Most of the required data on wages were derived from the work of Vermaas.[110] In addition to her extensive work on the development of wages in the nineteenth-century Netherlands, she has collected a great deal of information on the length of the working day and the number of working days per year.

Vermaas' wage series encompass the entire economy. In constructing her series Vermaas has taken into account regional wage differences, the contribution of women and children aside from adult male labour, and shifts in the structure of employment. By regularly changing employment weights the aggregate index of Dutch wages was made representative for the total economy during the entire nineteenth century.[111]

The data for agriculture relate to the wages of all agricultural labourers. They were derived from the works of Van Zanden, Paping and Priester. The wage series of Priester and Paping –both pertaining to the province of Groningen– were linked to Van Zanden's estimates of agricultural wage levels in the various Dutch provinces as well as the Netherlands as a whole.[112]

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[110] Vermaas, *Wages*.

[111] The sources and methodology were discussed in Vermaas, 'Real industrial wages'. A more elaborate explanation will be presented in Vermaas, *Wages*.

[112] Van Zanden, *De economische ontwikkeling*, 117. Paping, "*Voor een handvol stuivers*". Priester, *De economische ontwikkeling*. Van Zanden's data were used to

The industrial wage figures of Vermaas are without a doubt some of the most reliable data for the nineteenth century. For the period after 1903 there exist annual wage figures for every industrial branch. These wage data were collected in the framework of a national insurance against industrial accidents and can be distinguished by region and branch. As a result of the lack of published wage series relating to the years before 1903, Vermaas had to do extensive basic research for the period 1850-1903. The archives of industrial companies were the only source for primary data on industrial wages, since there are almost no nationwide wage data for the nineteenth century.[113] For every year Vermaas took a systematic and aselect sample with a reliability margin of 3 percent. She has thus collected industrial wage series for more than forty firms.

The only nineteenth-century wage data that could be collected on a national level were found in the working specifications of the section "Buildings and Roads" of the Department of the Interior. These specifications not only mention the price of various materials but also the estimated wage rate for several occupations. The specifications also chart the development of provincial wage rates. They could therefore be used to construct an annual weighting scheme of regional wage differences. The wage data from the company archives were converted to national wage series per industrial branch by using the regional weighting schemes to estimate the wage level of missing provinces. Subsequently, all provincial wage data were weighted into a national branch average on basis of the share of every province in the total labour force per branch. These series were linked to the absolute wage level per branch derived from the *Ongevallenstatistiek van de Rijksverzekeringbank* [Industrial Accident Statistics]. Finally, the branch-specific wage series were weighted into a

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calculate the ratio between wage levels in Groningen and average agricultural wages in the entire country.

[113] Wage data were collected from all provincial and several municipal archives.

national industrial wage index by means of the yearly shares of the different branches in total industrial employment.[114]

The company archives produce enough data –one or more wage series per company– to construct national wage series for almost 75 percent of the total industrial labour force. Construction, engineering, shipbuilding, ceramics, printing, and textile manufacturing were heavily represented, whereas wage figures for foodstuffs, papermaking, mining, peat extraction, gas and electricity were less abundant.

Vermaas has estimated the development of nominal wages in the remaining undocumented industrial branches –chemicals, wood, leather, diamond cutting, industrial arts, and cleaning– by means of the following method. From 1903 onwards the *Ongevallenstatistiek* [Accident Statistics] produced reliable wage estimates for all occupational branches. This source was used to calculate the ratio between wages in the missing branches and those in the industries for which there were reliable nineteenth-century wage data for the period 1903-1913. For the same years Vermaas has compared trends in industrial wages in order to match each of the undocumented branches to the most representative industry for which there was a wage series for the entire period 1850-1913. This series was then linked to the wage data for the missing branch in 1903-1913. Nineteenth-century wages in the chemical industry, industrial arts, and the leather industry were estimated by means of the trend in construction wages; wages in woodworking were estimated with the wage trend in ceramics; and wages in the textile industry were used to estimate earnings in the clothing and cleaning industries.

Wage figures in the payment lists usually consisted of actual weekly earnings, including bonuses, fines, and payments for overtime. Daily earnings were calculated by dividing weekly earnings by six. Hourly wages were converted into daily wages by means of Vermaas's estimates of the number of working hours per day (section 3.3). There is less

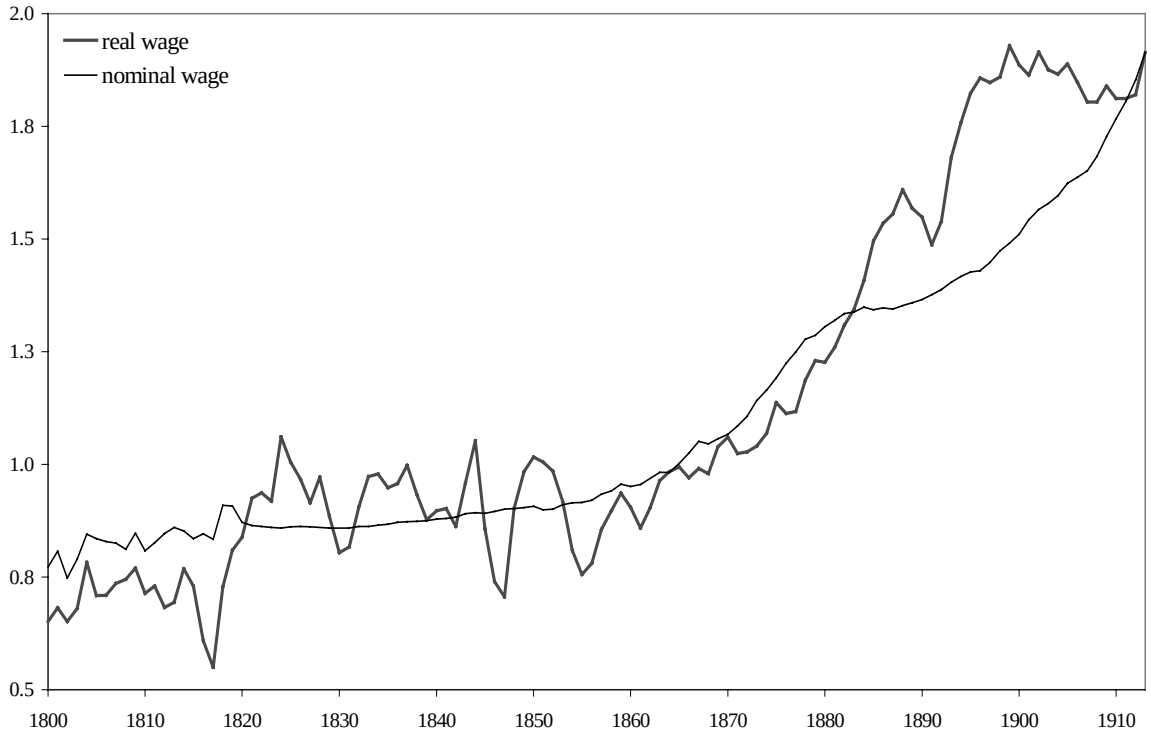
[114] See appendix B for the construction of consistent estimates of employment in the nineteenth century.

information on the number of working days per year. After 1890 one year consisted of approximately 275 working days. There are, however, almost no data for the period 1850-1890. In order to keep the results transparent it was assumed that a year consisted of 275 working days during the entire century.

The working specifications of the Department of the Interior made separate mention of the wage rates of women and children. Some payment lists also specify wages paid to women and children. These data were used to make a number of assumptions on the level and development of wage income in this group and on the ratio between female and male wages. Vermaas had to make but a few corrections to include the wages of women and children in the calculation of average wages per industrial branch.[115] Research into the pay ratio between men and women in the examined companies reveal that female wages were about 60 percent of average male wages. Children's wages were very low, but increased at the same pace as the average wage of men in the different sectors.

[115] When women and children were relatively overrepresented or underrepresented in the industrial company in question, she made an adjustment on basis of occupational data.

Graph 5.1
Nominal and Real Industrial Daily Wage, 1800-1913
(guilders per day)



The wage index of the service sector is based on an equally wide range of sources and data. Vermaas has collected data for government, education, domestic servants, merchant shipping, administrative personnel, and other services. The average wage of civil servants as well as teachers in primary education was based on data relating to the income of government employees in the Department of the Interior. The detailed nature of this source also allows for an analysis of regional differences in salary levels. The nineteenth-century licence tax data [*patentbelasting*] made it possible to estimate the salaries of clerks, managers, administrative and supervisory personnel. The wages of sailors were obtained from the muster-rolls of international trading companies and published sources. Payments to domestic personel can be estimated on the basis of household books in family archives as well as payment rolls for gardeners and attendants. The salaries of all other workers in the service sector as well as the level of

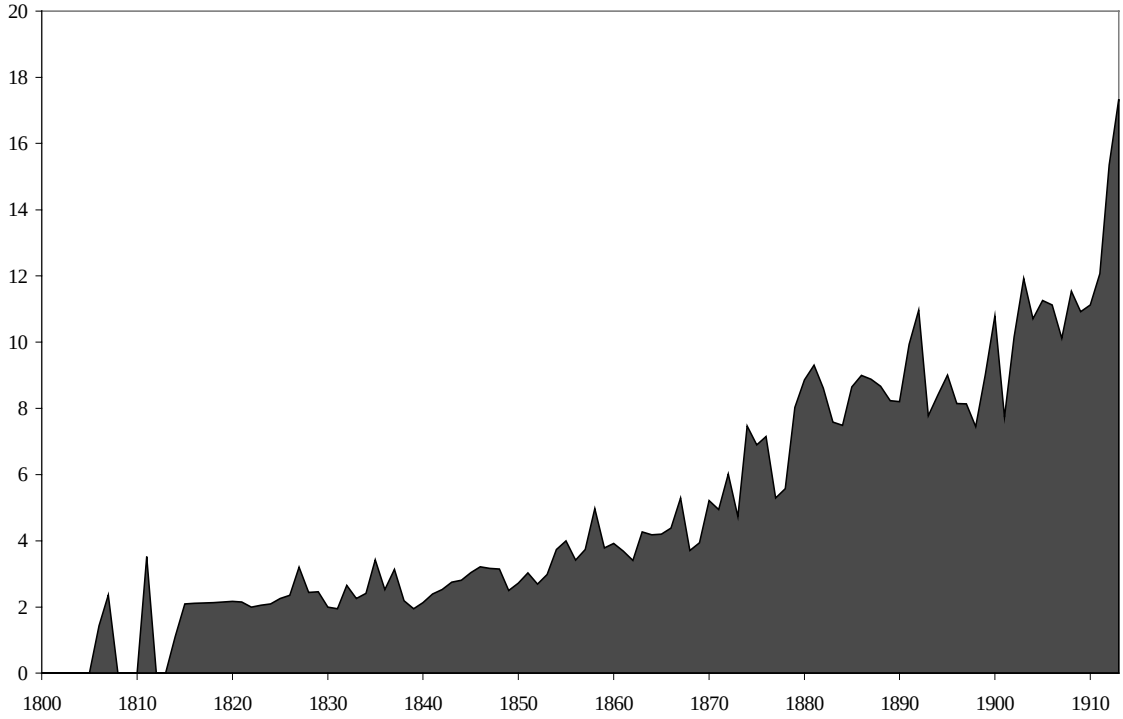
income in the professions was estimated by means of local income tax records. The various tertiary wage data were weighted into a single wage index for the service sector on basis of employment figures.

5.2 Income from Capital and Profits

Verstegen has estimated income from capital.[116] He has calculated the size and structure of the national wealth for a number of benchmark years during the nineteenth century (1807, 1815/16, 1831/32, 1843/44, 1855/57, 1862/67, and five-year averages from 1880 on (e.g. the average of 1879-1882, 1883-1887, etectera). The data on wealth were combined with information on the average yield of the different types of investment. The result was an estimate of the income from capital for a number of categories, namely real estate, securities, shares and bonds of Dutch enterprises in the Netherlands and the Dutch East Indies, foreign investments, Dutch government loans, and other moveable property. An annual series of capital income was constructed by combining a series of the revenues of the inheritance tax [*successiebelasting*] with interpolated data for the yield and relative share of different items of investments.

[116] Verstegen, 'National Wealth'.

Graph 5.2
National Wealth of the Netherlands, 1807-1913
(thousand millions of guilders)



There remains a group of incomes that cannot be ascribed to either wages or capital. The greater part of these incomes consisted of entrepreneurial profits. Profits were, however, difficult to measure. For 1913 profit income was estimated on the basis of *bedrijfsbelasting* [the company tax].[117] The same approach was not possible for the earlier period. The estimate for 1913 had to be extrapolated backwards by means of the total revenues of the company tax (1893-1913) and the *patentbelasting* [licence tax] (1819-1893). The quality of these estimates is, however, highly tentative.

[117] *Statistiek van Rijksinkomsten* 1913.

Chapter 6

EXPENDITURE

6.1 Private Consumer Expenditure

An estimate of private consumer expenditure should ideally be constructed independent of the two other approaches of the system of national accounts. The outcome can then be crosschecked with the estimates of national income and product. However, this requires information on the budget of consumers at varying levels of income, ranging from subsistence minimum to extreme wealth. Such information is unavailable for the nineteenth-century Netherlands. The only budgets concern working-class families.[118]

There is an alternative approach. The total value of private consumer expenditure can be defined as the sum of domestic production, net imports of goods, and the output of services geared towards household consumption. In his quantitative study of British economic development Feinstein has demonstrated that the method is quite practicable.[119]

Before turning to the actual calculation of expenditure, it is necessary to determine which goods and services must be included in the consumer expenditure of households. For example, the output of the metal industry was almost solely made up of intermediate products and capital goods, whereas the foodstuffs industry was entirely directed towards the needs of the individual consumer. In the case of services an industry such as the domestic servants is considered consumptive, whereas maritime shipping did not produce a final consumer service (at least until the rise of mass tourism).

The commodities and services that are included in these estimates are:

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[118] Cf Brugmans, *De arbeidende klasse*. Van Zanden, *De industrialisatie,* 136. Until the end of the nineteenth century the number of budgets was rather small.
[119] Feinstein, *National income, expenditure and output*.

(1) *Foodstuffs*: potatoes, beer, butter, bread (rye and wheat), brandy, cheese, coffee, milk, rice, sugar, tobacco, tea, horticultural goods, meat (beef, veal, mutton, pork), wine, salt, and other foodstuffs.

(2) *Industrial goods*: fuel (peat and coal), clothing, soap, and other industrial goods.

(3) *Services*: rent, domestic servants, education, communication, passenger transport, and other final services.

The indirect method of calculating private consumer expenditure requires annual information on the volume and value of physical production, imports and exports, prices, trade margins, tertiary incomes, and the revenue of specific excises.

The construction of annual series of agricultural and industrial output has been discussed in chapter 4. Information on the share of products for household consumption as opposed to industrial inputs, cattle fodder, and other intermediate and capital goods were obtained from the *Statistiek van Voortbrenging en Verbruik* [Statistics of Production and Consumption] of 1913 –the first real industrial census– and the reports of the *Commissie Ebels* on Dutch agriculture.[120] Data on the foreign trade in selected products have been taken from the studies of Horlings (1800-1850) and Smits (1850-1913).[121]

Price data have always been one of the main bottlenecks in the economic historiography of the Netherlands. Research by Van Riel has solved most of the old problems.[122] His database of Dutch prices covers the entire nineteenth century, it includes foodstuffs and non-food products, and Van Riel has adequately weighted the various regional prices into a

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[120] *Statistiek van Voortbrenging en Verbruik* 1913. *Verslag van de staatscommissie* 1927. Excises statistics in *De economist* (1853).

[121] Horlings, *The economic development*, appendix III. Smits, *Economic growth*, appendix 6.

[122] Van Riel, *Postponed conformity*.

national average per product. He generally presents wholesale prices, although for some commodities specified prices (of hospitals and other institutions) had to suffice. The absolute level of Van Riel's prices has not always been adopted. When the specific quality of a product did not adequately reflect the output of the entire industry, the price level (a unit-value ratio) was derived from the *Statistiek van Voortbrenging en Verbruik*. This level was then projected onto an index of Van Riel's prices.

Producer prices and wholesale prices can be calculated by means of the various price series and the *Statistiek van Voortbrenging en Verbruik*. The next step concerns the price that was actually paid by the consumer. Retail prices were not available until after 1890, and even then they did not cover the entire range of products. Instead, the margin between producer and wholesale prices on the one hand and retail prices on the other hand is estimated for every group of products. These margins are taken from the work of Smits; a detailed description of their calculation and the results can be found in his thesis.[123]

Two types of service are included in the calculations. The first type concerns domestic servants, education, and the remaining services. The consumption of these services is defined as the product of total employment and an average annual income per worker; no assumptions were made on a possible 'consumer surcharge' over and above the value of incomes earned. The second type involves communication, passenger transport, and rent. Gross revenues are given for the first two industries; the gross rental value of residential buildings is calculated by combining series on the total stock of houses and on average annual rents.[124]

The gross revenues of state taxes can be found in several publications. Van der Voort has collected the revenues for the second half of the nineteenth century. Similar data for the period 1800-1850 can be

[123] Smits, *Economic growth*, appendix 7.
[124] 1800-1850: Horlings, *The economic development*. 1850-1913: Smits, *Economic growth*.

found in a wide variety of sources.[125] However, the most interesting aspect of indirect taxation was that of local excises.

The total income of municipalities can be found for 1814, 1827, 1840, 1849 and for the period 1850-1913.[126] Much less is known about the revenues of the various kinds of municipal excise. In order to assess the burden of indirect taxation on the consumption of a number of taxed commodities we have constructed annual series of tax revenues. For the period 1814-1849 municipal excise revenues are estimates as follows. First, an index of the total outlay of local government is used as an indicator for the development of total income. The share of indirect taxes in 1840 is used to convert this total income into a series of indirect tax revenues. We have then projected the share of the various excises in total indirect tax revenues in 1849 onto this series. More information is available for the years between 1849 and 1865. The debate on the abolition of local and national excises prompted the publication of large amounts of quantitative data, that were used to estimate the revenue of individual excises. The total yield of local indirect taxes is given. The share of each excise was calculated in benchmark years. This share was assumed constant for as long as there were no changes in tax laws. When excises were abolished, the shares of the remaining commodities were adjusted to add up to one hundred percent.

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[125] Gogel, *Memoriën*, 510-511. *Handelingen van de Staten-Generaal* 1814/15-1850/51. *Bescheiden betreffende de geldmiddelen* 1846/59. *Staatkundig en Staathuishoudkundig Jaarboekje* (1853) 309-314. Van der Voort, *Overheidsbeleid*, 261-265.

[126] ARA, Staatssecretarie, no. 6482. Griffiths, 'The role of taxation', 265. Van der Voort, *Overheidsbeleid*, 265.

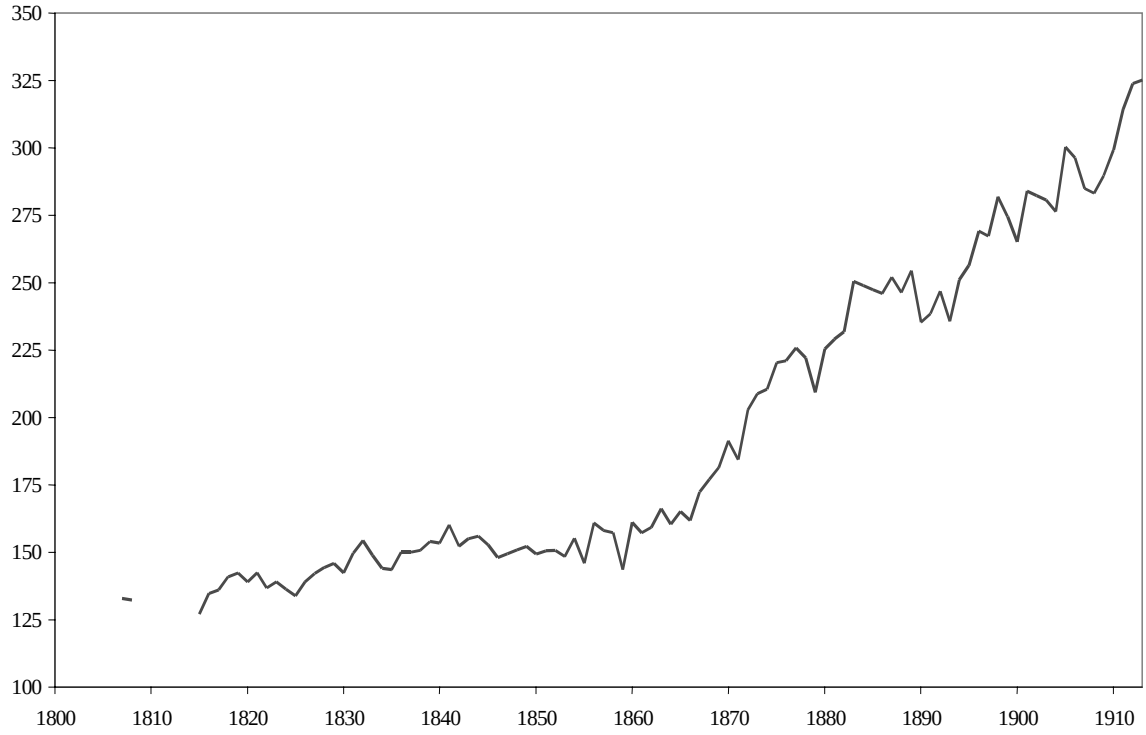
Table 6.1
The Composition of Private Consumer Expenditure at Current Prices, 1807-1913 (%)

	1807/08	1829/31	1849/51	1869/71	1889/91	1911/13
Food	*54.4*	*57.8*	*53.4*	*54.4*	*49.2*	*42.1*
primary	22.5	25.7	24.5	19.2	16.3	12.4
dairy	9.9	9.5	9.2	10.2	7.6	7.1
meat	12.4	9.2	10.9	13.6	12.9	13.0
other non-primary	9.6	13.4	8.8	11.4	12.3	9.6
Non-Food	*45.6*	*42.2*	*46.6*	*45.6*	*50.8*	*57.9*
clothing	12.7	11.3	14.2	16.1	12.8	9.9
other industrial goods	18.3	15.8	14.8	13.9	19.5	26.6
rent	7.2	8.5	9.4	7.4	8.9	9.7
services	7.4	6.6	8.2	8.2	9.6	11.7
Total	*100*	*100*	*100*	*100*	*100*	*100*
Real per capita expenditure, 1911/13=100	42	46	47	59	76	100

Note: The figures refer to the three years around each benchmark year. Primary foodstuffs: bread and potatoes. Dairy: butter, cheese, and milk. Meat: beef, veal, pork, and mutton. Other non-primary foodstuffs include rice, beverages, and horticultural products.
Source: Horlings and Smits, 'Private Consumer Expenditure'.

The total value of expenditure on goods is calculated by combining all data on volumes of domestic consumption and retail prices for the various products. The total value of Dutch private consumer expenditure is calculated by adding incomes and gross revenues earned in the (consumer) service industries. The final step in the estimates is the construction of a comprehensive cost-of-living index with which the value of consumer expenditure can be expressed in real terms. To this end series of the volumes of consumption and retail prices are weighted into a Paasche deflator. The weights are changed periodically in order to account for changes in relative prices and the structure of expenditure.

Graph 6.1
Real Per Capita Private Consumer Expenditure, 1807-1913
(1913 guilders)



6.2 Private Investment

Private capital formation encompasses all goods –either purchased or produced– intended to serve as capital goods in the production process. It concerns goods with a minimum lifespan of one year (such as buildings, machines, and ships). Items with a shorter lifespan are considered part of consumer expenditure. The definitions comprise investments aimed at expansion as well as replacement.[127]

The estimates of capital formation were made by the Groningen research group on nineteenth-century investments in the Netherlands.[128]

[127] CBS, *Nationale Rekeningen 1991*, 231-232.
[128] Group Albers, Groote, Clemens, under supervision of prof.dr. R.R. Fremdling.

They have constructed mutually consistent annual series of the capital stock and capital formation in fixed assets, changes in inventories and work in progress, and depreciation, as well as deflators for every component for the period 1800-1913. Their series are distinguished by type of asset and by main industry group, although in this paper we will only present aggregate series of total investments.[129] The Groningen series are inclusive of public investment. We have therefore constructed separate series for this item, which were then removed from total investment in order to distinguish between private and public capital formation.

The greater part of the estimates was based on the expenditure approach, i.e. actual expenditure on capital formation by the government or private enterprise.[130] Additional estimates were made by constructing commodity flows (machinery and equipment) and by combining data on income flows and average yields to calculate the value of the capital stock, the so-called Giffen method (buildings in the private sector). All estimates of fixed capital formation and capital stocks were made by means of the perpetual inventory method (PIM), that is nowadays used by most statistical offices to estimate the stock of capital goods.[131] The values of depreciation and retirements were based on estimates of average asset life and on appropriate patterns of scrapping and depreciation: the Groningen researchers have always used straight-line depreciation and a mixture of one-hoss-shay (rectangular) and bell-shaped retirement curves.[132]

Assumptions on the lifespan of assets are of crucial importance in the perpetual inventory model.[133] To a large extent the lifespan estimates were based on empirical evidence on retirements at a low level of aggregation, whereas in most other relevant studies the estimates of depreciation and

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[129] More detailed information can be found in Groote, *Kapitaalvorming* (infrastructure), and Albers, *Capital formation* (machinery and equipment).
[130] For example in infrastructure, see Groote, *Kapitaalvorming*.
[131] For example, the Central Bureau of Statistics (CBS) of the Netherlands, the British Office of National Statistics (ONS), and the American Bureau of Economic Analysis.
[132] The methodology of the Perpetual Inventory Model is explained in Albers and Groote, 'Kapitaalvorming', Groote, *Kapitaalvorming*, and Albers, *Capital formation*.
[133] *Cf* Groote, *Kapitaalvorming*, 11-13.

retirements lack such an empirical foundation. The value of capital formation was deflated with a weighted series of the price of labour and materials involved in the construction of the capital goods (buildings, infrastructure, machinery and equipment). Once again detailed microeconomic data were at the basis of the calculations. The weights for the deflators were derived from cost estimates and building plans that came along with the production process. In short, every element of the calculations was rooted in a sound empirical basis.

An extraordinary amount of source material was needed to achieve this level of detail. Published information –mostly from official statistics– was supplemented with data from government and private archives, the *Effectenboeken* of Van Oss and Van Nierop & Baak (volumes showing the balance sheets and profit-and-loss accounts of public limited companies), statistical publications of industrial institutes, memorial books, scientific literature, and so on.[134] For some sectors the financial bookkeeping of companies was used to calculate capital formation.[135] Balance sheets and profit-and-loss accounts provide data on investment expenditure. Some examples of industries for which this approach proved valuable are railways and tramways, public utilies, mining, and communication.[136]

6.2.a Buildings

Capital formation in buildings should ideally be derived from cadastral records. Unfortunately in the Netherlands these records have not been preserved. The estimates were therefore based on the statistics of the real estate tax that was levied on the basis of cadastral surveys. The revenues of the real estate tax were adjusted for tax exemptions and deductions for maintenance. The result was used to construct an annual series of the capital stock in residential and non-residential buildings in the private sector.

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[134] Albers and Groote, 'The empirics', and Clemens, Groote and Albers, 'The contribution'.
[135] Albers and Groote, 'The empirics'.
[136] See Groote, *Kapitaalvorming*.

Investments in buildings were deduced from a combination of the value of the capital stock and assumptions on the lifespan of buildings. In addition, government accounts, building plans, memorial books, and other sources were consulted to calculate the investments in buildings by government, water management boards, schools, churches, etcetera.

6.2.b Infrastructure

The value of capital formation in infrastructure (roads, canals, ports, railways, etcetera) was calculated mainly with two different methods. The first approach departs from data on actual investment expenditure according to the annual accounts (balance sheets and profit-and-loss accounts) of companies. The estimates for waterways and other hydraulic works, land reclamation, and roads were constructed with official statistics and government accounts. Where financial data were not available Groote combined data on the physical quantity of infrastructure (the length of roads and canals, the acreage of reclaimed land) with estimates of the unit costs of construction to approximate the value of investments and capital stock.[137]

6.2.c Machinery and Transport Equipment

The greater part of the estimates of capital formation in machinery and transport equipment were made with data on actual investment expenditure derived from the financial accounts of companies. Such data were available for public utilities, mining, agriculture (supplemented with data on total acreage), and the rolling stock of railway companies. Capital formation in shipping was calculated with data on the capacity of the fleet. The estimates of investments in industrial and construction machinery were based on the 'commodity flow' method, which departs from the sum of the domestic output and net imports of investment goods.[138]

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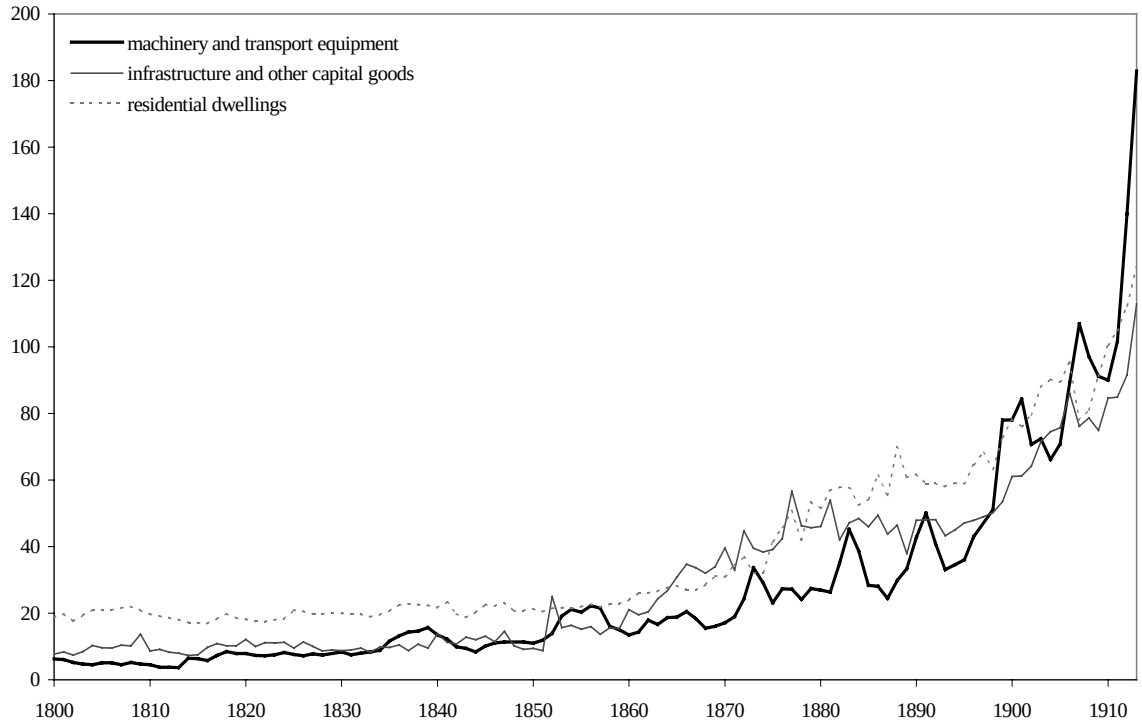
[137] Groote, *Kapitaalvorming*, 131-133, 159-161, and 292-293.
[138] Albers, *Capital formation*.

Graph 6.2
Gross Fixed Capital Formation by Type of Asset, 1800-1913
Source: Albers, *Capital Formation*, table A.3.1.



6.3 Public Consumption and Investment

The estimates relating to the public sector are based entirely on the annual accounts of the central government. Investments that were channelled through separate funds could not be identified as such, but in the nineteenth century this was probably insignificant.[139] Expenditure by other levels of government were added using the ratio between consumption, investment, and value added of the state.

Public consumption includes wage payments to government personnel. However, government finances include public enterprises that are treated as separate industries: e.g. the navy shipyard is part of the

[139] Such investments may have shown up as subsidies or advances to industry or other sectors of the economy.

shipbuilding industry, the postal service is part of communication, etcetera. Moreover, expenditure on military assets –including such items as barracks and fortresses– are considered consumption rather than investment.[140] Consequently, the wages and salaries of public companies must be excluded and military expenditure has to be reclassified.

Detailed annual accounts of state finances are available from 1823 on. In order to make these accounts consistent with the definitions of the system of national accounts a number of items was excluded from expenditure on wages, salaries, other items of consumption, and investment. These items were: education (agricultural and otherwise), mines, the navy shipyards, the clergy, the National Savings Bank, part of the military incomes, tax reimbursements, and reductions in the nominal value of assets (insofar as they were booked separately).[141]

For the period 1814-1822 the calculations were not based on the financial accounts, but on aggregate figures of expenditure. We have used the results of earlier work on the construction of annual series of government expenditure by category, which distinguishes between wages and salaries, consumption and investment, interest and redemption, and transfers of income and capital.[142]

The ratio between adjusted consumption and investment in 1823-1827 and total expenditure on wages, salaries, consumption and investment according to the earlier estimates was used to estimate the total combined value of public consumption and investment by the state in the period 1814-1822.[143] Separate series for consumption and investment were made by applying their average shares in their combined value in the period 1823-1827 (94 percent consumption and 6 percent investment). Expenditure by other levels of government (provincial and municipal) was added by calculating the ratio between consumption, investment, and value

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[140] CBS, *Nationale Rekeningen 1991,* 230.
[141] Calculations based on the work of Van der Voort.
[142] Horlings and Van Zanden, 'Exploitatie'.
[143] The earlier estimates concern actual government expenditure, which includes public companies (Horlings and Van Zanden, 'Exploitatie').

added for the state and applying it to the estimated value added of government as a whole.

Public consumption and investment during the Napoleonic Wars (1800-1810) was estimated in a fairly crude manner. The only available information concerns central government budgets rather than actual expenditure. We have linked an index of total state expenditure in 1800-1818 to the estimated figures for public consumption and investment in 1814/1818. This unfortunately also means that potential deviations between budgettary estimates and actual outlay, and changes in the relative importance of consumption and expenditure as well as provincial and municipal government are ignored.

6.4 Changes in Inventories and Work in Progress

The system of national accounts makes separate mention of the amount of goods in stock and work in progress at the end of the year to account for the output that has not yet passed entirely through the production process. Inventories comprise all raw materials, semi-manufactures, and finished products in stock with domestic producers, as well as part of the cattle stock. Work in progress does not include the building industry, whose unfinished projects are counted among the investments.

The work of Albers also contains annual estimates of the value of changes in inventories and work in progress. Changes in inventories were estimated by means of the stock of agricultural products (deduced from output series), the cattle stock, and other inventories of producers and consumers, partly on the basis of the ratio between stocks and output in industry and services. He has taken into account changes in the ratio between stocks and turnover as a consequence of improvements in transport, communication, and financial mediation. Albers has calculated the value of work in progress by applying lags to his own estimates of output in construction and the metal industry, and investments in infrastructure. Inventories and work in progress were deflated with a wholesale price index (the deflator for domestic trade).

6.5 Depreciation

Starting from the Groningen series on capital formation and the capital stock A tentative series of depreciation at constant 1913 prices was constructed. Depreciation in infrastructure was calculated by Groote; all other items were estimated by Albers.[144] In order to be able to make a distinction between gross and net income estimates at current prices the aggregate series has been inflated with the (implicit) price series for gross fixed capital formation.

[144] Groote, *Kapitaalvorming*. Albers, *Capital formation*.

Chapter 7

BALANCE OF PAYMENTS

The estimates of the balance of payments only concern the current account, i.e. net primary incomes from abroad, net merchandise exports, and net exports of services. There is some information on the capital account, but its reliability is doubtful.[145] Fortunately, however insightful data on international capital flows may be, their omission has no effect on the quality of the national accounts.

In the system of national accounts the distinction between domestic and foreign transactions is made on basis of their location rather than the nationality of producers, consumers, or income earners. For example, an Englishman who works in Dutch industry adds to the national income of the Netherlands; when he decides to send part of his income to his family in Britain it will show up on the balance of payments. Consequently, colonial and other possessions outside the present-day Netherlands are considered foreign territory. Therefore, all transactions with Suriname, the Dutch East Indies, Belgium, and other countries that were once a part of the Netherlands are included in the balance of payments.

7.1 Imports and Exports of Merchandise

The revised time series of imports and exports for the period 1802-1913 were taken from the works of Horlings and Smits.[146] The total value of imports was converted to *c.i.f.-prices* (costs, insurance, and freight) and the exports series was expressed in *f.o.b.-prices* (free on board). We were forced to use fixed coefficients: imports were lowered by 7.5 percent, while exports were raised by 2.5 percent to arrive at c.i.f. and f.o.b. prices.

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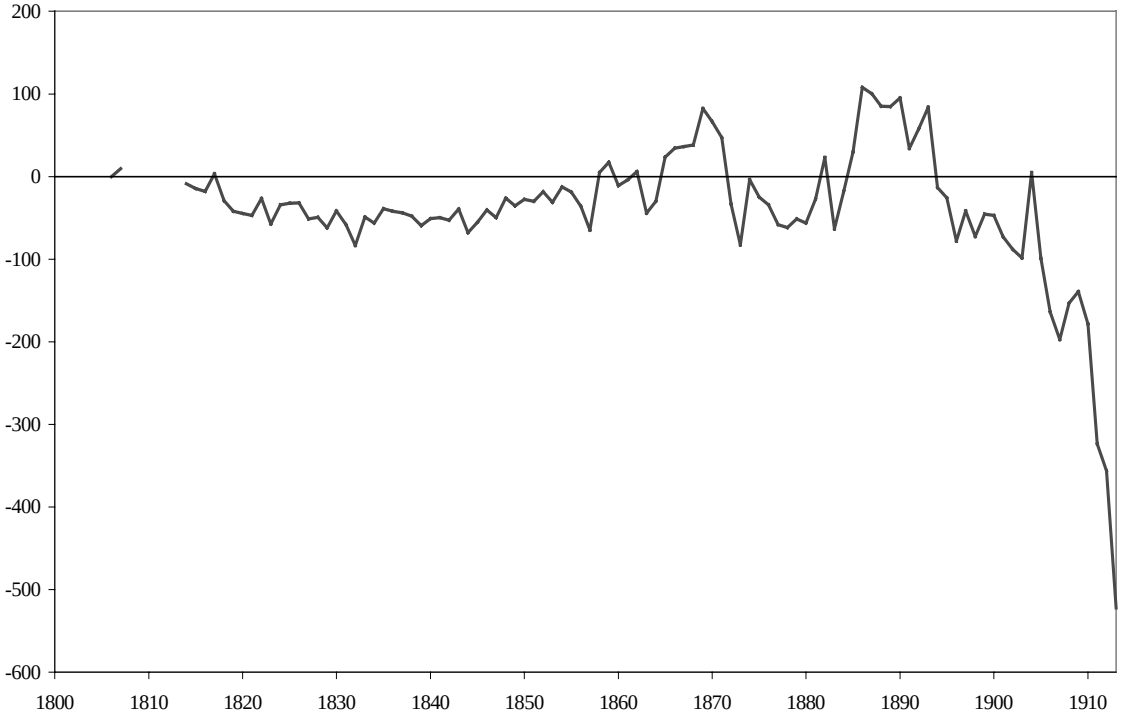
[145] For example, there was a stamp duty on foreign stock and bonds. (See Sickenga, *Bijdrage tot de geschiedenis*)

[146] Horlings, *The economic development*, appendix III. Smits, *Economic growth*. See section III.B.6 on services.

Graph 7.1
Net Merchandise Exports, 1802-1913
(current prices; millions of guilders)



7.2 Imports and Exports of Services

The estimates of net tertiary exports cover international transport (merchant shipping and river shipping), port activities, and financial services.[147] The guiding principle in the definition of the imports and exports of services is that all services associated with the export or transport of goods from the Netherlands to other countries were paid by the foreign receiver, while Dutch entrepreneurs paid for the services involved in the import or transport of goods into the Netherlands. The available figures on the volume and price of international trade and shipping in the nineteenth century are used to

[147] There are insufficient data to include the international exchange of railway transport, communication, and other services, while tourism was virtually non-existent.

construct annual series of the imports and exports of services. These series are then linked to the revised figures for the period 1921-1939.[148]

7.2.a Merchant shipping

The imports and exports of merchant shipping consist of two components, namely (i) shipping to and from the ports of the Netherlands and (ii) Dutch shipping between foreign ports. The difference between these components lies in the methods of calculation rather than the nature of the activities.

There already exist data on the volume and value of the output of Dutch shipping between foreign ports.[149] They concern estimates of the capacity and average distance of transport combined with aggregate series of the rate of utilization and the average freight rate of all Dutch merchant shipping. The result is ascribed entirely to exports.

The exports of merchant shipping from the Netherlands can be calculated relatively easily. The capacity of Dutch ships that cleared Dutch ports as well as their rate of utilization and average distance of transport are given.[150] The aggregate series of freight rates is used to value exports. An estimate of the imports of merchant shipping into the Netherlands requires some additional effort. For the period 1831-1913 the volume of foreign shipping to and from the Netherlands –the capacity of loaded ships– was taken directly from the official statistics on the movement of merchant shipping in Dutch ports.[151] The capacity of foreign shipping in the period 1800-1830 was calculated on basis of the shipping tables of Horlings.[152] It was assumed that foreign ships had the same rate of utilization as Dutch ships. The average distance of foreign shipping was calculated in

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[148] Estimates made by Gert den Bakker of the Central Bureau of Statistics.
[149] Horlings, *The economic development*, 397-398, 403-404. Smits, *Economische groei*, appendix I.
[150] Horlings, *The economic development*, 403-404. Smits, *Economische groei*, appendix I.
[151] *Handelingen van de Staten-Generaal* 1831/32-1845/46. *Statistiek van den Handel en de Scheepvaart* 1846-1876. *Statistiek van den In-, Uit- en Doorvoer* 1877-1913.
[152] Horlings, *The economic development*, appendix V, tables 6a-11c.

benchmark years using the official statistics; the distances in the intervening years were interpolated exponentially.[153] The output volume of foreign shipping to and from the Netherlands –in cargo-ton-kilometers– was not valued with the aggregate Dutch freight index but with a freight rate for European shipping in order to cancel out the overestimated East Indian freight rates.[154]

7.2.b International river shipping

The estimates of the imports and exports of river shipping only take into account shipping to and from the Netherlands. No attempt was made to include shipping between foreign ports (e.g. between the German Rhine ports). All data were taken from the works of Horlings and Smits.[155]

The volume of Dutch and foreign shipping was calculated by means of annual series of the total amount of goods conveyed and the share of Dutch skippers in their transport. For the period 1850-1913 data on the capacity of ships was combined with estimates of the rate of utilization to arrive at a series of the amount of goods. The calculations for the first half of the nineteenth century are made primarily by means of data on Rhine shipping. These data were supplemented with the estimated volume of shipping to and from the ports in the western part of Belgium. An index of the volume of river shipping to and from Western Belgium was combined with the actual volume of shipping on this route in 1850.[156] In 1850 the Rhine and Western Belgium accounted for 73 percent of foreign entrances

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[153] 1815-1913 benchmark estimates of distance, interpolated for intervening years; 1800-1811 index of distances of Dutch shipping relative to 1815/19.
[154] Harley, 'Ocean freight rates'. North, 'Ocean freight rates'. Horlings, *The economic development*, 400.
[155] Horlings, *The economic development*, appendix VI. Smits, *Economische groei*, appendix III. Other sources of information were the *Staatkundig en Staathuishoudkundig Jaarboekje* and the *Statistiek van den Handel en de Scheepvaart*.
[156] *Statistiek van den Handel en de Scheepvaart* 1850. This source only provides data on the capacity of ships. The rate of utilization was set at 75 percent (Smits, *Economische groei*, appendix III).

and 85 percent of Dutch clearances; these shares were assumed constant during the first half of the century. A series of the total volume of shipping past Emmerich on the Rhine in 1806-1825 was used to complete the volume estimates.[157] The result is an annual series of the total volume of entrances into and clearances from the Netherlands.

The volume of production in cargo-ton-kilometers was calculated by means of the estimated average distance of transport of Dutch international river shipping on the assumption that foreign ships transported goods across the same distance. The output volumes of Dutch clearances and foreign entrances were valued at representative freight rates: upstream rates for Dutch exports and downstream rates for foreign imports. For the period 1850-1913 benchmark estimates of upstream and downstream freight tariffs were interpolated with an aggregate index of freight rates. The resulting series was linked to annual indices of upstream and downstream tariffs in the period 1800-1850. The product of output volumes, average distances, and freight rates results in the value of the imports and exports of international river shipping.

7.2.c Port activities

Port activities are the counterpart of the imports and exports of shipping: exported transport services are accompanied by imports of port activities (i.e. expenditure abroad on harbour dues, loading and unloading, pilots, etcetera) and vice versa. The calculations were based entirely on the available data for merchant and international river shipping.[158]

The input-output ratios for merchant shipping and international river shipping are given. The bookkeeping of shipowners reveals that expenditure in foreign ports accounted for approximately 20 percent of the inputs of

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[157] The index was linked on the average of the years 1815/1819 (Horlings, *The economic development*, 409).

[158] Horlings, *The economic development*, appendix V-VI. Smits, *Economische groei*, appendix I and III.

Dutch merchant shipping.[159] However, Dutch harbours were more expensive than foreign ports.[160] Consequently, the price of exported port services was higher than that of imported services. The share of port activities in the inputs of foreign transport services was raised to account for the difference: until 1870 Dutch ports were roughly 50% more expensive, in 1890 the price levels were about equal, and between 1870 and 1890 the price difference was interpolated exponentially. The combination of input-output ratios, the estimated share of expenditure in Dutch and foreign ports in total intermediate expenditure, and the value of imported and exported shipping services results in annual estimates of the imports and exports of port services.

7.2.d Banking and insurance

It is assumed that the imports and exports of financial services were related entirely to the international trade of the Netherlands. Since financial imports and exports were not linked to either imports or exports of merchandise, the estimates were made by means of the total combined value of imports and exports. An index of the total value of Dutch international trade was combined with the average value of the imports and exports of banking services in 1921/26.[161] It was consequently assumed that financial imports and exports developed along parallel lines.

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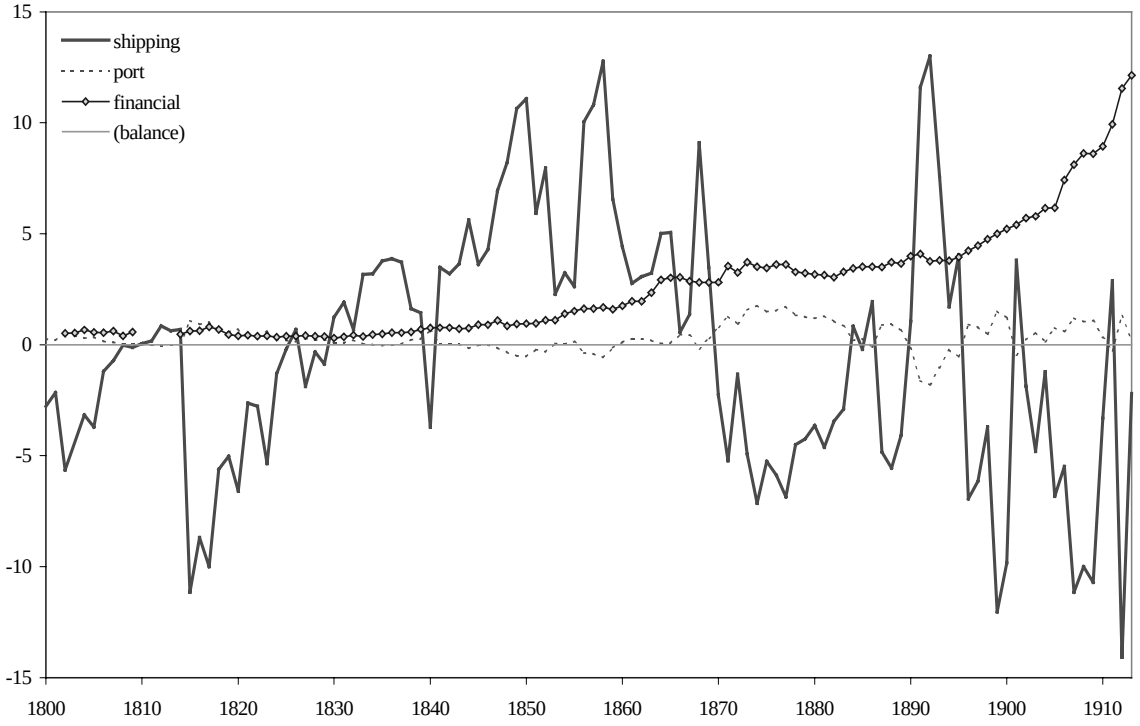
[159] Data relating to 1850, 1880, and 1910. Municipal Archive Amsterdam, Bienfait (646), 163-164. Public Record Office, Stoomvaartmaatschappij Nederland (2.20.23), 608-609

[160] Horlings, *The economic development*, 194.

[161] In 1921/26 average exports of banking services were 15 million guilders as against 5 million guilders for imports (latest estimates of the CBS provided by Gert den Bakker).

Graph 7.2
Net Service Exports by Component, 1800-1913
(current prices; millions of guilders)



7.3 Net Primary Income from Abroad

Foreign investments have long since been an essential element of Dutch economic development. There are, however, few estimates of the amount of capital invested and incomes earned. In his early work on the national accounts of the nineteenth-century Netherlands Van Zanden made benchmark estimates of net primary income from abroad.[162] Verstegen has presented revised estimates as part of his study on Dutch national wealth in the nineteenth century. He arrives at much lower values, although his income from foreign securities does not include the Dutch colonies.[163] When

[162] Van Zanden, 'Economische groei', 60. His estimates were taken from the works of Metelerkamp, Keuchenius, and Teijl.
[163] Verstegen, 'National wealth', 87 and 101. His figures are 23 million guilders in 1807, 23 million in 1854/57, 115 million in 1879/82, and 120 million in 1908/12.

colonial securities are included, Verstegen's income from foreign investments totalled 198 million guilders in 1908/12. The *CBS* estimate for 1910 was 188 million guilders.[164] This section aims to construct an annual series of primary incomes received from and paid to other countries – colonial and otherwise– and to link this series to the latest *CBS* estimates for the interbellum period.

There are different types of primary income from abroad. For the nineteenth-century Netherlands two different distinctions can be made: (1) public versus private incomes, and (2) incomes from colonial versus non-colonial sources.

7.3.a Public Incomes

The Dutch central government had three sources of incomes from abroad, viz. (i) transfers of Belgian tax revenues to the northern Netherlands during the period 1815-1830, (ii) colonial remittances as part of the *Cultuurstelsel*, and (iii) other incomes from the Dutch East Indies.

During the period of the United Netherlands the Belgian taxpayer was one of the most peculiar sources of foreign income. At the time Belgium was an integral part of the Netherlands, but technically speaking –i.e. when constructing the national accounts of the northern Netherlands– the southern provinces were a separate nation. One element of the unification of the northern and southern Netherlands was the amalgamation of the public debts of the Netherlands and Belgium. Unfortunately for the Belgians their debt was a mere drop in the vast ocean of public debt accumulated by the Dutch during the preceding century and a half. Taxes, on the other hand, were distributed more evenly among the population. Consequently, the Belgians paid a disproportionate share of the interest on the public debt, whereas Dutch capital owners were its main recipients. Other items of

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Income from colonial securities amounted to 7 million guilders in 1879/82 and 78 million in 1908/12.

[164] CBS, 'Nationaal inkomen', 46. It concerns *net* income from abroad.

public expenditure –such as state support for shipbuilding and merchant shipping, expenditure on the navy, and public investments in infrastructure– were similarly biased towards the Northern Netherlands. The combination of small differences in the relative burden of state taxation and a heavy northerly bias in state expenditure created net transfers of public funds from Belgium to the Netherlands.

The transfers have been calculated by comparing regional data on tax revenues and total expenditure. In principle every region (the southern and northern Netherlands) was entitled to an amount of expenditure equal to the value of tax income plus a proportion of the budget deficit. Net transfers are defined as the difference between these entitlements and actual regional state expenditure. The ratio between net Belgian transfers and the gross domestic product of the Netherlands demonstrates the significance of this source of foreign income: net transfers acounted for 3.3 percent of GDP in 1816/20, 5.9 percent in 1821/25, and 6.3 percent in 1826/30.[165]

[165] Horlings and Van Zanden, ‘Exploitatie en Afscheiding’, 11.

Table 7.1
The Share of Belgium in the Revenues and Expenditure of the Central Government of the United Netherlands, the Value of the Net Transfers from Belgium to the Netherlands as well as Their Share in Dutch GDP, 1816-1830

	Belgian share in revenues of the United Netherlands %	Belgian share in expenditure of the United Netherlands %	net transfers from Belgium to the Netherlands mln*f*	transfers as a percentage of Dutch GDP %
1816	41	19	17.3	3.5
1817	46	19	19.8	3.7
1818	45	27	13.2	2.6
1819	47	29	11.3	2.6
1820	47	21	19.8	4.6
1821	45	18	19.4	4.8
1822	44	18	20.0	5.0
1823	46	14	27.6	6.4
1824	48	17	28.6	7.1
1825	49	18	29.4	6.9
1826	50	21	31.1	7.3
1827	49	21	30.3	6.6
1828	48	20	28.8	6.4
1829	50	18	31.5	6.8
1830	38	10	22.4	5.1
average	*46*	*19*	*23.4*	*5.3*

Note: Belgium was credited with 25 percent of government subsidies to the international services and 70 percent of industrial subsidies.
Sources: *Handelingen van de Staten-Generaal* 1817/18-1831/32. *Algemeene Staatsrekeningen* 1823-1830. For an explanation of the method of calculation see Horlings and Van Zanden, 'Exploitatie en afscheiding'.

From 1832 until 1877 the Dutch government derived a substantial part of its income from the exploitation of the Dutch East Indies. As part of an elaborate programme to revive the international services the government introduced the *Cultuurstelsel* [Cultivation System] in 1832 in which Javanese peasants were forced to dedicate a portion of their land to the cultivation of tropical export crops (coffee and sugar in particular). The entire production was then purchased at undervalued prices, transported to the Netherlands by Dutch merchant ships, and auctioned by the *Nederlandsche Handel-Maatschappij* [Dutch Trading Company, established in 1824]. The net proceeds of the auctions –gross sales minus the value of purchases, the fees of the *NHM*, freight charges, insurance premiums, and so

on– went to the public treasury and was recorded as the '*batig slot*' [colonial remittances].

However, the amount that was officially registered in the annual accounts of state finances underestimates the true size of the remittances. Colonial incomes were used to finance subsidies to the international services and to pay for a number of unrelated subsidies and transfers.[166] These items of expenditure were added to the official value of the '*batig slot*'. The subsidies for shipowners, insurers, and the *NHM* were estimated by comparing tariffs in the colonial sector with the level of prices in the unprotected sector of the economy. For example, the broker's fee for normal transactions was 2 percent, whereas in the early 1830s the *NHM* was paid a fee of between 4 and 9 percent of the sales value. The adjustment of the '*batig slot*' has serious consequences for the early years of colonial protection: in 1832/50 actual colonial remittances were an average of 100 percent higher than the official '*batig slot*' as against 11 percent in the period 1851/77.

Finally, there were a number of other items of public income and expenditure on the colonial balance of payments aside from remittances. Our estimates mainly concern the Dutch East Indies. There are few data for Suriname and the Caribbean islands, but the state's annual accounts did yield a series of subsidies and other transfers to these possessions.[167] The estimates of the East Indian balance of payments have been constructed by Korthals Altes.[168] Net public income from colonial sources other than the '*batig slot*' is defined as expenditure in the Netherlands minus income from the Netherlands excluding the value of the sales of products in the Netherlands. The latter category is the financial counterpart of the colonial

[166] See Horlings and Van Zanden, 'Exploitatie en Afscheiding', 4-5 and appendix II.
[167] One of the main expenses incurred with respect to the West Indian colonies concerned compensation to plantation owners for the abolition of Surinam slavery in 1863.
[168] Korthals Altes, *Balance of Payments 1822-1939*.

remittances and should consequently be left aside.[169] The resulting estimates are adjusted for changes in the exchange rate of the East Indian guilder.[170]

7.3.b Private Incomes

The amount of interest and dividends paid to foreign investors cannot be ascertained independently. Instead, we have opted for an indirect approach. The most likely candidates for foreign investment were railway companies and utilities.[171] An index of the value added of these industries (at current prices) was linked to the amount of interest and dividends paid to other countries in 1921.[172] The calculation was restricted to the period 1870-1913, because according to De Jonge foreign investment in the Netherlands only became important after 1870.

Private primary incomes from abroad can be divided into two categories, namely (i) incomes from investments in the Dutch colonies and (ii) incomes from investments in other countries. In the nineteenth century non-colonial investments were by far the most important source of primary income from abroad.

The calculation of private non-colonial income from abroad is based on the statistics of the succession tax that provide data on the total value and composition of assessed inheritances. Verstegen has used these data to construct benchmark estimates of the size of and income from the national wealth of the Netherlands in the nineteenth century.[173] His methods have been extended to construct annual series of investments in foreign securities and bonds.

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[169] *Public Finance* 1816-1939, tables 2-4. Data on the value of the sales of products are only available until 1899, but after 1899 the total receipts from the Netherlands stay on or about the same level as before. It was assumed that the sales of products had the same share in total receipts in 1900-1913 as in 1890-1899 (an average of 85 percent).
[170] *Money and Banking* 1816-1940, 122-129.
[171] De Jonge, *De industrialisatie*, 34.
[172] Latest CBS estimates made by Gert den Bakker.
[173] Verstegen, 'National wealth', 87, 95, 102.

First, data on the revenues of the succession tax were compared with the value of the national wealth in order to calculate the ratio between wealth and taxes in benchmark years (table 6).[174] This ratio is used as an implicit multiplier to convert the total revenue of the succession tax into an estimate of the total national wealth. An annual series of the implicit multiplier was constructed by exponentially interpolating between benchmark years. The combination of an annual series of the revenues of the succession tax and the implicit multiplier results in an annual series of the total value of the national wealth of the Netherlands in 1807-1913.

Table 7.2
Benchmark Estimates of the Value of the National Wealth and its Ratio to Inheritance Tax Revenues, 1807-1908/12

	revenue of the inheritance tax thousands of guilders	value of the national wealth millions of guilders	ratio of tax revenues to national wealth wealth/revenues
1807	2,061	2,365	1,148
1831/1832	2,063	2,295	1,113
1843/1844	2,374	2,770	1,167
1854/1857	2,944	3,680	1,250
1867	3,854	5,300	1,375
1879/1882	7,576	8,700	1,148
1883/1887	7,637	8,320	1,089
1888/1892	9,170	9,200	1,003
1893/1897	8,548	8,295	970
1898/1902	9,680	9,030	933
1903/1907	10,448	11,025	1,055
1908/1912	11,698	12,200	1,043

Sources: Verstegen, 'National Wealth', 87, 94-95, 102. Gogel, *Memoriën*. *Handelingen van de Staten-Generaal* 1817/18-1831/32. *Staatkundig en Staathuishoudkundig Jaarboekje* (1853) 309-314. *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Statistiek van Rijksinkomsten* 1903-1914.

The second step concerns the construction of a series of the share of foreign bonds and securities in the national wealth. The composition of assessed

[174] Gogel, *Memoriën*. *Handelingen van de Staten-Generaal* 1817/18-1831/32. *Staatkundig en Staathuishoudkundig Jaarboekje* (1853) 309-314. *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Statistiek van Rijksinkomsten* 1903-1941.

inheritances serves as the starting point. Verstegen presents figures for a number of benchmark years in the first half of the nineteenth century (1807, 1831/32, and 1843/44), while the *Bescheiden betreffende de geldmiddelen* cover the greater part of the second half of the century.[175] However, before 1879 the tax only assessed inheritances in the indirect line, whereas from 1879 on the inheritance tax included all direct and indirect inheritances. There is therefore a difference in the representativeness of the tax data in the periods before and after 1879. In order to safeguard the reliability of the final series the data for 1879-1913 have been used to determine the *absolute* level of the share of foreign investments in the value of inheritances. Indices of the share of each component in the value of inheritances in the indirect line were chained to the share in the value of all inheritances in the years 1879/1883. The result is a consistent series of the share of foreign stocks and bonds in the period 1854-1939.[176] Graph 7.3 shows the development of the share of foreign investments in the total value of the national wealth according to the inheritances assessed in the succession tax. The value of foreign investments is calculated by multiplying the total value of the national wealth with the percentage share of foreign assets.

[175] Verstegen, 'National wealth'. *Bescheiden betreffende de geldmiddelen* 1846/59-1902.
[176] Missing values were exponentially interpolated (1858-1861, 1863-1866, 1868-1871, 1873-1874, 1907-1908, 1910, 1914).

Graph 7.3
Share of Foreign Assets in Dutch National Wealth, 1806-1913 (%)

The next task was to estimate the incomes from foreign stocks and bonds. The development of the yield of British consols was taken as a measure for the development of average returns.[177] Naturally, this understates the level of returns, but the British series suffices to chart the relative development of yields. The combination of the value of foreign investments and the yield of British consols results in an index of the income from foreign investments. This index is linked to the revised CBS estimate of primary incomes from abroad in 1913 of 272 million guilders.[178] The result is a consistent series of private primary non-colonial incomes from abroad.

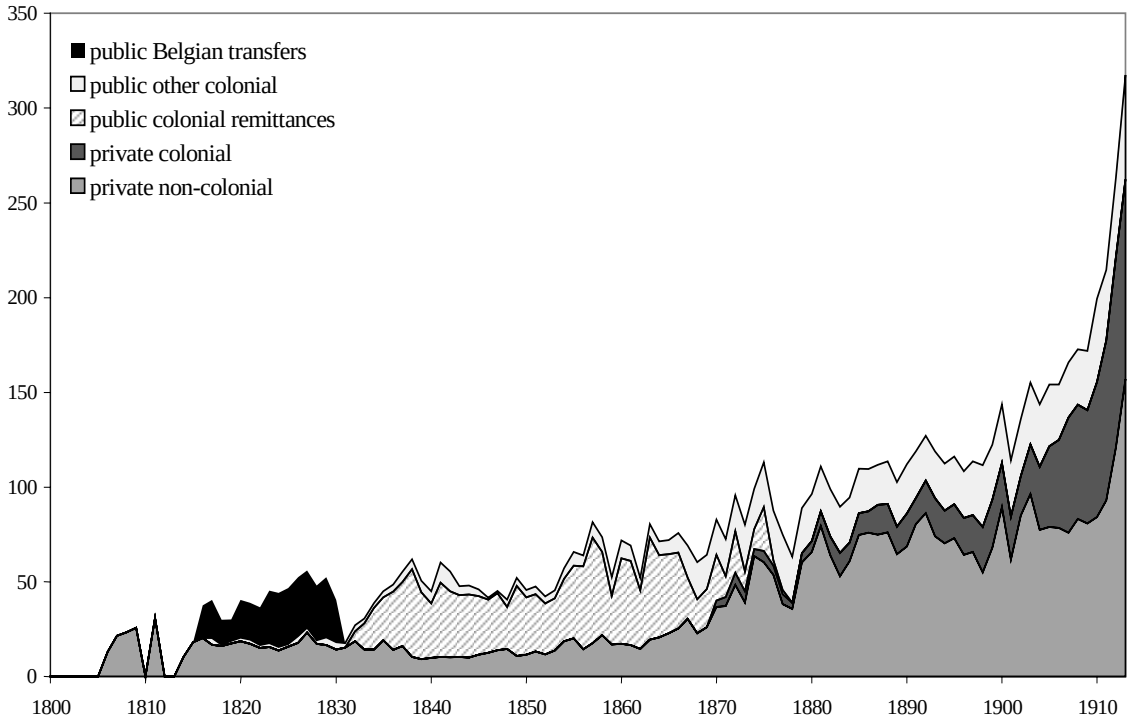
The calculation of private incomes from colonial investments is restricted to the Dutch East Indies. Suriname may have been a constant source of capital income –at least until the abolition of slavery in 1863– but

[177] Mitchell, *British historical statistics*.
[178] CBS, *Nationale Rekeningen 1991*, vol. I: 65.

there is very little information on the actual amount of transfers to the motherland. Direct investments in the East Indies were a relatively late phenomenon. Dividends first appeared on the East Indian balance of payments in 1870. The calculations are based on the series of the estimated dividends of colonial public limited companies in the period 1870-1926.[179] All values were converted to Dutch guilders by means of the exchange rate of the East Indian guilder.[180] On the assumption that all dividends were paid to Dutch shareholders an index of the dividends on the colonial balance of payments was linked to the average of the latest estimates of primary incomes from the colonies on the balance of the Netherlands in period 1921-1926.[181] The same index was used to add estimates of the value of reservations by colonial public limited companies in the nineteenth century: the index of dividends was linked to the average value of reservations in the years 1921/26.

[179] *Balance of Payments 1822-1939*.
[180] *Money and Banking 1816-1940*, 122-129.
[181] Den Bakker, *The Dutch interwar economy*. See also CBS, 'Het nationaal inkomen'.

Graph 7.4
Primary Incomes from Abroad by Source and Recipient, 1807-1913
(current prices; millions of guilders)



III.E.4 The Aggregate Balance of Payments

The imports and exports of merchandise and services and the primary incomes received from and paid to other countries make up the current account of the balance of payments. The estimates do not include every single item. A comparison with the balance of payments of the interbellum period shows that our estimates cover about 94 percent of all receipts and about 96 percent of all payments on the current account. [182] It was assumed

[182] Latest estimates of the CBS (Gert den Bakker). The missing items are: mail services; various government payments not related to the colonies, such as interest on government loans (from the government) of other countries (non-colonial); private remittances and pension premiums; management costs and other expenses by private companies; reservations of public limited companies in non-colonial countries; tourism.

that all excluded items were in equilibrium. Table 7.3 presents a summary view of the balance of payments in the nineteenth century.

Table 7.3
The Composition of the Current Account of the Balance of Payments of the Netherlands, 1806/07-1911/13 (millions of guilders)

	1806/07	1829/31	1849/51	1869/71	1889/91	1911/13
Primary Incomes						
From Abroad	17.2	36.5	48.4	60.1	97.0	228.2
	(3.4)	*(7.0)*	*(7.9)*	*(6.0)*	*(7.2)*	*(9.0)*
net private incomes						
-non-colonial	17.2	15.2	11.8	30.7	61.9	95.4
-colonial	•	•	•	2.6	15.2	96.9
net public incomes						
-colonial remittances	-	-	32.5	18.6	-	-
-other colonial incomes	•	3.3	4.0	8.2	19.9	35.8
-transfers from Belgium	-	18.0	-	-	-	-
Net Merchandise Exports	4.6	-54.1	-31.0	65.4	71.2	-400.8
	(0.9)	*(-10.4)*	*(-5.1)*	*(6.5)*	*(5.3)*	*(-15.8)*
Net Exports of Services	-0.2	1.2	9.7	2.5	6.4	7.1
	(0.0)	*(0.2)*	*(1.6)*	*(0.2)*	*(0.5)*	*(0.3)*
shipping	-1.0	0.8	9.2	-1.3	2.9	-4.5
port activities	0.1	0.1	-0.4	0.8	-0.4	0.4
banking services	0.6	0.3	1.0	3.1	3.9	11.2
Aggregate Balance of Payments	21.6	-16.3	27.1	127.9	174.6	-165.5
	(4.2)	*(-3.1)*	*(4.4)*	*(12.8)*	*(13.0)*	*(-6.5)*

Note: Figures in brackets denote the share of each component in GNP.

Chapter 8

INDIRECT TAXES AND SUBSIDIES

In the system of national accounts indirect taxes concern all taxes paid by companies and the government with the exception of taxes on profits. Some examples of indirect taxes are excises, import duties, and value added tax. Although the costs of indirect taxation will eventually lead to higher consumer prices, households do not pay indirect taxes. For example, the motor vehicle tax for private (i.e. non-professional) passenger cars and real estate taxes levied on households (whether on the rental value or on the property value) are classified as direct taxes.[183]

The series on the revenue of indirect taxes in the nineteenth century contains four different groups of levies, namely:[184]

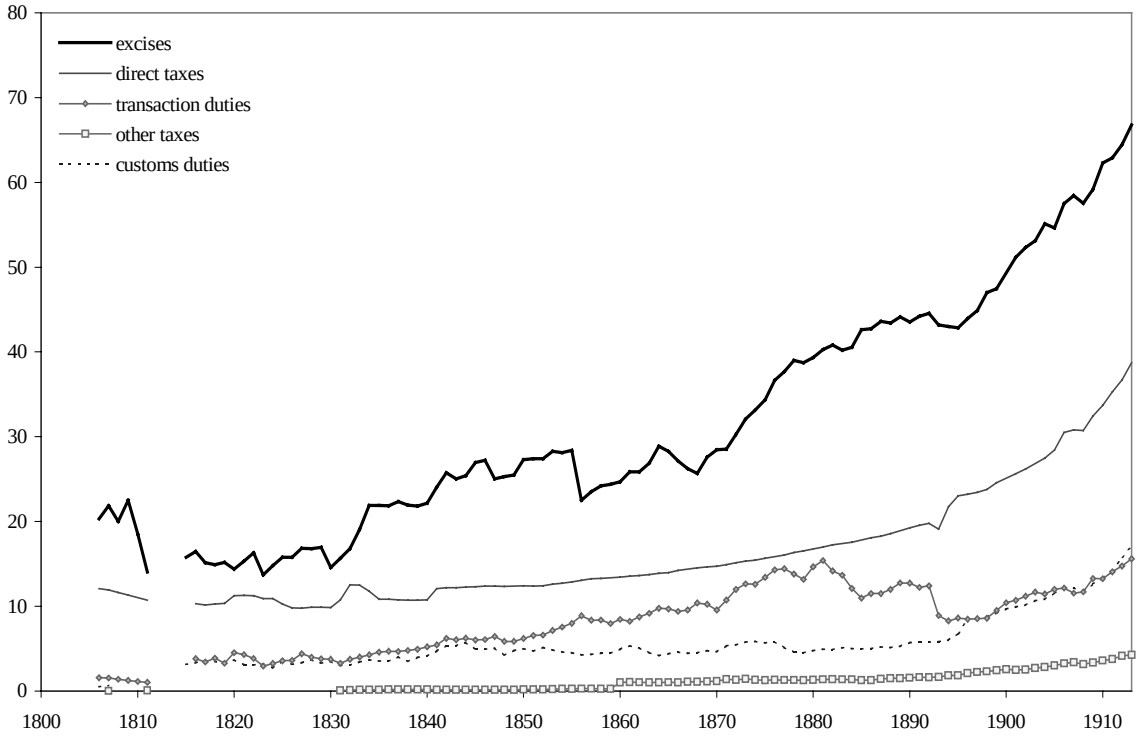
(1) *Direct taxes*: real estate tax, company tax, licence tax [*patentbelasting*], mine tax, and wealth tax.
(2) *Transaction duties*: stamp duty, registration duty, and mortgage duty.
(3) *Excises*: state and municipal excises, for example on bread, meat, brandy, and sugar.
(4) *Other taxes*: customs and shipping duties, tax on golden and silver objects, and pilot dues.

These taxes were not entirely made up of indirect taxes. A part of the real estate tax was paid by households and should therefore be excluded. Unfortunately the size of this amount could not be ascertained, so that we

[183] CBS, *Nationale Rekeningen 1991,* I:235.
[184] The revenues were found in: Gogel, *Memoriën*; *HSG* 1817/18-1831/32; *SSJ* (1853) 309-314; *Jaarcijfers* (1892) 232-235, (1898) 250-251, (1903) 290-293, *SRI* (1904) cxiii, cxxxi-cxxxii, (1913) 10-11. *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Jaarcijfers* (1881) 75, (1884) 203, (1905) 275, (1914) 346. The tax revenues of the period 1816-1830 include the Belgian provinces; all data were collected on a provincial basis, whereby 54 percent of the revenues for Limburg were assigned to the Netherlands (equal to the share of Dutch Limburg in the population of Limburg).

have chosen to include the total revenue of the real estate tax. The licence tax was partly levied on the profit of the entrepreneur; this concerned an estimated 75 percent of the tax revenues, so that only 25 percent of the total yield of the licence tax was included. Finally, only three items of the wealth tax were included, namely the taxes on horses, bicycles (1899-1913), and motorvehicles (1909-1913).

Graph 8.1
Revenues of Indirect Taxes, 1806-1913
(current prices; millions of guilders)



Subsidies comprise such expenses as support to companies (including compensation for the losses of public companies), programmes to expand or maintain employment, and price-reducing subsidies. Not included are subsidies within government (e.g. state subsidies to municipal government) and subsidies to education (which is considered a part of government).[185]

[185] CBS, *Nationale Rekeningen 1991*, I:235-236.

Our estimate of the amount of subsidies concerns the colonial sector and is made up of two groups of items, namely (i) the 'improper' use of income from colonial remittances, part of which was used to subsidize textile manufacturing and other industries as well as a steam-towing service on the river Waal, and (ii) subsidies to international trade and shipping that were inherent to the system of colonial protection.[186] Other government subsidies were negligible throughout the century.[187]

[186] Horlings and Van Zanden, 'Exploitatie'.
[187] Based on the database of Van der Voort (*Overheidsbeleid*).

Chapter 9

DEFLATION

The System of National Accounts prescribes the use of Paasche price indices to deflate national income. There is, however, a wide variety of formulas for the construction of price indices, each with their specific advantages and disadvantages. Some formulas are fairly complex, while others are remarkably simple. Is Paasche the best formula to construct a GDP deflator?

Den Bakker has tested five different formulas for the development of Dutch GDP during the Interbellum, a period when volumes and prices were highly volatile.[188] He states that the main properties of a price index formula must be consistency in aggregation and internal consistency. Consistency in aggregation implies that a direct application of the formula to the individual commodities should yield the same result as an indirect application in which the formula is used to make partial deflators that are then weighted into an aggregate deflator. Internal consistency means that the formula must disaggregate values into volumes and prices without leaving a residual.[189] Den Bakker concludes that only Paasche, Laspeyres and Vartia I are internally consistent, and that Vartia I is not consistent in aggregation. However, Paasche and Laspeyres not only distinguish between changes in prices and quantities, they also measure the effects of structural change during a period. An average weighting scheme would eliminate this problem. The Fisher index –the geometric average of a Paasche and a Laspeyres price index– operates with such average weights. It combines the simplicity of the constituent formulas with the added advantage of an average weighting scheme.

Notwithstanding the advantages of the Laspeyres and Fisher indices, all deflators were constructed by means of the Paasche price index formula

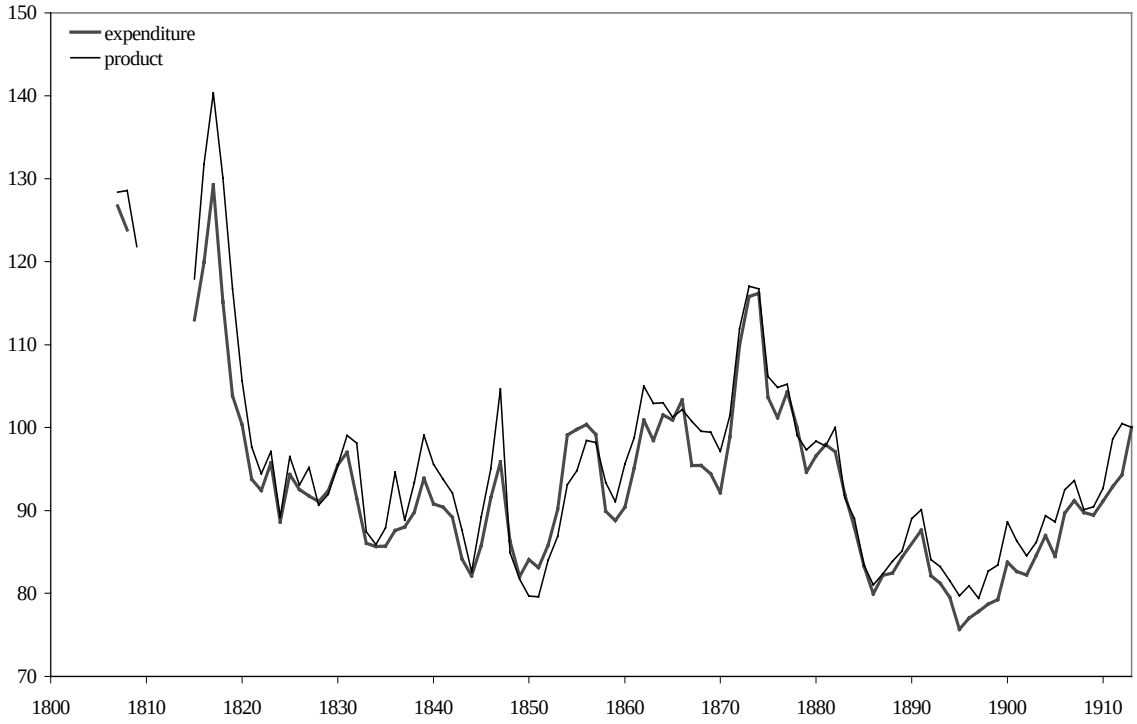
[188] He has tested the Paasche, Laspeyres, Fisher, Törnqvist and Vartia I formulas (Den Bakker, 'De keuze van indexcijferformules', 6-7).
[189] The product of the price index and the quantity index of a given formula should be equal to the index of nominal values.

in accordance with the demands of the SNA. The weights were changed at regular intervals to account for changes in relative prices.[190] A deflator for income could not be constructed. Instead, we have used the deflator for expenditure, since it concerns the way in which incomes were ultimately used.

The quantities and prices that were used to calculate product and expenditure were to some extent the same. They were, however, not identical. Product is valued at producer prices as against wholesale and retail prices for expenditure; product involves goods and services produced for domestic final and intermediate use as well as exports, whereas expenditure measures only domestic final consumption and gross fixed capital formation (or production capacity). Notwithstanding the overlap in basic data the two deflators are constructed on the basis of highly different prices and quantities. The resulting price indices are, however, virtually identical. They correspond extremely well in levels and in annual fluctuations (graph 9.1).

[190] The weighting schemes were: 1913 for the period 1890-1913, 1890 for the period 1870-1890, 1870 for the period 1850-1870, 1850 for the period 1830-1850, and 1830 for the period 1807-1830.

Graph 9.1
Deflators for Gross Domestic Product and Expenditure, 1807-1913 (1913=100)



Price indices for long periods are highly sensitive to the method of weighting. The ideal method of selecting base years is to analyse the development of relative prices: the index should be rebased after periods of large shifts in relative prices. It is, however, unfeasible to examine the development of relative prices at the level of individual components. Moreover, it is best to use the same weighting schemes for each aggregate price index. We have consequently chosen a number of subperiods (1807-30, 1830-50, 1850-90, and 1890-1913) in which prices are related to the final year of the period. The partial indices are then chained on the overlapping years.

Table 9.1
Paasche Deflators for Gross Domestic Product Using Fixed Weights, 1807-1913 (1913=100)

	weights of				
	1807	1830	1850	1890	1913
1807	174	161	161	125	114
1830	125	119	120	97	91
1850	105	100	103	84	79
1890	108	104	103	95	91
1913	100	100	100	100	100

We have first tested the sensitivity of the GDP deflator to changes in the choice of weights by using a fixed base year for the entire century (table 9.1). It appears that the nineteenth-century decline in prices is overstated when an early benchmark year, whereas the decline is underestimated when data from a late year are applied. The early years presumably assign too much weight to industries that experienced a rapid decline in prices during the century, whereas their weight is underestimated when prices are weighted on the end of the period.

The second test concerns the base year within subperiods. What happens when the partial indices are weighted on the first year instead of the last year of the period? Sectoral price indices were weighted into an aggregate GDP-deflator using both first-year and last-year weights. The difference appears to be minor: the deflator based on first-year weights is an average of 4.2 percent higher in 1807/30, 3.3 percent in 1831/50, 2.5 percent in 1851/70, 0.8 percent in 1871/90, and 0.3 percent in 1891/1913. The only significant conclusion is that first-year weights tend to overestimate the nineteenth-century decline in prices.

Even though the system of national accounts insists on the use of a Paasche price index to deflate product, income and expenditure, we have compared it with the two most reliable alternatives of Laspeyres and Fisher. The Laspeyres index is similar to the Paasche index. The difference is that the Paasche index uses current quantities, whereas Laspeyres applies the quantities of the base year. The Fisher index is the quadratic average of the Paasche and Laspeyres indices.

Table 9.2
Comparison between Paasche, Laspeyres and Fisher Price Indices for GDP, 1807-1913 (1913-100)

	Paasche	Laspeyres	Fisher
1807	128	134	131
1830	95	98	97
1850	80	82	81
1890	89	89	89
1913	100	100	100

The Paasche and Laspeyres price indices arrive more or less at the same development (table 9.2). The Laspeyres index shows a slightly stronger decline in prices. In that respect the conclusions correspond to the outcome of the test for first-year versus last-year weights. As a result, the SNA requirement that all deflators must be Paasche indices does not affect the conclusions drawn from our data on real product, income or expenditure.

Chapter 10

RELIABILITY OF THE ESTIMATES

The system of national accounts is a closed system of bookkeeping. Product, income and expenditure are by definition identical. It is, however, virtually impossible to make completely independent estimates for the three approaches. The contribution of such items as the value added of domestic servants or the consumption of education can only be estimated indirectly. Moreover, not every component can be calculated with the same degree of accuracy. To what extent have product, income and expenditure been calculated independently and how reliable are the results?

Our aim has been to construct independent estimates of income, product and expenditure. Some components –such as capital formation and wage income– were calculated almost entirely independent of the other elements of the national accounts. Yet, there is only a limited amount of statistical data for the nineteenth century. As a result several types of information were used in more than one approach of the national accounts. The most significant overlap concerns a number of service industries for which the sum of incomes earned is used to measure value added as well as household consumption (e.g. education, government, and domestic servants). The overlap in basic data is compensated for by fundamental differences in the way in which these data are combined and transformed. For example, data on agricultural output were used to calculate the value added of arable and livestock production, while they were also applied in the estimates of the household consumption of foodstuffs. However, the estimates of agricultural product only count domestic output including exports and they involve a calculation of intermediate expenditure. Household expenditure includes purchases of imported products and is based on gross output data. In addition, the two components are valued at different types of price: producer prices for agricultural value added and retail prices for consumer expenditure. The degree of independence can be made visible by calculating the relative size of identical components (table 10.1).

The overlap in basic data does not reduce the quality of the estimates. The independence of GDP, GDI and GDE is only diminished when components are calculated in exactly the same way. Table 8 presents measures of the share of components for which value added, income and expenditure are calculated in an identical fashion. This mainly concerns services for which no market price or definition of output is available.[191] Without quantities or prices value added, consumer expenditure and investment cannot be calculated. The only available measure is therefore the sum of incomes earned. The minimum estimate of the degree of independence suggests that between 5 and 13 percent of national income was common to each of the three approaches. The worst results were obtained for the comparison between product and income. The overlap between product and expenditure becomes somewhat larger when the definition of identical components is defined less strictly. The only difference between the estimates of the value added and household consumption of passenger transport, communication, and housing is the input-output ratio. The wider definition results in a decline in the degree of independence: the common elements comprised 12 to 15 percent of income in 1807-1850 and c. 25 percent in 1913.

Table 10.1
Share of Identical Components in Gross Domestic Product, Income and Expenditure at Current Prices, 1807, 1850 and 1913

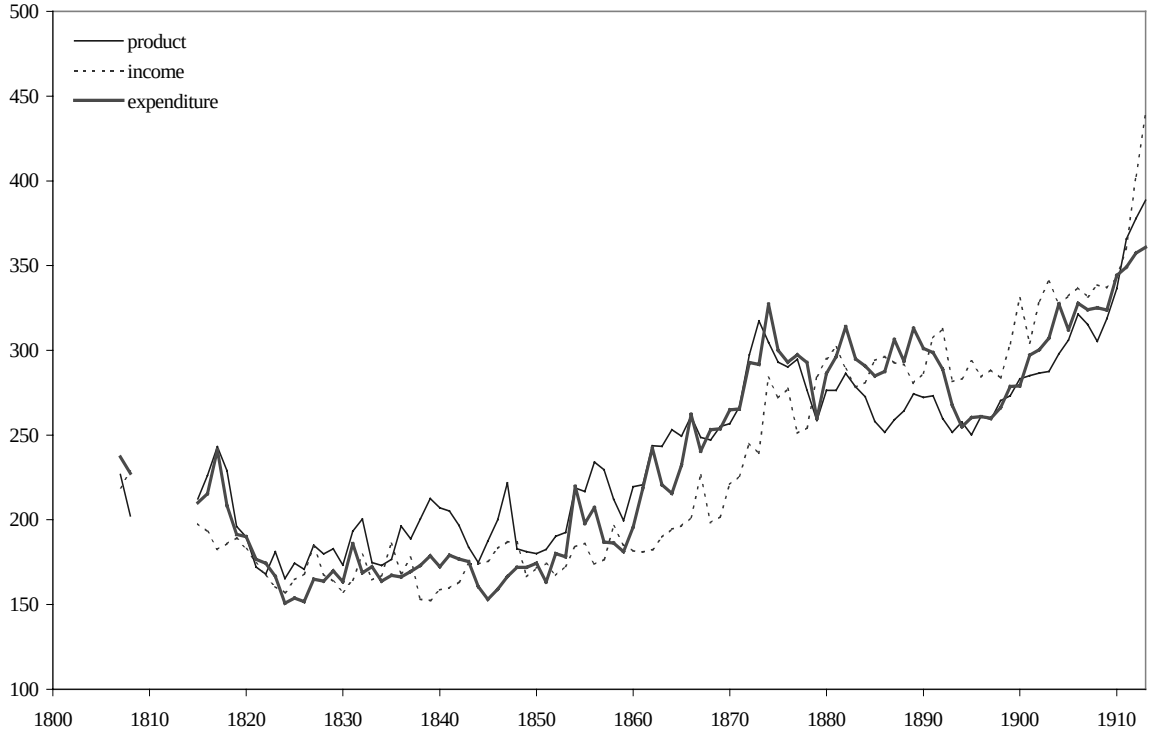
	GDP/GDI[a]		GDP/GDE[b]				GDI/GDE[c]	
	as % of GDP	as % of GDI	as % of GDP		as % of GDE		as % of GDI	as % of GDE
			min	max	min	max		
1807	12	13	6	13	5	12	6	5
1850	10	11	7	14	7	15	7	7
1913	13	12	10	24	11	26	9	11

[a] government, education, domestic servants, and other services. [b] minimum estimate consists of education, domestic servants, and other services; maximum estimate includes railways and other passenger transport, communication, and housing. [c] education, domestic servants, and other services.

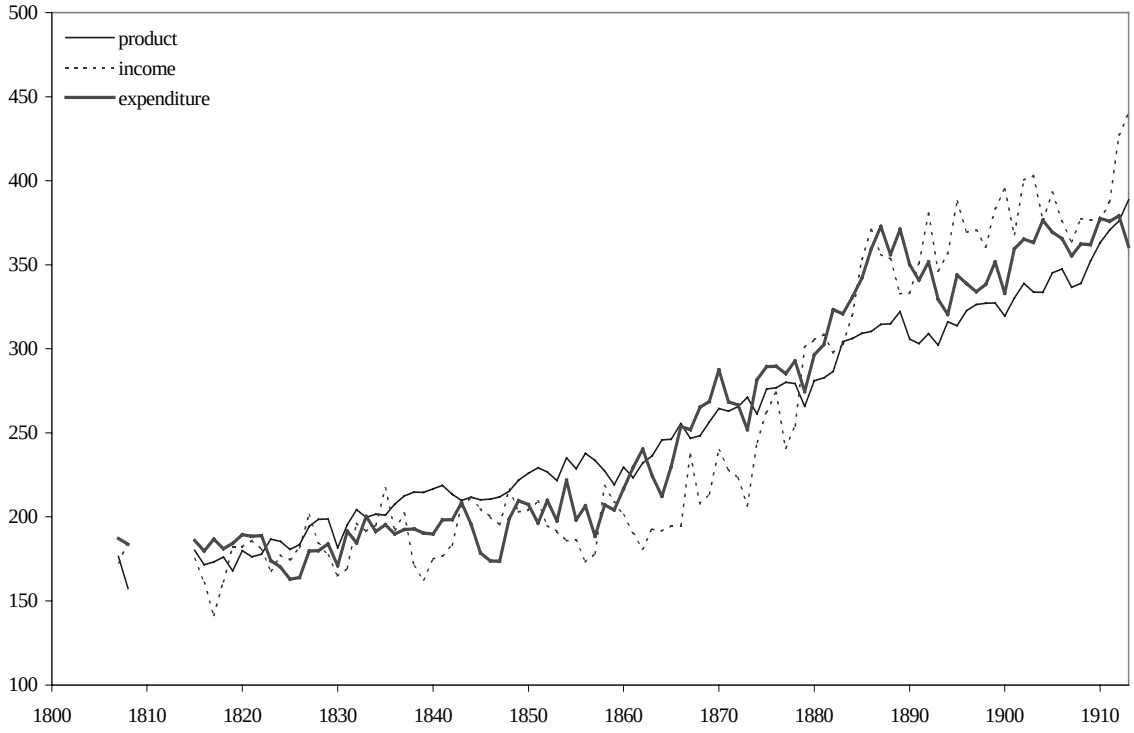
[191] For example, government is assumed to consume itself.

The comparison of gross domestic product, income and expenditure per capita is the first test of the reliability of the historical national accounts (graphs 10.1 and 10.2). To what extent do the (independent) estimates of the three approaches yield the same result? The general development of product, income and expenditure is highly similar. Throughout the century the three approaches show roughly the same level of income and the same periods of acceleration and deceleration. Only in a few periods does one series differ significantly from the other two, i.e. income in the 1860s and 1870s, product in 1880s, and all series in the 1840s and in 1913. The deflators for aggregate product and expenditure were constructed with highly different weighting schemes, but the resulting price indices are virtually identical (graph 9.1).

Graph 10.1
Gross Domestic Product, Income and Expenditure Per Capita at Current Prices, 1807-1913 (guilders)



Graph 10.2
Gross Domestic Product, Income and Expenditure Per Capita at Constant 1913 Prices, 1807-1913 (guilders)



An analysis of the percentage difference between product, income and expenditure yields remarkably favourable results (table 10.2).[192] At current prices product and expenditure differed a mere 7.1 percent for the period 1807-1913 and as little as 6.2 percent for the second half of the nineteenth century. The difference between income and expenditure is equally modest at 9.1 percent. The estimates of product and income are wider apart, but even there the gap amounts to only 11.2 percent. A comparison between product, income and expenditure at constant prices yields similarly positive results, especially for GDP and GDE.

[192] We have compared domestic rather than national income figures since net primary incomes from abroad are identical in each approach. Separate estimates are made for the first and second halves of the nineteenth century in view of the considerable difference in the availability of statistical data and consequently in the need for assumptions and measurement procedures.

Table 10.2
Difference between the Estimates of Gross Domestic Product, Income and Expenditure at Current and Constant Prices, 1807-1913 (%)

	current prices			constant prices	
	expenditure as a % of product	expenditure as a % of income	income as a % of product	expenditure as a % of product	income as a % of product
1807/1850	8.9	7.8	9.8	8.0	7.9
1850/1913	5.9	9.9	11.9	7.5	13.1
1807/1913	7.0	9.1	11.2	7.7	11.2

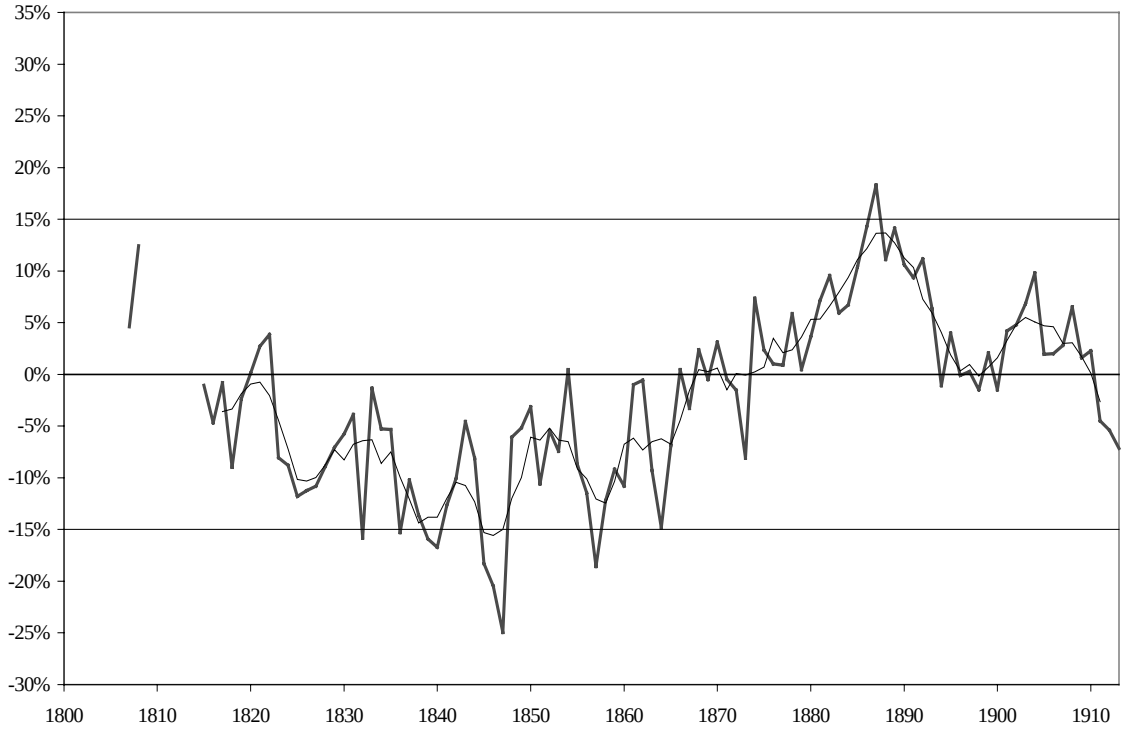
Note: The figures are the average of the absolute value of the percentage differences in order to stop positive and negative values from cancelling each other out.

A surprising conclusion of this exercise is that the comparisons between income and expenditure and between product and income seem to suggest that the estimates for the first half of the nineteenth century were more reliable than those for the second half. The most likely explanation for this finding is that the high degree of economic growth and structural change after 1850 –and particularly in the fifties and sixties– is insufficiently captured by our income estimates. The labour input series provides a good indication of developments in the long run but is less suitable for the analysis of short-term fluctuations. The methods used to calculate income from capital and profits carry a similar flaw. Capital income is estimated on the basis of the composition of inheritances and involves a fair degree of interpolation, while the information on yields mainly concerns long-term trends. Moreover, the first half of the nineteenth century was a period with comparatively little technological innovation, whereas the years after 1850 were characterized by considerable changes in input-output ratios and in the functional distribution of incomes.

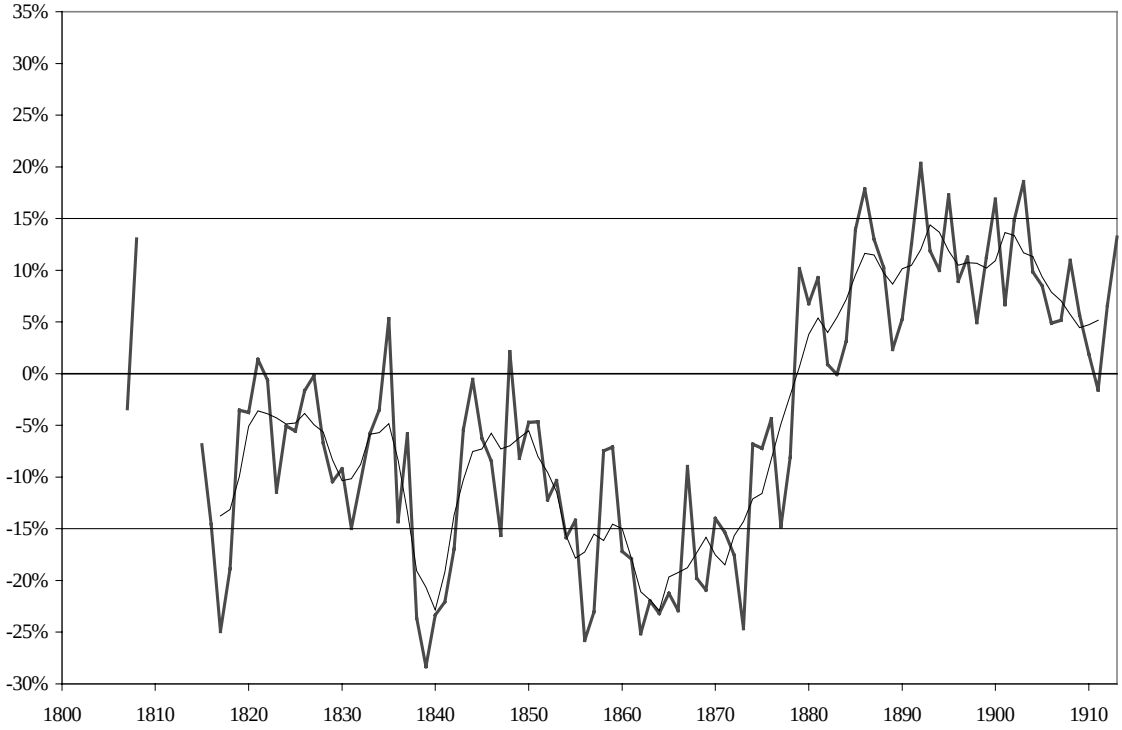
The percentages in table 10.2 hide much of the variation between individual subperiods. An analysis of annual series at current prices can help clarify the source of the differences. Graphs 10.3 through 10.5 show that the period 1860-1880 was a breaking point in the Dutch historical national accounts for the nineteenth century. Expenditure was generally lower than product until about 1870 and higher thereafter. Until the seventies income was well below product, especially in the 1860s, and

rapidly recovered between 1870 and 1890. Income and expenditure followed a similar pattern of growth until 1860 and after 1880. The only structural difference can be found in the period 1860-1880 when expenditure was substantially higher than income. In general, product was higher until 1870 and lower after 1870. Moreover, during the first half of the century it increased at a higher rate than income and expenditure, it lagged behind between 1860 and 1890, which was to some extent offset by higher growth rates after 1890. Income was consistently lower than product and expenditure during the sixties and seventies, a period of rapid structural change.

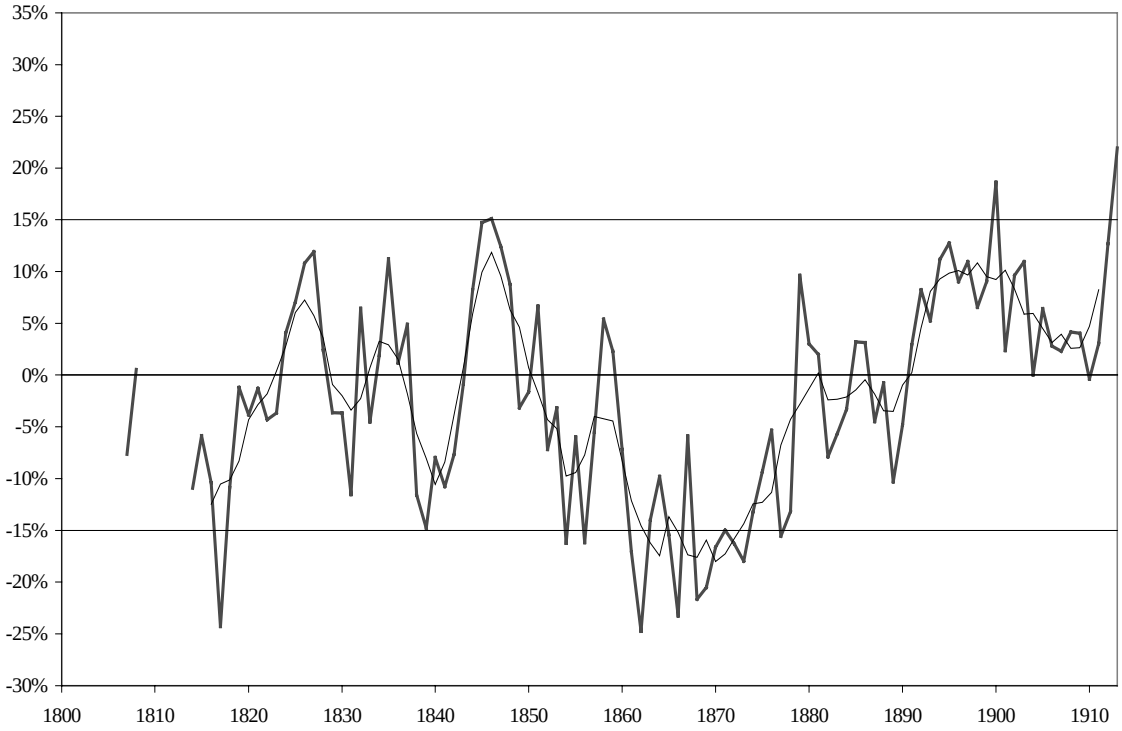
Graph 10.3
Gap Between GDP and GDE as a Percentage of GDP, 1815-1913 (%)



Graph 10.4
Gap Between GDP and GDI as a Percentage of GDP, 1815-1913 (%)



Graph 10.5
Gap Between GDI and GDE as a Percentage of GDE, 1815-1913 (%)



The time series of GDI, GDI and GDE correspond both in levels and in their general trend. How strong is the correlation between the three series? Table 10.3 presents two tests of the degree of correlation, one by means of the actual series and one on the basis of first differences.

The degree of correlation is lower for the first half than for the second half of the nineteenth century. It is strongest between product and expenditure. Income is clearly the weakest of the three approaches. However, the results include the trend in each series. A correlation of first differences was made to determine the strength of the relationship between annual fluctuations. The results clearly show that at this level the degree of similarity was much lower. The only really significant results were found between product and expenditure in the entire century and particularly between 1850 and 1913. A coefficient of .510 actually exceeds our expectations with respect to historical macroeconomic time series.

Table 10.3
Correlations between Gross Domestic Product, Income and Expenditure at Current Prices, 1815-1913

	actual values			first differences		
	GDP	GDI	GDE	GDP	GDI	GDE
			1815-1913			
GDP	•	.982**	.990**	•	.203*	.533**
GDI		•	.983**		•	.148
GDE			•			•
			1815-1850			
GDP	•	.686**	.813**	•	.029	.397*
GDI		•	.573**		•	-.042
GDE			•			•
			1850-1913			
GDP	•	.974**	.983**	•	.175	.538**
GDI		•	.978**		•	.183
GDE			•			•

Note: * significant at the .05 level, ** significant at the .01 level (one-tailed Pearson correlations).

It appears that the historical national accounts for the nineteenth century can very well be used for the analysis of economic developments in the medium and long run but are less suitable for research into short-term

fluctuations. The medium- and long-term differences in product, income and expenditure can be made visible by comparing periodic growth rates (table 10.4). For the entire century the three series grew at virtually the same rates both at current and constant prices. The differences were only slightly larger for the second half of the century. In the period 1807/1850 product was the only anomaly, growing at 1.7 percent per year (at constant prices) compared to 1.2 percent for income and 1.1 percent for expenditure. The degree of similarity diminishes further when shorter subperiods are examined, but even then the three series agree fairly well.

Table 10.4
Growth Rates of Gross Domestic Product, Income and Expenditure at Current and Constant Prices, 1807-1913 (%)

	current prices			constant prices		
	GDP	GDI	GDE	GDP	GDI	GDE
1807/1830	0.4	-0.7	-0.1	1.5	0.7	0.8
1830/1850	0.8	1.1	0.7	1.6	1.8	1.4
1807/1850	*0.6*	*0.2*	*0.3*	*1.7*	*1.2*	*1.1*
1850/1870	2.6	2.0	3.0	1.5	1.3	2.3
1870/1890	1.4	2.7	1.9	2.0	3.2	2.4
1890/1912	3.1	3.1	2.3	2.5	2.6	1.7
1850/1912	*2.3*	*2.5*	*2.3*	*1.9*	*2.2*	*2.0*
1807/1912	*1.6*	*1.5*	*1.5*	*1.8*	*1.8*	*1.7*

Note: Growth rates were calculated using the average of three years around each benchmark year.

It is generally impossible to test the quality of the estimates by means of alternative data. A comparison between product, income, and expenditure provides some insight into their reliability and internal consistency, but it is more difficult to judge each of the series on its own account. In his work on the British national accounts Feinstein has developed a method to make a subjective judgement on the quality of individual estimates.[193] The components of product, income and expenditure are classified into four categories depending on the availability of data, the methods of estimation,

[193] Feinstein, *National income*, 21-22.

and the need for assumptions. Each category represents (arbitrary) margins of error. The aggregate margin of error is calculated by weighting the upper and lower bounds for each category on the share of the components in total product, income, and expenditure. We have applied Feinstein's method to assess the quality of our estimates for the first and second halves of the nineteenth century. The margins for the first half were weighted on 1807 and 1850 and those for the second half on 1850 and 1913. Feinstein distinguishes between four categories:

A – Excellent (1 to 5 percent): All the necessary data can be found in historical sources.

B – Good (5 to 15 percent): It is fairly easy to construct time series of output, prices, incomes and other key variables, but the adjustment of annual data to the requirements of the system of national accounts introduces a measure of uncertainty. A prominent example is the use of assumptions on input-output ratios.

C – Fair (15 to 25 percent): There are sufficient data to estimate elements of value added, income or expenditure, even if only for benchmark years. However, the construction of time series consistent with the demands of the national accounts requires methods and assumptions that widen the margin of error. Some examples are exponential interpolation between benchmark years, the application of fixed ratios to long time series, and the use of mark-ups to raise partial data to an aggregate level.

D – Weak (25 to 50 percent): The lowest classification is reserved for elements of the national accounts that could only be estimated on the basis of far-reaching assumptions and shaky data.

Table 10.5
Aggregate Reliability of the Dutch Historical National Accounts

	GDP		GDI		GDE	
	1807/ 1850	1850/ 1913	1807/ 1850	1850/ 1913	1807/ 1850	1850/ 1913
value shares (%)						
A	0	3	0	0	0	11
B	24	66	8	42	57	39
C	54	25	35	46	38	48
D	22	7	57	13	5	2
total	100	100	100	100	100	100
classification	C	B	D	C	B–	B

Sources: Feinstein, *National Income*, 21-22. Smits, *Economic Growth*. Horlings, *The Economic Development*, 103-105. Albers, *Machinery Investment*, 57 and appendices.

The average margins of error reveal that the estimates for the second half of the nineteenth century are more reliable than those for the first half. Moreover, the quality of the expenditure series for 1807-1850 is higher than that of the product and income series. The estimates of product and expenditure in the second half of the century are of similar reliability, although the share of categories A (excellent) and B (good) was larger for product (69%) than for expenditure (50%). Finally, the aggregate error margins were compared with Feinstein's classification in order to grade the overall quality of each approach in the two halves of the nineteenth century. For 1807-1850 expenditure is most reliable (B–), product is in second place (C), and income is the least reliable of the three series (D). After 1850 expenditure and product are both awarded a B, while income has a larger margin of error (C).

The selection of a particular approach ultimately depends not only on the reliability of the specific series but also on the nature of the questions it must answer. Notwithstanding the clear differences in the reliability of income, product and expenditure, it must be emphasized that each of the three series is sufficiently reliable to be used in an historical analysis of economic development. The scrutiny of the quality of the national accounts does reveal that product and expenditure better capture structural change in volatile periods such as the 1860s and 1870s. In the

end only a thorough study of the nature and backgrounds of economic development will be able to determine which of the three series provides the best picture of the Dutch economy in the nineteenth century.

Appendix A

POPULATION

Table A.1
Population Size and Vital Demographic Rates, 1800-1913

	population size	number of births	number of deaths	surplus births	birth rate	death rate	net surplus
1800	2115368	66467	60505	5962	31.4	28.6	2.8
1801	2120846	66467	60505	5962	31.3	28.5	2.8
1802	2126324	66467	60505	5962	31.3	28.5	2.8
1803	2131802	66467	60505	5962	31.2	28.4	2.8
1804	2139795	67550	59347	8203	31.6	27.7	3.8
1805	2149651	68177	58009	10168	31.7	27.0	4.7
1806	2161582	68911	56598	12313	31.9	26.2	5.7
1807	2163092	69233	66769	2464	32.0	30.9	1.1
1808	2156215	65301	71736	-6435	30.3	33.3	-3.0
1809	2156407	63729	63399	330	29.6	29.4	0.2
1810	2161439	68472	62708	5764	31.7	29.0	2.7
1811	2165902	71902	66891	5011	33.2	30.9	2.3
1812	2170531	71071	65962	5109	32.7	30.4	2.4
1813	2181494	70410	60083	10327	32.3	27.5	4.7
1814	2184849	71926	68485	3441	32.9	31.3	1.6
1815	2217626	79069	52446	26623	35.7	23.6	12.0
1816	2248563	79148	54139	25009	35.2	24.1	11.1
1817	2266016	74489	60894	13595	32.9	26.9	6.0
1818	2291116	77184	56978	20206	33.7	24.9	8.8
1819	2319601	82682	59335	23347	35.6	25.6	10.1
1820	2346663	79374	58550	20824	33.8	25.0	8.9
1821	2383111	85439	57197	28242	35.9	24.0	11.9
1822	2416647	88910	62570	26340	36.8	25.9	10.9
1823	2452365	86449	57421	29028	35.3	23.4	11.8
1824	2495136	90223	55580	34643	36.2	22.3	13.9
1825	2533014	89834	58656	31178	35.5	23.2	12.3
1826	2552483	91252	77913	13339	35.8	30.5	5.2
1827	2569405	82471	72055	10416	32.1	28.0	4.1
1828	2599737	89910	66576	23334	34.6	25.6	9.0
1829	2620932	90618	75955	14663	34.6	29.0	5.6
1830	2646000	90883	67112	23771	34.3	25.4	9.0
1831	2660091	88184	73380	14804	33.2	27.6	5.6
1832	2670481	83273	71918	11355	31.2	26.9	4.3
1833	2694734	91186	69786	21400	33.8	25.9	7.9
1834	2718406	91446	70301	21145	33.6	25.9	7.8
1835	2746399	93467	68465	25002	34.0	24.9	9.1
1836	2778269	94527	65968	28559	34.0	23.7	10.3
1837	2804792	97098	72614	24484	34.6	25.9	8.7
1838	2836740	100363	71182	29181	35.4	25.1	10.3
1839	2868759	98390	68631	29759	34.3	23.9	10.4
1840	2902807	98348	69932	28416	33.9	24.1	9.8
1841	2939344	100852	70201	30651	34.3	23.9	10.4
1842	2965025	98787	77964	20823	33.3	26.3	7.0
1843	2997746	98197	70746	27451	32.8	23.6	9.2
1844	3029807	101233	74360	26873	33.4	24.5	8.9

Table A.1
Population Size and Vital Demographic Rates, 1800-1913

	population size	number of births	number of deaths	surplus births	birth rate	death rate	net surplus
1845	3064479	102054	72232	29822	33.3	23.6	9.7
1846	3074237	95309	87847	7462	31.0	28.6	2.4
1847	3067435	87204	95190	-7986	28.4	31.0	-2.6
1848	3071164	91026	90003	1023	29.6	29.3	0.3
1849	3081118	103279	96624	6655	33.5	31.4	2.2
1850	3115421	102899	70058	32841	33.0	22.5	10.5
1851	3150484	104628	71631	32997	33.2	22.7	10.5
1852	3182526	107782	76894	30888	33.9	24.2	9.7
1853	3205992	102257	79455	22802	31.9	24.8	7.1
1854	3230345	102655	78064	24591	31.8	24.2	7.6
1855	3239542	101621	91396	10225	31.4	28.2	3.2
1856	3265989	104178	77975	26203	31.9	23.9	8.0
1857	3288374	111735	89316	22419	34.0	27.2	6.8
1858	3299879	105750	93021	12729	32.0	28.2	3.9
1859	3308969	114022	104614	9408	34.5	31.6	2.8
1860	3326088	103945	84447	19498	31.3	25.4	5.9
1861	3353453	116463	87351	29112	34.7	26.0	8.7
1862	3379216	111037	82553	28484	32.9	24.4	8.4
1863	3415727	122180	84642	37538	35.8	24.8	11.0
1864	3445573	121611	89950	31661	35.3	26.1	9.2
1865	3475110	124820	93048	31772	35.9	26.8	9.1
1866	3492326	123656	103451	20205	35.4	29.6	5.8
1867	3527880	123598	87673	35925	35.0	24.9	10.2
1868	3557812	124412	91591	32821	35.0	25.7	9.2
1869	3592858	121553	84789	36764	33.8	23.6	10.2
1870	3626790	127452	95611	31841	35.1	26.4	8.8
1871	3645118	126995	108288	18707	34.8	29.7	5.1
1872	3679189	129097	97161	31936	35.1	26.4	8.7
1873	3720699	131241	91842	39399	35.3	24.7	10.6
1874	3768703	133133	88008	45125	35.3	23.4	12.0
1875	3807338	136147	99157	36990	35.8	26.0	9.7
1876	3856362	139224	93173	46051	36.1	24.2	11.9
1877	3909692	139469	89438	50031	35.7	22.9	12.8
1878	3958700	139716	93769	45947	35.3	23.7	11.6
1879	4012693	143827	93211	50616	35.8	23.2	12.6
1880	4054591	141362	97775	43587	34.9	24.1	10.8
1881	4103159	140152	90543	49609	34.2	22.1	12.1
1882	4156988	143479	88925	54554	34.5	21.4	13.1
1883	4202759	141249	94509	46740	33.6	22.5	11.1
1884	4250151	145276	97617	47659	34.2	23.0	11.2
1885	4301200	144755	93577	51178	33.7	21.8	11.9
1886	4350137	147383	98707	48676	33.9	22.7	11.2
1887	4405526	145829	90421	55408	33.1	20.5	12.6
1888	4458704	148423	93912	54511	33.3	21.1	12.2
1889	4511415	146992	94672	52320	32.6	21.0	11.6
1890	4559247	146043	96532	49511	32.0	21.2	10.9
1891	4610839	151010	98521	52489	32.8	21.4	11.4
1892	4653772	146078	100166	45912	31.4	21.5	9.9
1893	4714154	154657	94720	59937	32.8	20.1	12.7
1894	4772655	150760	91932	58828	31.6	19.3	12.3

Table A.1
Population Size and Vital Demographic Rates, 1800-1913

	population size	number of births	number of deaths	surplus births	birth rate	death rate	net surplus
1895	4832527	154061	94076	59985	31.9	19.5	12.4
1896	4900232	155374	89164	66210	31.7	18.2	13.5
1897	4969566	156217	89080	67137	31.4	17.9	13.5
1898	5036267	155605	90973	64632	30.9	18.1	12.8
1899	5103979	158344	92264	66080	31.0	18.1	12.9
1900	5179233	162490	91846	70644	31.4	17.7	13.6
1901	5263232	168273	89802	78471	32.0	17.1	14.9
1902	5347190	168728	86248	82480	31.6	16.1	15.4
1903	5430942	170108	83933	86175	31.3	15.5	15.9
1904	5509660	171495	87091	84404	31.1	15.8	15.3
1905	5591412	170767	85016	85751	30.5	15.2	15.3
1906	5672232	170952	83259	87693	30.1	14.7	15.5
1907	5747263	171506	83350	88156	29.8	14.5	15.3
1908	5825198	171861	86936	84925	29.5	14.9	14.6
1909	5898429	170766	80283	90483	29.0	13.6	15.3
1910	5945525	168894	79984	88910	28.4	13.5	15.0
1911	6022476	166527	86782	79745	27.7	14.4	13.2
1912	6114300	170269	74647	95622	27.8	12.2	15.6
1913	6212701	173541	75867	97674	27.9	12.2	15.7

Appendix B

EMPLOYMENT

Table B.1
Male, Female and Total Employment by Sector and Branch, 1807 and 1849

	1807	1849		
	total	male	female	total
Primary sector	374533	333446	172556	506002
agriculture	367388	322020	172506	494526
fisheries	7145	11426	50	11476
Secondary sector	227690	329125	60225	389350
ceramics	9017	10524	1054	11578
diamond cutting	555	1597	48	1645
printing	1769	5181	67	5248
construction	58224	82671	264	82935
chemicals	3858	4169	412	4581
woodworking	12461	25731	490	26221
clothing and cleaning	34825	29485	41243	70728
industrial art	546	723	55	778
leather	22290	31260	490	31750
mining	1810	2216	293	2509
metal and shipbuilding	12845	44161	568	44729
paper	2573	3583	401	3984
textiles	39516	32321	12577	44898
utilities	0	82	0	82
food processing	27401	55421	2263	57684
Tertiary sector	267644	228468	132387	360855
trade	62061	66055	20759	86814
catering	14372	9380	3949	13329
shipping	26822	40232	329	40561
other transport	12467	35573	1400	36973
banking		1219	88	1307
insurance		823	8	831
total finance	1020			
government	9320	16472	68	16540
military	23690	25915	0	25915
medical services	3812	4306	1699	6005
professional services	2863	4983	396	5379
education	6234	6792	1728	8520
domestic servants	102176	12515	101753	114268
religion	2807	4203	210	4413
Casual labour	6283	14215	342	14557
Total	876150	905254	365510	1270764

Table B.2
Male, Female and Total Employment by Sector and Branch, 1859 and 1889

	1859			1889		
	male	female	total	male	female	total
Primary sector	361304	174826	536130	463554	169894	633448
agriculture	348739	174787	523526	446781	169831	616612
fisheries	12565	39	12604	16773	63	16836
Secondary sector	357901	57579	415480	482122	65688	547810
ceramics	13212	1193	14405	16801	1920	18721
diamond cutting	1660	11	1671	9973	425	10398
printing	5634	43	5677	9756	63	9819
construction	90725	279	91004	123339	341	123680
chemicals	4385	304	4689	5123	1035	6158
woodworking	28863	827	29690	35221	509	35730
clothing and cleaning	32282	39290	71572	34109	43190	77299
industrial art	889	48	937	1031	60	1091
leather	30586	455	31041	36570	629	37199
mining	2212	46	2258	13072	2087	15159
metal and shipbuilding	49515	461	49976	66453	602	67055
paper	3736	471	4207	5050	650	5700
textiles	33076	12469	45545	33569	10806	44375
utilities	370	0	370	2662	3	2665
food processing	60756	1682	62438	89393	3368	92761
Tertiary sector	246304	128997	375301	341237	212539	553776
trade	72435	19914	92349	109132	29909	139041
catering	9490	3274	12764	14645	4729	19374
shipping	42484	364	42848	40455	422	40877
other transport	39188	942	40130	61689	1985	63674
banking	1483	38	1521	4335	27	4362
insurance	788	1	789	2063	19	2082
government	17743	48	17791	26156	206	26362
military	28673	0	28673	33953	0	33953
medical services	4296	1577	5873	5580	6778	12358
professional services	4766	188	4954	10101	1584	11685
education	7483	1939	9422	16091	8801	24892
domestic servants	13103	100587	113690	11458	157179	168637
religion	4372	125	4497	5579	900	6479
Casual labour	17246	510	17756	24453	535	24988
Total	982755	361912	1344667	1311366	448656	1760022

Table B.3
Male, Female and Total Employment by Sector and Branch, 1899 and 1909

	1899			1909		
	male	female	total	male	female	total
Primary sector	508301	173373	681674	523529	176160	699689
agriculture	487011	172821	659832	500019	176100	676119
fisheries	21290	552	21842	23510	60	23570
Secondary sector	564912	87199	652111	674705	114351	789056
ceramics	22476	2318	24794	28252	2758	31010
diamond cutting	8786	1091	9877	9064	1002	10066
printing	13602	147	13749	19706	504	20210
construction	139892	513	140405	161645	519	162164
chemicals	6478	1611	8089	9726	2610	12336
woodworking	37657	851	38508	46213	1157	47370
clothing and cleaning	36857	55843	92700	39997	69891	109888
industrial art	518	28	546	820	57	877
leather	38206	1375	39581	34971	1812	36783
mining	14943	1519	16462	20795	2633	23428
metal and shipbuilding	88335	1236	89571	114843	2598	117441
paper	6002	940	6942	8718	1633	10351
textiles	34596	14602	49198	40224	19874	60098
utilities	4449	11	4460	9457	21	9478
food processing	112115	5114	117229	130274	7282	137556
Tertiary sector	401080	264407	665487	502464	312376	814840
trade	144738	39220	183958	178174	46118	224292
catering	17343	7413	24756	19870	12081	31951
shipping	42813	460	43273	50142	506	50648
other transport	75182	2126	77308	103486	3536	107022
banking	5793	47	5840	9488	435	9923
insurance	4044	74	4118	7606	445	8051
government	26741	307	27048	30608	489	31097
military	33887	0	33887	40277	1	40278
medical services	5807	9584	15391	7710	17860	25570
professional services	10411	767	11178	15047	1466	16513
education	19715	14168	33883	24139	23601	47740
domestic servants	7888	189581	197469	8631	205398	214029
religion	6718	660	7378	7286	440	7726
Casual labour	27607	77	27684	22110	30	22140
Total	1501900	525056	2026956	1722808	602917	2325725

Appendix C

Labour Input

Table C.1
Annual Series of Labour Input, 1800-1913:
Labour Force and Input in Man-Days

	labour force				input in thousands of man-days			
	agriculture	industry	services	total	agriculture	industry	services	total
1800	371511	217156	265575	854242	79420	59718	73033	212171
1801	372107	218728	265988	856823	79576	60150	73147	212873
1802	372699	220308	266398	859405	79731	60585	73259	213575
1803	373287	221897	266806	861990	79885	61022	73372	214278
1804	374312	223758	267525	865595	80133	61533	73569	215235
1805	375657	225826	268473	869956	80449	62102	73830	216381
1806	377359	228125	269677	875161	80842	62734	74161	217738
1807	377238	229335	269577	876150	80845	63067	74134	218046
1808	375653	229656	268431	873740	80534	63155	73819	217508
1809	375299	230731	268165	874195	80486	63451	73745	217683
1810	375784	232329	268499	876612	80619	63890	73837	218347
1811	376167	233874	268759	878800	80730	64315	73909	218954
1812	376575	235445	269038	881058	80846	64747	73985	219579
1813	378077	237714	270098	885889	81197	65371	74277	220846
1814	378256	239165	270213	887634	81265	65770	74309	221344
1815	383521	243857	273960	901338	82425	67061	75339	224825
1816	388453	248383	277470	914306	83515	68305	76304	228124
1817	391045	251447	279308	921800	84102	69148	76810	230059
1818	394946	255384	282080	932410	84971	70231	77572	232773
1819	399419	259730	285261	944410	85964	71426	78447	235836
1820	403634	263947	288258	955839	86902	72585	79271	238758
1821	409450	269257	292397	971104	88185	74046	80409	242640
1822	414750	274276	296167	985193	89358	75426	81446	246230
1823	420409	279583	300193	1000185	90610	76885	82553	250048
1824	427259	285737	305070	1018066	92119	78578	83894	254591
1825	433255	291377	309336	1033968	93445	80129	85067	258641
1826	436088	294932	311344	1042364	94089	81106	85620	260815
1827	438476	298216	313034	1049726	94638	82009	86084	262732
1828	443142	303085	316349	1062576	95679	83348	86996	266023
1829	446237	306919	318543	1071699	96381	84403	87599	268383
1830	449981	311235	321200	1082416	97224	85590	88330	271144
1831	451847	314284	322517	1088648	97662	86428	88692	272783
1832	453078	316913	323380	1093371	97963	87151	88930	274044
1833	456652	321210	325914	1103776	98771	88333	89626	276730
1834	460115	325467	328370	1113952	99555	89503	90302	279360
1835	464297	330272	331338	1125907	100496	90825	91118	282439
1836	469119	335580	334764	1139463	101576	92285	92060	285920
1837	473025	340278	337534	1150837	102458	93576	92822	288856
1838	477831	345669	340947	1164447	103535	95059	93760	292355
1839	482633	351107	344357	1178097	104613	96554	94698	295866
1840	487761	356834	347998	1192593	105762	98129	95699	299591
1841	493289	362909	351926	1208124	106999	99800	96780	303578
1842	496981	367681	354542	1219204	107838	101112	97499	306449
1843	501837	373363	357989	1233189	108930	102675	98447	310052

Table C.1
Annual Series of Labour Input, 1800-1913:
Labour Force and Input in Man-Days

	labour force				input in thousands of man-days			
	agriculture	industry	services	total	agriculture	industry	services	total
1844	506567	379003	361346	1246916	109996	104226	99370	313592
1845	511717	385009	365001	1261727	111153	105877	100375	317406
1846	512694	387915	365681	1266290	111405	106677	100562	318644
1847	510907	388738	364388	1264033	111056	106903	100207	318166
1848	510871	390898	364345	1266114	111088	107497	100195	318780
1849	511866	393862	365037	1270765	111344	108312	100385	320041
1850	516960	398065	367985	1283010	112533	109468	101196	323197
1851	522167	402361	371002	1295530	113750	110649	102026	326424
1852	526860	406266	373641	1306767	114855	111723	102751	329330
1853	530123	409074	375257	1314454	115651	112495	103196	331342
1854	533524	411991	376963	1322478	116477	113298	103665	333440
1855	534415	412973	376892	1324280	116757	113568	103645	333970
1856	538145	416152	378817	1333114	117657	114442	104175	336274
1857	541196	418809	380258	1340263	118410	115172	104571	338154
1858	542450	420079	380432	1342961	118771	115522	104619	338911
1859	543304	421040	380323	1344667	119044	115786	104589	339419
1860	543775	422811	383359	1349945	119236	116273	105424	340933
1861	545895	425877	387589	1359361	119789	117116	106587	343492
1862	547722	428729	391651	1368102	120279	117900	107704	345884
1863	551254	432934	396979	1381167	121145	119057	109169	349371
1864	553669	436282	401553	1391504	121765	119978	110427	352170
1865	555999	439581	406109	1401689	122368	120885	111680	354933
1866	556331	441312	409241	1406884	122532	121361	112541	356434
1867	559554	445350	414538	1419442	123333	122471	113998	359802
1868	561845	448667	419194	1429706	123930	123383	115278	362592
1869	564906	452616	424474	1441996	124697	124469	116730	365897
1870	567749	456413	429644	1453806	125418	125514	118152	369083
1871	568121	458237	432981	1459339	125593	126015	119070	370678
1872	570916	462028	438205	1471149	126304	127058	120506	373868
1873	574820	466741	444338	1485899	127262	128354	122193	377809
1874	579673	472253	451275	1503201	128432	129870	124101	382402
1875	583032	476575	457117	1516724	129271	131058	125707	386037
1876	587930	482183	464233	1534346	130454	132600	127664	390718
1877	593421	488311	471900	1553632	131770	134286	129773	395828
1878	598194	493881	479077	1571152	132928	135817	131746	400492
1879	603657	500056	486890	1590603	134241	137515	133895	405652
1880	607244	504706	493265	1605215	135139	138794	135648	409581
1881	611776	510170	500479	1622425	136248	140297	137632	414177
1882	617031	516270	508367	1641668	137521	141974	139801	419296
1883	621031	521352	515299	1657682	138515	143372	141707	423594
1884	625215	526617	522460	1674292	139551	144820	143677	428047
1885	629880	532317	530100	1692297	140696	146387	145778	432861
1886	634177	537738	537510	1709425	141761	147878	147815	437454
1887	639353	543937	545750	1729040	143024	149583	150081	442688
1888	644145	549843	553749	1747737	144203	151207	152281	447690
1889	648808	555672	561723	1766203	145354	152810	154474	452638
1890	652438	564463	571151	1788052	146253	155227	157067	458546
1891	656534	573783	581131	1811448	147257	157790	159811	464858
1892	659329	582086	590099	1831514	147970	160074	162277	470321

Table C.1
Annual Series of Labour Input, 1800-1913:
Labour Force and Input in Man-Days

	labour force				input in thousands of man-days			
	agriculture	industry	services	total	agriculture	industry	services	total
1893	664522	592637	601365	1858524	149222	162975	165375	477573
1894	669365	603026	612487	1884878	150397	165832	168434	484663
1895	674315	613664	623883	1911862	151598	168758	171568	491923
1896	680268	625378	636394	1942040	153025	171979	175008	500013
1897	686350	637385	649228	1972963	154484	175281	178538	508302
1898	691972	649141	661828	2002941	155840	178514	182003	516356
1899	697638	661112	674672	2033422	157208	181806	185535	524548
1900	698855	673888	688525	2061268	157583	185319	189344	532246
1901	701040	687858	703633	2092531	158177	189161	193499	540837
1902	702996	701884	718831	2123711	158720	193018	197679	549417
1903	704706	715939	734096	2154741	159208	196883	201876	557968
1904	705558	729385	748769	2183712	159503	200581	205911	565995
1905	706600	743281	763939	2213820	159841	204402	210083	574326
1906	707325	757102	779068	2243495	160108	208203	214244	582554
1907	707146	770194	793479	2270819	160170	211803	218207	590180
1908	707149	783715	808366	2299230	160273	215522	222301	598096
1909	706414	796640	822672	2325726	160209	219076	226235	605520
1910	702434	806054	833381	2341869	159409	221665	229180	610254
1911	701865	819536	848324	2369725	159382	225372	233289	618044
1912	702844	835082	865441	2403367	159707	229648	237996	627351
1913	704363	851575	883580	2439518	160155	234183	242985	637322

Table C.2
Annual Series of Labour Input, 1800-1913:
Adjusted Input in Man-Hours

	input in thousands of man-hours				unemployment	adjusted labour input
	agriculture	industry	services	total	percentage	ths man-hrs
1800	953041	716615	876397	2546053	2.2	2490668
1801	954909	721802	877760	2554472	2.2	2497439
1802	956767	727016	879113	2562897	2.3	2504169
1803	958617	732260	880460	2571337	2.4	2510863
1804	961590	738401	882832	2582824	2.4	2520480
1805	965388	745226	885961	2596575	2.5	2532248
1806	970106	752812	889934	2612853	2.5	2546417
1807	970139	756806	889604	2616549	2.6	2548267
1808	966406	757865	885822	2610093	2.7	2540185
1809	965838	761412	884945	2612195	2.7	2540387
1810	967429	766686	886047	2620162	2.8	2546238
1811	968759	771784	886905	2627448	2.9	2551365
1812	970154	776969	887825	2634948	3.0	2556638
1813	974369	784456	891323	2650149	3.1	2569312
1814	975176	789245	891703	2656124	3.1	2572971
1815	989101	804728	904068	2697897	3.2	2611211
1816	1002176	819664	915651	2737491	3.3	2647216
1817	1009221	829775	921716	2760712	3.4	2667273
1818	1019650	842767	930864	2793282	3.6	2691767
1819	1031565	857109	941361	2830035	3.6	2728854
1820	1042820	871025	951251	2865097	3.9	2754337
1821	1058222	888548	964910	2911680	3.7	2802776
1822	1072300	905111	977351	2954762	3.8	2841542
1823	1087317	922624	990637	3000578	4.1	2877310
1824	1105425	942932	1006731	3055088	4.7	2909973
1825	1121336	961544	1020809	3103689	5.1	2945101
1826	1129069	973276	1027435	3129780	4.4	2992824
1827	1135655	984113	1033012	3152780	4.7	3005086
1828	1148147	1000181	1043952	3192279	4.6	3045389
1829	1156576	1012833	1051192	3220601	4.5	3075114
1830	1166694	1027076	1059960	3253729	4.2	3116513
1831	1171948	1037137	1064306	3273391	4.3	3131601
1832	1175557	1045813	1067154	3288524	4.5	3140295
1833	1185251	1059993	1075516	3320760	4.7	3163419
1834	1194663	1074041	1083621	3352325	4.7	3196056
1835	1205949	1089898	1093415	3389262	4.6	3232915
1836	1218906	1107414	1104721	3431041	4.5	3275215
1837	1229491	1122917	1113862	3466271	5.4	3278471
1838	1242424	1140708	1125125	3508257	4.9	3336835
1839	1255355	1158653	1136378	3550386	4.7	3382010
1840	1269143	1177552	1148393	3595089	5.1	3412355
1841	1283983	1197600	1161356	3642938	4.5	3480716
1842	1294052	1213347	1169989	3677387	4.5	3513463
1843	1307159	1232098	1181364	3720621	5.6	3511950
1844	1319948	1250710	1192442	3763100	6.5	3518953
1845	1333841	1270530	1204503	3808874	5.6	3596869

Table C.2
Annual Series of Labour Input, 1800-1913:
Adjusted Input in Man-Hours

	input in thousands of man-hours				unemployment	adjusted labour input
	agriculture	industry	services	total	percentage	ths man-hrs
1846	1336861	1280120	1206747	3823728	5.0	3631646
1847	1332675	1282835	1202480	3817990	5.0	3626870
1848	1333054	1289963	1202339	3825355	6.0	3596005
1849	1336124	1299745	1204622	3840491	6.1	3605181
1850	1350402	1313615	1214351	3878367	6.4	3628647
1851	1364996	1327791	1224307	3917093	6.6	3660433
1852	1378265	1340678	1233015	3951958	6.5	3693261
1853	1387809	1349944	1238348	3976102	6.2	3731506
1854	1397729	1359570	1243978	4001277	5.5	3780978
1855	1401081	1362811	1243744	4007635	5.0	3807114
1856	1411886	1373302	1250096	4035283	4.6	3850419
1857	1420923	1382070	1254851	4057844	4.8	3862295
1858	1425251	1386261	1255426	4066937	4.9	3868259
1859	1428533	1389432	1255066	4073031	4.9	3873977
1860	1430830	1391235	1261421	4083486	4.7	3891855
1861	1437472	1397265	1271646	4106383	4.4	3927368
1862	1443351	1402549	1281251	4127151	4.5	3942650
1863	1453734	1412203	1294920	4160858	5.0	3951974
1864	1461184	1419002	1306047	4186234	5.1	3973410
1865	1468420	1425592	1317040	4211051	4.9	4005235
1866	1470385	1427060	1323353	4220799	4.7	4024279
1867	1479999	1435947	1336600	4252545	4.0	4084048
1868	1487159	1442452	1347698	4277309	3.9	4109960
1869	1496368	1450934	1360720	4308023	4.1	4129737
1870	1505013	1458868	1373305	4337186	4.5	4141439
1871	1507114	1460457	1379963	4347534	3.6	4191585
1872	1515650	1468274	1392567	4376492	3.4	4229724
1873	1527145	1478956	1407968	4414068	3.3	4268293
1874	1541178	1492088	1425808	4459074	3.7	4294128
1875	1551257	1501382	1440083	4492722	3.2	4350329
1876	1565447	1514650	1458265	4538362	3.0	4400193
1877	1581238	1529457	1478056	4588751	2.9	4456098
1878	1595137	1542423	1496189	4633749	3.0	4496817
1879	1610896	1557185	1516186	4684267	3.0	4541977
1880	1621668	1567113	1531589	4720371	3.1	4574193
1881	1634981	1579491	1549488	4763960	3.1	4614003
1882	1650246	1593748	1569351	4813345	3.3	4656143
1883	1662174	1604775	1586143	4853093	3.3	4693701
1884	1674612	1616287	1603528	4894426	3.5	4723684
1885	1688357	1629049	1622264	4939670	3.6	4762300
1886	1701133	1640873	1640177	4982183	3.8	4794097
1887	1716288	1654982	1660498	5031767	3.9	4836857
1888	1730432	1668106	1679956	5078494	4.1	4872580
1889	1744249	1680908	1699212	5124369	4.0	4920994
1890	1755031	1699576	1719713	5174320	3.8	4976520
1891	1767079	1719620	1741641	5228340	3.6	5037861
1892	1775637	1736407	1760310	5272354	3.9	5064838
1893	1790666	1759676	1785592	5335934	4.1	5116191

Table C.2
Annual Series of Labour Input, 1800-1913: Adjusted Input in Man-Hours

	input in thousands of man-hours				unemployment	adjusted labour input
	agriculture	industry	services	total	percentage	ths man-hrs
1894	1804768	1782213	1810175	5397157	4.3	5165725
1895	1819175	1805236	1835298	5459709	4.1	5234813
1896	1836305	1831157	1863413	5530875	4.1	5302076
1897	1853804	1857653	1892169	5603625	4.0	5379329
1898	1870078	1883135	1919939	5673152	4.0	5448954
1899	1886491	1908961	1948115	5743567	4.1	5505970
1900	1890994	1936381	1978440	5805814	4.0	5575930
1901	1898123	1966903	2012011	5877037	3.5	5673519
1902	1904640	1997241	2045465	5947347	3.5	5738803
1903	1910498	2027320	2078735	6016553	3.3	5815320
1904	1914035	2055342	2109965	6079342	3.2	5885409
1905	1918092	2084306	2142235	6144633	2.9	5964805
1906	1921292	2112729	2174027	6208048	2.7	6037534
1907	1922038	2138803	2203464	6264305	2.9	6079707
1908	1923279	2165757	2233879	6322916	3.2	6120871
1909	1922513	2190760	2262348	6375621	3.3	6168227
1910	1912908	2205860	2280643	6399411	3.3	6186903
1911	1912584	2231839	2310237	6454661	3.4	6237509
1912	1916481	2263107	2345381	6524968	3.1	6319521
1913	1921855	2296571	2382884	6601310	3.1	6396580

Appendix D

OUTPUT

D.1 Agriculture

Table D.1A
The Value of Output, Inputs, and Value Added in Agriculture, 1807-1913
(millions of guilders, current prices)

	output				inputs				
	arable	livestock	horti-culture	total output	cattle fodder	seed	other inputs	total inputs	value added
1807	86.3	68.2	3.6	158.1	15.2	8.3	15.3	38.8	119.3
1808	59.9	65.7	2.9	128.5	14.6	6.2	13.2	34.0	94.6
1809	77.6	65.9	3.3	146.9	14.7	9.5	15.1	39.3	107.6
1810	72.0	66.7	3.2	142.0	14.8	10.3	14.7	39.8	102.1
1811	75.9	56.6	3.1	135.5	12.6	11.1	13.8	37.5	98.0
1812	118.8	54.7	4.0	177.5	16.0	16.1	17.6	49.7	127.8
1813	120.5	56.8	4.1	181.5	17.6	14.6	17.7	49.9	131.6
1814	84.3	68.4	3.5	156.3	11.3	10.4	14.5	36.2	120.1
1815	78.4	69.5	3.4	151.4	10.2	10.1	13.9	34.2	117.2
1816	113.1	62.3	4.1	179.5	12.4	15.5	16.8	44.7	134.7
1817	146.5	67.0	4.9	218.4	18.0	20.8	21.0	59.7	158.6
1818	107.8	70.9	4.1	182.8	9.5	15.7	16.9	42.1	140.7
1819	90.1	66.2	3.6	159.9	9.7	12.5	15.1	37.3	122.6
1820	82.4	63.8	3.4	149.6	10.6	10.2	14.4	35.1	114.5
1821	58.9	53.9	2.6	115.4	8.0	7.3	11.4	26.7	88.8
1822	58.0	43.5	2.4	103.9	5.7	7.2	10.4	23.3	80.6
1823	72.9	45.3	2.7	120.9	9.8	8.3	12.2	30.3	90.6
1824	48.9	50.7	2.3	101.9	5.7	5.7	10.0	21.4	80.5
1825	58.5	60.1	2.8	121.4	8.0	6.6	11.8	26.5	94.9
1826	64.7	56.1	2.8	123.6	6.4	8.2	12.1	26.7	96.9
1827	90.2	59.9	3.5	153.6	13.6	10.5	15.2	39.3	114.3
1828	68.9	60.6	3.0	132.5	9.2	9.4	13.0	31.6	100.9
1829	83.8	59.5	3.3	146.6	11.1	10.6	14.3	36.0	110.6
1830	77.5	62.7	3.3	143.5	9.5	11.1	13.9	34.5	109.0
1831	100.3	65.0	3.8	169.2	13.0	12.2	16.0	41.2	128.0
1832	92.2	67.0	3.7	162.9	12.7	11.0	15.5	39.2	123.7
1833	71.6	59.0	3.0	133.6	10.3	8.7	12.9	31.9	101.7
1834	63.9	55.7	2.8	122.4	7.9	7.9	11.9	27.6	94.8
1835	75.1	59.1	3.1	137.4	8.5	8.4	13.0	30.0	107.4
1836	79.1	67.6	3.4	150.0	10.3	8.8	14.2	33.4	116.7
1837	78.1	67.0	3.4	148.5	9.6	8.7	14.1	32.4	116.0
1838	89.7	71.1	3.7	164.5	11.9	10.7	15.8	38.4	126.1
1839	108.6	75.7	4.3	188.6	13.2	12.3	17.6	43.2	145.4
1840	111.3	79.3	4.4	195.0	14.3	12.1	18.4	44.8	150.2
1841	90.0	77.0	3.9	170.9	11.0	10.9	16.2	38.1	132.8
1842	106.2	73.2	4.2	183.6	11.2	12.1	16.8	40.2	143.4

Table D.1A
The Value of Output, Inputs, and Value Added in Agriculture, 1807-1913
(millions of guilders, current prices)

	output				inputs				
	arable	livestock	horti-culture	total output	cattle fodder	seed	other inputs	total inputs	value added
1843	101.9	66.5	3.9	172.3	10.0	11.1	15.8	37.0	135.4
1844	83.0	65.6	3.5	152.0	10.0	9.3	14.3	33.6	118.4
1845	94.9	78.1	4.0	177.0	13.7	13.4	17.3	44.4	132.6
1846	120.8	84.6	4.8	210.2	13.2	16.4	19.6	49.2	161.0
1847	186.3	89.0	6.4	281.7	24.3	20.8	26.6	71.7	209.9
1848	100.4	79.8	4.2	184.4	12.6	11.7	17.3	41.6	142.8
1849	92.8	78.8	4.0	175.6	13.6	9.8	16.5	39.9	135.8
1850	92.0	83.6	4.1	179.8	13.5	10.0	16.7	40.2	139.5
1851	102.9	92.0	4.7	199.5	19.0	10.1	18.1	47.2	152.3
1852	103.5	96.8	5.9	206.2	16.4	11.6	19.6	47.6	158.6
1853	111.7	110.3	6.3	228.3	18.9	13.4	20.6	52.9	175.4
1854	167.8	117.9	7.3	293.0	29.3	18.4	25.9	73.6	219.4
1855	159.7	122.9	7.9	290.5	30.5	17.5	26.1	74.0	216.5
1856	169.6	140.7	7.4	317.7	29.5	17.5	27.7	74.7	243.0
1857	143.1	135.0	6.9	285.0	31.3	14.6	25.7	71.5	213.4
1858	132.0	113.5	6.6	252.2	33.8	12.9	23.5	70.2	181.9
1859	116.4	114.4	6.3	237.0	22.8	11.4	21.3	55.5	181.5
1860	150.3	125.4	7.0	282.7	28.9	16.6	25.0	70.5	212.2
1861	133.9	127.2	7.4	268.4	35.2	18.5	25.3	78.9	189.5
1862	151.6	153.1	7.8	312.4	35.7	14.0	27.8	77.5	234.9
1863	148.1	128.0	6.7	282.8	32.3	12.9	26.6	71.9	210.9
1864	140.9	146.8	7.5	295.2	32.2	12.6	27.7	72.5	222.6
1865	137.6	150.8	7.5	295.9	32.6	12.5	27.2	72.4	223.6
1866	142.9	179.2	9.0	331.1	31.1	14.7	30.0	75.8	255.4
1867	161.8	149.7	9.2	320.7	35.7	16.7	29.6	81.9	238.8
1868	166.7	158.0	9.5	334.2	34.3	16.5	30.1	80.9	253.3
1869	159.9	181.4	8.8	350.2	29.9	15.5	31.2	76.6	273.6
1870	162.5	179.5	9.3	351.3	34.5	16.1	32.3	82.9	268.4
1871	154.7	190.4	10.3	355.4	34.9	17.1	32.1	84.1	271.3
1872	173.8	190.0	10.6	374.4	38.4	17.0	35.3	90.7	283.6
1873	164.5	193.9	10.8	369.2	31.8	15.7	36.9	84.4	284.8
1874	176.4	207.7	11.5	395.5	43.0	16.8	38.5	98.2	297.3
1875	165.6	197.7	10.7	374.0	37.8	15.1	36.5	89.4	284.6
1876	173.8	208.1	12.0	393.9	43.4	17.1	38.3	98.9	295.0
1877	166.7	207.9	12.3	386.8	35.2	18.9	38.6	92.7	294.1
1878	163.8	191.4	12.0	367.2	33.4	18.6	37.2	89.2	278.0
1879	137.1	177.2	12.7	327.1	32.1	20.6	35.0	87.7	239.4
1880	162.1	204.6	13.6	380.3	35.4	19.0	37.4	91.8	288.5
1881	168.5	192.5	13.3	374.3	53.7	17.5	38.6	109.7	264.6
1882	151.7	202.8	13.2	367.7	32.9	18.2	36.1	87.2	280.5
1883	170.3	206.2	13.4	389.9	57.5	17.2	39.8	114.5	275.3
1884	151.7	193.2	12.9	357.8	44.5	14.0	36.6	95.1	262.7
1885	138.4	177.2	12.3	327.9	39.3	13.4	33.8	86.5	241.4
1886	133.9	179.7	12.3	325.9	38.2	13.3	33.0	84.4	241.5
1887	148.7	173.5	12.8	334.9	45.9	14.4	34.0	94.3	240.7
1888	114.8	176.4	13.0	304.2	28.8	13.9	32.1	74.7	229.5
1889	149.0	188.2	14.4	351.6	44.9	14.5	35.7	95.1	256.5

Table D.1A
The Value of Output, Inputs, and Value Added in Agriculture, 1807-1913
(millions of guilders, current prices)

	output				inputs				
	arable	livestock	horti-culture	total output	cattle fodder	seed	other inputs	total inputs	value added
1890	133.0	202.6	15.3	350.9	49.2	14.4	37.3	100.9	250.0
1891	140.4	200.1	17.3	357.8	52.2	18.5	39.2	109.9	248.0
1892	164.2	192.4	17.0	373.6	78.0	14.6	40.4	133.1	240.6
1893	139.7	193.4	17.1	350.2	71.9	12.2	38.4	122.5	227.7
1894	117.8	188.7	16.4	322.8	49.1	12.7	34.9	96.8	226.1
1895	128.2	189.2	16.1	333.4	54.3	12.1	36.4	102.8	230.6
1896	141.0	210.6	17.1	368.8	71.8	11.9	40.5	124.3	244.5
1897	140.6	204.1	18.7	363.3	71.6	13.1	42.7	127.4	235.9
1898	155.7	231.0	19.8	406.5	88.2	14.7	47.2	150.1	256.5
1899	161.7	234.0	20.8	416.6	96.5	13.5	50.7	160.6	256.0
1900	148.4	251.8	23.0	423.2	92.2	13.2	52.5	157.8	265.3
1901	175.6	256.6	24.7	456.9	102.2	14.2	55.8	172.2	284.7
1902	166.2	274.9	25.8	466.9	104.8	14.4	58.2	177.3	289.6
1903	150.7	274.6	27.5	452.8	100.8	14.6	59.5	174.9	277.9
1904	181.7	274.4	28.9	485.1	112.7	15.6	63.4	191.7	293.4
1905	174.4	291.7	29.5	495.7	113.4	15.1	66.0	194.5	301.2
1906	185.2	319.4	32.3	536.9	134.4	15.4	76.8	226.6	310.3
1907	194.1	304.9	34.2	533.2	137.6	16.3	71.6	225.6	307.7
1908	198.1	325.8	35.8	559.7	152.9	16.5	84.7	254.2	305.5
1909	198.3	358.1	42.1	598.6	155.1	16.8	92.1	264.1	334.5
1910	191.3	383.4	42.6	617.4	148.0	16.7	84.4	249.2	368.2
1911	235.7	383.6	46.9	666.2	154.2	18.4	92.6	265.2	401.0
1912	242.7	402.4	51.6	696.7	194.6	18.1	100.7	313.5	383.3
1913	204.2	418.5	53.1	675.8	187.3	16.4	107.2	310.9	364.9

Table D.1B
Agricultural Price Indices and Real Value Added, 1807-1913

	price indices			value added	
	arable and horticultural production 1913=100	livestock production 1913=100	total agriculture 1913=100	current prices mln*f*	constant prices mln*f* 1913
1807	126.9	47.7	77.0	119.3	155.0
1808	111.6	47.6	71.2	94.6	132.8
1809	97.8	46.8	66.3	107.6	162.3
1810	98.3	50.1	68.6		
1811	114.8	44.5	70.9		
1812	143.4	42.0	81.3		
1813	132.2	41.9	77.3		
1814	101.8	48.8	69.1	120.1	
1815	92.5	49.1	65.7	117.2	178.3
1816	134.5	45.7	79.9	134.7	168.7
1817	176.5	54.1	102.1	158.6	155.3
1818	134.4	55.1	85.6	140.7	164.3
1819	110.2	47.8	71.6	122.6	171.1
1820	88.4	43.4	60.6	114.5	188.8
1821	66.2	37.5	48.4	88.8	183.3
1822	64.4	31.5	44.1	80.6	182.9
1823	72.9	33.1	48.5	90.6	187.0
1824	49.4	35.8	40.3	80.5	199.6
1825	59.8	41.3	47.8	94.9	198.4
1826	70.3	39.2	51.0	96.9	190.1
1827	89.0	39.8	58.7	114.3	194.5
1828	75.4	37.7	52.2	100.9	193.3
1829	88.5	38.3	57.6	110.6	192.1
1830	96.8	46.6	65.8	109.0	165.6
1831	99.6	47.6	68.1	128.0	187.9
1832	88.1	46.0	62.4	123.7	198.3
1833	70.0	39.2	51.0	101.7	199.4
1834	64.3	36.7	47.3	94.8	200.4
1835	69.1	38.2	50.1	107.4	214.3
1836	69.8	40.6	51.7	116.7	225.5
1837	67.1	40.6	50.6	116.0	229.1
1838	79.6	41.5	56.2	126.1	224.2
1839	90.6	46.4	63.7	145.4	228.3
1840	89.8	48.0	64.3	150.2	233.7
1841	83.9	45.2	60.1	132.8	221.0
1842	92.0	45.4	63.7	143.4	225.2
1843	82.6	42.9	58.5	135.4	231.4
1844	71.2	39.5	51.7	118.4	229.1
1845	98.2	43.6	64.1	132.6	207.0
1846	126.9	49.7	78.8	161.0	204.3
1847	154.5	54.0	94.6	209.9	221.9
1848	87.2	47.2	62.6	142.8	227.9
1849	74.4	44.7	55.9	135.8	242.8
1850	75.9	43.4	55.9	139.5	249.7
1851	87.5	43.4	59.9	152.3	254.4

Table D.1B
Agricultural Price Indices and Real Value Added, 1807-1913

	price indices			value added	
	arable and horticultural production 1913=100	livestock production 1913=100	total agriculture 1913=100	current prices mln*f*	constant prices mln*f* 1913
1852	95.2	45.6	63.7	158.6	249.0
1853	113.5	52.3	73.9	175.4	237.2
1854	135.5	57.1	87.0	219.4	252.1
1855	136.9	59.8	88.7	216.5	243.9
1856	124.4	66.9	89.1	243.0	272.6
1857	106.8	64.9	80.9	213.4	263.7
1858	96.8	56.2	71.9	181.9	252.9
1859	97.2	55.6	71.3	181.5	254.5
1860	117.1	59.1	81.2	212.2	261.3
1861	122.2	60.3	83.0	189.5	228.3
1862	108.2	69.3	84.1	234.9	279.4
1863	100.4	55.9	73.0	210.9	288.8
1864	93.8	62.3	74.2	222.6	300.0
1865	94.6	65.2	76.3	223.6	293.1
1866	111.4	81.2	92.6	255.4	275.8
1867	130.4	67.7	91.2	238.8	261.8
1868	125.5	70.4	91.3	253.3	277.4
1869	113.7	75.3	89.8	273.6	304.8
1870	114.3	76.6	90.8	268.4	295.6
1871	123.1	77.4	93.9	271.3	289.0
1872	118.0	80.1	94.5	283.6	300.1
1873	120.6	86.2	99.1	284.8	287.3
1874	122.7	86.5	100.1	297.3	297.1
1875	114.9	79.2	92.5	284.6	307.7
1876	124.9	82.9	98.4	295.0	299.7
1877	133.8	82.6	100.8	294.1	291.7
1878	128.3	79.2	97.1	278.0	286.4
1879	135.0	73.0	93.7	239.4	255.5
1880	129.7	79.5	97.4	288.5	296.3
1881	122.5	77.3	94.0	264.6	281.5
1882	118.4	81.0	94.6	280.5	296.6
1883	113.8	85.0	95.8	275.3	287.5
1884	97.1	78.7	85.4	262.7	307.6
1885	91.4	71.1	78.6	241.4	307.1
1886	91.6	67.4	76.3	241.5	316.4
1887	90.0	64.9	74.4	240.7	323.7
1888	93.9	64.0	74.5	229.5	308.0
1889	94.0	68.6	78.1	256.5	328.6
1890	96.6	76.6	83.9	250.0	297.9
1891	120.2	72.9	88.2	248.0	281.2
1892	93.7	69.7	79.6	240.6	302.3
1893	83.3	70.0	75.4	227.7	302.2
1894	87.1	69.9	76.2	226.1	296.8
1895	81.3	67.9	73.1	230.6	315.4
1896	80.1	69.0	73.3	244.5	333.4
1897	87.5	64.7	73.1	235.9	322.8

Table D.1B
Agricultural Price Indices and Real Value Added, 1807-1913

	price indices			value added	
	arable and horticultural production 1913=100	livestock production 1913=100	total agriculture 1913=100	current prices mln*f*	constant prices mln*f* 1913
1898	92.5	67.6	76.5	256.5	335.2
1899	87.6	70.2	76.9	256.0	332.9
1900	86.8	72.5	77.7	265.3	341.5
1901	90.1	72.9	79.6	284.7	357.7
1902	88.8	77.7	81.9	289.6	353.7
1903	92.6	79.1	83.9	277.9	331.1
1904	97.9	77.9	85.5	293.4	343.2
1905	96.6	78.6	85.2	301.2	353.6
1906	97.3	83.8	88.8	310.3	349.4
1907	98.3	85.7	90.7	307.7	339.2
1908	100.6	86.5	91.9	305.5	332.4
1909	106.1	87.5	94.1	334.5	355.3
1910	108.3	93.0	98.2	368.2	374.8
1911	114.1	97.4	103.9	401.0	386.0
1912	112.8	97.0	103.1	383.3	371.8
1913	100.0	100.0	100.0	364.9	364.9

Table D.1C
Value Added of the Fisheries, 1807-1913

	VAcrt mln*f*	Price 1913=100	VAcst mln*f* 1913
1807	1.4	36.3	3.7
1808	1.4	44.6	3.0
1809	1.4	53.0	2.6
1810			
1811			
1812			
1813			
1814	1.5	63.9	
1815	2.0	60.6	3.4
1816	1.8	57.5	3.1
1817	1.9	54.5	3.5
1818	1.0	51.8	1.8
1819	0.8	46.0	1.8
1820	0.7	47.2	1.4
1821	0.8	46.0	1.8
1822	0.5	44.8	1.2
1823	0.5	37.3	1.5
1824	0.8	33.6	2.4
1825	0.9	35.5	2.5
1826	1.0	37.3	2.7
1827	0.9	31.7	2.8
1828	0.8	32.7	2.5
1829	0.6	32.7	1.9
1830	1.2	32.7	3.7
1831	0.8	31.7	2.6
1832	0.8	34.4	2.4
1833	0.9	37.3	2.4
1834	1.0	32.7	3.1
1835	0.8	37.3	2.1
1836	0.6	37.3	1.6
1837	1.2	39.2	3.1
1838	1.3	33.6	3.8
1839	0.9	33.1	2.7
1840	0.8	33.6	2.4
1841	1.2	33.1	3.7
1842	1.5	32.7	4.6
1843	0.5	32.8	1.5
1844	1.0	29.3	3.2
1845	0.5	28.0	1.9
1846	0.5	27.1	1.8
1847	1.2	27.8	4.2
1848	1.6	28.0	5.8
1849	1.1	28.0	3.9
1850	1.7	27.5	6.4
1851	1.4	27.5	5.1
1852	1.4	29.1	4.8

Table D.1C
Value Added of the Fisheries, 1807-1913

	VAcrt mln*f*	Price 1913=100	VAcst mln*f* 1913
1853	1.3	31.5	4.0
1854	2.0	33.5	5.8
1855	1.1	31.8	3.5
1856	1.7	31.7	5.3
1857	0.8	32.0	2.4
1858	1.8	34.9	5.2
1859	2.4	36.8	6.6
1860	2.0	36.6	5.3
1861	1.7	37.0	4.7
1862	2.4	38.3	6.2
1863	2.3	33.5	6.9
1864	2.4	35.1	7.0
1865	3.1	37.1	8.4
1866	1.3	49.0	2.8
1867	2.5	44.3	5.7
1868	2.5	46.0	5.5
1869	1.9	46.9	4.0
1870	2.8	47.3	5.8
1871	3.5	47.2	7.4
1872	2.6	47.8	5.5
1873	3.6	49.4	7.3
1874	2.7	53.3	5.1
1875	2.3	56.2	4.1
1876	3.2	61.3	5.2
1877	3.2	62.2	5.2
1878	4.2	69.5	6.0
1879	3.7	73.5	5.0
1880	3.8	75.6	5.0
1881	4.4	61.7	7.1
1882	4.8	70.9	6.7
1883	6.0	73.6	8.2
1884	5.9	77.6	7.7
1885	4.9	77.2	6.3
1886	4.7	58.7	8.0
1887	5.0	80.3	6.2
1888	5.4	79.7	6.8
1889	6.1	89.5	6.8
1890	6.9	95.7	7.2
1891	7.3	105.0	6.9
1892	7.4	123.5	6.0
1893	6.7	151.3	4.4
1894	7.8	125.0	6.2
1895	7.6	143.7	5.3
1896	6.4	128.1	5.0
1897	7.8	172.9	4.5
1898	8.0	154.4	5.2
1899	8.0	150.2	5.3
1900	10.3	202.7	5.1
1901	9.8	226.3	4.3

Table D.1C
Value Added of the Fisheries, 1807-1913

	VAcrt mln*f*	Price 1913=100	VAcst mln*f* 1913
1902	15.0	226.0	6.6
1903	13.1	178.4	7.4
1904	12.4	102.7	12.1
1905	14.5	105.7	13.8
1906	16.6	142.4	11.7
1907	13.4	125.1	10.7
1908	11.4	98.8	11.5
1909	13.6	105.0	13.0
1910	14.5	112.7	12.9
1911	14.7	108.2	13.6
1912	16.1	103.9	15.5
1913	18.8	100.0	18.8

D.2 Industry

Table D.2A
Industrial Value Added by Branch, 1807-1913:
Mining, Ceramics, Diamond Cutting, and Paper
(millions of guilders, current prices; price index 1913=100)

	mining			ceramics and glass			diamond cutting			paper		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807	3.1	80.3	3.9							1.0	208.5	0.5
1808	3.1	80.3	3.9							1.0	211.1	0.5
1809	2.8	62.9	4.5							1.0	206.4	0.5
1810	2.7	73.8	3.7							0.9	197.0	0.5
1811	2.5	63.9	3.9							0.9	188.1	0.5
1812	2.2	59.8	3.7							0.8	173.3	0.5
1813	2.1	58.5	3.5							0.8	166.9	0.5
1814	2.5	68.9	3.6							0.9	193.2	0.5
1815	2.5	73.3	3.4							0.9	202.8	0.5
1816	3.2	76.4	4.2							0.9	197.4	0.5
1817	2.0	74.2	2.7							0.9	197.9	0.5
1818	2.6	66.0	4.0							0.9	200.1	0.5
1819	2.5	67.7	3.7							0.9	200.9	0.4
1820	3.2	63.3	5.1							0.9	211.1	0.4
1821	2.9	57.3	5.1							0.9	198.0	0.4
1822	2.8	58.1	4.9							0.8	195.1	0.4
1823	2.9	56.0	5.2							0.8	194.6	0.4
1824	2.6	48.6	5.4							0.9	200.4	0.4
1825	2.7	49.5	5.5							0.8	195.8	0.4
1826	2.7	49.3	5.4							0.8	191.3	0.4
1827	2.6	52.0	4.9							0.8	185.8	0.4
1828	2.8	50.1	5.5							0.9	211.3	0.4
1829	2.8	49.3	5.7							0.9	207.9	0.4
1830	3.4	53.8	6.2							0.8	192.1	0.4
1831	2.5	45.4	5.5							0.8	189.3	0.4
1832	2.6	41.9	6.3							0.8	193.9	0.4
1833	2.6	40.6	6.4							0.8	193.0	0.4
1834	2.9	45.3	6.3							0.8	208.1	0.4
1835	3.1	45.9	6.6							0.8	209.2	0.4
1836	3.3	46.2	7.1							0.8	203.3	0.4
1837	3.6	48.1	7.5							0.8	192.6	0.4
1838	4.2	50.2	8.3							0.7	191.6	0.4
1839	4.3	49.4	8.6							0.7	188.9	0.4
1840	4.2	46.9	8.9							0.7	183.8	0.4
1841	3.8	46.9	8.1							0.7	181.6	0.4
1842	3.8	47.2	8.1							0.6	177.4	0.4
1843	3.4	43.2	8.0							0.6	168.7	0.4
1844	3.6	46.4	7.8							0.6	175.6	0.3
1845	3.5	47.6	7.4							0.6	176.0	0.3
1846	4.1	46.2	8.9							0.6	179.1	0.3
1847	4.0	46.9	8.6							0.6	193.9	0.3
1848	3.7	46.3	8.0							0.6	184.3	0.3
1849	3.7	45.7	8.0							0.6	211.1	0.3
1850	0.0	48.5	8.3	3.8	122.2	3.1	1.7	101.5	1.7	0.7	214.8	0.3

Table D.2A
Industrial Value Added by Branch, 1807-1913:
Mining, Ceramics, Diamond Cutting, and Paper
(millions of guilders, current prices; price index 1913=100)

	mining			ceramics and glass			diamond cutting			paper		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1851	4.0	47.1	8.4	3.8	142.1	2.7	1.7	95.6	1.8	0.6	200.5	0.3
1852	4.5	47.0	9.6	3.8	148.2	2.6	1.7	100.0	1.7	0.6	200.5	0.3
1853	4.0	45.0	8.9	4.2	137.5	3.1	1.7	102.4	1.7	0.6	186.2	0.3
1854	4.5	47.3	9.5	4.6	148.2	3.1	1.7	104.0	1.6	0.6	157.6	0.4
1855	4.4	48.3	9.1	5.0	143.6	3.5	1.7	106.9	1.6	0.6	171.9	0.4
1856	6.6	58.3	11.3	5.5	143.6	3.8	1.7	108.7	1.6	0.8	229.2	0.4
1857	6.8	61.3	11.1	5.6	145.2	3.8	1.8	118.3	1.5	0.9	257.8	0.4
1858	6.4	61.4	10.4	5.6	139.0	4.0	1.8	110.9	1.6	0.9	229.2	0.4
1859	6.4	62.6	10.2	5.7	131.4	4.4	1.9	107.5	1.8	0.8	227.1	0.4
1860	5.7	58.1	9.9	5.8	134.5	4.3	2.1	114.4	1.8	0.9	225.0	0.4
1861	6.6	62.3	10.5	5.9	136.0	4.3	2.2	110.4	2.0	0.9	237.5	0.4
1862	6.9	59.2	11.7	6.0	131.4	4.6	2.5	117.4	2.2	1.0	250.0	0.4
1863	6.7	55.2	12.1	5.8	129.9	4.4	2.8	127.0	2.2	1.1	252.1	0.4
1864	5.5	46.8	11.8	6.3	123.8	5.1	3.0	125.8	2.4	1.3	254.2	0.5
1865	5.4	47.3	11.5	6.4	125.3	5.1	3.0	120.8	2.5	1.3	243.8	0.5
1866	5.4	48.0	11.1	5.7	122.2	4.7	3.2	114.2	2.8	1.3	233.3	0.5
1867	5.6	51.6	10.8	5.8	126.8	4.6	3.4	112.4	3.1	1.4	245.8	0.6
1868	5.0	48.1	10.5	5.6	113.1	5.0	3.7	106.3	3.4	1.5	258.3	0.6
1869	5.1	50.2	10.1	6.1	110.0	5.6	3.8	106.9	3.6	1.5	235.4	0.6
1870	5.2	52.7	9.8	6.9	111.5	6.2	4.0	110.9	3.6	1.4	212.5	0.6
1871	5.2	53.8	9.7	7.2	110.5	6.5	4.3	113.4	3.8	1.4	212.5	0.7
1872	5.3	54.6	9.7	6.7	119.2	5.6	4.9	127.3	3.8	1.4	212.5	0.7
1873	5.3	54.8	9.6	8.6	159.4	5.4	5.3	136.8	3.9	1.6	243.8	0.7
1874	5.1	53.2	9.5	9.7	141.1	6.9	6.0	137.6	4.3	1.8	275.0	0.6
1875	5.0	53.9	9.3	11.0	130.9	8.4	6.7	119.5	5.6	1.7	250.0	0.7
1876	5.2	56.0	9.2	12.4	128.4	9.7	7.5	114.3	6.5	1.4	225.0	0.6
1877	5.4	60.5	9.0	15.1	126.8	11.9	8.3	119.3	7.0	1.5	210.4	0.7
1878	5.3	60.5	8.8	14.6	120.2	12.2	9.1	110.6	8.2	1.4	195.8	0.7
1879	5.5	63.1	8.7	11.6	120.7	9.6	9.8	105.2	9.3	1.4	181.3	0.8
1880	5.2	61.0	8.6	10.4	113.8	9.2	10.7	107.3	10.0	1.6	166.7	1.0
1881	5.1	60.8	8.5	9.9	112.8	8.8	11.7	110.5	10.6	1.5	160.4	0.9
1882	4.8	57.8	8.3	10.6	108.2	9.8	12.6	112.4	11.2	1.5	154.2	1.0
1883	4.4	53.6	8.3	8.8	114.1	7.7	13.4	101.0	13.3	1.7	147.9	1.2
1884	4.4	54.6	8.1	6.5	81.7	8.0	14.2	96.7	14.7	1.7	141.7	1.2
1885	4.2	52.4	8.0	6.4	78.5	8.2	14.6	91.7	15.9	1.8	135.4	1.4
1886	4.1	52.1	7.8	6.6	78.5	8.5	15.0	92.0	16.3	2.0	129.2	1.6
1887	3.9	50.6	7.7	6.4	73.4	8.7	15.4	92.7	16.6	1.9	122.9	1.5
1888	3.8	50.2	7.6	7.5	83.9	9.0	16.5	98.0	16.8	1.8	116.7	1.6
1889	4.1	52.3	7.9	7.3	78.5	9.3	17.3	99.3	17.4	2.0	112.5	1.8
1890	4.1	50.4	8.1	8.8	90.9	9.6	17.2	94.5	18.2	2.1	108.3	1.9
1891	4.5	53.5	8.3	10.1	99.6	10.1	17.4	95.0	18.3	2.6	104.2	2.5
1892	4.0	53.7	7.5	10.7	100.7	10.6	17.6	92.0	19.1	2.2	100.0	2.2
1893	3.2	50.6	6.4	10.3	92.3	11.2	17.7	85.7	20.6	2.6	108.3	2.4
1894	3.4	50.4	6.8	10.2	87.2	11.7	17.5	88.7	19.8	2.9	116.7	2.5
1895	3.2	52.3	6.1	12.5	101.8	12.3	17.5	82.3	21.3	3.3	112.5	2.9
1896	3.3	50.4	6.6	15.8	123.5	12.8	17.6	87.3	20.1	3.5	108.3	3.2
1897	3.6	50.3	7.1	16.9	125.7	13.4	17.6	88.5	19.9	3.8	106.3	3.6
1898	3.6	49.9	7.2	16.4	116.7	14.0	17.5	87.9	19.9	3.5	104.2	3.4

Table D.2A
Industrial Value Added by Branch, 1807-1913:
Mining, Ceramics, Diamond Cutting, and Paper
(millions of guilders, current prices; price index 1913=100)

	mining			ceramics and glass			diamond cutting			paper		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1899	4.0	51.0	7.9	17.0	116.3	14.7	17.3	88.0	19.6	3.5	104.2	3.4
1900	5.2	55.5	9.3	17.6	114.7	15.3	17.3	92.1	18.8	3.9	104.2	3.8
1901	5.4	57.2	9.5	17.2	107.8	16.0	17.5	90.1	19.4	4.6	104.2	4.4
1902	5.1	60.5	8.5	18.6	111.5	16.7	18.1	88.6	20.4	4.8	104.2	4.6
1903	5.1	64.7	7.8	22.0	126.9	17.4	18.5	91.7	20.1	5.7	106.3	5.3
1904	5.1	65.3	7.7	23.7	130.7	18.1	18.9	92.9	20.3	5.3	108.3	4.9
1905	6.3	59.5	10.7	21.7	114.9	18.8	19.7	92.9	21.2	5.9	106.3	5.5
1906	6.6	62.7	10.5	21.1	107.7	19.6	20.1	94.8	21.2	6.4	104.2	6.1
1907	7.9	73.6	10.7	21.2	104.0	20.4	18.8	98.7	19.0	7.1	110.4	6.5
1908	9.0	72.5	12.4	21.2	100.0	21.2	16.9	92.9	18.2	8.1	116.7	6.9
1909	9.6	73.5	13.0	22.1	100.0	22.1	17.8	92.7	19.1	8.9	113.1	7.9
1910	10.3	78.1	13.2	21.0	100.0	21.0	17.8	93.3	19.1	9.2	109.7	8.4
1911	11.0	83.5	13.2	23.2	100.0	23.2	16.7	96.5	17.3	9.0	106.4	8.5
1912	12.8	92.4	13.8	24.9	100.0	24.9	15.9	97.7	16.2	9.2	103.1	8.9
1913	14.4	100	14.4	28.2	100	28.2	16.0	100	16.0	9.2	100	9.2

Table D.2B
Industrial Value Added by Branch, 1807-1913:
Printing, Woodworking, Food Processing, and Textiles
(millions of guilders, current prices; price index 1913=100)

	printing			woodworking			food processing			textiles		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807							41.9	176.2	23.8	22.0	344.0	6.4
1808							40.5	179.9	22.5	23.4	351.6	6.7
1809							37.7	164.0	23.0	12.5	326.9	3.8
1810							35.5	163.0	21.8	11.8	329.1	3.6
1811							26.0	140.3	18.5	11.2	331.4	3.4
1812							27.5	174.6	15.8	10.6	333.6	3.2
1813							26.4	159.3	16.6	10.0	335.9	3.0
1814							28.9	167.2	17.3	9.5	338.2	2.8
1815							35.9	172.9	20.8	9.0	340.5	2.6
1816							35.8	174.3	20.5	17.3	341.4	5.1
1817							32.7	187.1	17.5	18.5	336.3	5.5
1818							37.8	150.8	25.1	21.1	339.0	6.2
1819							27.5	138.2	19.9	20.7	327.0	6.3
1820							35.0	115.8	30.2	19.4	291.1	6.7
1821							32.8	111.4	29.4	19.2	273.9	7.0
1822							29.5	104.0	28.4	17.8	252.9	7.1
1823							36.9	112.5	32.8	18.0	231.5	7.8
1824							28.4	112.0	25.3	17.7	229.9	7.7
1825							27.8	112.6	24.7	19.4	263.7	7.4
1826							32.2	107.9	29.8	15.7	204.6	7.7
1827							37.9	115.8	32.7	16.0	192.3	8.3
1828							37.9	113.0	33.6	15.8	187.9	8.4
1829							44.0	122.2	36.0	15.2	171.2	8.9
1830							37.9	109.3	34.7	15.1	174.0	8.7
1831							36.9	106.1	34.8	14.6	162.5	9.0
1832							32.4	112.9	28.7	14.8	164.4	9.0
1833							32.2	102.8	31.3	15.5	174.1	8.9
1834							36.3	97.6	37.2	15.7	172.1	9.1
1835							41.4	108.7	38.1	22.1	201.9	10.9
1836							46.8	114.8	40.8	27.7	222.8	12.4
1837							46.6	103.4	45.1	30.0	219.1	13.7
1838							49.8	116.5	42.8	37.6	225.3	16.7
1839							52.8	132.5	39.8	34.1	221.4	15.4
1840							58.1	124.3	46.7	37.6	222.1	16.9
1841							63.2	120.8	52.3	38.3	228.1	16.8
1842							61.5	114.8	53.6	40.1	226.5	17.7
1843							53.7	109.1	49.2	37.5	227.1	16.5
1844							56.2	99.0	56.8	31.1	219.7	14.2
1845							63.9	111.1	57.5	35.5	205.7	17.3
1846							61.6	123.9	49.7	35.3	193.3	18.3
1847							56.7	134.0	42.4	30.7	185.3	16.6
1848							53.8	107.8	49.9	24.5	179.1	13.7
1849							50.6	109.2	46.4	27.2	181.5	15.0
1850	0.7	120.0	0.6	2.2	53.6	4.1	55.8	111.4	50.1	18.2	140.0	13.0
1851	0.7	109.5	0.6	2.2	53.1	4.1	50.5	101.5	49.8	19.5	137.7	14.2
1852	0.8	105.9	0.7	2.3	55.1	4.1	44.4	97.3	45.7	23.2	141.2	16.4

Table D.2B
Industrial Value Added by Branch, 1807-1913: Printing, Woodworking, Food Processing, and Textiles (millions of guilders, current prices; price index 1913=100)

	printing			woodworking			food processing			textiles		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1853	0.9	107.7	0.8	2.6	65.5	4.0	43.0	98.4	43.7	22.9	135.5	16.9
1854	0.7	109.4	0.7	1.6	60.5	2.7	55.5	116.4	47.7	27.5	133.8	20.6
1855	0.8	109.4	0.7	1.6	57.6	2.8	56.5	125.1	45.2	21.7	133.6	16.3
1856	0.7	109.4	0.6	1.4	56.3	2.5	52.7	117.0	45.0	19.2	134.9	14.3
1857	0.7	109.4	0.7	1.7	56.6	3.0	63.9	129.8	49.3	18.2	136.7	13.3
1858	0.7	109.4	0.7	1.8	58.1	3.2	65.1	121.3	53.7	14.8	130.7	11.3
1859	0.6	108.4	0.6	1.4	57.2	2.5	40.7	95.1	42.8	17.4	134.2	13.0
1860	0.6	107.4	0.6	1.9	61.7	3.0	55.6	112.2	49.6	19.2	135.6	14.1
1861	0.7	113.2	0.7	1.9	61.5	3.1	48.5	100.9	48.1	23.4	137.3	17.1
1862	0.8	119.3	0.6	3.4	60.5	5.6	55.2	112.2	49.2	24.0	168.2	14.3
1863	1.0	119.3	0.8	2.8	57.4	4.8	51.9	98.8	52.5	35.6	256.4	13.9
1864	0.9	121.3	0.8	2.5	61.4	4.1	51.2	97.9	52.3	35.6	268.8	13.3
1865	1.0	121.3	0.8	1.8	60.6	3.0	57.0	102.6	55.6	40.2	218.6	18.4
1866	0.9	122.4	0.7	1.4	51.7	2.6	63.0	112.3	56.1	38.5	186.2	20.7
1867	1.9	122.5	1.5	1.2	56.7	2.2	55.8	107.9	51.7	33.9	145.8	23.2
1868	1.9	121.3	1.6	1.1	62.9	1.8	60.7	116.9	51.9	30.5	134.8	22.6
1869	1.7	120.3	1.4	1.5	62.9	2.5	58.0	99.0	58.6	33.9	147.7	22.9
1870	2.8	115.8	2.4	1.5	62.9	2.4	78.0	122.8	63.5	29.2	131.0	22.3
1871	4.1	123.7	3.3	1.5	62.9	2.4	72.5	121.8	59.5	35.1	137.1	25.6
1872	4.1	115.8	3.6	3.2	62.9	5.1	77.5	121.0	64.0	59.9	168.6	35.5
1873	5.5	144.3	3.8	6.1	73.9	8.3	90.1	135.7	66.4	71.5	154.9	46.1
1874	5.3	131.3	4.0	9.4	87.8	10.7	75.8	119.3	63.6	56.3	143.7	39.2
1875	5.6	132.8	4.2	6.9	68.5	10.0	74.8	111.5	67.1	62.0	145.0	42.7
1876	5.4	121.6	4.4	8.3	73.9	11.2	80.6	119.6	67.4	47.4	126.5	37.4
1877	6.2	129.9	4.8	9.3	71.3	13.1	91.3	126.8	72.0	58.3	137.3	42.5
1878	4.8	93.5	5.1	8.6	60.1	14.3	89.8	119.7	75.0	53.3	133.4	40.0
1879	6.7	125.3	5.4	7.5	55.2	13.6	82.5	108.8	75.8	39.0	120.5	32.4
1880	6.1	109.6	5.6	8.2	62.9	13.1	101.5	124.9	81.2	39.1	120.4	32.5
1881	7.3	123.1	6.0	9.7	65.7	14.7	103.1	129.5	79.6	58.5	132.2	44.3
1882	6.7	106.9	6.3	10.4	65.7	15.9	105.1	121.4	86.6	67.5	142.3	47.4
1883	8.0	116.1	6.9	9.7	60.1	16.2	115.1	118.8	96.9	48.9	121.7	40.2
1884	5.6	77.4	7.2	9.5	60.1	15.9	113.7	112.4	101.2	49.3	120.5	40.9
1885	6.3	82.4	7.7	9.3	62.9	14.8	108.6	99.6	109.0	49.8	111.9	44.5
1886	5.6	74.0	7.6	8.6	62.9	13.8	101.4	103.2	98.2	45.4	108.5	41.8
1887	5.1	69.2	7.3	8.1	62.9	12.8	122.4	108.3	113.0	51.7	109.4	47.3
1888	6.9	88.4	7.8	8.5	65.7	12.9	141.1	126.9	111.2	46.4	108.8	42.7
1889	7.7	95.9	8.1	9.0	68.5	13.1	153.6	130.0	118.2	45.4	108.4	41.9
1890	7.6	91.3	8.4	7.9	62.9	12.6	128.7	110.7	116.3	44.6	107.3	41.6
1891	7.6	88.9	8.6	8.0	62.9	12.7	130.5	111.4	117.2	44.9	101.9	44.1
1892	8.6	92.0	9.3	9.2	65.7	13.9	132.3	108.6	121.8	33.0	93.1	35.5
1893	8.9	92.2	9.6	9.4	65.7	14.3	123.3	97.7	126.2	32.7	96.1	34.1
1894	10.3	104.7	9.9	9.9	65.7	15.1	158.4	99.9	158.6	31.1	90.2	34.5
1895	10.8	103.4	10.5	9.9	68.5	14.5	131.8	90.3	146.0	31.9	89.2	35.7
1896	8.1	72.9	11.1	11.1	71.3	15.5	142.4	94.3	151.1	32.2	83.8	38.4
1897	9.2	83.5	11.0	13.3	79.5	16.8	146.2	96.3	151.8	34.9	84.1	41.5
1898	9.7	84.1	11.5	13.0	76.7	16.9	134.5	88.5	151.9	40.9	84.8	48.3
1899	9.6	80.6	11.9	13.4	76.7	17.5	149.0	93.3	159.7	38.8	83.2	46.6
1900	8.8	72.0	12.2	13.9	79.5	17.6	138.1	87.5	157.9	43.2	92.2	46.9

Table D.2B
Industrial Value Added by Branch, 1807-1913:
Printing, Woodworking, Food Processing, and Textiles
(millions of guilders, current prices; price index 1913=100)

	printing			woodworking			food processing			textiles		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1901	11.0	84.8	13.0	14.1	79.5	17.8	147.7	89.7	164.6	44.1	87.5	50.4
1902	11.2	85.4	13.1	15.4	83.0	18.6	141.7	91.0	155.8	43.8	86.7	50.5
1903	17.4	117.0	14.8	16.9	86.2	19.6	149.3	91.6	163.0	47.2	95.7	49.3
1904	12.5	78.6	15.8	17.4	79.8	21.7	154.0	93.4	164.8	56.6	106.4	53.2
1905	17.4	104.0	16.7	18.3	79.9	22.9	162.8	96.8	168.2	55.5	100.5	55.3
1906	11.8	72.1	16.4	21.7	88.5	24.6	165.2	97.0	170.4	60.5	102.4	59.1
1907	18.4	105.1	17.5	20.7	86.4	24.0	166.9	103.7	160.9	64.3	106.0	60.7
1908	13.2	73.6	17.9	19.4	81.0	23.9	169.5	99.7	170.0	56.8	92.4	61.4
1909	18.1	100.3	18.0	20.2	88.0	23.0	169.8	96.0	176.8	47.3	89.4	52.9
1910	12.7	71.6	17.8	24.8	91.6	27.0	191.2	97.9	195.4	51.8	101.4	51.1
1911	18.7	100.2	18.6	28.3	92.1	30.7	198.5	99.7	199.1	63.3	103.0	61.5
1912	19.4	100.2	19.3	32.1	92.1	34.9	209.3	103.6	201.9	61.4	98.5	62.4
1913	20.1	100	20.1	37.1	100	37.1	208.7	100	208.7	66.6	100	66.6

Table D.2C
Industrial Value Added by Branch, 1807-1913:
Clothing, Leather, Chemicals, and Metal
(millions of guilders, current prices; price index 1913=100)

	clothing and cleaning			leather			chemicals			metals and engineering		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807	30.9	440.5	7.0	10.0	98.9	10.1	3.9	364.0	1.1	4.3	300.8	1.4
1808	29.6	385.5	7.7	3.9	88.1	4.5	3.4	361.7	0.9	4.5	390.1	1.1
1809	23.9	385.5	6.2	3.2	86.7	3.6	3.9	392.6	1.0	3.9	404.2	1.0
1810	22.8	413.0	5.5	3.2	85.3	3.7	3.6	423.8	0.9	3.4	296.1	1.2
1811	21.7	440.5	4.9	3.7	85.3	4.3	2.5	280.6	0.9	3.0	305.5	1.0
1812	20.7	404.7	5.1	5.3	96.1	5.5	1.9	211.7	0.9	2.6	277.3	0.9
1813	19.7	357.9	5.5	6.0	107.0	5.7	1.6	172.0	0.9	2.3	277.3	0.8
1814	18.8	406.7	4.6	2.9	99.4	2.9	1.8	182.6	1.0	2.0	216.2	0.9
1815	30.5	409.7	7.5	7.9	91.8	8.6	4.0	404.9	1.0	1.8	183.3	1.0
1816	33.3	397.6	8.4	6.3	84.1	7.5	4.3	459.1	0.9	1.6	197.4	0.8
1817	25.5	385.5	6.6	9.5	76.5	12.4	3.9	422.3	0.9	1.8	220.9	0.8
1818	27.7	385.5	7.2	3.9	68.9	5.7	3.6	386.2	0.9	1.9	244.4	0.8
1819	17.2	385.5	4.5	8.4	73.9	11.4	2.7	301.8	0.9	2.4	244.4	1.0
1820	20.9	426.8	4.9	6.8	78.8	8.7	2.8	315.2	0.9	2.6	244.4	1.1
1821	21.6	484.1	4.5	10.0	83.8	11.9	2.6	299.0	0.9	2.9	230.3	1.2
1822	32.8	440.5	7.4	7.4	93.7	7.9	2.2	249.9	0.9	2.3	211.5	1.1
1823	35.5	405.1	8.8	9.7	100.4	9.7	2.1	242.9	0.9	2.7	202.1	1.3
1824	31.2	369.7	8.4	8.4	91.5	9.2	1.9	226.9	0.9	2.8	202.1	1.4
1825	30.7	385.5	8.0	7.6	82.7	9.2	1.7	207.0	0.8	4.5	249.1	1.8
1826	35.5	338.2	10.5	2.6	74.7	3.5	1.6	196.2	0.8	4.4	225.6	2.0
1827	38.1	340.1	11.2	10.5	87.8	12.0	1.6	195.0	0.8	3.8	211.5	1.8
1828	39.4	357.3	11.0	9.7	88.6	11.0	1.7	210.8	0.8	4.6	202.1	2.3
1829	36.7	335.5	10.9	8.4	92.1	9.1	1.8	225.0	0.8	4.0	173.9	2.3
1830	37.9	329.8	11.5	9.5	92.9	10.2	1.8	224.6	0.8	2.9	145.7	2.0
1831	41.5	325.7	12.7	9.5	95.6	9.9	1.8	230.9	0.8	2.6	136.3	1.9
1832	42.4	345.6	12.3	8.7	95.1	9.1	1.7	223.4	0.8	2.4	131.6	1.9
1833	35.2	334.1	10.5	13.1	97.6	13.5	2.0	265.9	0.8	2.8	141.0	2.0
1834	38.1	330.4	11.5	12.9	100.3	12.8	2.1	268.0	0.8	2.8	145.7	2.0
1835	35.2	335.4	10.5	12.9	102.5	12.6	2.2	290.4	0.7	2.4	131.6	1.8
1836	35.3	342.6	10.3	14.5	101.3	14.3	2.4	317.5	0.7	3.7	192.7	1.9
1837	34.5	356.0	9.7	13.1	91.0	14.5	2.3	301.3	0.8	3.5	192.7	1.8
1838	30.1	330.4	9.1	16.6	83.1	19.9	2.1	269.6	0.8	3.8	192.7	2.0
1839	30.6	316.2	9.7	12.1	117.9	10.3	2.0	251.4	0.8	4.6	197.4	2.4
1840	30.1	290.4	10.4	9.7	108.4	9.0	2.1	249.5	0.9	5.0	178.6	2.8
1841	32.8	267.3	12.3	10.8	98.9	10.9	2.1	270.3	0.8	4.8	155.1	3.1
1842	21.3	248.8	8.6	11.6	92.0	12.6	2.4	284.4	0.8	3.3	126.9	2.6
1843	21.4	238.7	9.0	10.0	90.1	11.1	2.3	268.6	0.8	3.0	112.8	2.7
1844	18.0	224.0	8.0	8.9	91.8	9.7	2.2	267.8	0.8	3.6	122.2	3.0
1845	17.5	209.8	8.4	11.0	93.6	11.8	2.1	252.7	0.8	5.0	164.5	3.1
1846	20.6	161.1	12.8	7.6	95.3	8.0	2.0	248.4	0.8	6.6	192.7	3.4
1847	19.5	159.1	12.3	8.4	97.0	8.7	2.0	264.6	0.8	7.8	192.7	4.0
1848	20.7	172.7	12.0	10.8	98.7	10.9	2.1	267.0	0.8	8.0	173.9	4.6
1849	19.8	185.2	10.7	8.4	100.5	8.4	2.2	266.3	0.8	6.7	136.3	4.9
1850	18.6	170.7	10.9	7.1	102.2	6.9	2.2	267.6	0.8	6.6	131.6	5.0
1851	19.4	165.5	11.7	7.5	102.2	7.4	2.1	240.8	0.9	6.7	121.1	5.5

Table D.2C
Industrial Value Added by Branch, 1807-1913:
Clothing, Leather, Chemicals, and Metal
(millions of guilders, current prices; price index 1913=100)

	clothing and cleaning			leather			chemicals			metals and engineering		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1852	22.1	174.1	12.7	7.7	102.2	7.6	2.2	236.3	1.0	6.8	121.1	5.6
1853	23.2	172.4	13.5	7.7	102.2	7.5	2.4	241.4	1.0	4.6	110.5	4.2
1854	25.2	162.9	15.5	7.4	102.2	7.2	2.8	242.9	1.1	5.3	110.5	4.8
1855	21.4	163.8	13.1	7.1	102.2	7.0	2.7	263.4	1.0	6.9	121.1	5.7
1856	21.0	165.5	12.7	6.9	102.2	6.7	2.9	262.1	1.1	9.9	184.3	5.4
1857	21.8	170.7	12.8	7.1	102.2	7.0	3.5	313.9	1.1	10.5	172.4	6.1
1858	19.1	167.2	11.4	8.2	112.9	7.3	3.0	228.7	1.3	9.5	161.4	5.9
1859	20.1	163.8	12.3	7.7	106.7	7.2	3.3	242.2	1.4	7.1	151.0	4.7
1860	21.5	167.2	12.8	7.1	100.4	7.1	2.9	215.6	1.3	6.4	141.3	4.6
1861	25.5	175.9	14.5	6.6	94.2	7.0	2.9	197.0	1.4	8.8	132.2	6.7
1862	25.0	220.7	11.3	7.2	94.2	7.6	2.7	181.4	1.5	9.2	123.7	7.5
1863	37.2	351.7	10.6	7.2	87.9	8.2	2.7	179.0	1.5	13.0	115.8	11.3
1864	41.6	366.4	11.3	7.5	87.9	8.5	2.7	184.5	1.5	12.7	123.7	10.2
1865	41.1	274.1	15.0	7.7	87.9	8.8	3.1	197.2	1.6	5.8	115.8	5.0
1866	37.5	237.1	15.8	7.3	87.9	8.3	3.8	208.7	1.8	5.5	102.7	5.4
1867	34.0	175.0	19.4	6.9	88.8	7.7	3.6	217.2	1.7	6.8	113.2	6.0
1868	33.8	168.1	20.1	6.6	87.9	7.6	4.1	238.8	1.7	6.6	121.1	5.4
1869	33.2	187.9	17.6	6.9	87.9	7.8	4.1	211.4	2.0	5.6	102.7	5.5
1870	29.9	164.7	18.2	7.6	87.9	8.6	3.1	174.1	1.8	8.5	106.0	8.0
1871	36.9	175.9	21.0	8.8	95.2	9.2	2.8	164.4	1.7	6.1	102.7	5.9
1872	58.6	204.3	28.7	9.5	102.6	9.2	3.1	158.0	2.0	9.3	134.2	7.0
1873	69.4	187.1	37.1	10.0	109.9	9.1	3.8	187.8	2.0	26.1	177.6	14.7
1874	62.0	187.9	33.0	10.3	117.2	8.8	4.4	217.2	2.0	27.8	189.5	14.7
1875	62.6	160.3	39.1	11.9	122.3	9.8	4.3	200.1	2.2	21.0	155.3	13.5
1876	50.2	129.3	38.8	11.0	110.3	10.0	3.7	170.5	2.2	23.5	134.2	17.5
1877	51.7	149.1	34.7	10.7	106.3	10.0	3.0	166.3	1.8	21.9	110.5	19.8
1878	47.2	147.4	32.0	9.7	100.2	9.6	2.9	165.8	1.8	22.3	94.7	23.6
1879	41.3	151.7	27.2	9.0	94.0	9.6	2.4	170.5	1.4	23.6	101.3	23.3
1880	41.1	131.0	31.4	9.2	95.0	9.6	2.4	193.5	1.2	19.2	105.3	18.2
1881	48.1	147.4	32.6	8.8	89.0	9.9	2.2	173.3	1.3	17.7	107.9	16.4
1882	52.2	153.4	34.0	8.4	86.8	9.7	1.8	161.8	1.1	16.6	105.3	15.8
1883	41.6	116.4	35.7	8.0	80.9	9.9	1.7	155.9	1.1	18.5	94.7	19.5
1884	42.3	123.3	34.3	8.0	82.2	9.7	1.5	141.2	1.1	21.4	94.7	22.6
1885	42.3	114.7	36.9	8.6	84.3	10.2	1.5	125.1	1.2	20.1	94.7	21.2
1886	38.6	105.2	36.7	9.1	86.6	10.5	1.7	131.4	1.3	18.3	94.7	19.3
1887	41.9	112.9	37.1	8.9	82.9	10.7	1.6	131.6	1.2	15.9	94.7	16.7
1888	39.0	104.3	37.4	8.7	79.0	11.0	2.0	135.0	1.5	19.5	92.7	21.0
1889	37.2	107.8	34.5	8.8	77.0	11.4	2.0	125.1	1.6	25.3	85.8	29.5
1890	35.6	100.9	35.3	9.1	79.8	11.4	2.1	123.9	1.7	26.5	90.8	29.1
1891	33.0	93.1	35.5	9.7	78.8	12.3	2.3	145.5	1.6	25.4	94.7	26.8
1892	24.7	76.7	32.1	10.0	78.0	12.8	2.3	144.1	1.6	24.0	94.7	25.3
1893	27.1	85.3	31.8	10.3	70.3	14.6	1.8	132.7	1.4	20.8	92.1	22.5
1894	27.5	82.8	33.2	9.9	65.1	15.2	1.7	113.0	1.5	20.0	88.7	22.6
1895	25.8	74.1	34.9	9.6	63.5	15.2	1.7	140.1	1.2	20.0	82.4	24.3
1896	30.8	81.0	38.0	10.9	71.2	15.3	1.9	128.2	1.5	20.1	84.2	23.9
1897	30.8	78.4	39.3	10.3	68.1	15.2	1.9	132.0	1.4	20.8	81.6	25.5
1898	32.6	82.8	39.4	11.2	71.0	15.8	2.6	129.9	2.0	30.1	96.0	31.4

Table D.2C
Industrial Value Added by Branch, 1807-1913:
Clothing, Leather, Chemicals, and Metal
(millions of guilders, current prices; price index 1913=100)

	clothing and cleaning			leather			chemicals			metals and engineering		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1899	33.2	79.3	41.8	10.9	71.1	15.3	1.9	103.7	1.8	34.9	97.4	35.9
1900	39.5	93.1	42.4	12.2	78.3	15.5	2.1	110.9	1.9	40.2	117.1	34.4
1901	37.8	85.3	44.3	11.9	74.9	15.9	2.4	104.4	2.3	44.7	121.1	37.0
1902	38.1	81.0	47.1	12.2	77.2	15.8	2.6	121.3	2.2	43.9	97.4	45.1
1903	41.6	94.0	44.2	12.3	78.1	15.8	2.7	111.1	2.4	44.4	96.4	46.1
1904	46.2	106.9	43.2	12.4	78.4	15.8	2.7	102.0	2.6	45.2	94.2	48.0
1905	46.7	101.7	45.9	12.9	78.1	16.5	2.4	81.4	3.0	53.2	100.0	53.2
1906	51.1	107.8	47.4	14.5	82.7	17.5	3.0	109.8	2.7	51.6	95.8	53.9
1907	52.4	106.9	49.0	15.7	89.6	17.5	3.6	107.1	3.4	53.7	101.3	53.0
1908	44.2	93.1	47.4	14.9	84.3	17.7	4.4	104.4	4.3	56.0	101.3	55.3
1909	41.2	87.1	47.3	15.6	85.7	18.2	6.0	97.8	6.2	59.1	101.3	58.4
1910	42.6	104.3	40.8	17.9	91.3	19.6	7.3	99.5	7.4	56.7	92.1	61.5
1911	47.9	103.4	46.3	18.7	91.2	20.5	16.2	118.7	13.6	63.2	97.1	65.1
1912	48.1	97.4	49.3	19.4	91.2	21.3	13.1	100.5	13.0	71.9	94.2	76.3
1913	57.1	100	57.1	22.1	100	22.1	13.2	100	13.2	89.8	100	89.8

Table D.2D
Industrial Value Added by Branch, 1807-1913:
Shipbuilding, Utilities, Construction, and Total Industry
(millions of guilders, current prices; price index 1913=100)

	shipbuilding			utilities			construction			total industry		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807	0.3	126.7	0.3	0.1	80.3	0.1	16.9	62.6	27.1	142.7	179.1	79.7
1808	0.4	122.8	0.3	0.1	80.3	0.1	17.3	64.8	26.7	135.1	177.4	76.2
1809	0.4	119.1	0.3	0.1	62.9	0.2	16.3	64.1	25.5	112.1	169.9	66.0
1810	0.4	115.4	0.4	0.1	73.8	0.2	15.5	59.0	26.2	106.0		
1811	0.5	111.9	0.5	0.1	63.9	0.2	15.0	57.9	25.8	92.4		
1812	0.6	108.5	0.6	0.1	59.8	0.2	14.6	56.2	26.0	92.3		
1813	0.8	105.2	0.7	0.1	58.5	0.2	14.1	54.0	26.1	89.1		
1814	1.0	102.0	1.0	0.1	68.9	0.2	13.3	50.9	26.2	86.7	154.9	56.0
1815	1.0	98.9	1.0	0.1	73.3	0.2	13.5	49.3	27.3	113.8	154.3	73.7
1816	1.1	86.7	1.3	0.1	76.4	0.2	13.2	45.9	28.8	124.3	156.5	79.4
1817	1.2	90.5	1.3	0.1	74.2	0.2	14.3	47.7	30.0	117.2	151.2	77.5
1818	1.2	100.2	1.2	0.1	66.0	0.2	15.6	51.6	30.2	123.6	159.1	77.7
1819	1.2	94.7	1.3	0.1	67.7	0.2	14.6	49.6	29.4	104.4	152.5	68.4
1820	1.4	89.7	1.6	0.1	63.3	0.2	14.3	47.9	29.9	114.1	154.2	74.0
1821	1.5	88.6	1.7	0.1	57.3	0.2	13.7	46.6	29.4	114.8	154.0	74.6
1822	1.7	88.2	1.9	0.1	58.1	0.2	13.6	45.1	30.2	117.9	150.8	78.2
1823	1.8	93.5	2.0	0.1	56.0	0.2	14.1	45.8	30.8	132.4	144.7	91.5
1824	2.0	96.6	2.0	0.1	48.6	0.2	14.3	46.6	30.8	117.0	137.7	85.0
1825	2.1	111.8	1.9	0.1	49.5	0.2	16.4	52.8	31.1	121.1	147.8	81.9
1826	2.3	104.6	2.2	0.1	49.3	0.2	16.1	50.4	31.9	120.9	132.2	91.5
1827	2.5	94.3	2.6	0.2	52.0	0.3	15.5	47.2	32.8	137.3	128.2	107.1
1828	2.5	90.5	2.8	0.2	50.1	0.4	15.5	46.1	33.5	138.9	130.2	106.7
1829	2.8	90.9	3.1	0.2	49.3	0.4	15.7	45.2	34.7	140.6	124.2	113.2
1830	2.8	94.3	3.0	0.2	53.8	0.4	15.6	44.8	34.7	135.6	123.1	110.2
1831	2.7	91.6	2.9	0.2	45.4	0.5	15.5	43.9	35.2	136.3	122.0	111.7
1832	2.8	92.0	3.0	0.2	41.9	0.5	15.5	43.9	35.2	132.0	124.4	106.1
1833	2.9	88.6	3.2	0.2	40.6	0.6	14.8	43.3	34.2	129.7	119.5	108.5
1834	3.0	94.7	3.1	0.3	45.3	0.7	15.5	45.0	34.4	138.4	122.7	112.8
1835	3.1	101.9	3.0	0.4	45.9	1.0	16.4	47.5	34.6	148.5	127.6	116.4
1836	3.4	102.3	3.3	0.6	46.2	1.2	17.8	49.7	35.8	165.7	132.9	124.7
1837	3.7	104.9	3.5	0.6	48.1	1.2	18.0	51.0	35.3	166.4	132.2	125.8
1838	4.0	96.4	4.1	0.6	50.2	1.2	17.9	49.0	36.6	177.6	124.7	142.4
1839	4.3	95.2	4.5	0.6	49.4	1.3	17.8	48.5	36.7	174.0	131.8	132.0
1840	4.6	90.9	5.1	0.7	46.9	1.5	17.3	46.5	37.2	180.5	126.9	142.3
1841	4.9	97.3	5.0	0.7	46.9	1.5	18.8	49.8	37.7	191.8	125.8	152.5
1842	4.2	99.8	4.2	0.8	47.2	1.7	15.8	47.9	33.0	175.5	120.2	146.0
1843	3.9	94.3	4.1	0.8	43.2	1.8	15.1	46.7	32.3	161.0	117.3	137.2
1844	3.1	96.4	3.2	0.9	46.4	1.9	16.4	48.2	34.1	153.7	114.4	134.3
1845	3.2	104.0	3.1	1.1	47.6	2.3	18.4	51.2	36.0	172.0	114.6	150.1
1846	3.5	105.3	3.3	1.3	46.2	2.7	17.9	51.6	34.7	171.0	108.3	157.9
1847	4.2	100.2	4.2	1.4	46.9	3.0	18.9	51.0	37.1	163.8	106.1	154.4
1848	4.4	94.7	4.7	1.5	46.3	3.3	16.9	48.8	34.7	156.1	104.0	150.1
1849	4.9	92.6	5.3	1.6	45.7	3.4	17.1	47.1	36.2	151.6	104.1	145.6
1850	4.9	95.0	5.2	1.6	61.4	2.6	17.4	47.5	36.7	145.7	96.4	151.2
1851	4.6	74.3	6.2	1.6	51.0	3.2	16.9	46.9	36.1	142.0	92.4	153.6
1852	8.5	153.1	5.5	1.7	51.0	3.3	17.7	48.0	36.8	148.1	100.5	147.3

Table D.2D
Industrial Value Added by Branch, 1807-1913: Shipbuilding, Utilities, Construction, and Total Industry (millions of guilders, current prices; price index 1913=100)

	shipbuilding			utilities			construction			total industry		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1853	13.2	183.9	7.2	1.9	56.6	3.4	17.9	55.1	32.5	150.9	102.9	146.6
1854	10.6	125.1	8.5	2.0	71.9	2.8	17.8	55.4	32.1	167.8	97.7	171.7
1855	9.7	126.2	7.7	2.2	66.9	3.2	18.3	54.0	33.9	160.7	98.2	163.7
1856	15.2	164.0	9.3	2.3	65.8	3.5	18.9	52.6	36.0	165.9	104.1	159.3
1857	21.1	233.8	9.0	2.5	66.4	3.8	18.2	53.1	34.2	184.4	112.2	164.3
1858	11.3	167.5	6.7	2.6	65.1	4.0	19.2	53.1	36.1	169.9	105.6	160.9
1859	15.5	280.5	5.5	3.0	60.7	4.9	19.3	55.7	34.6	151.0	112.0	134.8
1860	17.4	369.2	4.7	3.3	66.1	5.0	20.3	56.4	36.0	170.6	115.3	147.9
1861	16.2	297.4	5.5	3.6	68.5	5.3	22.1	57.4	38.6	175.9	113.4	155.1
1862	13.7	261.6	5.2	3.7	68.2	5.5	22.1	56.5	39.2	183.5	119.1	154.1
1863	13.7	235.9	5.8	3.8	68.1	5.6	22.6	57.7	39.2	207.7	139.7	148.7
1864	10.7	150.2	7.1	3.9	68.9	5.6	23.7	60.4	39.3	209.2	137.8	151.8
1865	9.7	159.0	6.1	4.0	69.6	5.7	24.2	58.3	41.5	211.8	128.5	164.9
1866	6.3	90.4	7.0	4.3	68.9	6.2	23.2	56.3	41.3	207.2	114.1	181.6
1867	19.5	289.5	6.7	4.4	65.3	6.7	23.4	58.5	39.9	207.7	112.5	184.6
1868	4.9	80.1	6.1	4.5	68.9	6.6	24.7	61.5	40.2	195.4	100.7	194.1
1869	12.4	204.2	6.1	4.6	62.3	7.3	27.1	60.8	44.5	205.6	109.5	187.7
1870	13.4	230.2	5.8	4.7	62.3	7.5	26.9	61.4	43.9	223.1	104.7	213.1
1871	11.5	215.7	5.3	4.9	75.9	6.4	30.0	62.3	48.2	232.3	108.3	214.5
1872	13.4	238.1	5.6	4.9	93.4	5.2	32.3	68.0	47.5	294.1	127.2	231.2
1873	12.6	256.9	4.9	5.1	110.3	4.6	28.3	76.1	37.2	349.5	133.8	261.2
1874	27.1	432.4	6.3	5.2	105.4	4.9	28.3	80.9	35.0	334.4	140.6	237.9
1875	9.2	150.3	6.2	5.6	93.8	6.0	36.8	73.6	50.1	325.3	118.6	274.2
1876	22.7	157.4	14.4	6.2	86.9	7.2	40.7	76.9	52.9	326.1	109.1	298.9
1877	19.4	255.0	7.6	6.8	76.5	8.9	45.1	76.2	59.2	354.2	113.4	312.3
1878	13.8	186.5	7.4	7.5	69.6	10.8	37.3	71.9	51.9	327.8	104.6	313.4
1879	17.1	195.3	8.7	8.2	63.7	12.8	47.8	68.3	70.1	313.4	101.2	309.7
1880	11.8	167.0	7.1	8.8	63.7	13.9	46.2	70.6	65.5	321.6	98.6	326.2
1881	6.6	95.6	6.9	8.7	63.0	13.8	51.2	71.6	71.4	350.1	101.3	345.6
1882	17.5	212.1	8.3	8.9	64.1	13.9	52.3	70.5	74.2	377.0	106.5	353.9
1883	13.9	110.9	12.6	8.7	67.2	12.9	52.2	68.6	76.0	354.7	92.5	383.5
1884	9.4	74.9	12.5	9.9	66.4	14.9	47.6	68.1	69.8	345.2	89.0	387.8
1885	9.6	88.4	10.9	10.6	66.1	16.0	49.4	68.6	72.1	343.0	87.3	392.9
1886	10.1	113.9	8.8	11.0	66.2	16.7	56.1	68.7	81.7	333.6	86.1	387.5
1887	7.5	87.0	8.6	10.6	56.5	18.8	50.8	68.2	74.5	352.1	85.1	413.7
1888	8.4	75.6	11.1	10.4	57.9	17.9	64.4	70.8	91.0	384.8	85.2	451.7
1889	9.0	75.5	11.9	9.9	60.2	16.4	56.0	71.2	78.6	394.7	85.3	462.7
1890	14.7	99.7	14.8	9.6	79.0	12.1	57.2	71.5	80.1	375.8	86.7	433.4
1891	20.3	104.0	19.5	10.1	82.7	12.2	54.6	72.7	75.1	380.9	87.1	437.4
1892	16.2	127.8	12.7	10.7	67.9	15.8	54.9	73.6	74.5	360.3	83.5	431.5
1893	9.0	66.2	13.6	11.3	64.7	17.4	54.1	71.0	76.3	342.6	79.4	431.4
1894	19.4	145.4	13.4	11.8	61.7	19.2	55.4	70.7	78.4	389.6	81.5	478.0
1895	9.3	72.5	12.8	12.3	58.2	21.1	55.4	73.3	75.5	355.2	77.4	458.9
1896	20.8	145.6	14.3	12.9	56.1	23.1	60.9	78.9	77.3	392.3	83.0	472.7
1897	18.1	139.8	12.9	13.6	57.9	23.5	64.4	82.3	78.2	405.5	83.8	483.9
1898	28.5	146.5	19.4	14.3	58.9	24.4	60.1	81.4	73.8	418.5	86.7	482.7
1899	19.3	119.3	16.2	14.9	62.4	23.8	69.3	82.4	84.2	437.1	84.6	516.6
1900	32.6	129.1	25.2	15.7	81.1	19.4	74.7	84.6	88.3	465.0	93.2	498.9

Table D.2D
Industrial Value Added by Branch, 1807-1913:
Shipbuilding, Utilities, Construction, and Total Industry
(millions of guilders, current prices; price index 1913=100)

	shipbuilding			utilities			construction			total industry		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1901	25.2	98.9	25.5	16.6	78.7	21.1	72.8	82.8	87.9	473.1	89.3	529.8
1902	29.1	99.5	29.2	17.9	71.3	25.1	76.4	84.1	90.8	479.0	87.0	550.6
1903	18.6	89.7	20.7	20.0	67.2	29.8	84.8	86.1	98.5	506.4	91.1	555.8
1904	23.1	101.2	22.8	21.9	66.5	32.9	87.4	84.5	103.5	532.0	92.1	577.7
1905	22.7	77.9	29.1	23.7	68.1	34.9	86.6	86.3	100.4	555.8	90.6	613.5
1906	31.0	107.0	29.0	25.7	72.9	35.3	92.9	88.0	105.7	583.4	93.1	626.6
1907	25.0	84.4	29.7	28.3	91.6	30.9	76.3	86.3	88.4	580.4	96.0	604.5
1908	26.3	80.1	32.9	29.9	90.7	33.0	79.5	84.4	94.2	569.3	89.5	636.1
1909	32.1	95.6	33.6	32.4	86.8	37.4	89.6	84.6	105.9	589.8	90.7	650.2
1910	25.6	78.7	32.5	34.2	83.9	40.7	99.1	86.5	114.6	622.2	90.8	685.3
1911	22.4	83.3	26.8	36.0	82.8	43.5	103.7	89.1	116.4	676.8	94.7	714.7
1912	33.6	91.4	36.8	39.3	89.3	44.0	111.5	94.9	117.4	721.8	95.2	758.2
1913	33.9	100	33.9	42.2	100	42.2	123.6	100	123.6	782.3	100.0	782.3

D.3 Services

Table D.3A
Value Added in Services by Branch, 1807-1913:
Trade and International Transport
(millions of guilders, current prices; price index 1913=100)

	foreign trade			domestic trade			maritime shipping			internat. river shipping		
	Vacrt	price	VAcst	VAcrt	price	VAcst	Vacrt	price	VAcst	VAcrt	price	VAcst
1807	57.0	194.2	29.4	25.1	172.5	14.6	0.8	790.5	0.1	2.4	2388.5	0.1
1808	54.2	211.7	25.6	16.7	170.9	9.7	0.2	935.1	0.0	1.0	2431.9	0.0
1809	36.5	222.3	16.4	23.1	168.6	13.7	0.2	906.2	0.0	0.5	2476.5	0.0
1810					181.1			858.0			2522.2	
1811					196.0			703.8			2569.1	
1812					213.7			747.1			2617.2	
1813					182.4			935.1			2666.6	
1814	34.7	211.4	16.4	26.9	167.3			809.8			2717.2	
1815	39.9	207.2	19.3	29.2	153.8	19.0	3.4	549.5	0.6	3.2	2534.8	0.1
1816	46.9	206.8	22.7	30.0	182.6	16.4	4.6	480.4	1.0	4.5	2904.9	0.2
1817	63.3	224.0	28.2	35.2	193.9	18.1	5.2	405.9	1.3	4.9	2513.4	0.2
1818	64.1	199.5	32.1	33.7	182.5	18.5	7.7	594.5	1.3	2.6	2438.1	0.1
1819	50.0	165.7	30.2	24.5	152.6	16.0	6.9	515.4	1.3	3.0	2726.1	0.1
1820	46.2	129.8	35.6	20.8	130.0	16.0	6.5	502.0	1.3	3.0	2598.8	0.1
1821	41.9	126.4	33.1	20.3	114.2	17.7	5.1	437.6	1.2	2.8	2514.0	0.1
1822	43.3	122.2	35.5	18.2	109.9	16.5	6.0	461.5	1.3	2.2	2273.1	0.1
1823	47.3	134.0	35.3	21.4	111.7	19.2	7.1	549.6	1.3	3.1	2447.1	0.1
1824	43.8	121.1	36.1	19.1	106.6	17.9	6.0	474.4	1.3	3.2	2465.0	0.1
1825	49.5	125.7	39.4	20.5	124.5	16.5	7.3	536.2	1.4	3.1	2240.0	0.1
1826	52.0	128.5	40.5	19.6	120.3	16.3	9.1	559.8	1.6	2.9	1911.7	0.2
1827	56.4	127.9	44.1	21.5	122.2	17.6	6.6	517.0	1.3	2.6	1758.0	0.1
1828	57.7	113.4	50.9	20.9	116.0	18.0	8.2	487.9	1.7	2.7	1653.7	0.2
1829	61.4	110.7	55.5	21.2	120.7	17.6	8.0	553.4	1.4	2.5	1442.6	0.2
1830	58.9	111.9	52.7	18.0	127.3	14.1	9.7	503.6	1.9	2.4	1380.2	0.2
1831	63.3	130.6	48.4	21.5	132.3	16.3	11.1	549.7	2.0	1.8	856.5	0.2
1832	63.7	125.9	50.6	27.4	121.9	22.5	10.3	516.2	2.0	2.7	959.8	0.3
1833	50.0	106.7	46.9	20.9	102.0	20.5	8.1	482.0	1.7	2.5	949.8	0.3
1834	50.3	103.6	48.6	24.6	98.6	24.9	12.5	456.4	2.7	2.6	916.8	0.3
1835	53.0	107.5	49.3	24.8	102.0	24.4	13.7	429.8	3.2	2.8	891.5	0.3
1836	60.2	109.3	55.1	27.3	113.6	24.1	14.2	429.9	3.3	4.1	1218.5	0.3
1837	57.1	107.2	53.3	27.6	105.8	26.1	15.4	417.3	3.7	3.3	820.1	0.4
1838	63.2	115.7	54.6	28.6	116.6	24.5	16.6	411.1	4.0	3.7	864.2	0.4
1839	68.9	116.2	59.3	34.3	124.4	27.6	17.6	369.4	4.8	3.0	874.3	0.3
1840	67.0	113.5	59.0	35.3	119.5	29.5	17.0	371.8	4.6	2.4	775.5	0.3
1841	65.3	107.7	60.6	34.9	115.2	30.3	16.9	335.9	5.0	2.6	803.4	0.3
1842	62.3	106.3	58.6	32.4	113.8	28.5	15.6	318.6	4.9	2.4	792.5	0.3
1843	55.8	101.9	54.7	30.1	101.9	29.5	17.3	327.2	5.3	2.6	722.9	0.4
1844	58.9	96.4	61.1	34.1	97.9	34.9	16.4	312.7	5.2	2.1	752.7	0.3
1845	71.4	100.6	71.0	37.8	113.8	33.2	16.5	316.7	5.2	2.4	693.8	0.4
1846	74.3	109.1	68.2	36.4	130.4	27.9	16.5	325.0	5.1	2.7	697.0	0.4
1847	78.7	126.1	62.5	43.6	142.8	30.5	18.6	344.7	5.4	3.1	737.4	0.4
1848	59.7	96.5	61.8	32.6	103.4	31.5	18.3	318.1	5.7	2.1	719.1	0.3
1849	59.3	93.9	63.2	38.2	97.0	39.4	18.6	301.3	6.2	2.4	731.1	0.3

Table D.3A
Value Added in Services by Branch, 1807-1913:
Trade and International Transport
(millions of guilders, current prices; price index 1913=100)

	foreign trade			domestic trade			maritime shipping			internat. river shipping		
	Vacrt	price	VAcst	VAcrt	price	VAcst	Vacrt	price	VAcst	VAcrt	price	VAcst
1850	63.4	93.6	67.7	41.1	99.8	41.2	18.6	307.7	6.0	2.4	648.0	0.4
1851	64.2	88.2	72.8	40.5	98.8	41.0	13.6	233.6	5.8	2.9	700.5	0.4
1852	66.3	87.9	75.4	45.6	107.7	42.3	17.2	276.6	6.2	2.9	684.5	0.4
1853	70.0	95.8	73.1	46.7	107.4	43.5	11.0	213.9	5.2	2.5	587.6	0.4
1854	75.6	94.2	80.2	50.3	120.0	41.9	14.3	251.2	5.7	3.4	719.3	0.5
1855	75.0	98.3	76.2	52.9	119.4	44.3	15.9	235.4	6.8	3.1	720.4	0.4
1856	80.3	108.8	73.8	61.7	119.1	51.8	23.0	281.3	8.2	3.2	651.3	0.5
1857	78.2	114.4	68.3	62.4	113.4	55.0	22.7	289.6	7.9	3.1	656.8	0.5
1858	62.6	104.4	60.0	61.3	104.3	58.7	24.0	279.5	8.6	3.6	723.6	0.5
1859	58.7	107.4	54.7	62.6	103.0	60.8	17.9	269.5	6.7	2.8	560.0	0.5
1860	64.8	108.1	59.9	70.8	105.1	67.4	18.8	256.0	7.4	3.1	560.8	0.6
1861	66.4	112.6	58.9	81.2	106.3	76.4	19.3	245.7	7.9	4.0	660.8	0.6
1862	72.9	130.0	56.1	82.2	105.3	78.0	17.7	234.0	7.6	5.5	860.4	0.6
1863	75.2	150.4	50.0	97.7	110.2	88.6	15.9	218.6	7.3	4.0	596.5	0.7
1864	76.6	165.9	46.1	123.7	107.4	115.2	19.7	244.2	8.1	3.3	531.0	0.6
1865	72.4	137.1	52.8	108.9	104.0	104.7	18.1	253.4	7.1	4.1	598.3	0.7
1866	76.7	137.5	55.7	122.1	97.2	125.6	14.0	221.3	6.3	4.2	565.9	0.7
1867	71.2	123.3	57.8	108.6	101.0	107.5	15.9	245.3	6.5	4.1	533.5	0.8
1868	71.3	112.2	63.6	100.2	106.2	94.4	24.1	337.9	7.1	4.3	534.3	0.8
1869	74.5	122.5	60.8	109.8	99.1	110.8	18.9	271.1	7.0	4.1	501.6	0.8
1870	73.7	117.0	63.0	109.9	92.9	118.3	13.3	203.9	6.5	3.8	530.7	0.7
1871	74.3	117.6	63.2	127.8	101.0	126.6	13.1	220.8	5.9	4.3	561.4	0.8
1872	94.9	134.2	70.7	130.5	116.0	112.5	13.8	248.6	5.6	5.4	593.9	0.9
1873	108.5	130.7	83.0	131.8	120.2	109.6	13.4	278.9	4.8	6.3	630.8	1.0
1874	93.3	136.6	68.3	129.3	110.9	116.7	9.9	236.0	4.2	5.2	559.6	0.9
1875	96.2	124.3	77.4	122.1	107.3	113.8	8.4	209.4	4.0	4.8	470.0	1.0
1876	87.8	116.2	75.6	113.8	103.5	110.0	5.7	209.9	2.7	5.5	506.9	1.1
1877	95.4	112.4	84.9	110.2	105.2	104.7	5.8	213.8	2.7	5.0	435.2	1.1
1878	88.3	110.0	80.3	103.2	99.7	103.5	5.3	188.2	2.8	4.7	370.5	1.3
1879	82.7	106.3	77.8	100.8	96.6	104.4	4.4	166.9	2.7	5.9	409.6	1.4
1880	92.9	107.0	86.8	97.8	99.4	98.4	4.9	179.5	2.7	6.7	418.9	1.6
1881	96.6	102.4	94.3	95.2	102.4	93.0	5.0	187.8	2.7	7.1	397.9	1.8
1882	98.5	98.6	99.8	90.7	104.7	86.6	5.9	186.2	3.2	7.9	427.4	1.8
1883	108.5	95.0	114.2	96.0	98.3	97.6	6.0	182.7	3.3	5.1	243.1	2.1
1884	105.8	93.0	113.7	95.1	96.9	98.1	6.3	169.3	3.7	7.1	318.3	2.2
1885	98.5	86.9	113.3	89.4	86.7	103.1	3.8	143.7	2.7	6.0	272.2	2.2
1886	92.6	89.5	103.5	88.3	81.2	108.7	7.7	132.9	5.8	4.9	222.5	2.2
1887	99.5	95.3	104.4	96.8	81.2	119.2	4.9	128.7	3.8	6.9	288.3	2.4
1888	101.0	97.4	103.8	97.0	77.1	125.8	5.8	140.1	4.2	9.0	360.4	2.5
1889	113.2	98.7	114.8	97.6	81.4	120.0	7.2	140.4	5.1	7.8	329.5	2.4
1890	117.2	98.2	119.4	104.1	82.1	126.8	8.0	146.2	5.5	10.8	416.0	2.6
1891	120.9	99.7	121.3	108.1	84.1	128.6	8.9	137.7	6.4	10.1	367.8	2.7
1892	117.1	95.2	122.9	97.9	81.1	120.8	8.7	124.5	7.0	7.5	256.0	2.9
1893	109.8	96.9	113.2	101.7	78.5	129.6	6.5	104.4	6.2	10.2	316.3	3.2
1894	111.1	88.9	125.0	96.5	76.5	126.1	7.3	93.4	7.8	9.0	258.8	3.5
1895	109.8	86.1	127.4	93.6	73.1	128.1	7.3	90.6	8.0	10.0	312.3	3.2
1896	120.9	82.5	146.5	93.9	76.0	123.6	7.6	89.5	8.5	9.3	254.0	3.7

Table D.3A
Value Added in Services by Branch, 1807-1913:
Trade and International Transport
(millions of guilders, current prices; price index 1913=100)

	foreign trade			domestic trade			maritime shipping			internat. river shipping		
	Vacrt	price	VAcst	VAcrt	price	VAcst	Vacrt	price	VAcst	VAcrt	price	VAcst
1897	124.6	81.0	153.9	99.6	76.9	129.5	7.6	88.1	8.7	6.4	169.3	3.8
1898	140.7	79.3	177.5	99.3	83.6	118.7	10.8	110.4	9.8	8.2	189.3	4.3
1899	130.6	78.8	165.7	103.0	82.9	124.2	11.2	105.9	10.6	10.5	240.7	4.4
1900	136.1	88.6	153.6	114.2	89.4	127.8	13.7	113.0	12.1	8.7	194.7	4.5
1901	144.3	84.9	170.1	109.9	90.8	121.1	15.3	116.0	13.2	6.1	137.1	4.4
1902	148.5	83.9	177.0	110.6	84.6	130.8	12.1	78.0	15.5	6.7	137.0	4.9
1903	148.6	82.7	179.6	112.1	86.3	129.9	13.0	82.4	15.7	5.9	104.0	5.7
1904	147.2	86.4	170.3	118.7	93.9	126.4	14.7	85.2	17.3	8.9	146.6	6.1
1905	166.8	85.4	195.5	112.6	91.4	123.2	16.5	90.3	18.2	8.5	132.1	6.5
1906	176.9	86.7	204.0	123.3	91.9	134.1	17.3	88.0	19.7	15.0	221.3	6.8
1907	161.0	92.9	173.2	131.2	92.5	141.9	18.7	83.1	22.6	11.5	157.8	7.3
1908	139.8	91.4	152.9	133.9	89.9	148.8	15.7	63.2	24.9	9.1	131.5	6.9
1909	163.0	90.9	179.4	137.2	90.2	152.1	20.5	73.4	27.9	7.1	86.6	8.2
1910	174.0	95.7	181.8	145.6	92.2	158.0	26.0	81.3	32.0	7.9	82.6	9.6
1911	196.2	103.0	190.4	165.3	94.9	174.2	32.9	89.2	36.9	14.3	132.6	10.8
1912	215.3	104.5	206.0	175.2	101.8	172.0	43.9	112.3	39.1	12.1	110.5	10.9
1913	235.5	100.0	235.5	181.5	100.0	181.5	44.9	100.0	44.9	11.7	100.0	11.7

Table D.3B
Value Added in Services by Branch, 1807-1913:
Domestic Transport and Communication
(millions of guilders, current prices; price index 1913=100)

	railways			inland navigation			other transport			communication		
	Vacrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807				30.8	1420.0	2.2	13.7	78.5	17.5	0.9	818.1	0.1
1808				36.9	1452.7	2.5	12.6	80.2	15.7	0.9	817.1	0.1
1809				36.7	1486.1	2.5	10.9	81.0	13.4	0.6	824.5	0.1
1810					1520.5						830.6	
1811					1555.7						866.0	
1812					1591.9						965.1	
1813					1628.9						860.4	
1814					1665.4			84.8			814.7	
1815				46.5	1598.6	2.9	11.9	93.4	12.7	1.0	762.6	0.1
1816				55.6	1888.3	2.9	13.7	108.4	12.6	0.9	888.9	0.1
1817				52.6	1584.3	3.3	15.6	101.0	15.5	0.9	916.5	0.1
1818				43.1	1344.6	3.2	14.7	89.4	16.5	1.0	848.9	0.1
1819				43.5	1418.1	3.1	12.3	82.5	14.9	0.9	729.7	0.1
1820				42.2	1385.7	3.0	11.6	73.2	15.9	0.9	639.7	0.1
1821				40.6	1354.8	3.0	11.1	68.3	16.2	0.8	568.1	0.1
1822				40.3	1325.7	3.0	11.3	66.0	17.1	0.8	549.7	0.2
1823				39.7	1298.4	3.1	11.9	66.5	18.0	0.9	549.5	0.2
1824				38.3	1272.5	3.0	11.3	63.5	17.8	0.9	531.0	0.2
1825				37.4	1170.7	3.2	11.6	65.5	17.7	0.9	601.1	0.1
1826				29.0	911.1	3.2	10.9	58.3	18.8	0.9	571.6	0.2
1827				28.2	867.7	3.3	11.5	57.7	19.9	0.9	572.5	0.2
1828				28.7	833.4	3.4	11.5	54.3	21.3	0.9	548.5	0.2
1829				26.9	834.0	3.2	12.0	55.2	21.7	0.9	570.2	0.2
1830				27.8	834.7	3.3	11.3	56.3	20.0	1.0	598.9	0.2
1831				28.2	834.7	3.4	12.1	59.0	20.5	1.2	616.3	0.2
1832				39.3	1115.6	3.5	14.2	62.3	22.7	1.3	585.3	0.2
1833				36.5	1045.4	3.5	11.8	54.4	21.7	1.2	503.2	0.2
1834				36.0	1009.1	3.6	12.2	52.4	23.2	1.1	486.1	0.2
1835				33.1	908.0	3.6	12.1	51.4	23.6	1.2	494.9	0.2
1836				46.4	1231.4	3.8	14.8	61.8	24.0	1.2	559.0	0.2
1837				31.5	808.1	3.9	12.5	50.2	24.9	1.2	504.5	0.2
1838				37.2	945.5	3.9	14.0	56.4	24.8	1.2	554.7	0.2
1839	0.0	113.0	0.0	44.0	1049.6	4.2	15.8	60.4	26.1	1.2	589.9	0.2
1840	0.1	101.3	0.1	35.1	825.2	4.2	14.6	55.3	26.3	1.2	560.6	0.2
1841	0.1	98.0	0.1	40.3	944.3	4.3	15.1	56.2	26.9	1.2	547.7	0.2
1842	0.1	94.3	0.1	34.7	829.7	4.2	13.8	53.3	26.0	1.2	534.2	0.2
1843	0.3	97.0	0.3	35.3	808.0	4.4	12.8	49.7	25.8	1.1	487.5	0.2
1844	0.7	125.0	0.5	31.1	750.6	4.1	13.3	46.9	28.3	1.1	466.0	0.2
1845	0.9	136.8	0.7	30.3	711.8	4.3	14.7	50.4	29.2	1.1	529.2	0.2
1846	1.0	137.4	0.7	29.5	688.2	4.3	14.5	54.8	26.4	1.1	591.5	0.2
1847	1.0	131.6	0.8	32.7	759.6	4.3	15.9	60.8	26.2	1.1	643.1	0.2
1848	1.0	128.7	0.8	30.5	695.4	4.4	12.8	47.2	27.0	1.1	488.3	0.2
1849	1.1	135.4	0.8	32.7	737.0	4.4	13.8	46.1	29.8	1.1	463.3	0.2
1850	1.2	140.5	0.8	28.7	642.9	4.5	13.9	45.2	30.8	1.0	470.5	0.2
1851	1.2	156.0	0.8	34.9	696.6	5.0				1.0	307.7	0.3
1852	1.2	155.1	0.8	36.9	682.4	5.4				1.1	293.2	0.4

Table D.3B
Value Added in Services by Branch, 1807-1913:
Domestic Transport and Communication
(millions of guilders, current prices; price index 1913=100)

	railways			inland navigation			other transport			communication		
	Vacrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1853	1.3	138.9	0.9	28.8	587.3	4.9				1.2	279.0	0.4
1854	1.3	137.2	1.0	37.5	720.7	5.2				1.2	267.3	0.5
1855	1.6	122.8	1.3	36.1	723.5	5.0				1.3	260.3	0.5
1856	1.9	130.9	1.4	36.4	655.8	5.6				1.4	254.7	0.6
1857	2.1	122.5	1.7	37.1	663.0	5.6				1.5	251.1	0.6
1858	2.2	112.7	1.9	42.0	732.2	5.7				1.5	234.3	0.7
1859	2.2	117.3	1.9	31.6	568.1	5.6				1.7	227.5	0.7
1860	2.4	120.3	2.0	31.5	570.3	5.5				1.7	225.2	0.8
1861	2.6	108.7	2.4	37.6	673.6	5.6				1.8	222.0	0.8
1862	2.7	116.7	2.3	52.7	879.2	6.0				1.9	221.4	0.9
1863	3.0	117.7	2.5	42.4	611.1	6.9				2.0	214.3	0.9
1864	3.7	105.9	3.5	32.5	545.4	6.0				2.0	201.5	1.0
1865	4.2	107.2	3.9	40.4	616.0	6.6				2.1	191.3	1.1
1866	4.7	112.4	4.2	39.0	584.1	6.7				2.2	176.4	1.2
1867	5.7	103.4	5.5	35.5	551.9	6.4				2.3	171.4	1.3
1868	6.5	109.9	5.9	36.1	554.1	6.5				2.4	152.5	1.6
1869	7.2	110.8	6.5	31.9	521.6	6.1				2.5	146.6	1.7
1870	7.8	112.8	6.9	33.0	553.1	6.0				2.6	139.4	1.9
1871	8.8	114.5	7.7	35.7	586.6	6.1				2.4	104.0	2.3
1872	9.3	120.6	7.7	43.4	622.1	7.0				2.4	102.6	2.4
1873	10.0	118.3	8.5	47.2	662.4	7.1				2.7	104.5	2.5
1874	10.4	120.3	8.6	40.7	589.1	6.9				2.6	96.5	2.7
1875	10.8	127.0	8.5	33.8	496.0	6.8				2.8	99.0	2.9
1876	11.1	126.3	8.8	37.6	536.3	7.0				3.1	101.9	3.1
1877	11.5	128.0	9.0	32.1	461.5	6.9				3.2	99.8	3.2
1878	11.9	125.2	9.5	26.4	393.9	6.7				3.3	99.2	3.4
1879	12.9	121.9	10.6	25.1	436.5	5.8				3.6	99.3	3.6
1880	14.1	122.3	11.6	29.0	447.6	6.5				3.8	97.7	3.9
1881	15.8	108.2	14.6	27.8	426.1	6.5				4.1	97.3	4.2
1882	16.9	105.3	16.0	30.1	458.9	6.6				4.3	97.9	4.4
1883	18.0	101.3	17.7	17.7	261.6	6.7				4.6	100.1	4.6
1884	18.2	100.0	18.2	23.1	343.4	6.7				4.7	102.0	4.7
1885	18.0	100.1	18.0	19.1	294.4	6.5				4.9	100.2	4.9
1886	18.0	98.2	18.3	15.5	241.3	6.4				5.1	104.0	4.9
1887	18.7	96.8	19.3	21.4	313.4	6.8				5.3	107.4	5.0
1888	19.5	95.5	20.5	26.2	392.8	6.7				5.7	109.6	5.2
1889	20.2	95.0	21.2	25.8	359.9	7.2				5.9	108.8	5.4
1890	21.4	92.6	23.1	31.3	455.6	6.9	43.8	96.4	45.4	6.2	109.6	5.6
1891	22.1	101.5	21.7	28.7	401.2	7.2				6.5	110.7	5.8
1892	22.0	98.3	22.4	20.7	278.2	7.4				6.5	106.8	6.1
1893	23.1	96.8	23.9	25.5	342.3	7.5				6.7	105.0	6.4
1894	23.5	97.4	24.1	21.7	279.0	7.8				6.9	105.7	6.6
1895	25.1	98.0	25.6	26.7	335.3	8.0				7.2	102.0	7.0
1896	25.9	101.8	25.5	24.1	271.7	8.9				7.6	101.9	7.5
1897	26.9	102.0	26.4	16.2	180.4	9.0				8.1	104.8	7.7
1898	27.4	91.7	29.9	19.9	200.9	9.9				8.6	103.8	8.2
1899	29.3	92.8	31.6	25.7	254.4	10.1				9.0	103.4	8.7
1900	30.4	93.8	32.4	22.7	205.0	11.1				9.6	104.7	9.1

Table D.3B
Value Added in Services by Branch, 1807-1913:
Domestic Transport and Communication
(millions of guilders, current prices; price index 1913=100)

	railways			inland navigation			other transport			communication		
	Vacrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1901	32.0	88.3	36.2	14.6	143.8	10.1				10.2	103.7	9.9
1902	33.3	88.6	37.6	15.8	143.1	11.1				10.8	104.8	10.3
1903	34.5	88.7	38.9	13.3	108.2	12.3				11.4	101.4	11.3
1904	36.5	87.9	41.6	19.6	151.9	12.9				11.8	99.4	11.9
1905	38.3	89.1	43.0	18.3	136.3	13.4				12.7	100.6	12.6
1906	40.8	89.6	45.5	32.7	227.5	14.4				12.8	98.8	13.0
1907	42.4	92.1	46.0	23.2	161.6	14.4				13.3	96.1	13.8
1908	43.7	94.7	46.2	19.2	134.1	14.3				13.6	94.9	14.3
1909	45.2	95.9	47.1	14.6	88.0	16.6				14.3	94.4	15.2
1910	47.5	94.4	50.4	14.3	83.6	17.1				15.2	97.1	15.6
1911	51.0	104.4	48.8	25.7	133.7	19.2				15.9	97.1	16.4
1912	54.9	102.6	53.5	22.4	110.9	20.2				16.9	97.7	17.3
1913	58.2	100.0	58.2	19.2	100.0	19.2	90.9	100.0	90.9	18.1	100.0	18.1

Table D.3C
Value Added in Services by Branch, 1807-1913:
Finance, Government, and Domestic Servants
(millions of guilders, current prices; price index 1913=100)

	banking			insurance			government			domestic servants		
	Vacrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1807	2.8	213.9	1.3	1.2	213.9	0.6	32.0	97.4	32.8	17.6	46.2	38.0
1808		213.6			213.6		23.3	97.3	24.0			
1809		215.5			215.5		22.7	98.2	23.1			
1810		217.1			217.1			98.9				
1811		226.4			226.4			103.1				
1812		252.3			252.3			114.9				
1813		224.9			224.9			102.4				
1814		213.0			213.0			97.0				
1815	3.0	199.4	1.5	1.1	199.4	0.5	40.8	90.8	44.9	16.2		
1816		232.4			232.4		26.9	105.8	25.4			
1817		239.6			239.6		25.9	109.1	23.8			
1818		221.9			221.9		24.7	101.1	24.5			
1819		190.8			190.8		23.4	86.9	26.9			
1820		167.2			167.2		24.3	76.2	31.9			
1821		148.5			148.5		23.6	67.6	34.9			
1822		143.7			143.7		24.5	65.5	37.4			
1823		143.6			143.6		25.9	65.4	39.6			
1824		138.8			138.8		28.5	63.2	45.1			
1825		157.1			157.1		28.3	71.6	39.5			
1826		149.4			149.4		27.6	68.1	40.5			
1827		149.7			149.7		28.3	68.2	41.6			
1828		143.4			143.4		28.0	65.3	42.8			
1829		149.1			149.1		25.4	67.9	37.4			
1830	2.6	156.6	1.7	1.1	156.6	0.7	17.3	71.3	24.3	15.8	38.1	41.3
1831		161.1			161.1		36.8	73.4	50.2			
1832		153.0			153.0		41.9	69.7	60.1			
1833		131.5			131.5		37.5	59.9	62.6			
1834		127.1			127.1		28.4	57.9	49.0			
1835		129.4			129.4		21.0	58.9	35.7			
1836		146.1			146.1		21.0	66.6	31.6			
1837		131.9			131.9		27.2	60.1	45.2			
1838		145.0			145.0		26.4	66.1	39.9			
1839		154.2			154.2		27.4	70.2	39.0			
1840	4.3	146.6	2.9	1.9	146.6	1.3	23.2	66.8	34.7	16.8		
1841		143.2			143.2		24.7	65.2	37.9			
1842		139.6			139.6		25.9	63.6	40.8			
1843		127.4			127.4		25.7	58.0	44.2			
1844		121.8			121.8		24.6	55.5	44.3			
1845		138.3			138.3		16.7	63.0	26.6			
1846		154.6			154.6		26.4	70.4	37.5			
1847		168.1			168.1		25.4	76.6	33.2			
1848		127.6			127.6		26.2	58.1	45.0			
1849		121.1			121.1		23.7	55.2	43.0			
1850	4.4	123.0	3.6	2.6	123.0	2.1	23.0	56.0	41.1	20.4	46.2	44.0
1851							22.7	55.7	40.7	22.3	49.1	45.4
1852							23.3	55.6	41.9	23.3	49.8	46.8

Table D.3C
Value Added in Services by Branch, 1807-1913:
Finance, Government, and Domestic Servants
(millions of guilders, current prices; price index 1913=100)

	banking			insurance			government			domestic servants		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1853							23.6	55.4	42.6	24.7	52.2	47.3
1854							24.6	55.0	44.6	24.3	50.8	47.7
1855							25.0	54.7	45.8	25.4	52.6	48.2
1856							25.0	55.2	45.3	27.6	56.8	48.5
1857							25.2	55.3	45.6	28.7	58.0	49.5
1858							25.7	55.6	46.3	28.6	56.8	50.4
1859							27.2	56.0	48.6	28.0	55.3	50.7
1860							27.0	55.3	48.9	27.6	53.8	51.4
1861							27.9	55.0	50.7	28.1	53.8	52.2
1862							28.0	55.6	50.3	28.9	54.6	52.9
1863							27.9	55.8	50.1	28.7	53.8	53.3
1864							28.0	55.9	50.2	29.0	53.8	53.9
1865							28.9	55.9	51.6	29.3	53.8	54.4
1866							31.4	57.3	54.8	28.7	52.2	54.9
1867							32.8	58.1	56.5	28.5	52.2	54.5
1868							29.9	58.1	51.5	27.9	51.5	54.2
1869							29.8	58.0	51.3	27.7	51.1	54.2
1870							32.1	59.1	54.3	29.6	52.9	55.9
1871							31.1	61.0	51.0	29.6	52.9	56.0
1872							32.9	63.0	52.2	32.3	57.5	56.3
1873							33.7	65.1	51.8	32.7	57.5	56.8
1874							33.9	67.1	50.4	33.7	59.3	56.9
1875							36.5	69.4	52.6	32.5	57.8	56.3
1876							37.1	69.7	53.2	33.0	58.2	56.7
1877							39.3	69.6	56.4	32.9	57.9	56.8
1878							39.3	69.1	56.8	34.6	60.3	57.3
1879							38.6	69.7	55.4	34.9	60.7	57.4
1880							40.1	69.2	57.9	34.7	60.3	57.6
1881							41.1	69.6	59.1	34.8	60.3	57.7
1882							44.1	69.9	63.2	36.1	61.7	58.4
1883							43.4	71.1	61.0	36.0	61.7	58.3
1884							44.4	71.4	62.2	36.6	61.7	59.3
1885							42.9	71.0	60.4	37.2	61.8	60.3
1886							43.2	70.8	61.1	38.0	63.5	59.9
1887							44.4	70.1	63.3	37.5	62.7	59.7
1888							44.2	70.2	62.9	37.9	63.1	60.1
1889							45.3	70.3	64.4	38.2	63.5	60.3
1890	9.0	73.0	12.3	4.0	73.0	5.5	44.7	71.4	62.6	38.5	63.3	60.7
1891							46.7	72.1	64.8	39.8	63.9	62.3
1892							47.9	73.0	65.6	42.0	66.3	63.3
1893							47.9	74.2	64.5	42.9	66.9	64.1
1894							48.5	74.8	64.8	44.4	67.9	65.3
1895							48.5	74.9	64.8	45.7	68.1	67.0
1896							47.8	75.9	62.9	49.3	72.0	68.5
1897							48.3	77.2	62.6	49.1	71.1	69.0
1898							49.5	79.9	62.0	50.1	71.8	69.7
1899							51.4	80.6	63.9	50.2	71.7	70.1
1900							54.5	82.7	66.0	52.5	73.5	71.4

Table D.3C
Value Added in Services by Branch, 1807-1913:
Finance, Government, and Domestic Servants
(millions of guilders, current prices; price index 1913=100)

	banking			insurance			government			domestic servants		
	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst	VAcrt	price	VAcst
1901							56.0	83.4	67.2	52.9	73.1	72.3
1902							56.6	84.6	66.9	52.7	73.1	72.1
1903							59.7	84.5	70.7	54.4	75.0	72.6
1904							61.4	85.1	72.1	58.6	79.8	73.4
1905							63.9	86.2	74.2	60.5	81.6	74.2
1906							65.7	87.2	75.4	62.7	83.8	74.8
1907							67.5	87.9	76.7	68.1	90.4	75.3
1908							69.7	87.9	79.3	69.5	92.3	75.3
1909							70.0	89.0	78.7	71.6	94.5	75.8
1910							72.0	91.3	78.8	72.2	93.4	77.3
1911							76.1	93.2	81.6	74.4	95.6	77.8
1912							80.8	95.9	84.3	78.9	100.4	78.6
1913	35.0	100.0	35.0	7.0	100.0	7.0	85.3	100.0	85.3	78.7	100.0	78.7

Table D.3D
Value Added in Services by Branch, 1807-1913:
Education, Catering, Housing, and Remaining Services
(millions of guilders, current prices; price index 1913=100)

	education			remaining services			catering			housing		
	Vacrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst
1807	1.9	44.7	4.2	8.0	56.0	14.4	12.9	81.7	15.7	19.7	143.3	13.8
1808										19.7	143.5	13.7
1809										19.8	144.3	13.7
1810											144.7	
1811											142.9	
1812											139.2	
1813											135.7	
1814											135.3	
1815	1.9			8.5			12.4			19.0	135.6	14.0
1816										19.3	136.4	14.2
1817										19.6	137.2	14.3
1818										19.9	137.7	14.4
1819										20.2	138.2	14.6
1820										20.5	138.4	14.8
1821										20.9	139.1	15.0
1822										21.3	139.7	15.3
1823										21.7	139.9	15.5
1824										22.2	141.2	15.8
1825										22.8	142.5	16.0
1826										23.1	143.4	16.1
1827										23.4	144.4	16.2
1828										23.9	145.6	16.4
1829										24.2	145.8	16.6
1830	2.2	50.6	4.3	10.7	56.0	19.0	10.0	64.6	15.4	24.4	146.3	16.7
1831										24.2	144.6	16.7
1832										24.0	143.2	16.8
1833										24.2	143.7	16.9
1834										23.8	140.1	17.0
1835										24.0	140.3	17.1
1836										24.6	142.6	17.3
1837										24.9	143.2	17.4
1838										25.1	143.3	17.5
1839										25.6	144.6	17.7
1840	2.6			12.2			9.8			26.1	145.4	18.0
1841										26.5	144.8	18.3
1842										26.8	144.9	18.5
1843										27.2	144.7	18.8
1844										27.5	144.4	19.1
1845										27.7	143.1	19.3
1846										27.7	142.1	19.5
1847										27.8	142.3	19.5
1848										27.8	141.6	19.6
1849										27.8	140.5	19.8
1850	2.7	47.5	5.8	13.4	56.0	23.9	9.2	63.0	14.6	28.0	140.9	19.9
1851	2.8	48.5	5.8							28.7	149.8	19.2
1852	3.1	51.7	6.0							29.5	149.3	19.8

Table D.3D
Value Added in Services by Branch, 1807-1913: Education, Catering, Housing, and Remaining Services (millions of guilders, current prices; price index 1913=100)

	education			remaining services			catering			housing		
	Vacrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst
1853	3.2	52.6	6.0							30.3	130.6	23.2
1854	3.3	54.4	6.1							31.1	146.1	21.3
1855	3.3	55.4	6.0							31.9	152.3	21.0
1856	3.4	56.3	6.1							32.7	153.7	21.3
1857	3.4	56.6	6.0							33.8	158.1	21.4
1858	3.9	61.4	6.3							34.8	173.9	20.0
1859	3.7	60.9	6.1							35.8	141.6	25.3
1860	4.2	49.5	8.5							36.9	137.7	26.8
1861	4.6	49.7	9.2							37.9	152.3	24.9
1862	4.8	48.6	9.8							39.1	195.0	20.1
1863	4.9	47.4	10.4							40.4	153.7	26.3
1864	4.9	46.4	10.7							41.8	145.1	28.8
1865	4.9	46.7	10.5							43.3	154.8	28.0
1866	5.0	47.0	10.7							45.0	142.2	31.6
1867	5.2	48.1	10.9							46.8	138.3	33.8
1868	5.3	48.9	10.9							48.1	142.2	33.8
1869	5.6	49.6	11.3							49.6	130.4	38.0
1870	5.9	50.4	11.6							51.3	130.0	39.5
1871	6.0	51.5	11.7							52.8	139.5	37.8
1872	6.4	53.2	12.0							54.6	154.1	35.4
1873	6.9	55.4	12.5							57.0	164.2	34.7
1874	7.5	58.6	12.8							59.6	154.8	38.5
1875	8.2	61.7	13.2							60.8	135.6	44.8
1876	9.0	64.4	14.0							65.2	137.2	47.5
1877	9.2	66.6	13.8							69.4	126.4	54.9
1878	9.7	67.8	14.3							73.9	113.0	65.4
1879	10.3	68.2	15.1							77.9	115.9	67.2
1880	11.5	70.8	16.3							82.4	118.3	69.7
1881	12.5	72.0	17.4							84.6	119.3	70.9
1882	13.4	72.9	18.5							87.9	123.4	71.2
1883	13.9	73.0	19.1							90.8	103.9	87.3
1884	14.7	73.0	20.2							91.9	107.0	85.9
1885	14.9	72.8	20.4							93.2	93.7	99.4
1886	14.9	72.5	20.5							94.5	87.7	107.7
1887	15.3	72.6	21.0							95.5	92.0	103.8
1888	15.3	72.5	21.1							96.7	98.6	98.0
1889	15.3	72.2	21.2							98.9	97.4	101.6
1890	15.8	72.2	21.9	32.5	76.0	42.8	20.6	96.4	21.4	100.2	107.6	93.1
1891	16.2	72.2	22.4							101.5	103.6	98.0
1892	16.5	72.0	23.0							102.7	90.2	113.8
1893	17.4	73.0	23.9							103.2	97.4	105.9
1894	18.0	73.7	24.5							104.3	87.5	119.2
1895	19.0	74.0	25.7							105.0	89.0	117.9
1896	19.4	74.4	26.1							106.9	87.2	122.7
1897	20.4	74.7	27.3							106.1	79.0	134.3
1898	21.1	75.1	28.1							108.1	85.2	126.8
1899	21.8	75.5	28.9							110.3	89.5	123.3
1900	22.8	76.3	29.9							112.7	92.7	121.6

Table D.3D
Value Added in Services by Branch, 1807-1913:
Education, Catering, Housing, and Remaining Services
(millions of guilders, current prices; price index 1913=100)

	education			remaining services			catering			housing		
	Vacrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst	VAcrt	Price	VAcst
1901	24.8	80.3	30.8							115.8	90.2	128.4
1902	26.3	82.0	32.0							119.0	83.0	143.4
1903	27.2	82.1	33.1							122.6	85.7	143.1
1904	28.2	82.3	34.3							126.5	91.5	138.3
1905	28.8	82.5	34.9							130.6	92.9	140.5
1906	30.0	82.6	36.3							135.2	96.4	140.3
1907	31.2	84.0	37.1							140.0	94.6	148.0
1908	34.1	87.1	39.1							143.3	91.1	157.3
1909	37.9	93.1	40.7							146.8	90.6	161.9
1910	40.4	95.2	42.4							151.3	92.8	163.1
1911	42.7	95.9	44.5							156.5	99.8	156.9
1912	45.7	98.3	46.5							162.4	104.8	155.0
1913	48.4	100.0	48.4	125.0	100.0	125.0	40.1	100.0	40.1	169.0	100.0	169.0

Table D.3E
Total Value Added in Services, 1807-1913

	value added at current prices mln*f*	deflator 1913=100	value added at constant prices mln*f* 1913
1807	226.9	146.2	155.2
1808	205.2	152.3	134.7
1809	186.8	150.2	124.3
1810			
1811			
1812			
1813			
1814			
1815	237.9	145.5	163.5
1816	247.5	164.3	150.6
1817	273.4	163.4	167.3
1818	259.4	151.2	171.6
1819	226.8	136.9	165.6
1820	216.5	121.8	177.8
1821	205.7	115.1	178.6
1822	206.9	112.6	183.8
1823	220.9	115.8	190.8
1824	214.3	110.2	194.5
1825	224.8	115.5	194.5
1826	217.3	109.6	198.3
1827	222.9	108.6	205.2
1828	227.0	102.4	221.6
1829	227.3	103.5	219.6
1830	213.0	105.2	202.5
1831	249.0	112.5	221.3
1832	278.8	114.2	244.2
1833	238.4	101.7	234.5
1834	236.3	99.5	237.6
1835	228.5	99.8	229.0
1836	262.6	111.6	235.2
1837	245.6	99.0	248.2
1838	263.6	107.7	244.9
1839	289.6	111.6	259.6
1840	269.5	104.8	257.1
1841	277.1	104.1	266.2
1842	262.6	100.5	261.2
1843	254.2	96.2	264.1
1844	256.8	92.0	279.2
1845	269.3	96.6	278.8
1846	282.6	102.8	275.0
1847	305.3	113.2	269.7
1848	261.4	93.3	280.2
1849	270.1	91.4	295.6
1850	274.0	90.5	302.8
1851	279.3	88.8	314.4
1852	297.8	91.5	325.4

Table D.3E
Total Value Added in Services, 1807-1913

	value added at current prices mln*f*	deflator 1913=100	value added at constant prices mln*f* 1913
1853	289.6	88.7	326.6
1854	317.8	95.2	333.7
1855	323.8	97.4	332.5
1856	353.9	102.5	345.4
1857	356.0	104.3	341.4
1858	346.6	103.3	335.4
1859	325.5	96.7	336.6
1860	345.6	97.3	355.2
1861	372.7	102.4	363.8
1862	402.7	114.4	352.0
1863	410.0	110.3	371.8
1864	438.0	110.3	397.1
1865	427.9	107.6	397.6
1866	447.7	103.0	434.7
1867	428.4	101.6	421.7
1868	428.4	104.5	409.9
1869	435.0	101.3	429.3
1870	437.1	97.7	447.6
1871	465.0	103.4	449.6
1872	513.4	115.5	444.7
1873	543.1	119.0	456.4
1874	514.2	114.8	447.9
1875	503.7	107.3	469.6
1876	494.5	105.7	468.0
1877	500.6	102.3	489.3
1878	485.0	96.5	502.4
1879	481.0	96.7	497.4
1880	506.6	98.4	514.9
1881	515.1	97.6	527.6
1882	528.7	98.5	536.7
1883	534.3	89.1	599.9
1884	544.4	90.7	600.0
1885	520.5	83.3	624.9
1886	514.5	80.5	639.1
1887	543.3	84.4	643.5
1888	558.7	87.3	639.7
1889	579.9	88.2	657.7
1890	608.2	92.8	655.6
1891	623.4	92.7	672.2
1892	600.8	86.1	697.8
1893	609.0	88.7	686.8
1894	606.1	83.4	727.0
1895	616.1	83.6	737.2
1896	636.4	82.6	770.2
1897	639.0	78.8	810.7
1898	678.7	82.4	823.7
1899	692.8	84.9	815.8

Table D.3E
Total Value Added in Services, 1807-1913

	value added at current prices mln*f*	deflator 1913=100	value added at constant prices mln*f* 1913
1900	726.0	89.7	809.3
1901	733.2	86.7	846.1
1902	749.0	83.1	901.8
1903	764.4	83.2	918.6
1904	804.3	88.9	905.1
1905	839.4	88.4	949.7
1906	912.6	92.8	983.0
1907	910.1	92.8	980.7
1908	891.9	89.7	993.9
1909	942.5	88.9	1059.8
1910	995.5	91.7	1085.6
1911	1109.5	99.2	1118.4
1912	1188.9	103.0	1153.7
1913	1248.5	100.0	1248.5

D.4 Productivity

Table D.4
Value Added Per Worker and Per Man-Hour at Constant 1913 Prices, 1807-1913 (guilders)

	VA/worker				VA/man-hour			
	agriculture	industry	services	GDP	agriculture	industry	services	GDP
1807	421	347	526	418	0.164	0.108	0.164	0.142
1808	362	332	454	371	0.141	0.103	0.141	0.126
1809	439	286	415	364	0.171	0.089	0.129	0.124
1810								
1811								
1812								
1813								
1814								
1815	474	302	549	425	0.184	0.095	0.172	0.145
1816	442	320	501	406	0.171	0.100	0.157	0.138
1817	406	308	556	411	0.157	0.097	0.174	0.140
1818	421	304	562	416	0.163	0.096	0.177	0.142
1819	433	264	529	394	0.168	0.083	0.166	0.135
1820	471	280	558	421	0.182	0.088	0.176	0.144
1821	452	277	549	410	0.175	0.087	0.173	0.140
1822	444	285	557	413	0.172	0.090	0.175	0.141
1823	448	327	573	435	0.173	0.103	0.181	0.149
1824	473	297	572	430	0.183	0.095	0.182	0.148
1825	464	281	565	420	0.179	0.090	0.180	0.145
1826	442	310	569	426	0.171	0.098	0.180	0.146
1827	450	359	587	452	0.174	0.114	0.187	0.155
1828	442	352	627	461	0.171	0.112	0.199	0.158
1829	435	369	616	462	0.168	0.117	0.196	0.158
1830	376	354	558	420	0.145	0.112	0.177	0.144
1831	422	356	620	454	0.163	0.113	0.196	0.155
1832	443	335	690	477	0.171	0.106	0.219	0.163
1833	442	338	646	463	0.170	0.107	0.206	0.159
1834	442	347	651	467	0.170	0.110	0.207	0.160
1835	466	352	618	466	0.179	0.112	0.196	0.160
1836	484	372	637	483	0.186	0.118	0.202	0.165
1837	491	370	661	493	0.189	0.118	0.212	0.170
1838	477	412	650	500	0.184	0.131	0.207	0.171
1839	479	376	687	501	0.184	0.120	0.219	0.171
1840	484	399	667	504	0.186	0.127	0.213	0.173
1841	456	420	684	509	0.175	0.133	0.217	0.174
1842	462	397	662	495	0.178	0.126	0.210	0.169
1843	464	368	659	485	0.178	0.118	0.212	0.167
1844	459	354	690	488	0.176	0.115	0.224	0.169
1845	408	390	685	486	0.157	0.125	0.220	0.167
1846	402	407	678	488	0.154	0.130	0.216	0.167
1847	442	397	673	493	0.170	0.127	0.215	0.169
1848	458	384	687	497	0.175	0.124	0.222	0.171
1849	482	370	726	511	0.185	0.119	0.235	0.176
1850	495	380	739	521	0.190	0.123	0.239	0.180
1851	497	382	760	530	0.190	0.124	0.247	0.183

Table D.4
Value Added Per Worker and Per Man-Hour at Constant 1913 Prices, 1807-1913 (guilders)

	VA/worker				VA/man-hour			
	agriculture	industry	services	GDP	agriculture	industry	services	GDP
1852	482	363	785	525	0.184	0.118	0.254	0.181
1853	455	358	779	514	0.174	0.116	0.252	0.177
1854	484	417	799	549	0.185	0.134	0.256	0.188
1855	463	396	795	534	0.177	0.126	0.254	0.182
1856	516	383	827	558	0.197	0.122	0.263	0.190
1857	492	392	813	548	0.187	0.125	0.259	0.187
1858	476	383	793	531	0.181	0.122	0.253	0.181
1859	481	320	788	510	0.183	0.102	0.251	0.174
1860	490	350	828	537	0.186	0.112	0.264	0.183
1861	427	364	843	523	0.162	0.116	0.269	0.178
1862	521	359	811	546	0.198	0.115	0.260	0.186
1863	536	343	844	556	0.203	0.111	0.273	0.191
1864	554	348	895	579	0.210	0.113	0.290	0.199
1865	542	375	880	580	0.205	0.122	0.285	0.199
1866	501	412	956	603	0.189	0.133	0.310	0.207
1867	478	414	906	581	0.181	0.134	0.293	0.199
1868	503	433	868	584	0.190	0.140	0.281	0.200
1869	547	415	896	604	0.206	0.135	0.292	0.208
1870	531	467	919	623	0.200	0.153	0.301	0.215
1871	522	468	921	621	0.197	0.152	0.300	0.213
1872	535	500	907	631	0.202	0.163	0.295	0.217
1873	513	560	919	646	0.193	0.183	0.300	0.222
1874	521	504	878	621	0.196	0.166	0.288	0.214
1875	535	575	903	655	0.201	0.189	0.296	0.226
1876	519	620	875	655	0.195	0.204	0.287	0.226
1877	500	640	893	662	0.188	0.210	0.294	0.229
1878	489	635	889	656	0.183	0.209	0.293	0.227
1879	432	619	856	620	0.162	0.205	0.284	0.215
1880	496	646	874	657	0.186	0.215	0.291	0.228
1881	472	677	881	661	0.177	0.226	0.294	0.230
1882	492	686	880	672	0.184	0.230	0.295	0.234
1883	476	736	966	712	0.178	0.247	0.325	0.248
1884	504	736	955	716	0.188	0.249	0.322	0.251
1885	498	738	968	720	0.186	0.250	0.328	0.253
1886	511	721	971	722	0.191	0.245	0.331	0.254
1887	516	761	972	734	0.192	0.260	0.332	0.259
1888	489	821	955	738	0.182	0.282	0.328	0.261
1889	517	833	971	757	0.192	0.287	0.334	0.268
1890	468	768	959	717	0.174	0.265	0.331	0.254
1891	439	762	968	709	0.163	0.264	0.335	0.252
1892	468	741	980	718	0.174	0.259	0.342	0.256
1893	461	728	949	700	0.171	0.256	0.333	0.251
1894	453	793	983	732	0.168	0.280	0.347	0.263
1895	476	748	980	724	0.176	0.265	0.348	0.261
1896	497	756	1007	746	0.184	0.269	0.359	0.269
1897	477	759	1041	754	0.177	0.271	0.372	0.273
1898	492	744	1046	757	0.182	0.267	0.376	0.275
1899	485	781	1017	757	0.179	0.282	0.367	0.275

Table D.4
Value Added Per Worker and Per Man-Hour at Constant 1913 Prices, 1807-1913 (guilders)

	VA/worker				VA/man-hour			
	agriculture	industry	services	GDP	agriculture	industry	services	GDP
1900	496	740	993	741	0.183	0.268	0.360	0.270
1901	516	770	1013	766	0.191	0.279	0.367	0.279
1902	513	784	1055	787	0.189	0.286	0.384	0.288
1903	480	776	1051	775	0.177	0.284	0.384	0.284
1904	504	792	1019	777	0.186	0.290	0.373	0.285
1905	520	825	1050	806	0.192	0.303	0.386	0.296
1906	511	828	1075	813	0.188	0.305	0.396	0.300
1907	495	785	1046	786	0.182	0.291	0.388	0.291
1908	486	812	1032	789	0.179	0.303	0.386	0.294
1909	521	816	1088	824	0.192	0.307	0.409	0.308
1910	552	850	1105	852	0.203	0.321	0.418	0.319
1911	569	872	1132	875	0.209	0.331	0.430	0.329
1912	551	908	1151	889	0.202	0.346	0.439	0.335
1913	545	919	1222	920	0.200	0.352	0.468	0.348

Note: Housing was excluded from the value added of services and from total GDP since it involves little or no labour.

Appendix E

EXPENDITURE

Table E.1
Consumer Expenditure, 1800-1913

	private			public		
	current prices mln*f*	price index 1913=100	constant prices mln*f*1913	current prices mln*f*	price index 1913=100	constant prices mln*f*1913
1807	383.0	133	287.4	39.1	97	40.2
1808	367.2	129	285.3	28.5	97	29.3
1809	288.9			27.7		
1810				25.3		
1811						
1812						
1813						
1814	300.1			29.7		
1815	345.1	122	281.7	51.4	91	56.6
1816	390.7	129	303.3	33.3	106	31.4
1817	420.9	136	308.6	31.2	109	28.6
1818	399.9	124	322.9	30.4	101	30.1
1819	368.8	112	330.4	27.8	87	32.0
1820	351.5	108	326.4	30.1	76	39.5
1821	344.7	101	339.6	28.7	68	42.4
1822	328.5	99	330.6	29.5	65	45.0
1823	358.5	105	340.9	33.9	65	51.8
1824	319.2	94	340.2	37.4	63	59.2
1825	335.1	99	338.9	36.8	72	51.4
1826	342.3	96	354.8	36.1	68	53.0
1827	358.8	98	365.3	39.2	68	57.5
1828	363.1	97	375.5	36.0	65	55.2
1829	375.1	98	382.3	33.3	68	49.0
1830	381.2	101	376.9	19.6	71	27.4
1831	415.2	104	398.3	48.6	73	66.2
1832	410.4	100	412.4	52.4	70	75.1
1833	368.7	92	401.1	46.3	60	77.2
1834	359.1	92	391.6	33.8	58	58.3
1835	358.8	91	394.4	24.5	59	41.6
1836	384.1	92	417.1	25.9	67	38.9
1837	386.7	92	421.1	35.6	60	59.2
1838	403.1	94	427.8	36.1	66	54.6
1839	436.7	99	441.6	36.5	70	52.0
1840	425.6	96	445.1	30.7	67	46.0
1841	445.8	95	471.0	34.8	65	53.3
1842	422.0	93	451.4	34.4	64	54.1
1843	411.8	89	465.1	33.9	58	58.3
1844	409.4	87	472.7	31.5	55	56.8
1845	422.1	90	468.2	20.0	63	31.7
1846	439.1	96	455.1	36.1	70	51.2
1847	471.3	103	458.8	37.2	77	48.5
1848	414.3	89	463.5	35.9	58	61.7
1849	400.5	85	469.0	30.1	55	54.7

Table E.1
Consumer Expenditure, 1800-1913

	private			public		
	current prices mln*f*	price index 1913=100	constant prices mln*f*1913	current prices mln*f*	price index 1913=100	constant prices mln*f*1913
1850	410.1	88	465.3	29.5	56	52.7
1851	413.6	87	474.2	30.0	56	53.8
1852	434.3	91	479.7	30.0	56	54.0
1853	450.6	95	476.1	30.9	55	55.8
1854	530.4	106	501.6	32.0	55	58.1
1855	501.5	106	472.9	35.5	55	65.0
1856	560.9	107	525.5	35.3	55	63.9
1857	546.4	105	520.0	34.9	55	63.1
1858	497.7	96	519.1	37.1	56	66.8
1859	452.3	95	475.0	40.7	56	72.7
1860	519.4	97	536.3	38.3	55	69.3
1861	539.3	102	527.1	39.2	55	71.2
1862	591.2	110	538.1	39.4	56	70.9
1863	608.5	107	567.9	38.7	56	69.5
1864	612.2	111	552.8	38.7	56	69.2
1865	628.5	109	574.1	40.6	56	72.6
1866	642.9	114	565.2	42.3	57	73.9
1867	622.8	102	608.5	44.2	58	76.1
1868	642.4	102	630.0	40.9	58	70.4
1869	655.9	101	652.1	41.0	58	70.7
1870	676.7	97	694.1	45.9	59	77.7
1871	719.3	107	672.1	44.5	61	73.0
1872	890.8	119	746.1	47.7	63	75.7
1873	946.9	122	777.0	50.6	65	77.7
1874	964.8	122	793.4	51.3	67	76.4
1875	908.6	108	838.9	58.0	69	83.6
1876	903.2	106	852.6	62.6	70	89.8
1877	973.1	110	882.9	64.6	70	92.7
1878	923.3	105	879.5	63.4	69	91.7
1879	835.7	100	839.9	58.8	70	84.4
1880	926.5	101	914.2	61.3	69	88.5
1881	970.7	103	939.8	62.3	70	89.5
1882	993.3	103	963.6	66.8	70	95.6
1883	1005.9	96	1053.0	66.5	71	93.5
1884	960.7	91	1058.1	65.4	71	91.5
1885	910.8	86	1064.4	61.1	71	86.1
1886	877.2	82	1070.2	64.7	71	91.4
1887	935.5	84	1110.3	66.7	70	95.2
1888	926.3	84	1098.8	66.3	70	94.5
1889	993.3	87	1148.1	69.6	70	99.0
1890	945.0	88	1073.1	68.9	71	96.4
1891	986.9	90	1099.5	71.4	72	99.1
1892	948.3	83	1148.9	72.9	73	99.9
1893	902.4	81	1111.3	72.4	74	97.6
1894	965.9	81	1198.3	73.5	75	98.3
1895	947.2	76	1238.8	75.5	75	100.8
1896	1019.0	77	1318.9	80.1	76	105.5
1897	1017.7	77	1328.5	81.3	77	105.3

Table E.1
Consumer Expenditure, 1800-1913

	private			public		
	current prices mln*f*	price index 1913=100	constant prices mln*f*1913	current prices mln*f*	price index 1913=100	constant prices mln*f*1913
1898	1099.8	77	1419.8	80.1	80	100.2
1899	1087.1	78	1401.3	83.9	81	104.1
1900	1135.3	83	1373.3	91.2	83	110.3
1901	1214.1	81	1494.7	92.2	83	110.5
1902	1236.3	82	1509.6	94.8	85	112.1
1903	1280.3	84	1524.0	102.6	84	121.5
1904	1327.6	87	1523.2	111.0	85	130.4
1905	1420.7	85	1679.8	110.6	86	128.4
1906	1510.1	90	1681.1	114.4	87	131.3
1907	1503.5	92	1637.8	116.3	88	132.2
1908	1482.2	90	1649.7	122.7	88	139.6
1909	1538.6	90	1708.8	122.6	89	137.8
1910	1647.2	93	1779.2	125.3	91	137.2
1911	1802.2	95	1893.5	127.7	93	137.0
1912	1905.3	96	1980.6	138.1	96	144.1
1913	2020.3	100	2020.3	146.4	100	146.4

Table E.2
Gross Fixed Capital Formation by Type of Asset, 1800-1913

	current prices					
	machinery and transport equipment mln*f*	residential dwellings mln*f*	infrastructure and other non-residential capital goods mln*f*	total GFCF mln*f*	implicit deflator 1913=100	total GFCF at constant 1913 prices mln*f* 1913
1800	6.2	18.8	7.6	32.6	67	48.7
1801	6.1	19.8	8.3	34.1	69	49.3
1802	5.1	17.5	7.4	30.0	61	49.4
1803	4.7	19.3	8.4	32.4	66	48.9
1804	4.4	21.0	10.2	35.6	70	50.7
1805	5.1	21.0	9.6	35.7	70	51.3
1806	5.0	21.0	9.5	35.5	69	51.5
1807	4.4	21.6	10.4	36.3	70	51.9
1808	5.2	22.0	10.2	37.4	74	50.4
1809	4.7	20.8	13.6	39.1	74	52.8
1810	4.5	19.6	8.6	32.6	68	48.1
1811	3.7	19.1	9.1	31.8	67	47.6
1812	3.7	18.6	8.2	30.6	65	46.8
1813	3.6	18.0	8.0	29.6	63	46.8
1814	6.4	17.1	7.3	30.8	63	49.0
1815	6.3	17.1	7.5	30.9	61	51.0
1816	5.7	16.8	9.7	32.2	57	56.4
1817	7.3	18.3	10.9	36.4	61	59.6
1818	8.4	19.8	10.2	38.4	65	58.9
1819	7.8	18.6	10.1	36.5	63	57.7
1820	7.8	18.2	12.1	38.1	62	61.9
1821	7.3	17.5	9.9	34.7	58	59.6
1822	7.2	17.4	11.1	35.7	57	62.9
1823	7.5	18.0	11.1	36.6	57	64.2
1824	8.2	18.2	11.3	37.6	58	64.6
1825	7.6	20.9	9.5	38.1	64	59.2
1826	7.2	20.5	11.3	39.0	61	63.6
1827	7.7	19.7	10.0	37.4	59	63.6
1828	7.3	19.8	8.6	35.7	57	63.1
1829	7.9	20.0	9.0	36.8	55	66.9
1830	8.3	19.9	8.7	37.0	57	64.7
1831	7.4	19.7	8.9	36.0	53	67.5
1832	7.9	19.6	9.5	37.1	54	68.9
1833	8.3	18.9	8.3	35.5	54	66.1
1834	8.8	19.5	9.8	38.1	56	68.1
1835	11.6	20.7	9.7	41.9	60	69.7
1836	13.1	22.5	10.5	46.1	63	72.7
1837	14.3	22.8	8.8	45.9	66	69.3
1838	14.6	22.5	10.6	47.7	64	74.9
1839	15.6	22.3	9.4	47.3	64	73.8
1840	13.5	21.6	13.8	48.9	60	81.2
1841	12.2	23.3	11.2	46.7	61	76.3
1842	9.9	19.7	10.7	40.3	59	68.3
1843	9.4	18.7	12.8	40.9	57	71.5
1844	8.4	20.3	12.0	40.6	57	70.7

Table E.2
Gross Fixed Capital Formation by Type of Asset, 1800-1913

	current prices					
	machinery and transport equipment mln*f*	residential dwellings mln*f*	infrastructure and other non-residential capital goods mln*f*	total GFCF mln*f*	implicit deflator 1913=100	total GFCF at constant 1913 prices mln*f* 1913
1845	10.1	22.6	13.0	45.7	62	73.1
1846	11.0	22.1	11.4	44.4	64	69.0
1847	11.4	23.1	14.5	49.0	63	77.3
1848	11.3	20.7	10.2	42.2	61	68.7
1849	11.3	20.7	9.2	41.2	58	70.9
1850	10.9	21.2	9.4	41.5	58	71.4
1851	11.9	20.4	8.8	41.1	57	71.7
1852	13.9	21.4	25.0	60.3	61	98.8
1853	19.1	21.6	15.6	56.3	74	76.5
1854	21.1	21.4	16.3	58.8	75	78.7
1855	20.2	21.9	15.1	57.3	72	79.6
1856	22.2	22.6	15.9	60.7	71	85.4
1857	21.5	21.7	13.6	56.8	72	79.0
1858	16.0	22.7	15.6	54.3	68	79.9
1859	14.9	22.8	15.3	53.0	68	78.3
1860	13.4	24.0	21.0	58.4	67	86.6
1861	14.3	26.1	19.5	59.9	68	87.9
1862	17.8	26.1	20.3	64.3	70	91.7
1863	16.6	26.5	24.3	67.4	69	97.5
1864	18.7	27.7	26.7	73.1	73	100.5
1865	18.9	28.2	30.9	77.9	71	109.2
1866	20.5	27.0	34.7	82.2	69	118.5
1867	18.4	27.0	33.6	78.9	69	115.0
1868	15.4	28.5	32.0	75.9	69	110.6
1869	16.0	31.2	34.0	81.2	69	117.6
1870	17.1	30.9	39.6	87.7	70	124.6
1871	19.0	34.4	32.9	86.3	70	122.6
1872	24.2	36.9	44.7	105.8	78	135.5
1873	33.7	32.2	39.5	105.4	94	112.5
1874	29.2	32.1	38.3	99.6	94	105.6
1875	23.1	41.6	39.1	103.8	82	126.2
1876	27.3	45.8	42.4	115.6	84	137.7
1877	27.2	50.7	56.7	134.5	84	160.8
1878	24.1	41.9	46.2	112.1	80	140.1
1879	27.4	53.4	45.7	126.5	77	163.4
1880	26.9	51.5	46.1	124.5	78	159.4
1881	26.3	56.8	54.0	137.1	78	175.0
1882	34.9	57.9	42.0	134.8	79	170.1
1883	45.1	57.6	47.1	149.8	80	188.3
1884	38.6	52.4	48.5	139.6	78	178.2
1885	28.4	54.2	45.9	128.5	76	170.2
1886	28.1	61.4	49.4	138.9	74	188.3
1887	24.4	55.4	43.7	123.5	73	168.2
1888	29.8	70.0	46.4	146.2	76	193.0
1889	33.3	60.7	37.9	131.9	78	169.4
1890	42.7	61.8	47.9	152.4	81	188.1

Table E.2
Gross Fixed Capital Formation by Type of Asset, 1800-1913

	current prices					
	machinery and transport equipment mln*f*	residential dwellings mln*f*	infrastructure and other non-residential capital goods mln*f*	total GFCF mln*f*	implicit deflator 1913=100	total GFCF at constant 1913 prices mln*f* 1913
1891	50.1	58.9	48.0	157.0	83	189.7
1892	40.9	59.0	48.0	147.9	81	182.0
1893	33.1	58.0	43.3	134.3	77	175.4
1894	34.4	59.1	45.0	138.5	75	183.9
1895	36.0	58.9	47.1	142.0	77	184.9
1896	43.0	64.6	47.9	155.5	84	185.6
1897	47.1	68.1	48.9	164.1	88	185.5
1898	51.1	63.3	50.1	164.5	88	187.5
1899	78.0	72.8	53.5	204.3	92	221.6
1900	78.0	78.2	61.0	217.2	95	229.0
1901	84.4	76.0	61.2	221.7	90	247.4
1902	70.7	79.5	64.2	214.4	88	242.3
1903	72.4	88.0	71.5	231.9	89	259.2
1904	66.1	90.3	74.5	230.8	87	265.1
1905	70.8	89.4	75.6	235.8	88	267.4
1906	89.3	95.5	86.1	270.8	92	294.0
1907	106.9	78.1	76.2	261.2	94	277.8
1908	97.1	81.1	78.7	256.9	90	284.1
1909	91.2	91.2	74.9	257.3	87	294.5
1910	90.1	100.5	84.7	275.3	89	311.0
1911	101.7	104.8	84.9	291.4	90	322.9
1912	139.9	112.3	91.6	343.8	95	360.5
1913	182.9	124.1	112.9	419.8	100	419.8

Sources: Albers, *Capital formation*. Groote, *Kapitaalvorming*.

Table E.3
Public Consumption and Investment, 1800-1913
(millions of guilders at current prices)

	consumption	investments
1800	43.9	2.7
1801	37.0	2.3
1802	29.2	1.8
1803	21.5	1.3
1804	38.2	2.4
1805	29.6	1.8
1806	33.3	2.1
1807	39.1	2.4
1808	28.5	1.8
1809	27.7	1.7
1810	25.3	1.6
1811		
1812		
1813		
1814	29.7	1.8
1815	51.4	3.2
1816	33.3	2.1
1817	31.2	1.9
1818	30.4	1.9
1819	27.8	1.7
1820	30.1	1.9
1821	28.7	1.8
1822	29.5	1.8
1823	33.9	3.0
1824	37.4	1.5
1825	36.8	2.0
1826	36.1	1.7
1827	39.2	3.1
1828	36.0	0.4
1829	33.3	1.3
1830	19.6	0.0
1831	48.6	0.6
1832	52.4	0.4
1833	46.3	0.6
1834	33.8	0.6
1835	24.5	0.6
1836	25.9	0.6
1837	35.6	0.9
1838	36.1	1.1
1839	36.5	0.8
1840	30.7	0.8
1841	34.8	1.3
1842	34.4	2.4
1843	33.9	2.2
1844	31.5	2.8
1845	20.0	2.5

Table E.3
Public Consumption and Investment, 1800-1913 (millions of guilders at current prices)

	consumption	investments
1846	36.1	2.3
1847	37.2	2.3
1848	35.9	1.9
1849	30.1	1.7
1850	29.5	1.7
1851	30.0	2.1
1852	30.0	2.2
1853	30.9	2.8
1854	32.0	2.9
1855	35.5	3.3
1856	35.3	3.1
1857	34.9	5.3
1858	37.1	3.2
1859	40.7	3.7
1860	38.3	3.6
1861	39.2	4.1
1862	39.4	3.7
1863	38.7	3.5
1864	38.7	4.1
1865	40.6	3.6
1866	42.3	5.0
1867	44.2	5.8
1868	40.9	5.4
1869	41.0	5.1
1870	45.9	4.8
1871	44.5	5.3
1872	47.7	7.0
1873	50.6	6.6
1874	51.3	6.2
1875	58.0	6.8
1876	62.6	7.9
1877	64.6	8.3
1878	63.4	8.1
1879	58.8	8.5
1880	61.3	6.2
1881	62.3	8.9
1882	66.8	9.7
1883	66.5	12.4
1884	65.4	11.5
1885	61.1	8.3
1886	64.7	8.6
1887	66.7	14.2
1888	66.3	14.0
1889	69.6	11.4
1890	68.9	13.8
1891	71.4	11.5
1892	72.9	10.0

Table E.3
Public Consumption and Investment, 1800-1913 (millions of guilders at current prices)

	consumption	investments
1893	72.4	9.2
1894	73.5	9.0
1895	75.5	7.6
1896	80.1	8.7
1897	81.3	10.0
1898	80.1	12.1
1899	83.9	12.8
1900	91.2	16.3
1901	92.2	13.9
1902	94.8	21.6
1903	102.6	10.7
1904	111.0	14.5
1905	110.6	14.0
1906	114.4	12.4
1907	116.3	12.7
1908	122.7	16.0
1909	122.6	14.0
1910	125.3	15.1
1911	127.7	14.4
1912	138.1	24.4
1913	146.4	22.9

Table E.4
Changes in Stocks, Work in Progress, and Depreciation, 1800-1913

	changes in stocks and work in progress			depreciation		
	current prices mln*f*	deflator 1913=100	constant prices mln*f* 1913	current prices mln*f*	GFCF deflator 1913=100	constant prices mln*f* 1913
1800	11.8	121.6	9.7	28.9	69.1	41.9
1801	0.2	200.0	0.1	30.1	71.9	41.9
1802	2.1	116.7	1.8	26.8	64.0	41.9
1803	14.6	116.8	12.5	28.7	68.2	42.0
1804	-6.8	115.3	-5.9	30.8	73.3	42.0
1805	3.1	129.2	2.4	30.9	73.5	42.0
1806	17.5	118.2	14.8	31.1	73.8	42.1
1807	9.1	109.6	8.3	31.6	75.1	42.1
1808	10.7	107.0	10.0	32.9	77.9	42.2
1809	-55.8	107.1	-52.1	35.3	83.5	42.3
1810	-47.9	108.9	-44.0	34.1	80.6	42.3
1811	-82.8	107.7	-76.9	31.9	75.1	42.4
1812	-69.4	114.7	-60.5	31.6	74.5	42.4
1813	-23.2	100.4	-23.1	30.5	71.8	42.5
1814	8.1	89.0	9.1	29.3	69.0	42.5
1815	30.3	88.3	34.3	26.9	63.1	42.6
1816	19.5	108.3	18.0	25.1	58.7	42.8
1817	30.8	119.8	25.7	26.4	61.5	43.0
1818	9.9	111.2	8.9	28.3	65.5	43.2
1819	24.7	94.6	26.1	28.8	66.4	43.4
1820	42.9	83.1	51.6	28.5	65.2	43.7
1821	28.1	73.9	38.0	27.7	63.2	43.9
1822	22.1	71.1	31.1	27.2	61.5	44.2
1823	10.7	74.3	14.4	26.7	60.1	44.5
1824	-14.5	70.4	-20.6	26.9	60.1	44.8
1825	-21.5	81.1	-26.5	29.5	65.5	45.1
1826	-32.1	76.1	-42.2	30.5	67.0	45.5
1827	6.9	79.3	8.7	28.9	63.2	45.8
1828	5.7	77.0	7.4	28.1	61.0	46.1
1829	28.6	80.6	35.5	27.1	58.4	46.5
1830	2.8	87.5	3.2	26.7	57.0	46.9
1831	17.9	90.4	19.8	25.3	53.5	47.3
1832	-3.3	84.6	-3.9	25.2	52.8	47.7
1833	20.2	70.9	28.5	25.0	52.1	48.0
1834	25.8	68.1	37.9	26.6	55.0	48.4
1835	27.7	71.4	38.8	27.8	56.9	48.8
1836	2.7	77.1	3.5	28.3	57.5	49.2
1837	4.9	75.4	6.5	31.8	64.2	49.5
1838	8.4	82.4	10.2	31.2	62.5	49.9
1839	7.9	87.8	9.0	31.1	61.8	50.3
1840	6.4	86.5	7.4	31.1	61.2	50.8
1841	-1.7	81.0	-2.1	31.5	61.5	51.3
1842	27.0	82.8	32.6	30.7	59.6	51.6
1843	25.6	76.6	33.4	29.0	55.8	52.0

Table E.4
Changes in Stocks, Work in Progress, and Depreciation, 1800-1913

	changes in stocks and work in progress			depreciation		
	current prices mln*f*	deflator 1913=100	constant prices mln*f* 1913	current prices mln*f*	GFCF deflator 1913=100	constant prices mln*f* 1913
1844	17.4	73.4	23.7	28.8	55.0	52.4
1845	-18.1	83.4	-21.7	31.2	59.0	52.9
1846	-46.1	94.9	-48.6	34.1	64.0	53.3
1847	-54.2	104.8	-51.7	35.3	65.7	53.7
1848	4.9	76.6	6.4	35.1	64.9	54.1
1849	33.8	72.5	46.6	32.8	60.2	54.5
1850	27.4	74.9	36.6	30.9	56.3	54.8
1851	1.3	72.2	1.8	30.8	55.7	55.3
1852	6.5	77.4	8.4	33.1	59.0	56.2
1853	8.2	80.4	10.2	37.7	66.5	56.6
1854	43.6	85.0	51.3	41.2	72.0	57.2
1855	7.2	86.7	8.3	42.5	73.3	58.0
1856	-4.0	102.6	-3.9	41.2	70.1	58.7
1857	-20.5	99.5	-20.6	42.5	71.4	59.5
1858	-43.9	90.9	-48.3	40.0	66.7	60.0
1859	-21.9	89.8	-24.4	37.4	62.1	60.2
1860	-12.3	91.1	-13.5	37.9	62.7	60.5
1861	39.1	87.1	44.9	39.9	65.3	61.1
1862	58.4	89.2	65.5	40.9	66.1	61.8
1863	22.5	92.6	24.3	43.4	68.8	63.1
1864	-16.7	91.3	-18.3	45.8	71.0	64.5
1865	-29.5	92.8	-31.8	43.6	66.9	65.1
1866	53.6	86.0	62.3	43.3	65.6	66.0
1867	6.2	88.6	7.0	44.0	65.9	66.8
1868	35.1	88.4	39.7	44.6	66.3	67.3
1869	-13.7	85.6	-16.0	45.2	66.6	67.9
1870	24.0	82.5	29.1	48.0	69.7	68.9
1871	9.8	88.3	11.1	47.2	68.1	69.4
1872	-0.3	150.0	-0.2	54.3	77.1	70.5
1873	-2.3	109.5	-2.1	73.0	100.7	72.5
1874	54.8	97.9	56.0	80.3	108.6	73.9
1875	27.0	103.4	26.1	65.6	87.2	75.2
1876	9.5	100.0	9.5	64.7	84.5	76.6
1877	-24.1	98.4	-24.5	64.9	82.8	78.4
1878	47.1	93.6	50.3	63.8	78.7	81.1
1879	-1.7	94.4	-1.8	63.6	75.3	84.5
1880	27.6	89.9	30.7	66.5	76.3	87.2
1881	-6.5	92.9	-7.0	68.3	76.2	89.7
1882	7.6	93.8	8.1	67.6	74.1	91.2
1883	1.8	90.0	2.0	68.5	73.7	93.0
1884	7.0	89.7	7.8	69.7	73.4	95.0
1885	13.9	79.9	17.4	70.3	72.2	97.4
1886	-22.4	74.9	-29.9	70.0	70.5	99.4
1887	44.5	73.4	60.6	71.2	70.3	101.3
1888	5.6	69.1	8.1	74.6	72.1	103.5
1889	50.0	73.4	68.1	77.7	73.5	105.8

Table E.4
Changes in Stocks, Work in Progress, and Depreciation, 1800-1913

	changes in stocks and work in progress			depreciation		
	current prices mln*f*	deflator 1913=100	constant prices mln*f* 1913	current prices mln*f*	GFCF deflator 1913=100	constant prices mln*f* 1913
1890	23.6	75.9	31.1	83.2	76.5	108.7
1891	30.2	71.2	42.4	92.1	82.1	112.2
1892	17.6	72.4	24.3	90.4	79.0	114.5
1893	-21.1	69.9	-30.2	86.0	74.3	115.7
1894	-34.8	68.4	-50.9	85.0	72.4	117.3
1895	28.2	65.7	42.9	88.6	74.3	119.2
1896	17.3	71.5	24.2	96.5	79.5	121.3
1897	-16.5	71.4	-23.1	107.7	87.0	123.8
1898	-22.5	78.4	-28.7	109.8	87.5	125.5
1899	5.1	78.5	6.5	114.7	89.5	128.1
1900	-45.6	85.1	-53.6	121.5	92.5	131.4
1901	0.4	100.0	0.4	122.7	90.8	135.1
1902	42.3	78.3	54.0	119.3	84.8	140.6
1903	45.7	85.1	53.7	126.5	87.1	145.3
1904	16.3	88.6	18.4	129.1	86.7	148.9
1905	-33.2	91.2	-36.4	129.5	84.3	153.6
1906	10.4	86.7	12.0	139.9	88.3	158.5
1907	64.5	90.8	71.0	148.2	90.4	163.9
1908	71.0	88.4	80.3	155.6	91.3	170.3
1909	11.3	86.3	13.1	153.1	87.1	175.7
1910	44.6	88.0	50.7	156.1	86.5	180.4
1911	63.0	92.2	68.3	165.5	89.6	184.8
1912	20.2	101.5	19.9	177.3	92.6	191.5
1913	24.6	100.0	24.6	199.2	100.0	199.2

Appendix F

INCOME

Table F.1
Gross National Income by Component, 1807-1913
(millions of guilders, current prices)

	wages	capital income	profits	depreciation	indirect taxes	gross national income
1807	180.1	165.8	81.6	31.6	35.9	495.0
1808	179.3	181.4	89.3	32.9	33.6	516.5
1809	179.1	197.9	97.4	35.3	35.6	545.3
1810	179.3	218.6	107.7	34.1	31.2	570.9
1811	180.2	241.9	119.1	31.9	26.3	599.3
1812	181.1	174.1	85.8	31.6		472.6
1813	182.5	116.9	57.6	30.5		387.5
1814	183.3	77.5	38.2	29.3	34.6	362.9
1815	186.5	141.2	69.6	26.9	32.4	456.5
1816	189.1	149.7	73.7	25.1	33.9	471.6
1817	190.5	137.3	67.6	26.4	32.2	454.1
1818	192.2	135.3	66.6	28.3	32.5	455.0
1819	194.9	140.9	69.4	28.8	32.1	466.0
1820	196.7	145.0	63.4	28.5	33.8	467.4
1821	187.6	139.3	64.4	27.7	34.0	453.0
1822	186.0	125.5	65.2	27.2	34.4	438.3
1823	184.6	129.1	66.2	26.7	30.7	437.3
1824	184.8	124.1	67.3	26.9	31.7	434.8
1825	194.3	137.0	68.2	29.5	33.1	462.2
1826	200.7	148.1	68.7	30.5	32.3	480.3
1827	200.6	197.0	69.1	28.9	34.3	529.9
1828	202.3	149.2	69.9	28.1	34.3	483.9
1829	203.0	146.5	70.4	27.1	33.8	481.0
1830	205.4	122.2	71.1	26.7	31.6	457.0
1831	201.8	123.0	71.5	25.3	32.7	454.3
1832	208.8	163.1	71.8	25.2	36.2	505.1
1833	205.8	135.3	72.4	25.0	39.1	477.6
1834	208.7	142.5	73.1	26.6	41.7	492.5
1835	211.9	200.9	73.8	27.8	41.0	555.4
1836	221.9	150.0	74.7	28.3	41.0	515.8
1837	221.3	182.9	75.4	31.8	41.9	553.3
1838	222.0	125.5	76.2	31.2	41.0	496.0
1839	222.4	112.9	77.1	31.1	41.5	485.0
1840	227.9	124.9	78.0	31.1	42.4	504.3
1841	232.4	139.7	79.0	31.5	46.4	529.0
1842	234.4	145.1	79.7	30.7	49.6	539.5
1843	254.6	156.1	80.5	29.0	48.7	569.0
1844	257.0	157.9	81.4	28.8	49.7	574.9
1845	247.7	172.7	82.3	31.2	50.3	584.2
1846	256.5	180.7	82.6	34.1	50.7	604.5
1847	266.1	186.2	82.4	35.3	49.0	619.0
1848	262.8	186.3	82.5	35.1	47.8	614.5
1849	262.5	138.4	82.7	32.8	48.6	565.1

Table F.1
Gross National Income by Component, 1807-1913
(millions of guilders, current prices)

	wages	capital income	profits	depreciation	indirect taxes	gross national income
1850	267.3	147.3	83.7	30.9	51.0	580.1
1851	269.5	162.1	82.2	30.8	51.2	595.8
1852	272.5	140.4	76.5	33.1	51.7	574.2
1853	275.3	157.1	75.7	37.7	53.0	598.8
1854	278.4	202.3	76.8	41.2	53.2	651.9
1855	279.9	214.2	77.6	42.5	54.0	668.2
1856	287.0	174.7	79.4	41.2	48.9	631.1
1857	289.9	197.8	82.2	42.5	49.7	662.1
1858	293.2	254.1	83.7	40.0	50.5	721.5
1859	296.9	196.9	84.3	37.4	50.3	665.8
1860	296.3	203.6	86.1	37.9	52.5	676.3
1861	299.9	194.4	88.2	39.9	54.0	676.4
1862	306.6	176.2	89.3	40.9	54.3	667.3
1863	310.1	224.0	92.8	43.4	55.3	725.7
1864	314.9	226.2	95.3	45.8	57.6	739.8
1865	319.9	234.0	98.0	43.6	57.3	752.8
1866	331.7	247.0	98.3	43.3	56.3	776.6
1867	344.0	292.6	97.9	44.0	55.6	834.1
1868	348.4	207.8	97.2	44.6	56.1	754.1
1869	352.3	224.0	98.1	45.2	58.3	777.9
1870	362.2	301.7	99.5	48.0	58.5	870.0
1871	381.1	290.9	100.5	47.2	60.8	880.6
1872	400.1	360.8	104.0	54.3	64.1	983.4
1873	420.7	285.2	110.5	73.0	67.2	956.6
1874	439.5	453.9	113.4	80.3	68.3	1155.5
1875	463.7	421.8	114.0	65.6	70.3	1135.5
1876	474.8	414.8	115.7	64.7	73.9	1144.0
1877	483.6	300.8	118.5	64.9	74.6	1042.4
1878	488.0	307.1	121.2	63.8	75.0	1055.1
1879	500.4	458.7	121.3	63.6	74.1	1218.1
1880	504.5	503.4	123.2	66.5	76.8	1274.5
1881	517.3	542.9	127.3	68.3	79.0	1334.8
1882	529.1	480.3	129.9	67.6	78.5	1285.3
1883	548.4	416.7	131.7	68.5	77.7	1243.1
1884	560.5	432.7	132.7	69.7	76.5	1272.1
1885	567.5	511.6	131.2	70.3	77.6	1358.3
1886	575.3	528.8	131.2	70.0	78.5	1383.9
1887	580.7	523.2	131.2	71.2	79.9	1386.2
1888	592.5	518.1	133.7	74.6	80.5	1399.5
1889	605.2	453.9	135.1	77.7	82.6	1354.6
1890	620.0	473.6	144.0	83.2	82.8	1403.6
1891	633.6	568.5	145.0	92.1	83.4	1522.6
1892	645.7	608.0	139.6	90.4	84.0	1567.9
1893	663.7	462.3	139.5	86.0	78.7	1430.1
1894	675.2	466.1	142.2	85.0	80.8	1449.3
1895	686.1	518.2	143.0	88.6	83.1	1519.0
1896	704.9	450.5	148.0	96.5	86.2	1486.1

Table F.1
Gross National Income by Component, 1807-1913
(millions of guilders, current prices)

	wages	capital income	profits	depreciation	indirect taxes	gross national income
1897	727.6	451.7	156.7	107.7	87.7	1531.4
1898	763.1	399.1	160.6	109.8	90.4	1523.0
1899	778.3	497.4	171.4	114.7	93.1	1654.9
1900	796.4	643.2	179.3	121.5	97.0	1837.4
1901	820.8	464.1	187.0	122.7	99.8	1694.4
1902	844.7	616.5	192.0	119.3	102.3	1874.9
1903	857.7	695.4	197.9	126.5	105.0	1982.5
1904	877.0	600.1	207.5	129.1	107.7	1921.4
1905	902.3	622.8	221.3	129.5	109.6	1985.4
1906	926.1	614.0	243.1	139.9	115.5	2038.6
1907	943.5	594.8	239.3	148.2	116.3	2042.2
1908	951.5	652.0	243.1	155.6	114.8	2116.9
1909	972.8	634.8	248.1	153.1	120.9	2129.6
1910	1003.4	663.6	257.7	156.1	126.2	2206.9
1911	1035.0	737.5	279.3	165.5	130.1	2347.4
1912	1080.4	961.4	333.8	177.3	135.8	2688.7
1913	1142.6	1155.2	372.2	199.2	142.4	3011.5

Appendix G

INDIRECT TAXES AND SUBSIDIES

• *Additional percentages for provincial and municipal government*: The recorded amounts of the revenues of state taxation do not include additional percentages levied on the land tax and the wealth tax for the benefit of provincial and municipal government. Fortunately, there are data on the amount of additional percentages levied on the wealth tax (1847-1913) and the land (1846-1913).[194] For the first half of the nineteenth century the ratio between the amounts of additional percentages paid to provincial and municipal governments and the total gross revenue of the state's land and wealth taxes (including the additional percentages of the state itself) held constant at the earliest known level (1846 or 1847).

• *Wealth tax*: Only a few of the items that were assessed in the wealth tax can be considered indirect taxes, namely the taxes on horses, bicycles, and motorvehicles. The tax statistics only provide the revenue of individual items net of additional percentages, but the state imposed a universal percentage on the wealth tax as a whole (20 percent). This percentage was therefore applied to the net revenue of the 'indirect' items of taxation. The ratio between the total sum of provincial and municipal additional percentages and the gross revenue of the wealth tax was applied to the estimated gross revenue of the 'indirect' items.

• *Licence tax*: Before 1842 the revenue data for the licence ['*patent*'] tax did not include Limburg. In 1844-1850 the average share of this province was 3.2 percent, which was applied to the period 1820-1842. The revenue figures for 1843 are missing; the total revenue of the *patent* tax in this years was calculated by exponentially interpolating between 1842 and 1844. Finally, in the years 1820-1830 the tax revenues are exclusive of the additional percentages; it was assumed that these percentages were equal to the average percentage in 1831-1835. The data for 1806-1811 include the stamp duty.

• *Stamp duty, registration duty, and mortgage duty*: For the period 1831-1851 the statistics only concern net revenues; the additional percentages are only given for the total of all transaction

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[194] *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Jaarcijfers* (1881) 72-75, (1884) 201-203, (1898) 235-237; *SRI* (1903) xliii, xix, (1913) 14-15, 26-27, (1915) 28-29.

duties, which include the inheritance tax. In 1850 and 1851 gross and net revenues can be compared for the individual duties. This comparison reveals that the additional percentage was more or less the same for each individual duty. The ratio between the total gross revenue of all transaction duties and the yield of their additional percentages can therefore be applied to the known net revenues in the period 1831-1849. The figures for 1806-1807 and 1811 concern only the so-called collective stamp duty [‘*collectief zegel*’]; the actual stamp duty was part of the licence tax [*patentbelasting*].

• *Other taxes*: In 1806-1807 and 1811 the customs duties and shipping dues only comprise the duty on inland navigation [‘*binnenlands lastgeld*’]. The municipal excises of 1806-1811 were estimated by applying their average share in total excises revenues in the years 1814-1818.

Table G.1
The Revenues of Indirect Taxes Levied by Local and Central Government, 1806-1913 (millions of guilders, current prices)

	real estate, wealth, and licence taxes	transaction duties	excises	customs duties, shipping dues, and other taxes	total revenues of indirect taxes
1806	12.1	1.6	20.3	0.5	34.4
1807	11.9	1.5	21.8	0.6	35.9
1808	*11.6*	*1.4*	20.0	*0.6*	*33.6*
1809	*11.3*	*1.2*	22.5	*0.6*	*35.6*
1810	*11.0*	*1.1*	18.5	*0.5*	*31.2*
1811	10.7	1.0	14.0	0.5	26.3
1812					
1813					
1814					*34.6*
1815			15.8	3.1	*32.4*
1816	10.3	3.8	16.4	3.4	33.9
1817	10.1	3.4	15.1	3.5	32.2
1818	10.2	3.8	14.9	3.5	32.5
1819	10.3	3.3	15.2	3.3	32.1
1820	11.2	4.5	14.4	3.7	33.8
1821	11.3	4.3	15.3	3.1	34.0
1822	11.2	3.8	16.3	3.1	34.4
1823	10.9	2.9	13.7	3.2	30.7
1824	10.9	3.3	14.8	2.7	31.7
1825	10.2	3.6	15.8	3.5	33.1
1826	9.8	3.6	15.8	3.1	32.3
1827	9.7	4.4	16.8	3.3	34.3
1828	9.9	4.0	16.8	3.7	34.3
1829	9.9	3.8	16.9	3.3	33.8
1830	9.9	3.7	14.6	3.5	31.6
1831	10.7	3.3	15.6	3.1	32.7

Table G.1
The Revenues of Indirect Taxes Levied by Local and Central Government, 1806-1913 (millions of guilders, current prices)

	real estate, wealth, and licence taxes	transaction duties	excises	customs duties, shipping dues, and other taxes	total revenues of indirect taxes
1832	12.5	3.7	16.8	3.1	36.2
1833	12.5	4.0	19.1	3.6	39.1
1834	11.8	4.3	21.9	3.8	41.7
1835	10.8	4.6	21.9	3.7	41.0
1836	10.8	4.7	21.8	3.7	41.0
1837	10.7	4.7	22.4	4.2	41.9
1838	10.7	4.8	21.9	3.6	41.0
1839	10.7	4.9	21.8	4.1	41.5
1840	10.7	5.2	22.1	4.3	42.4
1841	12.1	5.4	24.0	4.8	46.4
1842	12.2	6.2	25.7	5.5	49.6
1843	12.2	6.0	25.0	5.4	48.7
1844	12.2	6.2	25.4	5.9	49.7
1845	12.3	6.0	26.9	5.1	50.3
1846	12.4	6.1	27.2	5.0	50.7
1847	12.4	6.4	25.0	5.2	49.0
1848	12.3	5.8	25.3	4.3	47.8
1849	12.4	5.8	25.5	4.9	48.6
1850	12.4	6.2	27.3	5.2	51.0
1851	12.4	6.6	27.4	4.8	51.2
1852	12.4	6.6	27.4	5.3	51.7
1853	12.6	7.1	28.3	5.0	53.0
1854	12.7	7.5	28.1	4.8	53.2
1855	12.9	8.0	28.4	4.8	54.0
1856	13.1	8.9	22.5	4.5	48.9
1857	13.2	8.3	23.5	4.6	49.7
1858	13.3	8.4	24.2	4.7	50.5
1859	13.3	8.0	24.4	4.6	50.3
1860	13.4	8.4	24.7	5.9	52.5
1861	13.5	8.2	25.9	6.4	54.0
1862	13.6	8.7	25.8	6.1	54.3
1863	13.7	9.2	26.9	5.5	55.3
1864	13.9	9.7	28.9	5.2	57.6
1865	13.9	9.7	28.3	5.4	57.3
1866	14.2	9.4	27.1	5.6	56.3
1867	14.3	9.5	26.2	5.5	55.6
1868	14.5	10.4	25.6	5.6	56.1
1869	14.6	10.2	27.6	5.9	58.3
1870	14.7	9.5	28.5	5.8	58.5
1871	14.9	10.7	28.5	6.7	60.8
1872	15.1	12.0	30.2	6.7	64.1
1873	15.3	12.6	32.1	7.2	67.2
1874	15.5	12.6	33.1	7.2	68.3
1875	15.6	13.4	34.4	6.9	70.3
1876	15.9	14.3	36.7	7.1	73.9
1877	16.0	14.4	37.7	6.4	74.6
1878	16.3	13.8	39.0	5.9	75.0

Table G.1
The Revenues of Indirect Taxes Levied by Local and Central Government, 1806-1913 (millions of guilders, current prices)

	real estate, wealth, and licence taxes	transaction duties	excises	customs duties, shipping dues, and other taxes	total revenues of indirect taxes
1879	16.5	13.2	38.7	5.7	74.1
1880	16.8	14.6	39.3	6.1	76.8
1881	17.0	15.4	40.3	6.3	79.0
1882	17.2	14.2	40.8	6.3	78.5
1883	17.4	13.6	40.2	6.5	77.7
1884	17.5	12.1	40.5	6.4	76.5
1885	17.8	11.0	42.6	6.2	77.6
1886	18.1	11.5	42.7	6.3	78.5
1887	18.3	11.5	43.6	6.6	79.9
1888	18.6	12.0	43.4	6.6	80.5
1889	18.9	12.7	44.1	6.8	82.6
1890	19.2	12.7	43.6	7.3	82.8
1891	19.5	12.2	44.2	7.4	83.4
1892	19.8	12.4	44.5	7.4	84.0
1893	19.1	8.9	43.2	7.5	78.7
1894	21.7	8.3	43.0	7.8	80.8
1895	23.0	8.6	42.9	8.6	83.1
1896	23.2	8.5	43.9	10.5	86.2
1897	23.4	8.5	44.9	10.8	87.7
1898	23.8	8.6	47.0	11.1	90.4
1899	24.5	9.5	47.4	11.6	93.1
1900	25.1	10.4	49.3	12.2	97.0
1901	25.6	10.7	51.1	12.4	99.8
1902	26.2	11.2	52.3	12.6	102.3
1903	26.8	11.7	53.1	13.4	105.0
1904	27.5	11.4	55.1	13.6	107.7
1905	28.4	12.0	54.6	14.5	109.6
1906	30.5	12.1	57.5	15.4	115.5
1907	30.8	11.5	58.4	15.5	116.3
1908	30.7	11.7	57.5	14.9	114.8
1909	32.4	13.3	59.2	16.0	120.9
1910	33.7	13.2	62.3	16.9	126.2
1911	35.3	14.1	62.9	17.8	130.1
1912	36.7	14.7	64.5	19.9	135.8
1913	38.7	15.6	66.8	21.3	142.4

Sources: Gogel, *Memoriën*; *HSG* 1817/18-1831/32; *SSJ* (1853) 309-314; *Jaarcijfers* (1892) 232-235, (1898) 250-251, (1903) 290-293, *SRI* (1904) cxiii, cxxxi-cxxxii, (1913) 10-11. *Bescheiden betreffende de geldmiddelen* 1846/59-1902. *Jaarcijfers* (1881) 75, (1884) 203, (1905) 275, (1914) 346. The tax revenues of the period 1816-1830 include the Belgian provinces; all data were collected on a provincial basis, whereby 54 percent of the revenues for Limburg were assigned to the Netherlands (equal to the share of Dutch Limburg in the population of Limburg).

Table G.2
Central Government Subsidies, 1825-1868 (millions of guilders)

	subsidies paid from gross colonial remittances	indirect subsidies to industries in the colonial complex	total amount of subsidies
1825		0.4	0.4
1826		1.0	1.0
1827		1.3	1.3
1828		1.9	1.9
1829		2.1	2.1
1830		1.5	1.5
1831		1.7	1.7
1832		1.4	1.4
1833		1.4	1.4
1834		2.5	2.5
1835		3.0	3.0
1836	0.2	3.3	3.5
1837	0.3	3.8	4.1
1838	0.1	4.3	4.4
1839	1.7	4.9	6.6
1840	0.9	5.4	6.3
1841	0.9	5.5	6.5
1842	0.2	4.8	5.0
1843	0.1	4.8	4.9
1844	0.1	4.8	4.9
1845	0.0	4.6	4.7
1846	0.0	4.5	4.5
1847		4.0	4.0
1848		4.2	4.2
1849		4.1	4.1
1850		3.6	3.6
1851		3.2	3.2
1852		3.4	3.4
1853		2.9	2.9
1854		2.4	2.4
1855		2.3	2.3
1856		2.5	2.5
1857		2.0	2.0
1858		2.1	2.1
1859		1.8	1.8
1860		1.6	1.6
1861		1.5	1.5
1862		1.2	1.2
1863		1.1	1.1
1864		1.2	1.2
1865		1.0	1.0
1866		0.8	0.8
1867		0.7	0.7
1868		0.5	0.5

Appendix H

BALANCE OF PAYMENTS

H.1 Net Merchandise Exports

Table H.1
Imports, Exports, and Net Merchandise Exports, 1802-1913
(millions of guilders at current prices)

	import cif	export fob	net exports
1800			
1801			
1802	88.9	91.0	2.1
1803	91.4	75.9	-15.5
1804	91.1	109.1	18.0
1805	85.1	93.8	8.7
1806	85.7	85.6	-0.1
1807	89.8	99.1	9.4
1808	55.9	68.8	13.0
1809	54.0	121.0	67.1
1810			
1811			
1812			
1813			
1814	99.2	90.6	-8.6
1815	109.1	94.4	-14.7
1816	112.7	94.6	-18.0
1817	120.1	123.3	3.2
1818	129.5	100.3	-29.2
1819	103.2	61.2	-42.0
1820	91.5	46.7	-44.7
1821	90.2	43.2	-47.1
1822	73.2	46.7	-26.5
1823	98.1	40.7	-57.4
1824	79.2	44.9	-34.3
1825	82.5	50.2	-32.3
1826	78.7	46.9	-31.7
1827	93.6	42.1	-51.5
1828	90.1	40.9	-49.2
1829	97.0	34.8	-62.2
1830	76.5	35.0	-41.4
1831	96.1	37.5	-58.5
1832	126.8	43.5	-83.3
1833	90.3	41.4	-48.9
1834	106.0	49.5	-56.6
1835	99.0	60.2	-38.7
1836	109.0	67.0	-42.0
1837	111.2	67.1	-44.0
1838	116.6	69.0	-47.6

Table H.1
Imports, Exports, and Net Merchandise Exports, 1802-1913
(millions of guilders at current prices)

	import cif	export fob	net exports
1839	141.7	82.3	-59.4
1840	141.5	90.4	-51.1
1841	139.7	89.9	-49.8
1842	132.9	80.0	-52.9
1843	118.9	79.6	-39.3
1844	146.0	77.9	-68.1
1845	152.2	96.9	-55.3
1846	140.6	100.4	-40.2
1847	169.3	119.6	-49.7
1848	121.3	95.3	-26.0
1849	144.8	109.2	-35.7
1850	150.9	123.2	-27.7
1851	152.8	123.0	-29.8
1852	167.8	149.3	-18.5
1853	181.8	150.7	-31.1
1854	189.1	176.4	-12.7
1855	206.1	187.1	-19.0
1856	252.5	216.3	-36.3
1857	274.4	209.6	-64.8
1858	240.3	245.4	5.1
1859	245.0	262.4	17.4
1860	299.0	287.7	-11.2
1861	345.7	341.5	-4.1
1862	352.2	358.3	6.1
1863	453.9	409.5	-44.4
1864	573.6	543.5	-30.1
1865	490.9	514.7	23.8
1866	558.4	592.9	34.4
1867	505.1	541.2	36.1
1868	474.2	512.6	38.4
1869	511.5	593.8	82.3
1870	532.2	598.7	66.5
1871	648.3	695.7	47.3
1872	717.9	684.2	-33.7
1873	764.7	681.8	-82.9
1874	727.3	723.7	-3.7
1875	712.8	687.6	-25.2
1876	683.9	649.9	-34.0
1877	688.9	630.4	-58.6
1878	662.3	600.4	-61.9
1879	655.9	604.4	-51.5
1880	652.9	596.6	-56.3
1881	635.5	608.3	-27.1
1882	593.4	616.6	23.3
1883	686.0	622.8	-63.2
1884	671.4	653.4	-17.9
1885	622.0	651.8	29.8
1886	588.6	696.6	108.0

Table H.1
Imports, Exports, and Net Merchandise Exports, 1802-1913
(millions of guilders at current prices)

	import cif	export fob	net exports
1887	669.4	769.8	100.4
1888	694.5	779.6	85.1
1889	716.0	800.5	84.6
1890	778.9	874.0	95.2
1891	847.0	881.0	34.0
1892	758.7	817.2	58.5
1893	782.3	866.2	84.0
1894	793.9	780.8	-13.1
1895	781.5	755.8	-25.7
1896	815.4	737.6	-77.8
1897	850.6	809.0	-41.6
1898	869.3	796.6	-72.7
1899	892.8	847.3	-45.5
1900	995.2	948.1	-47.1
1901	977.6	904.5	-73.2
1902	997.8	909.5	-88.3
1903	1023.0	924.6	-98.4
1904	1035.1	1039.9	4.8
1905	1040.5	941.5	-99.1
1906	1175.1	1011.1	-164.1
1907	1269.9	1072.4	-197.6
1908	1279.9	1126.7	-153.2
1909	1311.3	1172.0	-139.3
1910	1416.5	1238.1	-178.4
1911	1679.1	1355.3	-323.8
1912	1797.3	1440.8	-356.4
1913	1949.9	1427.8	-522.1

H.2 Net Exports of Services

Table H.2
Ratios Applied in the Calculation of the Imports and Exports of Port Services, 1800-1913

	VA/output ratio in Dutch merchant shipping	share of port services in output value abroad *(import)*	price level of Dutch ports relative to foreign ports	share of port services in output value Netherlands *(export)*
	%	%	ratio	%
1800	70	6.0	1.5	8.7
1801	70	6.0	1.5	8.7
1802	70	6.0	1.5	8.7
1803	70	6.0	1.5	8.7
1804	70	6.0	1.5	8.7
1805	70	6.0	1.5	8.7
1806	70	6.0	1.5	8.7
1807	70	6.0	1.5	8.7
1808	70	6.0	1.5	8.7
1809	70	6.0	1.5	8.7
1810	70	6.0	1.5	8.7
1811	70	6.0	1.5	8.7
1812	70	6.0	1.5	8.7
1813	70	6.0	1.5	8.7
1814	70	6.0	1.5	8.7
1815	70	6.0	1.5	8.7
1816	70	6.0	1.5	8.7
1817	70	6.0	1.5	8.7
1818	70	6.0	1.5	8.7
1819	70	6.0	1.5	8.7
1820	70	6.0	1.5	8.7
1821	70	6.0	1.5	8.7
1822	70	6.0	1.5	8.7
1823	70	6.0	1.5	8.7
1824	70	6.0	1.5	8.7
1825	70	6.0	1.5	8.7
1826	70	6.0	1.5	8.7
1827	70	6.0	1.5	8.7
1828	70	6.0	1.5	8.7
1829	70	6.0	1.5	8.7
1830	70	6.0	1.5	8.7
1831	70	6.0	1.5	8.7
1832	70	6.0	1.5	8.7
1833	70	6.0	1.5	8.7
1834	70	6.0	1.5	8.7
1835	70	6.0	1.5	8.7
1836	70	6.0	1.5	8.7
1837	70	6.0	1.5	8.7
1838	70	6.0	1.5	8.7
1839	70	6.0	1.5	8.7

Table H.2
Ratios Applied in the Calculation of the Imports and Exports of Port Services, 1800-1913

	VA/output ratio in Dutch merchant shipping	share of port services in output value abroad *(import)*	price level of Dutch ports relative to foreign ports	share of port services in output value Netherlands *(export)*
	%	%	ratio	%
1840	70	6.0	1.5	8.7
1841	70	6.0	1.5	8.7
1842	70	6.0	1.5	8.7
1843	70	6.0	1.5	8.7
1844	70	6.0	1.5	8.7
1845	70	6.0	1.5	8.7
1846	70	6.0	1.5	8.7
1847	70	6.0	1.5	8.7
1848	70	6.0	1.5	8.7
1849	70	6.0	1.5	8.7
1850	70	6.0	1.5	8.7
1851	69	6.1	1.5	8.9
1852	69	6.2	1.5	9.1
1853	68	6.4	1.5	9.2
1854	68	6.5	1.5	9.4
1855	67	6.6	1.5	9.6
1856	67	6.7	1.5	9.7
1857	66	6.8	1.5	9.9
1858	65	6.9	1.5	10.0
1859	65	7.0	1.5	10.2
1860	64	7.1	1.5	10.4
1861	64	7.3	1.5	10.5
1862	63	7.4	1.5	10.7
1863	63	7.5	1.5	10.8
1864	62	7.6	1.5	11.0
1865	62	7.7	1.5	11.1
1866	61	7.8	1.5	11.2
1867	61	7.9	1.5	11.4
1868	60	8.0	1.5	11.5
1869	60	8.1	1.5	11.7
1870	59	8.2	1.5	11.8
1871	53	9.3	1.47	13.1
1872	48	10.3	1.44	14.2
1873	44	11.2	1.41	15.1
1874	40	12.0	1.38	15.9
1875	36	12.8	1.36	16.6
1876	33	13.5	1.33	17.1
1877	30	14.1	1.30	17.6
1878	27	14.6	1.28	17.9
1879	24	15.1	1.25	18.2
1880	22	15.6	1.22	18.5
1881	23	15.5	1.20	18.0
1882	23	15.3	1.18	17.6
1883	24	15.2	1.15	17.1

Table H.2
Ratios Applied in the Calculation of the Imports and Exports of Port Services, 1800-1913

	VA/output ratio in Dutch merchant shipping	share of port services in output value abroad *(import)*	price level of Dutch ports relative to foreign ports	share of port services in output value Netherlands *(export)*
	%	%	ratio	%
1884	25	15.1	1.13	16.7
1885	25	14.9	1.11	16.3
1886	26	14.8	1.08	15.9
1887	27	14.7	1.06	15.4
1888	27	14.5	1.04	15.0
1889	28	14.3	1.02	14.6
1890	29	14.2	1	14.2
1891	30	14.0	1	14.0
1892	31	13.9	1	13.9
1893	32	13.7	1	13.7
1894	32	13.5	1	13.5
1895	33	13.3	1	13.3
1896	34	13.1	1	13.1
1897	35	12.9	1	12.9
1898	36	12.7	1	12.7
1899	37	12.5	1	12.5
1900	38	12.3	1	12.3
1901	39	12.1	1	12.1
1902	41	11.9	1	11.9
1903	42	11.7	1	11.7
1904	43	11.4	1	11.4
1905	44	11.2	1	11.2
1906	45	10.9	1	10.9
1907	47	10.7	1	10.7
1908	48	10.4	1	10.4
1909	49	10.1	1	10.1
1910	51	9.9	1	9.9
1911	52	9.6	1	9.6
1912	54	9.3	1	9.3
1913	55	9.0	1	9.0

Table H.3
Dutch Merchant Shipping Between Foreign Ports, 1800-1913

	output capacity mln tkm	rate of utilitization %	output cargo mln tkm	freight rate cent/tkm	exports of shipping mln*f*	share of port services %	imports of port services mln*f*
1800		33.5		0.971		6.0	
1801		33.5		0.771		6.0	
1802		33.6		0.718		6.0	
1803		33.7		0.902		6.0	
1804		33.8		0.854		6.0	
1805		33.8		0.848		6.0	
1806		33.9		0.845		6.0	
1807		34.0		1.028		6.0	
1808		34.1		1.216		6.0	
1809		34.2		1.178		6.0	
1810		34.2		1.115		6.0	
1811		34.3		0.915		6.0	
1812		34.4		0.971		6.0	
1813		34.5		1.216		6.0	
1814		34.5		1.053		6.0	
1815		34.6		0.714		6.0	
1816	77	34.7	27	0.625	0.2	6.0	0.0
1817	35	34.8	12	0.528	0.1	6.0	0.0
1818	5	34.8	2	0.773	0.0	6.0	0.0
1819	5	34.9	2	0.670	0.0	6.0	0.0
1820	5	35.0	2	0.653	0.0	6.0	0.0
1821	0	35.9	0	0.569	0.0	6.0	0.0
1822	0	36.8	0	0.600	0.0	6.0	0.0
1823	0	37.7	0	0.714	0.0	6.0	0.0
1824	0	38.7	0	0.617	0.0	6.0	0.0
1825	0	39.7	0	0.697	0.0	6.0	0.0
1826	0	40.7	0	0.728	0.0	6.0	0.0
1827	0	41.7	0	0.672	0.0	6.0	0.0
1828	94	42.8	40	0.634	0.3	6.0	0.0
1829	114	43.9	50	0.719	0.4	6.0	0.0
1830	185	45.0	83	0.655	0.5	6.0	0.0
1831	288	44.4	128	0.715	0.9	6.0	0.1
1832	275	43.7	120	0.671	0.8	6.0	0.0
1833	271	43.1	117	0.627	0.7	6.0	0.0
1834	142	42.5	60	0.593	0.4	6.0	0.0
1835	186	41.9	78	0.559	0.4	6.0	0.0
1836	173	41.3	71	0.559	0.4	6.0	0.0
1837	108	40.7	44	0.543	0.2	6.0	0.0
1838	136	40.1	54	0.534	0.3	6.0	0.0
1839	124	39.6	49	0.480	0.2	6.0	0.0
1840	324	39.0	126	0.483	0.6	6.0	0.0
1841	416	38.5	160	0.437	0.7	6.0	0.0
1842	774	37.9	294	0.414	1.2	6.0	0.1
1843	874	37.4	327	0.425	1.4	6.0	0.1
1844	1055	36.9	389	0.407	1.6	6.0	0.1
1845	454	36.4	165	0.412	0.7	6.0	0.0
1846	257	35.9	92	0.423	0.4	6.0	0.0

Table H.3
Dutch Merchant Shipping Between Foreign Ports, 1800-1913

	output capacity mln tkm	rate of utilitization %	output cargo mln tkm	freight rate cent/tkm	exports of shipping mln*f*	share of port services %	imports of port services mln*f*
1847	1173	35.4	415	0.448	1.9	6.0	0.1
1848	1785	34.9	624	0.413	2.6	6.0	0.2
1849	2587	34.5	892	0.392	3.5	6.0	0.2
1850	2521	34.0	857	0.400	3.4	6.0	0.2
1851	2425	34.0	825	0.304	2.5	6.1	0.2
1852	2626	34.0	894	0.360	3.2	6.2	0.2
1853	2414	34.1	822	0.278	2.3	6.4	0.1
1854	2180	34.1	743	0.327	2.4	6.5	0.2
1855	4166	34.1	1421	0.306	4.4	6.6	0.3
1856	4579	34.1	1564	0.366	5.7	6.7	0.4
1857	5738	34.2	1961	0.376	7.4	6.8	0.5
1858	6897	34.2	2359	0.363	8.6	6.9	0.6
1859	4732	34.2	1619	0.350	5.7	7.0	0.4
1860	4637	34.2	1588	0.333	5.3	7.1	0.4
1861	4473	34.3	1533	0.319	4.9	7.3	0.4
1862	5197	34.3	1782	0.304	5.4	7.4	0.4
1863	5409	34.3	1856	0.284	5.3	7.5	0.4
1864	5157	34.3	1771	0.317	5.6	7.6	0.4
1865	5596	34.4	1923	0.329	6.3	7.7	0.5
1866	6319	34.4	2174	0.288	6.3	7.8	0.5
1867	5375	34.4	1850	0.319	5.9	7.9	0.5
1868	6115	34.4	2107	0.439	9.3	8.0	0.7
1869	4992	34.5	1721	0.352	6.1	8.1	0.5
1870	5473	34.5	1888	0.265	5.0	8.2	0.4
1871	5821	34.5	2010	0.287	5.8	9.3	0.5
1872	7027	34.5	2427	0.323	7.8	10.3	0.8
1873	6125	34.6	2118	0.363	7.7	11.2	0.9
1874	5177	34.6	1791	0.307	5.5	12.0	0.7
1875	5763	34.6	1995	0.272	5.4	12.8	0.7
1876	6916	34.6	2396	0.273	6.5	13.5	0.9
1877	6738	34.7	2336	0.278	6.5	14.1	0.9
1878	9527	34.7	3306	0.245	8.1	14.6	1.2
1879	8992	34.7	3122	0.217	6.8	15.1	1.0
1880	9454	34.7	3285	0.233	7.7	15.6	1.2
1881	8142	34.8	2831	0.244	6.9	15.5	1.1
1882	8569	34.8	2982	0.242	7.2	15.3	1.1
1883	7570	34.8	2636	0.237	6.3	15.2	1.0
1884	10100	34.8	3520	0.220	7.7	15.1	1.2
1885	10781	34.9	3760	0.187	7.0	14.9	1.0
1886	11512	34.9	4018	0.173	6.9	14.8	1.0
1887	9919	34.9	3464	0.167	5.8	14.7	0.8
1888	12438	34.9	4347	0.182	7.9	14.5	1.1
1889	15023	35.0	5254	0.182	9.6	14.3	1.4
1890	15258	35.0	5340	0.190	10.1	14.2	1.4
1891	19483	35.2	6851	0.179	12.3	14.0	1.7
1892	20165	35.3	7124	0.162	11.5	13.9	1.6
1893	17741	35.5	6298	0.136	8.5	13.7	1.2
1894	17041	35.7	6078	0.121	7.4	13.5	1.0

Table H.3
Dutch Merchant Shipping Between Foreign Ports, 1800-1913

	output capacity mln tkm	rate of utilitization %	output cargo mln tkm	freight rate cent/tkm	exports of shipping mln*f*	share of port services %	imports of port services mln*f*
1895	18973	35.8	6799	0.118	8.0	13.3	1.1
1896	22977	36.0	8272	0.116	9.6	13.1	1.3
1897	20688	36.2	7483	0.115	8.6	12.9	1.1
1898	21477	36.3	7805	0.144	11.2	12.7	1.4
1899	22860	36.5	8347	0.138	11.5	12.5	1.4
1900	27338	36.7	10029	0.147	14.7	12.3	1.8
1901	28244	36.9	10411	0.151	15.7	12.1	1.9
1902	30550	37.0	11314	0.101	11.5	11.9	1.4
1903	27810	37.2	10348	0.107	11.1	11.7	1.3
1904	31802	37.4	11889	0.111	13.2	11.4	1.5
1905	30480	37.6	11448	0.117	13.4	11.2	1.5
1906	32809	37.7	12381	0.114	14.2	10.9	1.5
1907	36476	37.9	13830	0.108	14.9	10.7	1.6
1908	39678	38.1	15114	0.082	12.4	10.4	1.3
1909	40170	38.3	15374	0.095	14.7	10.1	1.5
1910	47814	38.5	18386	0.106	19.4	9.9	1.9
1911	55605	38.6	21483	0.116	24.9	9.6	2.4
1912	49661	38.8	19277	0.146	28.1	9.3	2.6
1913	56575	39.0	22064	0.130	28.7	9.0	2.6

Table H.4
Imports of Merchant Shipping, 1800-1913

	foreign ships								
	capacity entrances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	imports merchant shipping mln*f*	share of port services %	exports port services mln*f*
1800	534692	890	475.6	33.5	159.2	2.125	3.4	8.7	0.3
1801	464754	986	458.1	33.5	153.7	1.689	2.6	8.7	0.2
1802	1059594	1199	1270.3	33.6	427.1	1.571	6.7	8.7	0.6
1803	685092	1145	784.6	33.7	264.4	1.976	5.2	8.7	0.5
1804	509058	1244	633.2	33.8	213.9	1.870	4.0	8.7	0.3
1805	588612	1221	718.9	33.8	243.3	1.856	4.5	8.7	0.4
1806	372018	1032	383.9	33.9	130.2	1.851	2.4	8.7	0.2
1807	257151	1100	282.9	34.0	96.2	2.250	2.2	8.7	0.2
1808	65243	901	58.8	34.1	20.0	2.662	0.5	8.7	0.0
1809	38423	1375	52.8	34.2	18.0	2.579	0.5	8.7	0.0
1810	27742	1230	34.1	34.2	11.7	2.442	0.3	8.7	0.0
1811	657	843	0.6	34.3	0.2	2.003	0.0	8.7	0.0
1812				34.4		2.127		8.7	
1813				34.5		2.662		8.7	
1814				34.5		2.305		8.7	
1815	909387	2918	2653.2	34.6	918.3	1.564	14.4	8.7	1.3
1816	1002765	2829	2836.7	34.7	984.0	1.384	13.6	8.7	1.2
1817	1311764	2743	3598.2	34.8	1251.0	1.172	14.7	8.7	1.3
1818	678648	2660	1805.0	34.8	628.9	1.687	10.6	8.7	0.9
1819	696053	2579	1795.0	34.9	626.9	1.446	9.1	8.7	0.8
1820	864806	2501	2162.5	35.0	756.9	1.407	10.6	8.7	0.9
1821	609288	2425	1477.3	35.9	530.2	1.171	6.2	8.7	0.5
1822	679675	2351	1597.9	36.8	588.1	1.175	6.9	8.7	0.6
1823	894501	2280	2039.0	37.7	769.5	1.329	10.2	8.7	0.9
1824	594447	2210	1313.9	38.7	508.5	1.106	5.6	8.7	0.5
1825	550799	2143	1180.4	39.7	468.5	1.214	5.7	8.7	0.5
1826	591653	2078	1229.5	40.7	500.3	1.180	5.9	8.7	0.5
1827	752391	2015	1516.0	41.7	632.7	1.003	6.3	8.7	0.6
1828	858771	1954	1677.8	42.8	718.0	0.859	6.2	8.7	0.5
1829	778015	1894	1473.8	43.9	646.8	0.983	6.4	8.7	0.6
1830	740207	1837	1359.6	45.0	611.8	0.852	5.2	8.7	0.5
1831	891260	1781	1587.3	44.4	704.2	0.995	7.0	8.7	0.6
1832	1106222	1780	1969.3	43.7	861.2	0.941	8.1	8.7	0.7
1833	1267812	1779	2256.0	43.1	972.5	0.784	7.6	8.7	0.7
1834	1032443	1779	1836.4	42.5	780.4	0.805	6.3	8.7	0.5
1835	1063129	1778	1890.1	41.9	791.8	0.804	6.4	8.7	0.6
1836	996372	1777	1770.7	41.3	731.2	0.950	6.9	8.7	0.6
1837	1184383	1776	2103.9	40.7	856.5	0.964	8.3	8.7	0.7
1838	1307180	1776	2321.0	40.1	931.5	1.144	10.7	8.7	0.9
1839	1683612	1775	2988.0	39.6	1182.1	0.999	11.8	8.7	1.0
1840	1561919	1774	2770.9	39.0	1080.6	1.389	15.0	8.7	1.3
1841	1445357	1719	2484.7	38.5	955.8	0.822	7.9	8.7	0.7
1842	1664931	1666	2773.6	37.9	1052.4	0.716	7.5	8.7	0.7
1843	1641176	1614	2649.4	37.4	991.6	0.863	8.6	8.7	0.7
1844	1365721	1564	2136.5	36.9	788.7	0.718	5.7	8.7	0.5
1845	1466817	1516	2223.6	36.4	809.7	0.787	6.4	8.7	0.6

Table H.4
Imports of Merchant Shipping, 1800-1913

	foreign ships								
	capacity entrances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	imports merchant shipping mln*f*	share of port services %	exports port services mln*f*
1846	1892879	1469	2780.6	35.9	998.8	0.830	8.3	8.7	0.7
1847	1879593	1424	2675.7	35.4	947.9	0.896	8.5	8.7	0.7
1848	1367015	1379	1885.8	34.9	659.0	0.728	4.8	8.7	0.4
1849	1577261	1337	2108.4	34.5	726.8	0.562	4.1	8.7	0.4
1850	1669575	1295	2162.7	34.0	735.3	0.572	4.2	8.7	0.4
1851	1780070	1349	2401.7	34.0	817.2	0.536	4.4	8.9	0.4
1852	1949870	1405	2740.0	34.0	933.0	0.551	5.1	9.1	0.5
1853	1658380	1464	2427.2	34.1	827.1	0.742	6.1	9.2	0.6
1854	1714980	1524	2614.3	34.1	891.5	0.814	7.3	9.4	0.7
1855	2068730	1588	3284.6	34.1	1120.8	0.819	9.2	9.6	0.9
1856	2258340	1654	3734.6	34.1	1275.3	0.696	8.9	9.7	0.9
1857	2544170	1722	4382.0	34.2	1497.5	0.618	9.3	9.9	0.9
1858	2773400	1794	4975.3	34.2	1701.4	0.520	8.9	10.0	0.9
1859	2479080	1868	4632.0	34.2	1585.2	0.577	9.1	10.2	0.9
1860	2694160	1946	5243.0	34.2	1795.6	0.685	12.3	10.4	1.3
1861	2855470	1946	5556.3	34.3	1904.3	0.706	13.4	10.5	1.4
1862	3033760	1946	5902.7	34.3	2024.4	0.659	13.4	10.7	1.4
1863	2756420	1945	5362.5	34.3	1840.5	0.629	11.6	10.8	1.2
1864	2844150	1945	5532.6	34.3	1900.3	0.613	11.7	11.0	1.3
1865	3203560	1945	6231.0	34.4	2141.7	0.567	12.1	11.1	1.3
1866	3509200	1945	6824.8	34.4	2347.5	0.551	12.9	11.2	1.5
1867	3888420	1945	7561.5	34.4	2602.8	0.536	13.9	11.4	1.6
1868	3885590	1944	7555.2	34.4	2602.5	0.536	13.9	11.5	1.6
1869	4154440	1944	8077.1	34.5	2784.3	0.520	14.5	11.7	1.7
1870	4445930	1944	8642.9	34.5	2981.5	0.515	15.4	11.8	1.8
1871	5693960	1944	11067.9	34.5	3820.8	0.509	19.4	13.1	2.5
1872	5461900	1944	10615.7	34.5	3667.3	0.515	18.9	14.2	2.7
1873	6141100	1943	11934.5	34.6	4125.9	0.586	24.2	15.1	3.7
1874	6005260	1943	11669.3	34.6	4037.2	0.541	21.8	15.9	3.5
1875	6016580	1943	11690.1	34.6	4047.3	0.496	20.1	16.6	3.3
1876	5581000	1943	10842.6	34.6	3756.6	0.490	18.4	17.1	3.2
1877	5910000	1943	11480.5	34.7	3980.5	0.496	19.7	17.6	3.5
1878	6118000	1942	11883.3	34.7	4123.2	0.454	18.7	17.9	3.4
1879	6218000	1942	12076.3	34.7	4193.1	0.426	17.8	18.2	3.3
1880	6661000	1942	12935.3	34.7	4494.7	0.435	19.6	18.5	3.6
1881	7032000	1942	13654.3	34.8	4747.9	0.435	20.7	18.0	3.7
1882	7980000	1940	15480.3	34.8	5386.8	0.406	21.9	17.6	3.8
1883	7783000	1938	15083.7	34.8	5252.6	0.374	19.7	17.1	3.4
1884	8425000	1936	16312.4	34.8	5684.6	0.320	18.2	16.7	3.0
1885	7869000	1934	15221.4	34.9	5308.2	0.314	16.6	16.3	2.7
1886	7923000	1932	15311.2	34.9	5343.4	0.294	15.7	15.9	2.5
1887	9092000	1931	17553.5	34.9	6130.4	0.326	20.0	15.4	3.1
1888	9489000	1929	18302.5	34.9	6396.6	0.381	24.4	15.0	3.7
1889	9870000	1927	19019.3	35.0	6651.9	0.374	24.9	14.6	3.6
1890	10529000	1925	20269.8	35.0	7094.4	0.320	22.7	14.2	3.2
1891	11204000	1965	22020.7	35.2	7743.6	0.176	13.6	14.0	1.9
1892	11185000	2007	22443.4	35.3	7929.5	0.128	10.1	13.9	1.4

Table H.4
Imports of Merchant Shipping, 1800-1913

	foreign ships								
	capacity entrances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	imports merchant shipping mln*f*	share of port services %	exports port services mln*f*
1893	11864000	2049	24304.1	35.5	8627.3	0.160	13.8	13.7	1.9
1894	13641000	2091	28529.2	35.7	10174.9	0.178	18.1	13.5	2.4
1895	13411000	2135	28635.2	35.8	10260.9	0.152	15.6	13.3	2.1
1896	15833000	2180	34514.2	36.0	12425.8	0.224	27.8	13.1	3.7
1897	17509000	2226	38966.4	36.2	14094.9	0.173	24.4	12.9	3.2
1898	17796000	2272	40434.0	36.3	14694.7	0.184	27.0	12.7	3.4
1899	19457000	2320	45133.2	36.5	16479.9	0.224	36.9	12.5	4.6
1900	19464000	2368	46094.3	36.7	16910.2	0.224	37.9	12.3	4.7
1901	18400000	2380	43794.6	36.9	16142.3	0.152	24.5	12.1	3.0
1902	18037000	2392	43147.4	37.0	15978.7	0.149	23.8	11.9	2.8
1903	20025000	2404	48144.9	37.2	17913.5	0.149	26.7	11.7	3.1
1904	21331000	2416	51543.8	37.4	19268.6	0.138	26.5	11.4	3.0
1905	23254000	2429	56474.2	37.6	21211.3	0.157	33.3	11.2	3.7
1906	25937000	2441	63308.1	37.7	23890.3	0.149	35.5	10.9	3.9
1907	28391000	2453	69647.9	37.9	26406.6	0.158	41.8	10.7	4.5
1908	26084000	2466	64311.5	38.1	24498.3	0.138	33.7	10.4	3.5
1909	27605000	2478	68405.3	38.3	26180.7	0.149	39.0	10.1	4.0
1910	27574000	2491	68673.5	38.5	26407.3	0.149	39.3	9.9	3.9
1911	30579000	2503	76542.1	38.6	29571.8	0.144	42.6	9.6	4.1
1912	34196000	2516	86028.0	38.8	33393.4	0.206	68.9	9.3	6.4
1913	35972973	2528	90955.3	39.0	35472.6	0.160	56.8	9.0	5.1

Table H.5
Exports of Merchant Shipping, 1800-1913

	Dutch ships								
	capacity clearances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	exports merchant shipping mln*f*	share of port services %	imports port services mln*f*
1800	208186	910	189.5	33.5	63.4	0.971	0.6	6.0	0.0
1801	170757	1009	172.3	33.5	57.8	0.771	0.4	6.0	0.0
1802	360876	1227	442.8	33.6	148.9	0.718	1.1	6.0	0.1
1803	229714	1172	269.3	33.7	90.7	0.902	0.8	6.0	0.0
1804	225446	1273	287.0	33.8	96.9	0.854	0.8	6.0	0.0
1805	223788	1250	279.8	33.8	94.7	0.848	0.8	6.0	0.0
1806	165309	1056	174.6	33.9	59.2	0.845	0.5	6.0	0.0
1807	116129	1126	130.8	34.0	44.5	1.028	0.5	6.0	0.0
1808	25631	922	23.6	34.1	8.1	1.216	0.1	6.0	0.0
1809	23025	1407	32.4	34.2	11.1	1.178	0.1	6.0	0.0
1810	14591	1259	18.4	34.2	6.3	1.115	0.1	6.0	0.0
1811	0	863	0.0	34.3	0.0	0.915	0.0	6.0	0.0
1812				34.4		0.971		6.0	
1813				34.5		1.216		6.0	
1814				34.5		1.053		6.0	
1815	391451	2064	808.0	34.6	279.7	0.714	2.0	6.0	0.1
1816	494251	2625	1297.3	34.7	450.0	0.625	2.8	6.0	0.2
1817	499690	2993	1495.4	34.8	519.9	0.528	2.7	6.0	0.2
1818	597059	2773	1655.7	34.8	576.9	0.773	4.5	6.0	0.3
1819	430002	3597	1546.7	34.9	540.1	0.670	3.6	6.0	0.2
1820	405873	3772	1531.0	35.0	535.8	0.653	3.5	6.0	0.2
1821	412320	3549	1463.2	35.9	525.2	0.569	3.0	6.0	0.2
1822	406694	3795	1543.4	36.8	568.1	0.600	3.4	6.0	0.2
1823	474897	3294	1564.1	37.7	590.3	0.714	4.2	6.0	0.3
1824	473366	3373	1596.8	38.7	618.0	0.617	3.8	6.0	0.2
1825	492602	3558	1752.9	39.7	695.7	0.697	4.8	6.0	0.3
1826	496284	4105	2037.4	40.7	829.1	0.728	6.0	6.0	0.4
1827	391656	3431	1343.7	41.7	560.7	0.672	3.8	6.0	0.2
1828	462039	3773	1743.3	42.8	746.0	0.634	4.7	6.0	0.3
1829	396550	3613	1432.9	43.9	628.8	0.719	4.5	6.0	0.3
1830	466382	4080	1902.7	45.0	856.2	0.655	5.6	6.0	0.3
1831	545027	4613	2514.0	44.4	1115.2	0.715	8.0	6.0	0.5
1832	583770	4452	2599.0	43.7	1136.6	0.671	7.6	6.0	0.5
1833	684028	5298	3624.3	43.1	1562.4	0.627	9.8	6.0	0.6
1834	622642	5586	3478.0	42.5	1478.0	0.593	8.8	6.0	0.5
1835	649092	6206	4028.6	41.9	1687.7	0.559	9.4	6.0	0.6
1836	679568	6448	4381.5	41.3	1809.5	0.559	10.1	6.0	0.6
1837	775454	6712	5204.5	40.7	2118.8	0.543	11.5	6.0	0.7
1838	740832	7236	5360.9	40.1	2151.5	0.534	11.5	6.0	0.7
1839	885496	7503	6644.0	39.6	2628.5	0.480	12.6	6.0	0.8
1840	748733	7372	5519.8	39.0	2152.7	0.483	10.4	6.0	0.6
1841	774124	7840	6069.0	38.5	2334.7	0.437	10.2	6.0	0.6
1842	746243	7796	5817.4	37.9	2207.4	0.414	9.1	6.0	0.5
1843	762832	8155	6221.2	37.4	2328.4	0.425	9.9	6.0	0.6
1844	773374	7875	6090.5	36.9	2248.4	0.407	9.1	6.0	0.5
1845	765093	7762	5938.5	36.4	2162.5	0.412	8.9	6.0	0.5

Table H.5
Exports of Merchant Shipping, 1800-1913

	Dutch ships								
	capacity clearances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	exports merchant shipping mln*f*	share of port services %	imports port services mln*f*
1846	998478	7454	7442.4	35.9	2673.2	0.423	11.3	6.0	0.7
1847	1054466	7483	7890.6	35.4	2795.5	0.448	12.5	6.0	0.8
1848	919541	7721	7100.0	34.9	2481.2	0.413	10.3	6.0	0.6
1849	1089425	7550	8224.9	34.5	2835.1	0.392	11.1	6.0	0.7
1850	1153579	7438	8580.6	34.0	2917.4	0.400	11.7	6.0	0.7
1851	939560	7452	7002.0	34.0	2382.4	0.304	7.2	6.1	0.4
1852	1061250	7302	7749.2	34.0	2638.6	0.360	9.5	6.2	0.6
1853	925410	6484	6000.3	34.1	2044.5	0.278	5.7	6.4	0.4
1854	1047100	6497	6802.7	34.1	2319.6	0.327	7.6	6.5	0.5
1855	1106530	6089	6738.1	34.1	2299.3	0.306	7.0	6.6	0.5
1856	1338590	7574	10138.0	34.1	3461.9	0.366	12.7	6.7	0.8
1857	1434810	6497	9322.0	34.2	3185.6	0.376	12.0	6.8	0.8
1858	1352740	7245	9800.4	34.2	3351.5	0.363	12.2	6.9	0.8
1859	1239540	6391	7921.4	34.2	2710.9	0.350	9.5	7.0	0.7
1860	1437640	6638	9543.7	34.2	3268.5	0.333	10.9	7.1	0.8
1861	1383870	7115	9845.8	34.3	3374.4	0.319	10.8	7.3	0.8
1862	1409340	6885	9703.7	34.3	3328.1	0.304	10.1	7.4	0.7
1863	1389530	6618	9196.3	34.3	3156.3	0.284	9.0	7.5	0.7
1864	1403680	6980	9798.3	34.3	3365.4	0.317	10.7	7.6	0.8
1865	1409340	6450	9090.9	34.4	3124.7	0.329	10.3	7.7	0.8
1866	1163130	6039	7024.6	34.4	2416.2	0.288	6.9	7.8	0.5
1867	1236710	6502	8041.1	34.4	2767.9	0.319	8.8	7.9	0.7
1868	1304630	6708	8750.9	34.4	3014.4	0.439	13.2	8.0	1.1
1869	1364060	6894	9404.0	34.5	3241.7	0.352	11.4	8.1	0.9
1870	1298970	6099	7922.9	34.5	2733.1	0.265	7.2	8.2	0.6
1871	1386700	5542	7684.4	34.5	2652.8	0.287	7.6	9.3	0.7
1872	1463110	5225	7645.3	34.5	2641.2	0.323	8.5	10.3	0.9
1873	1471600	5112	7523.5	34.6	2601.0	0.363	9.4	11.2	1.1
1874	1482920	5043	7477.9	34.6	2587.1	0.307	7.9	12.0	1.0
1875	1816860	4861	8831.2	34.6	3057.5	0.272	8.3	12.8	1.1
1876	1542000	3467	5346.1	34.6	1852.2	0.273	5.1	13.5	0.7
1877	1677000	3536	5930.1	34.7	2056.1	0.278	5.7	14.1	0.8
1878	1972000	3089	6091.3	34.7	2113.5	0.245	5.2	14.6	0.8
1879	2169000	3159	6850.9	34.7	2378.8	0.217	5.2	15.1	0.8
1880	2280000	3437	7837.0	34.7	2723.1	0.233	6.4	15.6	1.0
1881	2319000	3456	8013.8	34.8	2786.6	0.244	6.8	15.5	1.1
1882	2545000	3737	9509.6	34.8	3309.1	0.242	8.0	15.3	1.2
1883	2641000	3840	10142.2	34.8	3531.8	0.237	8.4	15.2	1.3
1884	2679000	3935	10543.2	34.8	3674.1	0.220	8.1	15.1	1.2
1885	2916000	3545	10336.6	34.9	3604.7	0.187	6.7	14.9	1.0
1886	3000000	4755	14264.2	34.9	4978.0	0.173	8.6	14.8	1.3
1887	3500000	2925	10237.7	34.9	3575.4	0.167	6.0	14.7	0.9
1888	3944000	2602	10263.4	34.9	3587.0	0.182	6.5	14.5	0.9
1889	3867000	3018	11672.2	35.0	4082.3	0.182	7.4	14.3	1.1
1890	3910000	3150	12315.9	35.0	4310.6	0.190	8.2	14.2	1.2
1891	4067000	3187	12962.8	35.2	4558.4	0.179	8.2	14.0	1.1
1892	4423000	3128	13835.9	35.3	4888.3	0.162	7.9	13.9	1.1

Table H.5
Exports of Merchant Shipping, 1800-1913

	Dutch ships								
	capacity clearances m3	average transport distance km	output capacity mln tkm	rate of utilization %	output cargo mln tkm	freight rate cent/tkm	exports merchant shipping mln*f*	share of port services %	imports port services mln*f*
1893	4618000	3122	14418.9	35.5	5118.3	0.136	6.9	13.7	1.0
1894	4733000	3468	16414.0	35.7	5854.0	0.121	7.1	13.5	1.0
1895	4627000	3362	15553.8	35.8	5573.4	0.118	6.6	13.3	0.9
1896	4954000	3070	15210.7	36.0	5476.2	0.116	6.4	13.1	0.8
1897	4924000	3168	15599.7	36.2	5642.7	0.115	6.5	12.9	0.8
1898	5110000	3165	16171.8	36.3	5877.2	0.144	8.4	12.7	1.1
1899	5316000	3124	16605.7	36.5	6063.4	0.138	8.3	12.5	1.0
1900	5289000	3274	17318.3	36.7	6353.4	0.147	9.3	12.3	1.2
1901	5663000	3290	18630.1	36.9	6866.9	0.151	10.4	12.1	1.3
1902	6554000	3489	22868.8	37.0	8469.0	0.101	8.6	11.9	1.0
1903	7006000	3307	23169.9	37.2	8620.9	0.107	9.2	11.7	1.1
1904	6903000	3362	23210.1	37.4	8676.6	0.111	9.6	11.4	1.1
1905	7199000	3380	24330.3	37.6	9138.3	0.117	10.7	11.2	1.2
1906	7563000	3360	25414.2	37.7	9590.4	0.114	11.0	10.9	1.2
1907	7577000	3575	27084.7	37.9	10269.0	0.108	11.1	10.7	1.2
1908	7397000	3804	28140.7	38.1	10719.7	0.082	8.8	10.4	0.9
1909	8101000	4015	32528.6	38.3	12449.6	0.095	11.9	10.1	1.2
1910	9265000	3994	37008.9	38.5	14231.2	0.106	15.0	9.9	1.5
1911	9584000	4107	39361.9	38.6	15207.4	0.116	17.6	9.6	1.7
1912	10040000	4391	44088.0	38.8	17113.6	0.146	25.0	9.3	2.3
1913	10884288	4448	48418.7	39.0	18883.3	0.130	24.5	9.0	2.2

Table H.6
Imports of International River Shipping, 1800-1913

	foreign ships								
	capacity entrances ton	rate of utilization %	cargo entrances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	imports river shipping mln*f*	share of port services %	exports port services mln*f*
1800						5.802		8.7	
1801						5.673		8.7	
1802						5.548		8.7	
1803						5.427		8.7	
1804						5.309		8.7	
1805						5.194		8.7	
1806			23443	235	5.5	5.082	0.3	8.7	0.0
1807			32985	236	7.8	4.973	0.4	8.7	0.0
1808			13539	237	3.2	5.094	0.2	8.7	0.0
1809			7022	238	1.7	5.218	0.1	8.7	0.0
1810			8408	239	2.0	5.347	0.1	8.7	0.0
1811			5586	241	1.3	5.479	0.1	8.7	0.0
1812			26219	242	6.3	5.616	0.4	8.7	0.0
1813			19476	243	4.7	5.757	0.3	8.7	0.0
1814			25839	244	6.3	5.902	0.4	8.7	0.0
1815			39671	250	9.9	6.052	0.6	8.7	0.1
1816			49286	242	11.9	6.206	0.7	8.7	0.1
1817			60710	250	15.2	5.947	0.9	8.7	0.1
1818			40065	248	9.9	5.701	0.6	8.7	0.0
1819			49709	248	12.3	5.467	0.7	8.7	0.1
1820			49852	240	11.9	5.246	0.6	8.7	0.1
1821			47385	226	10.7	5.035	0.5	8.7	0.0
1822			33864	228	7.7	4.835	0.4	8.7	0.0
1823			56322	222	12.5	4.645	0.6	8.7	0.1
1824			63392	235	14.9	4.465	0.7	8.7	0.1
1825			67822	230	15.6	3.956	0.6	8.7	0.1
1826			70614	222	15.7	3.524	0.6	8.7	0.0
1827			65912	220	14.5	3.156	0.5	8.7	0.0
1828			70739	219	15.5	2.843	0.4	8.7	0.0
1829			78934	215	17.0	2.578	0.4	8.7	0.0
1830			94972	246	23.4	2.352	0.6	8.7	0.0
1831			123328	303	37.3	1.435	0.5	8.7	0.0
1832			165784	256	42.4	1.572	0.7	8.7	0.1
1833			152569	259	39.5	1.585	0.6	8.7	0.1
1834			165495	258	42.6	1.515	0.6	8.7	0.1
1835			186488	258	48.0	1.486	0.7	8.7	0.1
1836			202717	252	51.1	1.475	0.8	8.7	0.1
1837			265250	245	64.9	1.371	0.9	8.7	0.1
1838			249620	238	59.4	1.437	0.9	8.7	0.1
1839			253666	239	60.6	1.422	0.9	8.7	0.1
1840			226176	240	54.3	1.308	0.7	8.7	0.1
1841			228226	243	55.4	1.328	0.7	8.7	0.1
1842			222539	226	50.4	1.371	0.7	8.7	0.1
1843			182610	229	41.8	1.325	0.6	8.7	0.0
1844			186579	223	41.7	1.333	0.6	8.7	0.0
1845			308340	216	66.5	1.146	0.8	8.7	0.1

Table H.6
Imports of International River Shipping, 1800-1913

	foreign ships								
	capacity entrances ton	rate of utilization %	cargo entrances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	imports river shipping mln*f*	share of port services %	exports port services mln*f*
1846			288997	215	62.0	1.122	0.7	8.7	0.1
1847			304709	222	67.8	1.243	0.8	8.7	0.1
1848			267244	228	60.9	1.207	0.7	8.7	0.1
1849			363490	217	78.8	1.200	0.9	8.7	0.1
1850	480733	75	360550	236	85.1	1.010	0.9	8.7	0.1
1851	432162	75	325418	237	77.0	1.085	0.8	8.9	0.1
1852	482203	76	364545	238	86.6	1.054	0.9	9.1	0.1
1853	523170	76	397086	238	94.6	0.900	0.9	9.2	0.1
1854	569019	76	434161	239	103.8	1.094	1.1	9.4	0.1
1855	561549	77	430147	240	103.2	1.090	1.1	9.6	0.1
1856	623929	77	479801	241	115.4	0.979	1.1	9.7	0.1
1857	563018	77	434650	241	104.9	0.982	1.0	9.9	0.1
1858	556673	78	431422	242	104.5	1.075	1.1	10.0	0.1
1859	630843	78	491427	243	119.4	0.827	1.0	10.2	0.1
1860	659110	78	515424	244	125.6	0.823	1.0	10.4	0.1
1861	741727	79	582256	245	142.4	0.964	1.4	10.5	0.1
1862	741298	79	584884	245	143.5	1.248	1.8	10.7	0.2
1863	782132	79	619449	246	152.5	0.860	1.3	10.8	0.1
1864	745932	80	593016	247	146.4	0.761	1.1	11.0	0.1
1865	805094	80	642465	248	159.1	0.852	1.4	11.1	0.2
1866	906586	80	727082	249	180.7	0.801	1.4	11.2	0.2
1867	884077	81	711682	249	177.4	0.751	1.3	11.4	0.2
1868	952392	81	769533	250	192.5	0.747	1.4	11.5	0.2
1869	960403	81	779847	251	195.7	0.698	1.4	11.7	0.2
1870	770041	82	627584	252	158.0	0.734	1.2	11.8	0.1
1871	847262	82	693908	253	175.2	0.771	1.4	13.1	0.2
1872	974488	82	801029	253	203.0	0.811	1.6	14.2	0.2
1873	966241	83	798115	254	202.9	0.856	1.7	15.1	0.3
1874	975000	83	808275	255	206.1	0.755	1.6	15.9	0.2
1875	1090000	83	906880	256	232.0	0.631	1.5	16.6	0.2
1876	1321000	84	1104356	257	283.4	0.676	1.9	17.1	0.3
1877	1521000	84	1276119	257	328.6	0.577	1.9	17.6	0.3
1878	1512000	84	1274616	258	329.3	0.488	1.6	17.9	0.3
1879	1458000	85	1233468	259	319.7	0.536	1.7	18.2	0.3
1880	1590000	85	1351500	260	351.4	0.545	1.9	18.5	0.4
1881	1616000	85	1373600	260	356.8	0.515	1.8	18.0	0.3
1882	1545000	85	1313250	260	340.8	0.550	1.9	17.6	0.3
1883	1681000	85	1428850	259	370.4	0.311	1.2	17.1	0.2
1884	1730000	85	1470500	259	380.9	0.405	1.5	16.7	0.3
1885	1663000	85	1413550	259	365.8	0.344	1.3	16.3	0.2
1886	1763000	85	1498550	259	387.4	0.279	1.1	15.9	0.2
1887	1732000	85	1472200	258	380.2	0.360	1.4	15.4	0.2
1888	1817000	85	1544450	258	398.5	0.447	1.8	15.0	0.3
1889	2061000	85	1751850	258	451.6	0.406	1.8	14.6	0.3
1890	2271000	85	1930350	258	497.2	0.510	2.5	14.2	0.4
1891	2252000	85	1914200	257	492.5	0.462	2.3	14.0	0.3
1892	2342000	85	1990700	257	511.7	0.330	1.7	13.9	0.2

Table H.6
Imports of International River Shipping, 1800-1913

	foreign ships								
	capacity entrances ton	rate of utilization %	cargo entrances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	imports river shipping mln*f*	share of port services %	exports port services mln*f*
1893	2459000	85	2090150	257	536.8	0.419	2.2	13.7	0.3
1894	2767000	85	2351950	257	603.5	0.351	2.1	13.5	0.3
1895	2969000	85	2523650	256	646.9	0.435	2.8	13.3	0.4
1896	3654000	85	3105900	256	795.4	0.363	2.9	13.1	0.4
1897	4178000	85	3551300	256	908.6	0.248	2.3	12.9	0.3
1898	5116000	85	4348600	256	1111.5	0.284	3.2	12.7	0.4
1899	5126000	85	4357100	255	1112.6	0.371	4.1	12.5	0.5
1900	5421000	85	4607850	255	1175.6	0.308	3.6	12.3	0.4
1901	5928000	85	5038800	255	1284.3	0.222	2.9	12.1	0.3
1902	7073000	85	6012050	255	1530.9	0.228	3.5	11.9	0.4
1903	8196000	85	6966600	254	1772.3	0.178	3.1	11.7	0.4
1904	8814000	85	7491900	254	1904.1	0.257	4.9	11.4	0.6
1905	9463000	85	8043550	254	2042.4	0.237	4.8	11.2	0.5
1906	9283000	85	7890550	254	2001.6	0.408	8.2	10.9	0.9
1907	8970000	85	7624500	253	1932.3	0.298	5.8	10.7	0.6
1908	9573000	85	8137050	253	2060.3	0.255	5.2	10.4	0.5
1909	11473000	85	9752050	253	2466.8	0.172	4.2	10.1	0.4
1910	13212000	85	11230200	253	2838.1	0.168	4.8	9.9	0.5
1911	14292000	85	12148200	252	3067.2	0.277	8.5	9.6	0.8
1912	15121000	85	12852850	252	3242.0	0.237	7.7	9.3	0.7
1913	16094000	85	13679900	252	3447.3	0.220	7.6	9.0	0.7

Table H.7
Exports of International River Shipping, 1800-1913

	Dutch ships								
	capacity clear-ances ton	rate of utilization %	cargo clear-ances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	exports river shipping mln*f*	share of port services %	imports port services mln*f*
1800						5.810		6.0	
1801						5.991		6.0	
1802						6.180		6.0	
1803						6.376		6.0	
1804						6.581		6.0	
1805						6.795		6.0	
1806			65973	235	15.5	6.358	1.0	6.0	0.1
1807			92827	236	21.9	6.306	1.4	6.0	0.1
1808			38102	237	9.0	6.386	0.6	6.0	0.0
1809			19763	238	4.7	6.467	0.3	6.0	0.0
1810			23662	239	5.7	6.549	0.4	6.0	0.0
1811			15721	241	3.8	6.633	0.3	6.0	0.0
1812			73786	242	17.8	6.718	1.2	6.0	0.1
1813			54810	243	13.3	6.805	0.9	6.0	0.1
1814			62709	244	15.3	6.893	1.1	6.0	0.1
1815			113648	250	28.4	6.358	1.8	6.0	0.1
1816			140274	242	34.0	7.930	2.7	6.0	0.2
1817			173665	250	43.4	6.351	2.8	6.0	0.2
1818			84688	248	21.0	5.158	1.1	6.0	0.1
1819			75249	248	18.7	5.811	1.1	6.0	0.1
1820			84160	240	20.2	5.822	1.2	6.0	0.1
1821			85783	226	19.4	5.832	1.1	6.0	0.1
1822			82132	228	18.7	5.842	1.1	6.0	0.1
1823			94222	222	21.0	5.852	1.2	6.0	0.1
1824			85763	235	20.1	5.863	1.2	6.0	0.1
1825			95638	230	22.0	5.726	1.3	6.0	0.1
1826			109393	222	24.3	4.587	1.1	6.0	0.1
1827			112351	220	24.7	4.667	1.2	6.0	0.1
1828			125320	219	27.4	4.749	1.3	6.0	0.1
1829			129920	215	28.0	3.754	1.0	6.0	0.1
1830			100187	246	24.7	3.490	0.9	6.0	0.1
1831			84584	303	25.6	2.221	0.6	6.0	0.0
1832			148290	256	37.9	2.674	1.0	6.0	0.1
1833			137199	259	35.5	2.520	0.9	6.0	0.1
1834			153048	258	39.4	2.540	1.0	6.0	0.1
1835			162920	258	42.0	2.363	1.0	6.0	0.1
1836			176520	252	44.5	2.380	1.1	6.0	0.1
1837			219191	245	53.7	2.103	1.1	6.0	0.1
1838			244224	238	58.1	2.319	1.3	6.0	0.1
1839			206089	239	49.2	2.543	1.3	6.0	0.1
1840			194869	240	46.7	2.104	1.0	6.0	0.1
1841			209534	243	50.9	2.333	1.2	6.0	0.1
1842			216378	226	49.0	2.182	1.1	6.0	0.1
1843			308945	229	70.7	2.060	1.5	6.0	0.1
1844			234911	223	52.5	2.125	1.1	6.0	0.1
1845			267940	216	57.8	2.031	1.2	6.0	0.1

Table H.7
Exports of International River Shipping, 1800-1913

	Dutch ships								
	capacity clear-ances ton	rate of utilization %	cargo clear-ances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	exports river shipping mln*f*	share of port services %	imports port services mln*f*
1846			338317	215	72.6	2.194	1.6	6.0	0.1
1847			383298	222	85.3	2.227	1.9	6.0	0.1
1848			198959	228	45.4	2.023	0.9	6.0	0.1
1849			233598	217	50.6	2.114	1.1	6.0	0.1
1850	281905	75	211429	236	49.9	2.100	1.0	6.0	0.1
1851	342903	75	258206	237	61.1	2.267	1.4	6.1	0.1
1852	328369	76	248247	238	59.0	2.213	1.3	6.2	0.1
1853	376009	76	285391	238	68.0	1.897	1.3	6.4	0.1
1854	386225	76	294690	239	70.5	2.319	1.6	6.5	0.1
1855	361162	77	276650	240	66.4	2.319	1.5	6.6	0.1
1856	431076	77	331497	241	79.8	2.094	1.7	6.7	0.1
1857	440632	77	340168	241	82.1	2.109	1.7	6.8	0.1
1858	459226	78	355900	242	86.2	2.321	2.0	6.9	0.1
1859	453658	78	353400	243	85.9	1.794	1.5	7.0	0.1
1860	462843	78	361943	244	88.2	1.794	1.6	7.1	0.1
1861	471390	79	370041	245	90.5	2.111	1.9	7.3	0.1
1862	499868	79	394396	245	96.8	2.745	2.7	7.4	0.2
1863	505082	79	400025	246	98.5	1.901	1.9	7.5	0.1
1864	445327	80	354035	247	87.4	1.690	1.5	7.6	0.1
1865	512836	80	409243	248	101.4	1.902	1.9	7.7	0.1
1866	488528	80	391799	249	97.4	1.796	1.7	7.8	0.1
1867	566277	81	455853	249	113.7	1.691	1.9	7.9	0.2
1868	579732	81	468423	250	117.2	1.691	2.0	8.0	0.2
1869	572356	81	464753	251	116.6	1.586	1.8	8.1	0.1
1870	576582	82	469914	252	118.3	1.676	2.0	8.2	0.2
1871	598229	82	489950	253	123.7	1.770	2.2	9.3	0.2
1872	725321	82	596214	253	151.1	1.870	2.8	10.3	0.3
1873	924640	83	763753	254	194.1	1.984	3.9	11.2	0.4
1874	757057	83	627600	255	160.0	1.758	2.8	12.0	0.3
1875	805576	83	670239	256	171.5	1.475	2.5	12.8	0.3
1876	835593	84	698556	257	179.3	1.588	2.8	13.5	0.4
1877	876414	84	735311	257	189.3	1.362	2.6	14.1	0.4
1878	1027621	84	866285	258	223.8	1.158	2.6	14.6	0.4
1879	1207196	85	1021288	259	264.7	1.278	3.4	15.1	0.5
1880	1323416	85	1124904	260	292.5	1.306	3.8	15.6	0.6
1881	1521179	85	1293002	260	335.9	1.239	4.2	15.5	0.6
1882	1733331	85	1473331	260	382.3	1.329	5.1	15.3	0.8
1883	1968184	85	1672956	259	433.7	0.755	3.3	15.2	0.5
1884	2176395	85	1849936	259	479.2	0.987	4.7	15.1	0.7
1885	2125157	85	1806383	259	467.4	0.843	3.9	14.9	0.6
1886	2125358	85	1806554	259	467.0	0.688	3.2	14.8	0.5
1887	2434706	85	2069500	258	534.5	0.891	4.8	14.7	0.7
1888	2515758	85	2138394	258	551.8	1.112	6.1	14.5	0.9
1889	2531893	85	2152109	258	554.8	1.015	5.6	14.3	0.8
1890	2839819	85	2413846	258	621.7	1.280	8.0	14.2	1.1
1891	2877296	85	2445702	257	629.3	1.127	7.1	14.0	1.0
1892	3163927	85	2689338	257	691.3	0.781	5.4	13.9	0.7

Table H.7
Exports of International River Shipping, 1800-1913

	Dutch ships								
	capacity clear-ances ton	rate of utilization %	cargo clear-ances ton	average transport distance km	output cargo mln tkm	freight rate cent/tkm	exports river shipping mln*f*	share of port services %	imports port services mln*f*
1893	3885681	85	3302829	257	848.2	0.961	8.2	13.7	1.1
1894	4339125	85	3688256	257	946.3	0.783	7.4	13.5	1.0
1895	3843495	85	3266971	256	837.4	0.941	7.9	13.3	1.1
1896	4684517	85	3981839	256	1019.7	0.763	7.8	13.1	1.0
1897	4919712	85	4181755	256	1069.9	0.506	5.4	12.9	0.7
1898	5583938	85	4746347	256	1213.2	0.564	6.8	12.7	0.9
1899	5917584	85	5029946	255	1284.5	0.714	9.2	12.5	1.1
1900	6089645	85	5176198	255	1320.6	0.575	7.6	12.3	0.9
1901	5889140	85	5005769	255	1275.9	0.403	5.1	12.1	0.6
1902	6137745	85	5217083	255	1328.5	0.401	5.3	11.9	0.6
1903	7130715	85	6061108	254	1541.9	0.304	4.7	11.7	0.5
1904	8035040	85	6829784	254	1735.8	0.426	7.4	11.4	0.8
1905	8602842	85	7312416	254	1856.7	0.382	7.1	11.2	0.8
1906	9500446	85	8075379	254	2048.5	0.638	13.1	10.9	1.4
1907	10646992	85	9049943	253	2293.6	0.453	10.4	10.7	1.1
1908	9562537	85	8128156	253	2058.0	0.376	7.7	10.4	0.8
1909	11164911	85	9490174	253	2400.6	0.247	5.9	10.1	0.6
1910	12453612	85	10585570	253	2675.2	0.234	6.3	9.9	0.6
1911	14195828	85	12066454	252	3046.5	0.374	11.4	9.6	1.1
1912	14130451	85	12010883	252	3029.6	0.311	9.4	9.3	0.9
1913	14858156	85	12629433	252	3182.6	0.280	8.9	9.0	0.8

Table H.8
Imports and Exports of Financial Services, 1802-1913 (millions of guilders at current prices)

	combined value of merchandise imports and exports mln*f*	financial imports mln*f*	financial exports mln*f*
1800			
1801			
1802	196	0.3	0.8
1803	198	0.3	0.8
1804	250	0.3	1.0
1805	214	0.3	0.9
1806	206	0.3	0.8
1807	235	0.3	0.9
1808	151	0.2	0.6
1809	216	0.3	0.9
1810			
1811			
1812			
1813			
1814	179	0.2	0.7
1815	234	0.3	0.9
1816	239	0.3	0.9
1817	304	0.4	1.2
1818	259	0.3	1.0
1819	175	0.2	0.7
1820	150	0.2	0.6
1821	159	0.2	0.6
1822	143	0.2	0.6
1823	150	0.2	0.6
1824	131	0.2	0.5
1825	147	0.2	0.6
1826	145	0.2	0.6
1827	156	0.2	0.6
1828	146	0.2	0.6
1829	142	0.2	0.6
1830	116	0.2	0.5
1831	133	0.2	0.5
1832	165	0.2	0.7
1833	139	0.2	0.6
1834	171	0.2	0.7
1835	183	0.2	0.7
1836	205	0.3	0.8
1837	204	0.3	0.8
1838	216	0.3	0.9
1839	261	0.3	1.0
1840	286	0.4	1.1
1841	289	0.4	1.1

Table H.8
Imports and Exports of Financial Services, 1802-1913 (millions of guilders at current prices)

	combined value of merchandise imports and exports mln*f*	financial imports mln*f*	financial exports mln*f*
1842	289	0.4	1.2
1843	269	0.4	1.1
1844	280	0.4	1.1
1845	344	0.5	1.4
1846	341	0.5	1.4
1847	414	0.5	1.6
1848	317	0.4	1.3
1849	354	0.5	1.4
1850	359	0.5	1.4
1851	363	0.5	1.4
1852	418	0.6	1.7
1853	418	0.6	1.7
1854	528	0.7	2.1
1855	572	0.8	2.3
1856	616	0.8	2.4
1857	611	0.8	2.4
1858	637	0.8	2.5
1859	603	0.8	2.4
1860	659	0.9	2.6
1861	740	1.0	2.9
1862	739	1.0	2.9
1863	886	1.2	3.5
1864	1103	1.5	4.4
1865	1139	1.5	4.5
1866	1146	1.5	4.6
1867	1085	1.4	4.3
1868	1060	1.4	4.2
1869	1059	1.4	4.2
1870	1062	1.4	4.2
1871	1339	1.8	5.3
1872	1231	1.6	4.9
1873	1403	1.9	5.6
1874	1327	1.8	5.3
1875	1305	1.7	5.2
1876	1362	1.8	5.4
1877	1366	1.8	5.4
1878	1238	1.6	4.9
1879	1217	1.6	4.8
1880	1195	1.6	4.7
1881	1184	1.6	4.7
1882	1146	1.5	4.6
1883	1241	1.6	4.9
1884	1301	1.7	5.2

Table H.8
Imports and Exports of Financial Services, 1802-1913 (millions of guilders at current prices)

	combined value of merchandise imports and exports mln*f*	financial imports mln*f*	financial exports mln*f*
1885	1326	1.8	5.3
1886	1326	1.8	5.3
1887	1322	1.8	5.3
1888	1401	1.9	5.6
1889	1382	1.8	5.5
1890	1507	2.0	6.0
1891	1546	2.0	6.1
1892	1418	1.9	5.6
1893	1437	1.9	5.7
1894	1431	1.9	5.7
1895	1487	2.0	5.9
1896	1601	2.1	6.4
1897	1685	2.2	6.7
1898	1792	2.4	7.1
1899	1886	2.5	7.5
1900	1972	2.6	7.8
1901	2040	2.7	8.1
1902	2155	2.9	8.6
1903	2184	2.9	8.7
1904	2324	3.1	9.2
1905	2327	3.1	9.2
1906	2802	3.7	11.1
1907	3065	4.1	12.2
1908	3253	4.3	12.9
1909	3247	4.3	12.9
1910	3373	4.5	13.4
1911	3749	5.0	14.9
1912	4359	5.8	17.3
1913	4582	6.1	18.2

Table H.9
Summary of Net Service Exports
(millions of guilders at current prices)

			net exports of services					
	service imports	service exports	total	shipping between foreign ports	merchant shipping	river shipping	port services	financial services
1800	3.4	0.9	-2.5		-2.8		0.3	
1801	2.6	0.7	-1.9		-2.1		0.2	
1802	7.0	2.4	-4.6		-5.6		0.5	0.5
1803	5.5	2.1	-3.5		-4.4		0.4	0.5
1804	4.4	2.2	-2.2		-3.2		0.3	0.7
1805	4.8	2.0	-2.8		-3.7		0.3	0.6
1806	3.1	2.5	-0.5		-1.9	0.7	0.1	0.5
1807	3.0	3.0	0.0		-1.7	1.0	0.1	0.6
1808	0.9	1.3	0.4		-0.4	0.4	0.0	0.4
1809	0.9	1.3	0.5		-0.3	0.2	0.0	0.6
1810	0.4	0.5	0.1		-0.2	0.3	0.0	
1811	0.1	0.3	0.2		0.0	0.2	0.0	
1812	0.4	1.2	0.8			0.8	0.0	
1813	0.3	0.9	0.6			0.6	0.0	
1814	0.7	1.8	1.1			0.7	0.0	0.5
1815	15.5	6.0	-9.5		-12.4	1.2	1.1	0.6
1816	15.0	7.9	-7.1	0.2	-10.8	2.0	0.9	0.6
1817	16.3	8.1	-8.2	0.1	-11.9	1.9	1.0	0.8
1818	11.9	7.6	-4.3	0.0	-6.2	0.5	0.6	0.7
1819	10.3	6.3	-4.0	0.0	-5.4	0.4	0.6	0.5
1820	11.8	6.3	-5.5	0.0	-7.2	0.5	0.7	0.4
1821	7.2	5.3	-1.9	0.0	-3.2	0.6	0.3	0.4
1822	7.7	5.7	-2.0	0.0	-3.5	0.7	0.4	0.4
1823	11.3	7.0	-4.3	0.0	-6.0	0.6	0.6	0.4
1824	6.8	6.1	-0.7	0.0	-1.8	0.5	0.2	0.3
1825	6.9	7.2	0.4	0.0	-0.8	0.6	0.2	0.4
1826	7.1	8.3	1.2	0.0	0.1	0.6	0.1	0.4
1827	7.3	6.1	-1.2	0.0	-2.6	0.7	0.3	0.4
1828	7.2	7.4	0.3	0.3	-1.4	0.9	0.2	0.4
1829	7.3	7.1	-0.3	0.4	-1.8	0.6	0.2	0.4
1830	6.3	8.0	1.6	0.5	0.4	0.3	0.1	0.3
1831	8.3	10.6	2.4	0.9	1.0	0.0	0.1	0.4
1832	9.6	10.9	1.3	0.8	-0.5	0.3	0.2	0.4
1833	9.1	12.7	3.6	0.7	2.2	0.3	0.0	0.4
1834	7.8	11.4	3.7	0.4	2.5	0.4	0.0	0.5
1835	8.0	12.2	4.2	0.4	3.1	0.3	0.0	0.5
1836	8.7	13.1	4.4	0.4	3.2	0.3	0.0	0.5
1837	10.2	14.5	4.3	0.2	3.2	0.2	0.0	0.5
1838	12.6	15.0	2.4	0.3	0.8	0.5	0.2	0.6
1839	13.9	16.3	2.4	0.2	0.8	0.4	0.3	0.7
1840	16.8	14.5	-2.3	0.6	-4.6	0.3	0.7	0.8
1841	9.7	14.0	4.3	0.7	2.3	0.5	0.0	0.8
1842	9.3	13.3	4.0	1.2	1.6	0.4	0.0	0.8
1843	10.2	14.6	4.4	1.4	1.3	0.9	0.0	0.7

Table H.9
Summary of Net Service Exports
(millions of guilders at current prices)

			net exports of services					
	service imports	service exports	total	shipping between foreign ports	merchant shipping	river shipping	port services	financial services
1844	7.3	13.5	6.2	1.6	3.5	0.6	-0.2	0.7
1845	8.2	12.7	4.5	0.7	2.5	0.4	0.0	0.9
1846	10.2	15.4	5.2	0.4	3.0	0.9	0.0	0.9
1847	10.9	18.7	7.9	1.9	4.0	1.1	-0.2	1.1
1848	6.8	15.5	8.7	2.6	5.5	0.2	-0.3	0.8
1849	6.4	17.5	11.1	3.5	7.0	0.1	-0.5	0.9
1850	6.5	18.0	11.5	3.4	7.5	0.2	-0.5	1.0
1851	6.4	13.0	6.7	2.5	2.9	0.5	-0.2	1.0
1852	7.5	16.2	8.7	3.2	4.3	0.4	-0.3	1.1
1853	8.1	11.6	3.4	2.3	-0.5	0.4	0.1	1.1
1854	9.8	14.5	4.7	2.4	0.3	0.5	0.0	1.4
1855	11.9	16.2	4.3	4.4	-2.1	0.4	0.1	1.5
1856	12.2	23.5	11.3	5.7	3.8	0.5	-0.4	1.6
1857	12.5	24.5	12.0	7.4	2.7	0.7	-0.4	1.6
1858	12.4	26.3	13.9	8.6	3.3	0.9	-0.6	1.7
1859	12.1	20.1	8.0	5.7	0.3	0.6	-0.1	1.6
1860	15.5	21.7	6.3	5.3	-1.4	0.5	0.1	1.7
1861	17.1	22.1	5.0	4.9	-2.7	0.5	0.3	2.0
1862	17.5	22.8	5.3	5.4	-3.2	0.9	0.3	2.0
1863	15.3	21.0	5.8	5.3	-2.6	0.6	0.2	2.3
1864	15.6	23.6	8.0	5.6	-1.0	0.4	0.1	2.9
1865	16.4	24.6	8.2	6.3	-1.8	0.6	0.1	3.0
1866	17.1	21.1	4.1	6.3	-6.0	0.3	0.5	3.0
1867	18.0	22.7	4.7	5.9	-5.1	0.6	0.4	2.9
1868	18.7	30.5	11.7	9.3	-0.7	0.5	-0.2	2.8
1869	18.8	25.4	6.6	6.1	-3.1	0.5	0.3	2.8
1870	19.1	20.4	1.3	5.0	-8.1	0.8	0.8	2.8
1871	24.0	23.6	-0.4	5.8	-11.8	0.8	1.3	3.5
1872	24.2	27.0	2.9	7.8	-10.4	1.2	0.9	3.3
1873	30.1	30.5	0.3	7.7	-14.7	2.1	1.6	3.7
1874	27.1	25.2	-1.9	5.5	-13.9	1.3	1.8	3.5
1875	25.3	25.0	-0.3	5.4	-11.8	1.1	1.5	3.5
1876	24.1	23.3	-0.7	6.5	-13.3	0.9	1.5	3.6
1877	25.5	24.0	-1.5	6.5	-14.0	0.7	1.7	3.6
1878	24.3	24.4	0.1	8.1	-13.6	1.0	1.3	3.3
1879	23.5	23.7	0.2	6.8	-12.7	1.7	1.2	3.2
1880	25.8	26.5	0.7	7.7	-13.2	1.9	1.2	3.2
1881	26.8	26.6	-0.2	6.9	-13.9	2.3	1.3	3.1
1882	28.4	29.0	0.6	7.2	-13.9	3.2	1.1	3.0
1883	25.2	26.4	1.2	6.3	-11.3	2.1	0.8	3.3
1884	24.6	29.0	4.5	7.7	-10.1	3.2	0.2	3.4
1885	22.3	25.9	3.6	7.0	-9.9	2.7	0.3	3.5
1886	21.3	26.7	5.3	6.9	-7.1	2.1	-0.1	3.5
1887	25.6	25.1	-0.5	5.8	-14.0	3.4	0.9	3.5
1888	31.0	30.1	-0.9	7.9	-17.8	4.4	0.9	3.7
1889	31.8	32.1	0.2	9.6	-17.5	3.8	0.7	3.7

Table H.9
Summary of Net Service Exports
(millions of guilders at current prices)

			net exports of services					
	service imports	service exports	total	shipping between foreign ports	merchant shipping	river shipping	port services	financial services
1890	31.0	35.9	4.9	10.1	-14.5	5.4	-0.1	4.0
1891	21.8	35.9	14.1	12.3	-5.5	4.8	-1.6	4.1
1892	17.2	32.1	15.0	11.5	-2.2	3.7	-1.8	3.8
1893	21.2	31.6	10.4	8.5	-6.9	5.9	-1.0	3.8
1894	25.0	30.3	5.3	7.4	-11.0	5.3	-0.2	3.8
1895	23.4	30.8	7.4	8.0	-9.0	5.1	-0.5	3.9
1896	36.0	34.2	-1.8	9.6	-21.5	4.9	0.9	4.2
1897	31.5	30.6	-0.9	8.6	-17.9	3.2	0.8	4.5
1898	35.9	37.5	1.5	11.2	-18.6	3.7	0.5	4.7
1899	47.2	41.6	-5.5	11.5	-28.6	5.0	1.5	5.0
1900	48.0	44.6	-3.4	14.7	-28.5	4.0	1.2	5.2
1901	33.9	42.6	8.7	15.7	-14.2	2.3	-0.5	5.4
1902	33.1	37.2	4.1	11.5	-15.2	1.8	0.2	5.7
1903	35.6	37.2	1.5	11.1	-17.4	1.5	0.6	5.8
1904	37.9	43.0	5.1	13.2	-16.9	2.5	0.1	6.2
1905	44.7	44.8	0.1	13.4	-22.5	2.3	0.8	6.2
1906	51.6	54.1	2.5	14.2	-24.6	4.9	0.6	7.4
1907	55.5	53.7	-1.9	14.9	-30.7	4.6	1.2	8.1
1908	46.3	45.9	-0.3	12.4	-24.9	2.5	1.0	8.6
1909	50.8	49.8	-1.0	14.7	-27.1	1.7	1.1	8.6
1910	52.6	58.5	5.9	19.4	-24.2	1.5	0.3	8.9
1911	61.2	73.8	12.5	24.9	-24.9	2.9	-0.3	9.9
1912	88.2	87.0	-1.2	28.1	-43.9	1.7	1.3	11.5
1913	76.0	86.1	10.1	28.7	-32.2	1.3	0.2	12.1

H.3 Primary Incomes

Table H.10
The Estimated Amount of National Wealth, 1806-1913

	revenues of the inheritance tax *f*	estimated national wealth mln*f*	implicit multiplier #	interpolated series of the multiplier #	annual series of national wealth mln*f*
1806	1245602			1148	1430
1807	2060708	2365	1148	1148	2365
1808				1146	
1809				1145	
1810				1143	
1811	3082001			1142	3519
1812				1140	
1813				1139	
1814	970050			1137	1103
1815	1843961			1136	2094
1816	1859000			1134	2109
1817	1874161			1133	2123
1818	1889446			1131	2138
1819	1904855			1130	2152
1820	1920390			1129	2167
1821	1906135			1127	2148
1822	1775553			1126	1999
1823	1827562			1124	2054
1824	1861358			1123	2090
1825	2008827			1121	2252
1826	2100523			1120	2352
1827	2858135			1118	3196
1828	2190411			1117	2446
1829	2202097			1115	2456
1830	1795121			1114	2000
1831	1749236	2295	1113	1113	1946
1832	2376331			1117	2654
1833	2016052			1121	2261
1834	2146126			1126	2416
1835	3024677			1130	3419
1836	2232148			1135	2533
1837	2749885			1139	3133
1838	1906957			1144	2181
1839	1695064			1148	1947
1840	1853361			1153	2137
1841	2071133			1158	2397
1842	2172638			1162	2525
1843	2360352	2770	1167	1167	2754
1844	2387770			1174	2804
1845	2573585			1181	3041
1846	2704131			1189	3215
1847	2648119			1196	3168
1848	2613044			1204	3146
1849	2056497			1211	2491
1850	2235033			1219	2725

Table H.10
The Estimated Amount of National Wealth, 1806-1913

	revenues of the inheritance tax *f*	estimated national wealth mln*f*	implicit multiplier #	interpolated series of the multiplier #	annual series of national wealth mln*f*
1851	2466575			1227	3026
1852	2180565			1234	2692
1853	2399096			1242	2980
1854	2982807	3680	1250	1250	3729
1855	3175588			1259	3999
1856	2693994			1268	3417
1857	2923468			1278	3736
1858	3860824			1287	4970
1859	2922279			1297	3789
1860	3003218			1306	3923
1861	2803076			1316	3688
1862	2566302	5300		1326	3402
1863	3195340			1335	4267
1864	3106602			1345	4179
1865	3098025			1355	4198
1866	3208233			1365	4379
1867	3854431	5300	1375	1375	5300
1868	2738112			1355	3709
1869	2949846			1334	3936
1870	3967591			1315	5215
1871	3815874			1295	4941
1872	4716564			1276	6017
1873	3760421			1257	4725
1874	6034824			1238	7471
1875	5654928			1219	6896
1876	5947850			1201	7145
1877	4478419			1183	5300
1878	4779987			1166	5572
1879	6994002	8700	1148	1148	8032
1880	7715040			1148	8860
1881	8098395			1148	9300
1882	7495075			1148	8607
1883	6963397	8320	1089	1089	7586
1884	6872056			1089	7486
1885	7939729			1089	8650
1886	8260667			1089	8999
1887	8150281			1089	8879
1888	8635743	9200	1003	1003	8664
1889	8209006			1003	8236
1890	8172244			1003	8199
1891	9904228			1003	9936
1892	10930785			1003	10966
1893	8014107	8295	970	970	7777
1894	8666178			970	8410
1895	9282570			970	9008
1896	8395400			970	8147
1897	8381047			970	8133
1898	7979897	9030	933	933	7444

Table H.10
The Estimated Amount of National Wealth, 1806-1913

	revenues of the inheritance tax *f*	estimated national wealth mln*f*	implicit multiplier #	interpolated series of the multiplier #	annual series of national wealth mln*f*
1899	9664491			933	9015
1900	11569767			933	10793
1901	8291695			933	7735
1902	10895232			933	10163
1903	11299057	11025	1055	1055	11923
1904	10142666			1055	10703
1905	10668748			1055	11258
1906	10542908			1055	11125
1907	9587713			1055	10117
1908	11061222	12200	1043	1043	11536
1909	10467178			1043	10917
1910	10670290			1043	11128
1911	11575964			1043	12073
1912	14714570			1043	15346
1913	16627733			1043	17342

Table H.11
Estimated Primary Income Paid to Foreign Investors, 1870-1921
(millions of guilders at current prices)

	value added			primary income paid to foreign investors
	railways	utilities	total	
1870	7.8	4.7	12.5	3.7
1871	8.8	4.9	13.6	4.1
1872	9.3	4.9	14.2	4.2
1873	10.0	5.1	15.1	4.5
1874	10.4	5.2	15.6	4.7
1875	10.8	5.6	16.4	4.9
1876	11.1	6.2	17.3	5.2
1877	11.5	6.8	18.4	5.5
1878	11.9	7.5	19.4	5.8
1879	12.9	8.2	21.0	6.3
1880	14.1	8.8	23.0	6.9
1881	15.8	8.7	24.5	7.3
1882	16.9	8.9	25.8	7.7
1883	18.0	8.7	26.7	8.0
1884	18.2	9.9	28.1	8.4
1885	18.0	10.6	28.6	8.5
1886	18.0	11.0	29.0	8.7
1887	18.7	10.6	29.3	8.8
1888	19.5	10.4	29.9	8.9
1889	20.2	9.9	30.1	9.0
1890	21.4	9.6	30.9	9.3
1891	22.1	10.1	32.1	9.6
1892	22.0	10.7	32.8	9.8
1893	23.1	11.3	34.4	10.3
1894	23.5	11.8	35.3	10.6
1895	25.1	12.3	37.4	11.2
1896	25.9	12.9	38.9	11.6
1897	26.9	13.6	40.5	12.1
1898	27.4	14.3	41.8	12.5
1899	29.3	14.9	44.2	13.2
1900	30.4	15.7	46.2	13.8
1901	32.0	16.6	48.6	14.5
1902	33.3	17.9	51.2	15.3
1903	34.5	20.0	54.5	16.3
1904	36.5	21.9	58.4	17.5
1905	38.3	23.7	62.0	18.6
1906	40.8	25.7	66.6	19.9
1907	42.4	28.3	70.7	21.2
1908	43.7	29.9	73.6	22.0
1909	45.2	32.4	77.6	23.2
1910	47.5	34.2	81.7	24.4
1911	51.0	36.0	87.0	26.0
1912	54.9	39.3	94.2	28.2
1913	58.2	42.2	100.4	30.0

Table H.11
Estimated Primary Income Paid to Foreign Investors, 1870-1921
(millions of guilders at current prices)

	value added			primary income paid to foreign investors
	railways	utilities	total	
1914				
1915				
1916				
1917				
1918				
1919				
1920				
1921	232.0	102.3	334.3	100.0

Table H.12
The Share of Belgium in the Revenues and Expenditure of the Central Government of the United Netherlands, the Value of the Net Transfers from Belgium to the Netherlands as well as Their Share in Dutch GDP, 1816-1830

	Belgian share in revenues of the United Neth. %	Belgian share in expenditure of the United Neth. %	net transfers from Belgium to the Netherlands mln*f*	transfers as a percentage of Dutch GDP %
1816	41	19	17.3	3.5
1817	46	19	19.8	3.7
1818	45	27	13.2	2.6
1819	47	29	11.3	2.6
1820	47	21	19.8	4.6
1821	45	18	19.4	4.8
1822	44	18	20.0	5.0
1823	46	14	27.6	6.4
1824	48	17	28.6	7.1
1825	49	18	29.4	6.9
1826	50	21	31.1	7.3
1827	49	21	30.3	6.6
1828	48	20	28.8	6.4
1829	50	18	31.5	6.8
1830	38	10	22.4	5.1
average	*46*	*19*	*23.4*	*5.3*

Note: Belgium was credited with 25 percent of government subsidies to the international services and 70 percent of industrial subsidies.
Sources: *Handelingen van de Staten-Generaal* 1817/18-1831/32. *Algemeene Staatsrekeningen* 1823-1830. For an explanation of the method of calculation see Horlings and Van Zanden, ‘Exploitatie en afscheiding’.

Table H.13
Estimates of Colonial Remittances from the East Indies
(thousands of guilders at current prices)

	net public revenues from the East Indies	total sum of inappro-priate expenses	balance of expenditure relative to East Indies	estimated net colonial remittances	public expenditure on colonial trade and transport	estimated gross colonial remittances
1824					289	
1825					1710	
1826					2609	
1827					3588	
1828					4264	
1829					3114	
1830					3307	
1831					2835	
1832	1939	1241	213	2967	2191	5158
1833	2692	4285	-1875	8852	5008	13860
1834	6746	4466	-4920	16132	5824	21956
1835	13172	2972	916	15228	7331	22559
1836	16263	4239	-1886	22388	8481	30869
1837	19202	5521	681	24042	9808	33850
1838	22276	12164	-632	35072	11296	46368
1839	27557	4349	9758	22148	13270	35418
1840	29180	1714	15966	14928	13849	28777
1841	31801	6694	13107	25388	13755	39143
1842	26668	6724	12129	21263	13491	34754
1843	27294	2999	11283	19010	13564	32574
1844	28330	3737	11792	20275	13032	33307
1845	32930	1555	16837	17648	13319	30967
1846	30549	1198	15899	15848	12227	28075
1847	32603	1368	17138	16833	13340	30173
1848	23453	994	14739	9708	12589	22297
1849	39073	1812	16510	24375	12839	37214
1850	35775	830	17945	18660	11463	30123
1851	35204	826	17995	18035	12253	30288
1852	41960	924	26536	16348	10343	26691
1853	45867	927	30371	16423	11202	27625
1854	43549	1220	21885	22884	10143	33027
1855	49294	911	24035	26170	12166	38336
1856	58630	1034	27264	32400	11408	43808
1857	66038	1076	23304	43810	11900	55710
1858	57559	1383	25620	33322	10733	44055
1859	58575	1039	43936	15678	9993	25671
1860	57347	1264	23724	34887	10171	45058
1861	52837	1379	18463	35753	8793	44546
1862	63559	1240	42727	22072	8771	30843
1863	58883	1986	16706	44163	9763	53926
1864	59093		24405	34688	8621	43309
1865	53700		20088	33612	8236	41848
1866	48700		16504	32196	7976	40172
1867	54760		39904	14856	6843	21699
1868	45754		34521	11233	6690	17923
1869	45616		32141	13475	6654	20129
1870	44174		26503	17671	6728	24399

Table H.14
Net Primary Income by Origin and Receiver, 1806-1913
(millions of guilders at current prices)

	receipts				expenditure		net primary incomes		
	private		*public*		*private*	*public*			
	colonial	non-colonial	colonial	non-colonial	non-colonial	colonial	colonial	non-colonial	total
1806		12.9						12.9	12.9
1807		21.4						21.4	21.4
1808		23.5						23.5	23.5
1809		25.8						25.8	25.8
1810									
1811		31.0						31.0	31.0
1812									
1813									
1814		10.3						10.3	10.3
1815		18.0						18.0	18.0
1816		20.2		17.3				37.5	37.5
1817		16.8	3.7	19.8			3.7	36.6	40.3
1818		16.1	0.6	13.2		0.7	-0.1	29.3	29.2
1819		17.5	1.2	11.3		2.6	-1.4	28.8	27.4
1820		18.6	1.9	19.8		1.9	0.0	38.4	38.4
1821		17.2	2.2	19.4		1.6	0.6	36.6	37.2
1822		14.9	1.7	20.0		1.7	0.0	34.9	34.9
1823		15.4	2.4	27.6		1.8	0.5	43.0	43.6
1824		13.7	1.9	28.6		1.2	0.7	42.3	43.0
1825		15.7	1.4	29.4		1.4	0.0	45.1	45.1
1826		17.9	3.3	31.1		0.9	2.4	49.0	51.4
1827		23.1	2.6	30.3		0.5	2.1	53.4	55.5
1828		17.3	2.0	28.8		0.3	1.7	46.1	47.8
1829		16.4	4.4	31.5		0.4	4.0	47.9	51.9
1830		14.2	3.8	22.4		0.0	3.8	36.6	40.4
1831		15.1	2.6			0.6	2.0	15.1	17.1
1832		18.6	8.3			1.6	6.7	18.6	25.3
1833		14.3	16.4			-3.5	19.9	14.3	34.2
1834		14.1	24.4			0.1	24.3	14.1	38.4
1835		19.1	25.8			0.5	25.3	19.1	44.4
1836		13.9	34.6			0.3	34.3	13.9	48.2
1837		15.9	39.4			0.5	38.9	15.9	54.9
1838		10.3	51.6			0.2	51.5	10.3	61.7
1839		9.0	41.5			2.6	38.9	9.0	47.9
1840		9.7	35.2			1.3	33.9	9.7	43.6
1841		10.4	49.8			1.0	48.8	10.4	59.2
1842		10.2	45.2			0.2	45.1	10.2	55.2
1843		10.3	37.4			0.1	37.3	10.3	47.6
1844		10.0	37.9			0.0	37.9	10.0	47.9
1845		11.5	34.3			0.0	34.3	11.5	45.8
1846		12.5	29.0			0.0	29.0	12.5	41.4
1847		13.8	31.3			0.0	31.3	13.8	45.0
1848		14.4	26.2			0.0	26.2	14.4	40.6
1849		10.7	41.4			0.0	41.4	10.7	52.1
1850		11.6	34.0			0.0	34.0	11.6	45.6

Table H.14
Net Primary Income by Origin and Receiver, 1806-1913
(millions of guilders at current prices)

	receipts				expenditure		net primary incomes		
	private		*public*		*private*	*public*			
	colonial	non-colonial	colonial	non-colonial	non-colonial	colonial	colonial	non-colonial	total
1851		13.2	34.2			0.0	34.2	13.2	47.4
1852		11.6	30.6			0.0	30.6	11.6	42.2
1853		13.6	31.8			0.0	31.8	13.6	45.5
1854		18.6	38.6			0.0	38.6	18.6	57.1
1855		20.1	45.6			0.0	45.6	20.1	65.7
1856		14.4	49.5			0.0	49.5	14.4	63.8
1857		17.6	63.8			0.0	63.8	17.6	81.4
1858		21.7	51.9			0.0	51.9	21.7	73.6
1859		16.9	35.4			0.0	35.4	16.9	52.2
1860		17.3	54.5			0.0	54.5	17.3	71.8
1861		16.5	52.7			0.0	52.7	16.5	69.2
1862		14.6	37.4			1.1	36.3	14.6	50.9
1863		19.4	61.1			3.0	58.0	19.4	77.5
1864		20.8	50.5			1.6	49.0	20.8	69.8
1865		22.8	49.3			1.6	47.6	22.8	70.4
1866		25.2	50.4			1.8	48.6	25.2	73.9
1867		30.5	38.7			33.6	5.1	30.5	35.6
1868		22.8	37.7			11.9	25.8	22.8	48.7
1869		25.9	38.2			10.7	27.6	25.9	53.5
1870	3.2	36.7	42.9		3.7	10.1	36.0	33.0	69.0
1871	4.6	37.2	30.6		4.1	10.5	24.6	33.1	57.8
1872	6.3	48.5	40.9		4.2	9.8	37.4	44.2	81.7
1873	5.9	39.1	35.0		4.5	9.0	31.8	34.6	66.4
1874	3.7	63.6	31.8		4.7	9.0	26.4	58.9	85.3
1875	6.0	60.3	46.8		4.9	8.2	44.5	55.4	100.0
1876	5.0	53.6	28.8		5.2	8.0	25.8	48.4	74.2
1877	5.1	38.3	31.6		5.5	8.9	27.9	32.8	60.7
1878	3.2	35.6	24.5		5.8	8.6	19.1	29.7	48.9
1879	4.8	60.2	23.8		6.3	7.2	21.5	53.9	75.3
1880	5.8	65.8	24.7		6.9	11.1	19.4	58.9	78.3
1881	7.6	79.5	23.6		7.3	8.0	23.3	72.1	95.5
1882	10.1	63.7	24.9		7.7	7.5	27.6	56.0	83.6
1883	12.3	53.0	24.4		8.0	8.0	28.7	45.0	73.7
1884	9.8	60.8	23.9		8.4	8.6	25.1	52.4	77.5
1885	11.4	74.7	23.5		8.5	7.4	27.5	66.2	93.7
1886	11.3	75.8	22.3		8.7	6.5	27.1	67.1	94.3
1887	15.7	75.0	21.0		8.8	6.0	30.7	66.2	96.9
1888	15.2	75.9	22.4		8.9	4.4	33.3	67.0	100.2
1889	14.4	64.6	23.6		9.0	5.4	32.6	55.6	88.2
1890	17.4	68.6	25.9		9.3	5.3	38.0	59.3	97.3
1891	13.7	80.4	24.7		9.6	3.9	34.5	70.8	105.3
1892	17.1	86.3	23.7		9.8	4.4	36.4	76.5	112.8
1893	20.1	74.0	24.8		10.3	5.5	39.4	63.7	103.1
1894	17.2	70.2	24.9		10.6	4.4	37.6	59.6	97.3
1895	18.1	72.9	25.1		11.2	4.2	39.0	61.7	100.7
1896	19.5	64.2	24.6		11.6	4.5	39.5	52.6	92.1
1897	19.6	65.7	28.2		12.1	3.5	44.3	53.6	97.9

Table H.14
Net Primary Income by Origin and Receiver, 1806-1913
(millions of guilders at current prices)

	receipts				expenditure		net primary incomes		
	private		*public*		*private*	*public*			
	colonial	non-colonial	colonial	non-colonial	non-colonial	colonial	colonial	non-colonial	total
1898	23.9	54.9	32.8		12.5	5.2	51.5	42.4	94.0
1899	25.3	67.9	29.1		13.2	5.4	49.0	54.7	103.7
1900	23.2	89.5	30.9		13.8	6.2	47.9	75.7	123.6
1901	22.5	61.7	29.8		14.5	5.9	46.5	47.2	93.7
1902	20.8	85.0	30.0		15.3	5.8	44.9	69.7	114.6
1903	26.2	96.3	32.7		16.3	8.0	50.9	79.9	130.8
1904	33.3	77.3	33.1		17.5	8.5	57.9	59.8	117.8
1905	42.7	78.9	32.6		18.6	6.8	68.5	60.3	128.9
1906	46.7	78.3	29.1		19.9	7.6	68.2	58.4	126.6
1907	60.8	75.9	29.0		21.2	7.8	82.0	54.7	136.8
1908	60.3	83.1	29.2		22.0	6.5	83.1	61.1	144.2
1909	59.6	80.9	31.4		23.2	6.5	84.6	57.7	142.3
1910	71.4	84.0	43.9		24.4	6.8	108.6	59.6	168.1
1911	84.6	92.8	37.3		26.0	8.2	113.6	66.8	180.4
1912	100.8	120.7	41.6		28.2	9.1	133.3	92.5	225.8
1913	105.5	157.0	55.0		30.0	9.3	151.2	127.0	278.2

Appendix I

SUMMARY

Table I.1
Deflators for Expenditure and Product, 1807-1913
(1913=100)

	expenditure	product		
	paasche	paasche	laspeyres	fisher
1807	126.7	128.4	133.5	130.9
1808	123.8	128.6	133.8	131.2
1809		121.8	129.5	125.6
1810				
1811				
1812				
1813				
1814				
1815	113.0	117.9	123.6	120.7
1816	119.9	131.8	137.2	134.5
1817	129.3	140.4	143.5	141.9
1818	115.2	130.1	134.2	132.1
1819	103.8	116.7	121.4	119.0
1820	100.3	105.6	111.3	108.4
1821	93.8	97.6	104.0	100.8
1822	92.4	94.4	100.6	97.5
1823	95.8	97.1	102.1	99.6
1824	88.6	89.2	95.0	92.1
1825	94.4	96.5	102.4	99.4
1826	92.5	93.1	97.3	95.2
1827	91.8	95.2	98.6	96.9
1828	91.1	90.6	94.1	92.3
1829	92.4	91.9	95.1	93.5
1830	95.5	95.5	98.5	97.0
1831	97.0	99.0	102.3	100.7
1832	91.5	98.1	101.5	99.8
1833	86.0	87.4	90.7	89.1
1834	85.7	85.9	89.0	87.4
1835	85.7	87.9	91.4	89.6
1836	87.6	94.6	98.4	96.5
1837	88.0	88.8	92.2	90.5
1838	89.8	93.4	96.4	94.9
1839	93.9	99.1	102.5	100.8
1840	90.8	95.6	98.6	97.1
1841	90.4	93.8	96.5	95.1
1842	89.2	92.1	95.0	93.5
1843	84.2	87.6	90.5	89.1
1844	82.1	82.6	85.5	84.0
1845	85.8	89.2	92.1	90.6
1846	91.5	95.0	98.8	96.9
1847	95.9	104.6	108.8	106.7
1848	86.3	84.9	87.7	86.3

Table I.1
Deflators for Expenditure and Product, 1807-1913
(1913=100)

	expenditure	product		
	paasche	paasche	laspeyres	fisher
1849	82.0	81.7	84.5	83.1
1850	84.1	79.7	82.3	81.0
1851	83.1	79.6	81.9	80.7
1852	85.8	84.0	86.2	85.1
1853	90.2	86.9	88.6	87.8
1854	99.1	93.1	94.7	93.9
1855	99.8	94.8	96.3	95.6
1856	100.4	98.4	100.2	99.3
1857	99.2	98.2	100.3	99.3
1858	89.9	93.4	95.6	94.5
1859	88.8	91.1	93.7	92.4
1860	90.4	95.6	97.8	96.7
1861	95.2	98.8	100.4	99.6
1862	100.9	105.0	107.7	106.3
1863	98.4	102.9	106.9	104.9
1864	101.5	103.0	106.8	104.9
1865	100.9	101.3	104.1	102.7
1866	103.3	102.2	103.9	103.0
1867	95.4	100.8	102.4	101.6
1868	95.4	99.6	101.1	100.4
1869	94.4	99.5	101.1	100.3
1870	92.1	97.1	98.7	97.9
1871	98.9	101.5	103.2	102.3
1872	109.9	111.9	114.9	113.4
1873	115.8	117.1	119.6	118.3
1874	116.2	116.7	120.0	118.4
1875	103.7	106.2	108.0	107.1
1876	101.2	104.8	105.5	105.2
1877	104.3	105.2	105.8	105.5
1878	100.0	99.1	99.6	99.3
1879	94.6	97.3	97.9	97.6
1880	96.6	98.4	98.6	98.5
1881	97.9	97.8	98.3	98.1
1882	97.1	100.0	100.6	100.3
1883	91.9	91.5	92.0	91.8
1884	87.9	89.0	89.5	89.2
1885	83.3	83.4	84.0	83.7
1886	80.0	81.0	81.7	81.4
1887	82.2	82.4	82.9	82.6
1888	82.5	83.9	84.3	84.1
1889	84.4	85.1	85.6	85.4
1890	86.0	89.0	89.5	89.2
1891	87.6	90.1	90.3	90.2
1892	82.2	84.1	84.6	84.3
1893	81.2	83.2	84.1	83.7
1894	79.5	81.5	82.0	81.8
1895	75.7	79.7	80.5	80.1
1896	77.0	80.9	81.7	81.3

Table I.1
Deflators for Expenditure and Product, 1807-1913
(1913=100)

	expenditure	product		
	paasche	paasche	laspeyres	fisher
1897	77.8	79.4	80.3	79.9
1898	78.7	82.7	83.5	83.1
1899	79.3	83.4	84.1	83.8
1900	83.8	88.6	89.9	89.3
1901	82.7	86.4	87.5	86.9
1902	82.2	84.5	85.3	84.9
1903	84.6	86.1	86.6	86.4
1904	87.0	89.3	89.5	89.4
1905	84.5	88.6	88.7	88.7
1906	89.7	92.5	92.7	92.6
1907	91.2	93.6	93.8	93.7
1908	89.7	90.1	90.1	90.1
1909	89.5	90.5	90.4	90.4
1910	91.2	92.7	92.6	92.6
1911	92.9	98.6	98.5	98.6
1912	94.3	100.5	100.5	100.5
1913	100.0	100.0	100.0	100.0

Table I.2
Nominal Domestic and National Product, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1807	490.3	458.7	454.4	422.8	511.7	480.1	475.8	444.1
1808	436.2	403.4	402.7	369.8	459.7	426.8	426.1	393.3
1809	407.9	372.6	372.3	337.0	433.7	398.3	398.0	362.7
1810								
1811								
1812								
1813								
1814								
1815	471.0	444.1	438.6	411.7	488.9	462.1	456.6	429.7
1816	508.3	483.2	474.4	449.3	545.8	520.7	511.9	486.8
1817	551.1	524.6	518.9	492.4	591.3	564.9	559.1	532.7
1818	524.7	496.4	492.2	463.9	553.9	525.5	521.4	493.1
1819	454.6	425.8	422.5	393.7	482.1	453.2	450.0	421.2
1820	445.7	417.2	411.9	383.4	484.1	455.6	450.3	421.8
1821	410.1	382.4	376.1	348.4	447.3	419.6	413.3	385.6
1822	405.9	378.8	371.5	344.3	440.9	413.7	406.4	379.2
1823	444.5	417.8	413.8	387.1	488.1	461.4	457.4	430.6
1824	412.6	385.7	381.0	354.1	455.7	428.8	424.0	397.1
1825	441.6	412.1	409.0	379.4	486.7	457.2	454.1	424.5
1826	436.1	405.7	404.8	374.3	487.5	457.0	456.2	425.7
1827	475.3	446.4	442.4	413.4	530.8	501.9	497.8	468.9
1828	467.6	439.5	435.2	407.1	515.4	487.3	483.0	454.9
1829	479.1	452.0	447.4	420.2	531.0	503.9	499.3	472.1
1830	458.8	432.1	428.8	402.0	499.3	472.5	469.2	442.5
1831	514.2	488.8	483.2	457.8	531.3	506.0	500.3	475.0
1832	535.3	510.1	500.5	475.4	560.6	535.4	525.9	500.7
1833	470.7	445.7	433.0	408.0	504.9	479.9	467.2	442.2
1834	470.5	443.9	431.2	404.6	508.9	482.3	469.7	443.1
1835	485.2	457.4	447.2	419.4	529.6	501.8	491.6	463.8
1836	545.6	517.3	508.1	479.8	593.8	565.5	556.3	528.0
1837	529.3	497.5	491.4	459.6	584.1	552.3	546.3	514.5
1838	568.6	537.4	532.0	500.8	630.3	599.2	593.7	562.5
1839	610.0	578.9	575.0	543.9	657.9	626.8	622.9	591.9
1840	601.1	570.0	565.0	533.9	644.7	613.6	608.6	577.5
1841	602.9	571.3	563.0	531.4	662.1	630.6	622.2	590.7
1842	583.0	552.2	538.4	507.6	638.2	607.5	593.6	562.9
1843	551.0	522.0	507.2	478.2	598.6	569.6	554.8	525.8
1844	529.8	501.0	485.0	456.2	577.7	548.9	532.9	504.1
1845	574.4	543.2	528.8	497.6	620.2	589.0	574.6	543.4
1846	615.1	581.0	568.9	534.8	656.5	622.4	610.4	576.3
1847	680.3	645.0	635.3	600.0	725.3	690.0	680.3	645.0
1848	561.9	526.8	518.3	483.2	602.5	567.4	558.9	523.8
1849	558.6	525.8	514.1	481.3	610.7	577.9	566.2	533.4
1850	561.0	530.1	513.6	482.7	606.6	575.7	559.2	528.3
1851	575.0	544.2	527.1	496.2	622.4	591.6	574.5	543.6

Table I.2
Nominal Domestic and National Product, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1852	605.9	572.7	557.6	524.4	648.1	615.0	599.8	566.7
1853	617.2	579.5	567.1	529.4	662.6	625.0	612.5	574.9
1854	706.9	665.7	656.1	614.9	764.1	722.9	713.3	672.1
1855	702.1	659.6	650.4	607.9	767.8	725.3	716.2	673.6
1856	764.4	723.2	718.0	676.8	828.2	787.0	781.8	740.6
1857	754.6	712.1	706.9	664.4	836.0	793.5	788.3	745.8
1858	700.2	660.2	651.8	611.8	773.8	733.8	725.4	685.4
1859	660.4	623.0	611.9	574.5	712.6	675.2	664.1	626.7
1860	730.2	692.3	679.4	641.4	802.0	764.1	751.2	713.2
1861	739.8	700.0	687.3	647.5	809.0	769.2	756.5	716.7
1862	823.5	782.6	770.4	729.5	874.3	833.5	821.3	780.4
1863	830.9	787.5	776.8	733.4	908.4	865.0	854.2	810.8
1864	872.3	826.5	815.8	770.0	942.0	896.2	885.6	839.8
1865	866.5	822.9	810.1	766.6	936.9	893.3	880.6	837.0
1866	911.7	868.4	856.2	812.9	985.5	942.3	930.0	886.8
1867	877.4	833.4	822.5	778.4	912.9	868.9	858.0	814.0
1868	879.5	834.9	824.0	779.3	928.2	883.6	872.6	828.0
1869	916.0	870.7	857.6	812.4	969.4	924.2	911.1	865.9
1870	931.4	883.4	872.9	824.9	1000.4	952.3	941.9	893.8
1871	972.1	924.9	911.3	864.0	1029.8	982.6	969.0	921.8
1872	1093.8	1039.5	1029.7	975.4	1175.5	1121.1	1111.4	1057.0
1873	1181.0	1108.0	1113.8	1040.8	1247.4	1174.4	1180.2	1107.2
1874	1148.7	1068.4	1080.4	1000.1	1234.0	1153.7	1165.7	1085.4
1875	1115.9	1050.3	1045.6	980.0	1215.8	1150.3	1145.5	1079.9
1876	1118.9	1054.1	1045.0	980.2	1193.1	1128.3	1119.2	1054.4
1877	1152.1	1087.2	1077.6	1012.7	1212.8	1147.9	1138.3	1073.3
1878	1095.0	1031.1	1020.0	956.2	1143.8	1080.0	1068.8	1005.0
1879	1037.5	973.9	963.4	899.8	1112.8	1049.2	1038.7	975.1
1880	1120.5	1053.9	1043.7	977.1	1198.8	1132.3	1122.0	1055.4
1881	1134.2	1065.9	1055.2	986.9	1229.6	1161.3	1150.7	1082.4
1882	1190.9	1123.4	1112.5	1044.9	1274.5	1207.0	1196.1	1128.5
1883	1170.3	1101.8	1092.6	1024.0	1244.0	1175.4	1166.2	1097.7
1884	1158.2	1088.5	1081.7	1012.0	1235.7	1166.0	1159.2	1089.5
1885	1109.8	1039.5	1032.2	961.9	1203.5	1133.2	1125.9	1055.6
1886	1094.4	1024.3	1015.8	945.8	1188.6	1118.6	1110.1	1040.1
1887	1141.0	1069.8	1061.1	989.9	1237.9	1166.7	1158.0	1086.8
1888	1178.4	1103.7	1097.8	1023.2	1278.6	1204.0	1198.1	1123.4
1889	1237.2	1159.5	1154.7	1076.9	1325.5	1247.7	1242.9	1165.2
1890	1240.9	1157.7	1158.1	1075.0	1338.3	1255.1	1255.5	1172.3
1891	1259.5	1167.4	1176.2	1084.0	1364.9	1272.8	1281.5	1189.4
1892	1209.1	1118.7	1125.1	1034.7	1322.0	1231.6	1237.9	1147.5
1893	1186.1	1100.0	1107.4	1021.4	1289.2	1203.2	1210.5	1124.5
1894	1229.5	1144.5	1148.7	1063.7	1326.7	1241.8	1245.9	1161.0
1895	1209.4	1120.8	1126.3	1037.7	1310.2	1221.6	1227.0	1138.5
1896	1279.6	1183.1	1193.4	1096.9	1371.7	1275.2	1285.5	1189.1
1897	1288.2	1180.4	1200.5	1092.8	1386.1	1278.4	1298.4	1190.7
1898	1361.7	1251.9	1271.2	1161.5	1455.6	1345.9	1365.2	1255.4

Table I.2
Nominal Domestic and National Product, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1899	1393.8	1279.1	1300.7	1186.1	1497.5	1382.9	1404.4	1289.8
1900	1466.6	1345.1	1369.6	1248.1	1590.3	1468.7	1493.2	1371.7
1901	1500.8	1378.1	1401.0	1278.3	1594.5	1471.8	1494.6	1371.9
1902	1532.6	1413.3	1430.3	1311.0	1647.2	1527.9	1544.9	1425.6
1903	1561.8	1435.2	1456.8	1330.2	1692.6	1566.1	1587.6	1461.1
1904	1642.2	1513.0	1534.5	1405.3	1759.9	1630.8	1652.2	1523.1
1905	1711.0	1581.5	1601.4	1472.0	1839.8	1710.4	1730.3	1600.8
1906	1822.9	1683.0	1707.4	1567.5	1949.5	1809.6	1834.0	1694.1
1907	1811.6	1663.4	1695.3	1547.1	1948.4	1800.2	1832.0	1683.8
1908	1778.2	1622.6	1663.3	1507.8	1922.3	1766.8	1807.5	1651.9
1909	1880.3	1727.3	1759.5	1606.4	2022.6	1869.6	1901.7	1748.7
1910	2000.5	1844.4	1874.3	1718.3	2168.6	2012.6	2042.4	1886.4
1911	2201.9	2036.4	2071.9	1906.3	2382.4	2216.8	2252.3	2086.8
1912	2310.0	2132.7	2174.2	1996.9	2535.8	2358.6	2400.0	2222.7
1913	2414.4	2215.2	2272.0	2072.8	2692.6	2493.4	2550.2	2351.0

Table I.3
Nominal Domestic and National Income, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1807	473.6	442.0	437.7	406.1	495.0	463.4	459.1	427.5
1808	493.0	460.1	459.4	426.6	516.5	483.6	482.9	450.0
1809	519.6	484.3	484.0	448.7	545.3	510.0	509.7	474.4
1810	570.9	536.8	539.7	505.6	570.9	536.8	539.7	505.6
1811	568.3	536.4	542.0	510.1	599.3	567.4	573.0	541.2
1812	472.6	441.0			472.6	441.0		
1813	387.5	357.0			387.5	357.0		
1814	352.6	323.3	318.0	288.7	362.9	333.6	328.2	298.9
1815	438.6	411.7	406.2	379.3	456.5	429.7	424.2	397.3
1816	434.0	408.9	400.2	375.0	471.6	446.5	437.7	412.6
1817	413.8	387.4	381.6	355.2	454.1	427.6	421.9	395.4
1818	425.8	397.5	393.3	365.0	455.0	426.7	422.5	394.2
1819	438.6	409.8	406.5	377.7	466.0	437.2	434.0	405.1
1820	429.0	400.5	395.2	366.7	467.4	438.9	433.6	405.1
1821	415.8	388.0	381.8	354.1	453.0	425.3	419.0	391.3
1822	403.4	376.2	369.0	341.8	438.3	411.1	403.9	376.7
1823	393.7	367.0	363.0	336.3	437.3	410.6	406.6	379.8
1824	391.7	364.8	360.1	333.1	434.8	407.8	403.1	376.2
1825	417.1	387.6	384.4	354.9	462.2	432.7	429.5	400.0
1826	428.9	398.5	397.6	367.2	480.3	449.9	449.0	418.6
1827	474.4	445.5	441.5	412.5	529.9	501.0	496.9	468.0
1828	436.1	408.0	403.7	375.6	483.9	455.8	451.5	423.3
1829	429.1	401.9	397.3	370.2	481.0	453.9	449.3	422.1
1830	416.5	389.8	386.5	359.7	457.0	430.2	426.9	400.2
1831	437.2	411.9	406.2	380.9	454.3	429.0	423.3	398.0
1832	479.8	454.6	445.0	419.8	505.1	479.9	470.3	445.1
1833	443.4	418.4	405.7	380.7	477.6	452.6	439.9	414.9
1834	454.1	427.5	414.9	388.3	492.5	465.9	453.3	426.7
1835	511.0	483.2	473.0	445.2	555.4	527.6	517.4	489.6
1836	467.6	439.3	430.1	401.8	515.8	487.5	478.3	450.0
1837	498.5	466.7	460.6	428.9	553.3	521.5	515.5	483.7
1838	434.3	403.1	397.6	366.5	496.0	464.8	459.4	428.2
1839	437.1	406.0	402.2	371.1	485.0	453.9	450.1	419.0
1840	460.6	429.5	424.6	393.4	504.3	473.1	468.2	437.1
1841	469.8	438.2	429.9	398.4	529.0	497.5	489.1	457.6
1842	484.3	453.5	439.7	408.9	539.5	508.8	494.9	464.2
1843	521.3	492.3	477.6	448.6	569.0	540.0	525.2	496.2
1844	526.9	498.1	482.1	453.3	574.9	546.0	530.0	501.2
1845	538.4	507.2	492.8	461.6	584.2	553.0	538.6	507.4
1846	563.0	528.9	516.9	482.8	604.5	570.4	558.3	524.2
1847	573.9	538.7	529.0	493.7	619.0	583.7	574.0	538.7
1848	573.9	538.8	530.3	495.2	614.5	579.4	570.9	535.8
1849	512.9	480.1	468.4	435.6	565.1	532.3	520.6	487.8
1850	534.5	503.6	487.0	456.2	580.1	549.2	532.7	501.8
1851	548.4	517.5	500.4	469.6	595.8	564.9	547.8	517.0

Table I.3
Nominal Domestic and National Income, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1852	532.0	498.8	483.7	450.5	574.2	541.1	525.9	492.8
1853	553.3	515.7	503.2	465.6	598.8	561.1	548.7	511.0
1854	594.7	553.6	543.9	502.8	651.9	610.7	601.1	559.9
1855	602.5	559.9	550.8	508.3	668.2	625.7	616.6	574.0
1856	567.3	526.1	520.9	479.7	631.1	590.0	584.7	543.6
1857	580.7	538.2	533.0	490.5	662.1	619.6	614.4	571.9
1858	647.9	607.9	599.5	559.5	721.5	681.5	673.1	633.1
1859	613.5	576.1	565.0	527.6	665.8	628.4	617.3	579.9
1860	604.6	566.6	553.7	515.8	676.3	638.4	625.5	587.5
1861	607.1	567.3	554.6	514.8	676.4	636.5	623.9	584.0
1862	616.4	575.5	563.3	522.4	667.3	626.4	614.2	573.3
1863	648.2	604.8	594.1	550.7	725.7	682.3	671.5	628.1
1864	670.1	624.3	613.6	567.8	739.8	694.0	683.4	637.6
1865	682.3	638.8	626.0	582.5	752.8	709.2	696.5	652.9
1866	702.7	659.5	647.2	604.0	776.6	733.3	721.1	677.8
1867	798.5	754.5	743.6	699.6	834.1	790.1	779.2	735.1
1868	705.4	660.8	649.9	605.3	754.1	709.5	698.5	653.9
1869	724.4	679.2	666.1	620.9	777.9	732.7	719.6	674.4
1870	801.0	753.0	742.6	694.5	870.0	822.0	811.5	763.5
1871	822.8	775.6	762.0	714.8	880.6	833.3	819.7	772.5
1872	901.7	847.4	837.6	783.3	983.4	929.0	919.3	864.9
1873	890.2	817.1	823.0	750.0	956.6	883.5	889.4	816.4
1874	1070.1	989.9	1001.8	921.5	1155.5	1075.2	1087.1	1006.8
1875	1035.5	969.9	965.2	899.6	1135.5	1069.9	1065.2	999.6
1876	1069.8	1005.0	995.9	931.1	1144.0	1079.2	1070.1	1005.4
1877	981.7	916.7	907.1	842.2	1042.4	977.4	967.8	902.9
1878	1006.2	942.4	931.2	867.4	1055.1	991.2	980.1	916.2
1879	1142.8	1079.2	1068.6	1005.0	1218.1	1154.5	1144.0	1080.4
1880	1196.1	1129.6	1119.3	1052.8	1274.5	1207.9	1197.6	1131.1
1881	1239.3	1171.0	1160.3	1092.0	1334.8	1266.5	1255.8	1187.5
1882	1201.7	1134.1	1123.2	1055.6	1285.3	1217.7	1206.8	1139.3
1883	1169.5	1100.9	1091.7	1023.2	1243.1	1174.6	1165.4	1096.9
1884	1194.6	1124.9	1118.1	1048.4	1272.1	1202.4	1195.6	1125.9
1885	1264.6	1194.3	1187.0	1116.7	1358.3	1288.0	1280.7	1210.4
1886	1289.7	1219.6	1211.1	1141.1	1383.9	1313.9	1305.4	1235.4
1887	1289.3	1218.1	1209.4	1138.2	1386.2	1315.0	1306.3	1235.1
1888	1299.2	1224.6	1218.7	1144.1	1399.5	1324.9	1318.9	1244.3
1889	1266.3	1188.6	1183.8	1106.1	1354.6	1276.9	1272.0	1194.3
1890	1306.3	1223.1	1223.5	1140.3	1403.6	1320.4	1320.8	1237.6
1891	1417.2	1325.1	1333.8	1241.7	1522.6	1430.5	1439.2	1347.1
1892	1455.0	1364.6	1371.0	1280.6	1567.9	1477.4	1483.8	1393.4
1893	1327.0	1241.0	1248.3	1162.3	1430.1	1344.1	1351.4	1265.4
1894	1352.1	1267.1	1271.3	1186.3	1449.3	1364.4	1368.6	1283.6
1895	1418.3	1329.7	1335.2	1246.6	1519.0	1430.4	1435.9	1347.3
1896	1393.9	1297.5	1307.8	1211.3	1486.1	1389.6	1399.9	1303.4
1897	1433.5	1325.8	1345.8	1238.1	1531.4	1423.7	1443.8	1336.0
1898	1429.0	1319.2	1338.6	1228.8	1523.0	1413.2	1432.6	1322.8

Table I.3
Nominal Domestic and National Income, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1899	1551.2	1436.5	1458.1	1343.4	1654.9	1540.2	1561.8	1447.1
1900	1713.8	1592.2	1616.7	1495.2	1837.4	1715.9	1740.4	1618.9
1901	1600.7	1478.0	1500.9	1378.2	1694.4	1571.7	1594.5	1471.8
1902	1760.2	1641.0	1657.9	1538.6	1874.9	1755.6	1772.5	1653.2
1903	1851.7	1725.1	1746.7	1620.1	1982.5	1856.0	1877.5	1751.0
1904	1803.7	1674.5	1696.0	1566.8	1921.4	1792.3	1813.7	1684.6
1905	1856.5	1727.1	1747.0	1617.5	1985.4	1855.9	1875.8	1746.4
1906	1912.0	1772.1	1796.5	1656.5	2038.6	1898.7	1923.1	1783.2
1907	1905.4	1757.2	1789.1	1640.9	2042.2	1894.0	1925.8	1777.6
1908	1972.8	1817.2	1858.0	1702.4	2116.9	1961.4	2002.1	1846.5
1909	1987.3	1834.3	1866.5	1713.4	2129.6	1976.6	2008.8	1855.7
1910	2038.7	1882.7	1912.6	1756.5	2206.9	2050.8	2080.7	1924.6
1911	2167.0	2001.5	2036.9	1871.4	2347.4	2181.9	2217.4	2051.8
1912	2462.8	2285.6	2327.0	2149.7	2688.7	2511.4	2552.8	2375.6
1913	2733.3	2534.1	2591.0	2391.8	3011.5	2812.3	2869.2	2670.0

Table I.4
Nominal Domestic and National Expenditure, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1807	512.9	481.2	477.0	445.3	534.3	502.6	498.4	466.7
1808	490.4	457.5	456.8	424.0	513.9	481.0	480.3	447.4
1809	402.6	367.3	367.0	331.7	428.4	393.1	392.8	357.5
1810								
1811								
1812								
1813								
1814	395.9	366.6	361.3	332.0	406.2	376.9	371.6	342.3
1815	465.9	439.0	433.5	406.7	483.9	457.0	451.5	424.7
1816	484.4	459.3	450.6	425.4	522.0	496.9	488.1	463.0
1817	546.6	520.1	514.4	487.9	586.8	560.4	554.6	528.2
1818	477.6	449.3	445.1	416.8	506.8	478.5	474.3	446.0
1819	443.9	415.0	411.8	383.0	471.3	442.5	439.2	410.4
1820	446.2	417.7	412.4	383.9	484.5	456.0	450.7	422.3
1821	421.2	393.4	387.2	359.5	458.4	430.6	424.4	396.7
1822	421.6	394.5	387.2	360.0	456.6	429.4	422.1	395.0
1823	408.7	381.9	377.9	351.2	452.2	425.5	421.5	394.8
1824	376.4	349.4	344.7	317.8	419.4	392.5	387.7	360.8
1825	389.5	360.0	356.8	327.3	434.6	405.1	402.0	372.4
1826	387.1	356.6	355.8	325.3	438.5	408.0	407.2	376.7
1827	423.8	394.9	390.9	361.9	479.3	450.4	446.4	417.4
1828	425.9	397.8	393.5	365.4	473.7	445.5	441.2	413.1
1829	445.3	418.1	413.5	386.4	497.2	470.0	465.4	438.3
1830	432.3	405.6	402.3	375.5	472.8	446.0	442.7	416.0
1831	494.3	469.0	463.3	438.0	511.4	486.1	480.4	455.1
1832	450.7	425.5	415.9	390.7	476.0	450.8	441.3	416.1
1833	464.4	439.4	426.7	401.7	498.6	473.6	460.9	435.9
1834	445.6	419.0	406.4	379.8	484.1	457.5	444.8	418.2
1835	459.4	431.6	421.4	393.6	503.8	476.0	465.8	438.0
1836	462.2	433.9	424.7	396.4	510.4	482.1	472.9	444.6
1837	475.3	443.5	437.4	405.6	530.1	498.3	492.3	460.5
1838	491.1	459.9	454.5	423.3	552.8	521.6	516.2	485.0
1839	512.9	481.8	478.0	446.9	560.8	529.8	525.9	494.8
1840	500.5	469.4	464.4	433.3	544.1	513.0	508.1	477.0
1841	526.4	494.9	486.6	455.0	585.7	554.1	545.8	514.3
1842	524.4	493.7	479.8	449.1	579.7	548.9	535.1	504.3
1843	525.9	496.9	482.1	453.1	573.5	544.5	529.7	500.8
1844	486.8	457.9	441.9	413.1	534.7	505.8	489.9	461.0
1845	469.2	438.0	423.6	392.4	515.0	483.8	469.4	438.2
1846	489.1	455.0	442.9	408.8	530.6	496.5	484.4	450.3
1847	510.4	475.2	465.5	430.2	555.5	520.2	510.5	475.2
1848	527.8	492.7	484.2	449.1	568.4	533.3	524.8	489.7
1849	529.6	496.8	485.1	452.3	581.7	548.9	537.2	504.4
1850	543.4	512.5	495.9	465.1	589.0	558.1	541.5	510.7
1851	514.0	483.2	466.1	435.3	561.4	530.6	513.5	482.7

Table I.4
Nominal Domestic and National Expenditure, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1852	573.0	539.9	524.7	491.6	615.3	582.1	567.0	533.8
1853	571.4	533.7	521.3	483.6	616.9	579.2	566.8	529.1
1854	710.0	668.8	659.2	618.0	767.2	726.0	716.4	675.2
1855	640.7	598.2	589.1	546.5	706.5	663.9	654.8	612.3
1856	676.8	635.6	630.4	589.2	740.6	699.5	694.2	653.1
1857	614.5	572.0	566.8	524.3	695.9	653.4	648.2	605.7
1858	614.7	574.7	566.3	526.3	688.3	648.3	639.9	599.9
1859	599.7	562.3	551.2	513.8	652.0	614.6	603.5	566.1
1860	651.3	613.4	600.4	562.5	723.1	685.1	672.2	634.3
1861	732.4	692.5	679.9	640.0	801.6	761.7	749.1	709.2
1862	818.9	778.1	765.9	725.0	869.8	828.9	816.7	775.8
1863	753.7	710.3	699.5	656.1	831.2	787.7	777.0	733.6
1864	742.8	697.0	686.3	640.5	812.5	766.7	756.1	710.3
1865	806.8	763.2	750.5	706.9	877.2	833.6	820.9	777.3
1866	915.8	872.5	860.3	817.0	989.7	946.4	934.2	890.9
1867	848.5	804.5	793.6	749.6	884.1	840.1	829.2	785.2
1868	900.5	855.9	844.9	800.3	949.2	904.6	893.6	849.0
1869	911.5	866.3	853.2	808.0	965.0	919.8	906.7	861.5
1870	960.6	912.5	902.1	854.0	1029.5	981.5	971.0	923.0
1871	967.6	920.3	906.7	859.5	1025.3	978.1	964.5	917.2
1872	1077.2	1022.9	1013.1	958.8	1158.9	1104.5	1094.8	1040.4
1873	1085.3	1012.2	1018.1	945.1	1151.7	1078.6	1084.5	1011.5
1874	1233.3	1153.1	1165.0	1084.7	1318.6	1238.4	1250.3	1170.0
1875	1142.1	1076.5	1071.8	1006.2	1242.1	1176.5	1171.7	1106.2
1876	1130.1	1065.3	1056.2	991.4	1204.3	1139.5	1130.4	1065.6
1877	1162.6	1097.7	1088.0	1023.1	1223.3	1158.4	1148.7	1083.8
1878	1159.2	1095.3	1084.2	1020.3	1208.0	1144.2	1133.0	1069.2
1879	1042.2	978.6	968.1	904.5	1117.5	1053.9	1043.4	979.8
1880	1161.1	1094.6	1084.3	1017.8	1239.4	1172.9	1162.6	1096.1
1881	1215.2	1146.9	1136.2	1067.9	1310.6	1242.3	1231.7	1163.4
1882	1304.8	1237.3	1226.4	1158.8	1388.5	1320.9	1310.0	1242.5
1883	1239.7	1171.2	1162.0	1093.5	1313.4	1244.9	1235.7	1167.2
1884	1235.8	1166.1	1159.3	1089.5	1313.3	1243.6	1236.8	1167.1
1885	1225.3	1155.0	1147.7	1077.4	1319.0	1248.7	1241.4	1171.1
1886	1250.3	1180.3	1171.8	1101.7	1344.6	1274.5	1266.1	1196.0
1887	1350.0	1278.7	1270.1	1198.8	1446.8	1375.6	1366.9	1295.7
1888	1309.2	1234.6	1228.7	1154.0	1409.4	1334.8	1328.9	1254.3
1889	1412.1	1334.4	1329.6	1251.8	1500.4	1422.6	1417.8	1340.1
1890	1372.8	1289.6	1290.0	1206.8	1470.1	1386.9	1387.3	1304.1
1891	1376.9	1284.8	1293.5	1201.4	1482.3	1390.2	1398.9	1306.8
1892	1344.3	1253.8	1260.2	1169.8	1457.1	1366.7	1373.0	1282.6
1893	1261.0	1175.0	1182.3	1096.3	1364.1	1278.1	1285.5	1199.4
1894	1216.1	1131.2	1135.3	1050.4	1313.4	1228.4	1232.6	1147.6
1895	1257.7	1169.1	1174.6	1086.0	1358.4	1269.8	1275.3	1186.7
1896	1278.5	1182.0	1192.3	1095.9	1370.6	1274.2	1284.4	1188.0
1897	1291.8	1184.1	1204.1	1096.4	1389.7	1282.0	1302.1	1194.3
1898	1341.1	1231.3	1250.7	1140.9	1435.0	1325.3	1344.6	1234.9

Table I.4
Nominal Domestic and National Expenditure, Gross and Net, at Market Prices and Factor Costs, 1807-1913
(millions of guilders at current prices)

	domestic				national			
	market prices		factor costs		market prices		factor costs	
	gross	net	gross	net	gross	net	gross	net
1899	1422.4	1307.8	1329.4	1214.7	1526.1	1411.5	1433.1	1318.4
1900	1444.6	1323.1	1347.6	1226.1	1568.3	1446.7	1471.3	1349.7
1901	1563.7	1441.0	1463.9	1341.2	1657.4	1534.7	1557.5	1434.8
1902	1605.9	1486.6	1503.5	1384.2	1720.5	1601.2	1618.1	1498.9
1903	1668.6	1542.1	1563.6	1437.1	1799.4	1672.9	1694.4	1567.9
1904	1803.3	1674.2	1695.6	1566.5	1921.1	1791.9	1813.4	1684.2
1905	1744.6	1615.1	1635.0	1505.5	1873.4	1744.0	1763.9	1634.4
1906	1859.7	1719.8	1744.2	1604.3	1986.3	1846.4	1870.8	1730.9
1907	1862.3	1714.1	1746.0	1597.8	1999.1	1850.9	1882.8	1734.6
1908	1894.0	1738.5	1779.2	1623.6	2038.2	1882.6	1923.4	1767.8
1909	1910.3	1757.3	1789.5	1636.4	2052.6	1899.6	1931.8	1778.7
1910	2046.1	1890.1	1920.0	1763.9	2214.3	2058.2	2088.1	1932.0
1911	2103.1	1937.6	1973.0	1807.5	2283.5	2118.0	2153.5	1987.9
1912	2185.5	2008.3	2049.7	1872.5	2411.4	2234.1	2275.6	2098.3
1913	2241.6	2042.4	2099.2	1900.0	2519.8	2320.6	2377.5	2178.3

Table I.5
Nominal and Real Gross Domestic Product and Gross National Product Per Capita, 1807-1913

	nominal			real	
	GDP per capita *f*	GNP per capita *f*	GDP deflator 1913=100	GDP per capita *f*1913	GNP per capita *f*1913
1807	226.7	236.6	128.4	176.6	184.3
1808	202.3	213.2	128.6	157.4	165.8
1809			121.8		
1810					
1811					
1812					
1813					
1814					
1815	212.4	220.5	117.9	180.1	187.0
1816	226.0	242.7	131.8	171.6	184.2
1817	243.2	261.0	140.4	173.2	185.9
1818	229.0	241.7	130.1	176.0	185.8
1819	196.0	207.8	116.7	167.9	178.0
1820	189.9	206.3	105.6	179.8	195.3
1821	172.1	187.7	97.6	176.2	192.2
1822	168.0	182.4	94.4	177.9	193.2
1823	181.3	199.0	97.1	186.6	204.9
1824	165.4	182.6	89.2	185.3	204.7
1825	174.4	192.2	96.5	180.7	199.1
1826	170.9	191.0	93.1	183.5	205.1
1827	185.0	206.6	95.2	194.3	217.0
1828	179.9	198.3	90.6	198.5	218.7
1829	182.8	202.6	91.9	198.8	220.4
1830	173.4	188.7	95.5	181.7	197.7
1831	193.3	199.7	99.0	195.2	201.7
1832	200.5	209.9	98.1	204.3	214.0
1833	174.7	187.4	87.4	199.8	214.3
1834	173.1	187.2	85.9	201.5	218.0
1835	176.7	192.8	87.9	200.9	219.3
1836	196.4	213.7	94.6	207.6	225.9
1837	188.7	208.3	88.8	212.4	234.4
1838	200.4	222.2	93.4	214.7	238.0
1839	212.6	229.3	99.1	214.6	231.4
1840	207.1	222.1	95.6	216.6	232.4
1841	205.1	225.3	93.8	218.8	240.3
1842	196.6	215.3	92.1	213.4	233.7
1843	183.8	199.7	87.6	209.7	227.9
1844	174.9	190.7	82.6	211.7	230.8
1845	187.4	202.4	89.2	210.2	226.9
1846	200.1	213.6	95.0	210.5	224.7
1847	221.8	236.5	104.6	211.9	226.0
1848	182.9	196.2	84.9	215.4	231.0
1849	181.3	198.2	81.7	221.8	242.5
1850	180.1	194.7	79.7	226.0	244.4
1851	182.5	197.6	79.6	229.2	248.1

Table I.5
Nominal and Real Gross Domestic Product and Gross National Product Per Capita, 1807-1913

	nominal			real	
	GDP per capita *f*	GNP per capita *f*	GDP deflator 1913=100	GDP per capita *f*1913	GNP per capita *f*1913
1852	190.4	203.6	84.0	226.6	242.4
1853	192.5	206.7	86.9	221.5	237.8
1854	218.8	236.5	93.1	235.0	254.0
1855	216.7	237.0	94.8	228.6	250.0
1856	234.0	253.6	98.4	237.8	257.6
1857	229.5	254.2	98.2	233.6	258.8
1858	212.2	234.5	93.4	227.2	251.1
1859	199.6	215.4	91.1	219.1	236.4
1860	219.5	241.1	95.6	229.6	252.2
1861	220.6	241.3	98.8	223.3	244.2
1862	243.7	258.7	105.0	232.1	246.4
1863	243.3	265.9	102.9	236.4	258.5
1864	253.2	273.4	103.0	245.8	265.4
1865	249.3	269.6	101.3	246.2	266.3
1866	261.1	282.2	102.2	255.5	276.2
1867	248.7	258.8	100.8	246.8	256.8
1868	247.2	260.9	99.6	248.3	262.0
1869	254.9	269.8	99.5	256.3	271.3
1870	256.8	275.8	97.1	264.4	284.0
1871	266.7	282.5	101.5	262.8	278.4
1872	297.3	319.5	111.9	265.7	285.5
1873	317.4	335.3	117.1	271.2	286.4
1874	304.8	327.4	116.7	261.1	280.5
1875	293.1	319.3	106.2	276.1	300.8
1876	290.1	309.4	104.8	276.7	295.1
1877	294.7	310.2	105.2	280.0	294.8
1878	276.6	288.9	99.1	279.2	291.7
1879	258.6	277.3	97.3	265.8	285.0
1880	276.3	295.7	98.4	281.0	300.6
1881	276.4	299.7	97.8	282.6	306.4
1882	286.5	306.6	100.0	286.5	306.6
1883	278.5	296.0	91.5	304.2	323.4
1884	272.5	290.8	89.0	306.2	326.7
1885	258.0	279.8	83.4	309.3	335.4
1886	251.6	273.2	81.0	310.4	337.2
1887	259.0	281.0	82.4	314.5	341.2
1888	264.3	286.8	83.9	315.0	341.8
1889	274.2	293.8	85.1	322.1	345.1
1890	272.2	293.5	89.0	305.8	329.8
1891	273.2	296.0	90.1	303.1	328.5
1892	259.8	284.1	84.1	308.9	337.7
1893	251.6	273.5	83.2	302.3	328.5
1894	257.6	278.0	81.5	316.0	341.0
1895	250.3	271.1	79.7	313.9	340.0
1896	261.1	279.9	80.9	322.7	345.9
1897	259.2	278.9	79.4	326.4	351.2
1898	270.4	289.0	82.7	327.0	349.6

Table I.5
Nominal and Real Gross Domestic Product and Gross National Product Per Capita, 1807-1913

	nominal			real	
	GDP per capita *f*	GNP per capita *f*	GDP deflator 1913=100	GDP per capita *f* 1913	GNP per capita *f* 1913
1899	273.1	293.4	83.4	327.3	351.7
1900	283.2	307.0	88.6	319.5	346.4
1901	285.1	302.9	86.4	330.2	350.8
1902	286.6	308.1	84.5	339.0	364.4
1903	287.6	311.7	86.1	333.8	361.8
1904	298.0	319.4	89.3	333.6	357.5
1905	306.0	329.0	88.6	345.3	371.3
1906	321.4	343.7	92.5	347.4	371.6
1907	315.2	339.0	93.6	336.7	362.1
1908	305.3	330.0	90.1	338.9	366.3
1909	318.8	342.9	90.5	352.3	379.0
1910	336.5	364.7	92.7	363.1	393.6
1911	365.6	395.6	98.6	370.7	401.1
1912	377.8	414.7	100.5	376.0	412.8
1913	388.6	433.4	100.0	388.6	433.4

Table I.6
Nominal and Real Gross Domestic Expenditure and Gross National Expenditure Per Capita, 1807-1913

	nominal			real	
	GDE per capita *f*	GNE per capita *f*	GDE deflator 1913=100	GDE per capita *f*1913	GNE per capita *f*1913
1807	237.1	247.0	126.7	187.1	194.9
1808	227.4	238.3	123.8	183.7	192.5
1809					
1810					
1811					
1812					
1813					
1814					
1815	210.1	218.2	113.0	186.0	193.1
1816	215.4	232.1	119.9	179.7	193.6
1817	241.2	259.0	129.3	186.6	200.4
1818	208.5	221.2	115.2	181.0	192.1
1819	191.4	203.2	103.8	184.3	195.7
1820	190.1	206.5	100.3	189.5	205.8
1821	176.7	192.3	93.8	188.5	205.1
1822	174.5	188.9	92.4	188.8	204.4
1823	166.6	184.4	95.8	174.0	192.6
1824	150.8	168.1	88.6	170.2	189.6
1825	153.8	171.6	94.4	163.0	181.9
1826	151.7	171.8	92.5	163.9	185.7
1827	165.0	186.6	91.8	179.8	203.3
1828	163.8	182.2	91.1	179.8	200.0
1829	169.9	189.7	92.4	183.9	205.4
1830	163.4	178.7	95.5	171.1	187.1
1831	185.8	192.2	97.0	191.5	198.2
1832	168.8	178.3	91.5	184.4	194.8
1833	172.3	185.0	86.0	200.3	215.1
1834	163.9	178.1	85.7	191.4	207.9
1835	167.3	183.4	85.7	195.2	214.1
1836	166.4	183.7	87.6	189.9	209.7
1837	169.4	189.0	88.0	192.5	214.8
1838	173.1	194.9	89.8	192.8	217.0
1839	178.8	195.5	93.9	190.4	208.2
1840	172.4	187.5	90.8	189.9	206.5
1841	179.1	199.3	90.4	198.2	220.5
1842	176.9	195.5	89.2	198.4	219.3
1843	175.4	191.3	84.2	208.4	227.3
1844	160.7	176.5	82.1	195.6	214.9
1845	153.1	168.1	85.8	178.5	195.9
1846	159.1	172.6	91.5	173.8	188.6
1847	166.4	181.1	95.9	173.6	188.9
1848	171.8	185.1	86.3	199.1	214.4
1849	171.9	188.8	82.0	209.5	230.1
1850	174.4	189.1	84.1	207.4	224.8

Table I.6
Nominal and Real Gross Domestic Expenditure and Gross National Expenditure Per Capita, 1807-1913

	nominal			real	
	GDE per capita *f*	GNE per capita *f*	GDE deflator 1913=100	GDE per capita *f*1913	GNE per capita *f*1913
1851	163.2	178.2	83.1	196.4	214.5
1852	180.1	193.3	85.8	209.8	225.2
1853	178.2	192.4	90.2	197.7	213.4
1854	219.8	237.5	99.1	221.8	239.6
1855	197.8	218.1	99.8	198.2	218.5
1856	207.2	226.8	100.4	206.5	225.9
1857	186.9	211.6	99.2	188.5	213.4
1858	186.3	208.6	89.9	207.2	232.0
1859	181.2	197.0	88.8	204.2	222.0
1860	195.8	217.4	90.4	216.6	240.5
1861	218.4	239.0	95.2	229.5	251.2
1862	242.3	257.4	100.9	240.2	255.1
1863	220.7	243.3	98.4	224.2	247.2
1864	215.6	235.8	101.5	212.4	232.3
1865	232.2	252.4	100.9	230.0	250.1
1866	262.2	283.4	103.3	253.8	274.3
1867	240.5	250.6	95.4	252.0	262.6
1868	253.1	266.8	95.4	265.3	279.6
1869	253.7	268.6	94.4	268.7	284.5
1870	264.9	283.9	92.1	287.4	308.1
1871	265.4	281.3	98.9	268.5	284.5
1872	292.8	315.0	109.9	266.5	286.7
1873	291.7	309.5	115.8	251.9	267.3
1874	327.3	349.9	116.2	281.6	301.1
1875	300.0	326.2	103.7	289.4	314.7
1876	293.0	312.3	101.2	289.6	308.6
1877	297.4	312.9	104.3	285.1	300.0
1878	292.8	305.2	100.0	292.7	305.1
1879	259.7	278.5	94.6	274.5	294.3
1880	286.4	305.7	96.6	296.5	316.5
1881	296.2	319.4	97.9	302.4	326.2
1882	313.9	334.0	97.1	323.2	343.9
1883	295.0	312.5	91.9	320.8	339.9
1884	290.8	309.0	87.9	330.6	351.4
1885	284.9	306.7	83.3	342.2	368.3
1886	287.4	309.1	80.0	359.5	386.6
1887	306.4	328.4	82.2	372.9	399.6
1888	293.6	316.1	82.5	356.1	383.3
1889	313.0	332.6	84.4	371.0	394.2
1890	301.1	322.4	86.0	350.1	374.9
1891	298.6	321.5	87.6	340.9	367.0
1892	288.9	313.1	82.2	351.6	381.1
1893	267.5	289.4	81.2	329.4	356.3
1894	254.8	275.2	79.5	320.5	346.1
1895	260.2	281.1	75.7	343.9	371.4
1896	260.9	279.7	77.0	338.7	363.1

Table I.6
Nominal and Real Gross Domestic Expenditure and Gross National Expenditure Per Capita, 1807-1913

	nominal			real	
	GDE per capita *f*	GNE per capita *f*	GDE deflator 1913=100	GDE per capita *f*1913	GNE per capita *f*1913
1897	259.9	279.6	77.8	333.9	359.3
1898	266.3	284.9	78.7	338.3	362.0
1899	278.7	299.0	79.3	351.6	377.2
1900	278.9	302.8	83.8	333.0	361.5
1901	297.1	314.9	82.7	359.4	381.0
1902	300.3	321.8	82.2	365.2	391.3
1903	307.2	331.3	84.6	363.2	391.7
1904	327.3	348.7	87.0	376.3	400.9
1905	312.0	335.1	84.5	369.4	396.7
1906	327.9	350.2	89.7	365.6	390.5
1907	324.0	347.8	91.2	355.4	381.5
1908	325.1	349.9	89.7	362.3	389.9
1909	323.9	348.0	89.5	362.0	389.0
1910	344.1	372.4	91.2	377.5	408.6
1911	349.2	379.2	92.9	375.9	408.1
1912	357.4	394.4	94.3	379.1	418.3
1913	360.8	405.6	100.0	360.8	405.6

Table I.7
Nominal and Real Gross Domestic Income and Gross National Income Per Capita, 1807-1913

	nominal			real	
	GDI per capita *f*	GNI per capita *f*	GDE deflator 1913=100	GDI per capita *f* 1913	GNI per capita *f* 1913
1807	219.0	228.9	126.7	172.8	180.6
1808	228.7	239.5	123.8	184.6	193.4
1809	240.9	252.9			
1810	264.1	264.1			
1811	262.4	276.7			
1812	217.7	217.7			
1813	177.6	177.6			
1814	161.4	166.1			
1815	197.8	205.9	113.0	175.0	182.2
1816	193.0	209.7	119.9	161.0	174.9
1817	182.6	200.4	129.3	141.3	155.0
1818	185.8	198.6	115.2	161.4	172.4
1819	189.1	200.9	103.8	182.1	193.5
1820	182.8	199.2	100.3	182.2	198.5
1821	174.5	190.1	93.8	186.0	202.7
1822	166.9	181.4	92.4	180.6	196.3
1823	160.6	178.3	95.8	167.7	186.2
1824	157.0	174.2	88.6	177.1	196.6
1825	164.7	182.5	94.4	174.5	193.4
1826	168.1	188.2	92.5	181.7	203.4
1827	184.6	206.2	91.8	201.2	224.7
1828	167.8	186.1	91.1	184.2	204.3
1829	163.7	183.5	92.4	177.3	198.7
1830	157.4	172.7	95.5	164.8	180.8
1831	164.4	170.8	97.0	169.4	176.1
1832	179.7	189.1	91.5	196.3	206.7
1833	164.6	177.3	86.0	191.3	206.0
1834	167.0	181.2	85.7	195.0	211.5
1835	186.1	202.2	85.7	217.2	236.0
1836	168.3	185.7	87.6	192.1	211.9
1837	177.7	197.3	88.0	202.0	224.2
1838	153.1	174.8	89.8	170.5	194.7
1839	152.4	169.1	93.9	162.3	180.1
1840	158.7	173.7	90.8	174.8	191.3
1841	159.8	180.0	90.4	176.8	199.1
1842	163.3	182.0	89.2	183.2	204.1
1843	173.9	189.8	84.2	206.6	225.5
1844	173.9	189.7	82.1	211.8	231.1
1845	175.7	190.6	85.8	204.8	222.3
1846	183.1	196.6	91.5	200.1	214.8
1847	187.1	201.8	95.9	195.2	210.5
1848	186.9	200.1	86.3	216.5	231.8
1849	166.5	183.4	82.0	202.9	223.5
1850	171.6	186.2	84.1	204.0	221.4
1851	174.1	189.1	83.1	209.5	227.6

Table I.7
Nominal and Real Gross Domestic Income and Gross National Income Per Capita, 1807-1913

	nominal			real	
	GDI per capita *f*	GNI per capita *f*	GDE deflator 1913=100	GDI per capita *f*1913	GNI per capita *f*1913
1852	167.2	180.4	85.8	194.7	210.2
1853	172.6	186.8	90.2	191.4	207.2
1854	184.1	201.8	99.1	185.8	203.6
1855	186.0	206.3	99.8	186.4	206.7
1856	173.7	193.2	100.4	173.1	192.5
1857	176.6	201.3	99.2	178.1	203.1
1858	196.3	218.6	89.9	218.4	243.2
1859	185.4	201.2	88.8	208.9	226.6
1860	181.8	203.3	90.4	201.1	224.9
1861	181.0	201.7	95.2	190.2	211.9
1862	182.4	197.5	100.9	180.8	195.7
1863	189.8	212.5	98.4	192.8	215.8
1864	194.5	214.7	101.5	191.6	211.5
1865	196.3	216.6	100.9	194.6	214.6
1866	201.2	222.4	103.3	194.7	215.2
1867	226.3	236.4	95.4	237.2	247.7
1868	198.3	212.0	95.4	207.8	222.1
1869	201.6	216.5	94.4	213.6	229.3
1870	220.9	239.9	92.1	239.7	260.3
1871	225.7	241.6	98.9	228.3	244.3
1872	245.1	267.3	109.9	223.1	243.3
1873	239.2	257.1	115.8	206.6	222.0
1874	284.0	306.6	116.2	244.4	263.8
1875	272.0	298.2	103.7	262.4	287.7
1876	277.4	296.6	101.2	274.1	293.1
1877	251.1	266.6	104.3	240.8	255.7
1878	254.2	266.5	100.0	254.1	266.4
1879	284.8	303.6	94.6	301.0	320.8
1880	295.0	314.3	96.6	305.4	325.4
1881	302.0	325.3	97.9	308.4	332.2
1882	289.1	309.2	97.1	297.7	318.4
1883	278.3	295.8	91.9	302.7	321.7
1884	281.1	299.3	87.9	319.6	340.4
1885	294.0	315.8	83.3	353.1	379.3
1886	296.5	318.1	80.0	370.8	397.9
1887	292.7	314.7	82.2	356.1	382.9
1888	291.4	313.9	82.5	353.4	380.6
1889	280.7	300.3	84.4	332.7	355.9
1890	286.5	307.9	86.0	333.1	358.0
1891	307.4	330.2	87.6	350.9	376.9
1892	312.7	336.9	82.2	380.5	410.0
1893	281.5	303.4	81.2	346.6	373.5
1894	283.3	303.7	79.5	356.3	381.9
1895	293.5	314.3	75.7	387.8	415.3
1896	284.5	303.3	77.0	369.3	393.7
1897	288.5	308.2	77.8	370.6	395.9
1898	283.7	302.4	78.7	360.5	384.2

Table I.7
Nominal and Real Gross Domestic Income and Gross National Income Per Capita, 1807-1913

	nominal			real	
	GDI per capita *f*	GNI per capita *f*	GDE deflator 1913=100	GDI per capita *f* 1913	GNI per capita *f* 1913
1899	303.9	324.2	79.3	383.4	409.0
1900	330.9	354.8	83.8	395.0	423.5
1901	304.1	321.9	82.7	367.9	389.5
1902	329.2	350.6	82.2	400.3	426.4
1903	340.9	365.0	84.6	403.0	431.5
1904	327.4	348.7	87.0	376.4	401.0
1905	332.0	355.1	84.5	393.1	420.4
1906	337.1	359.4	89.7	375.9	400.8
1907	331.5	355.3	91.2	363.6	389.7
1908	338.7	363.4	89.7	377.4	405.0
1909	336.9	361.0	89.5	376.6	403.6
1910	342.9	371.2	91.2	376.2	407.2
1911	359.8	389.8	92.9	387.3	419.6
1912	402.8	439.7	94.3	427.2	466.3
1913	440.0	484.7	100.0	440.0	484.7

Appendix J

RELIABILITY OF THE ESTIMATES

Table J.1
Classification of Product by Reliability

	1800-1850				1850-1913			
	A	B	C	D	A	B	C	D
railways	●				●			
communication	●				●			
paper		●				●		
foodstuffs		●				●		
textiles		●				●		
utilities		●				●		
construction		●				●		
maritime shipping		●				●		
government		●				●		
agriculture			●			●		
mining			●			●		
foreign trade			●			●		
int. river shipping			●			●		
education			●			●		
domestic servants			●			●		
housing			●			●		
inland navigation				●		●		
clothing			●				●	
chemicals			●				●	
metal industry			●				●	
shipbuilding			●				●	
ceramics				●			●	
printing				●			●	
woodworking				●			●	
domestic trade				●			●	
other services				●			●	
catering				●			●	
diamond cutting				●				●
leather				●				●
other transport				●				●
banking				●				●
insurance				●				●

Table J.2
Classification of Income by Reliability

	1800-1850				1850-1913			
	A	B	C	D	A	B	C	D
indirect taxes		●				●		
capital			●			●		
depreciation			●				●	
wages				●			●	
profits				●				●

Table J.3
Classification of Expenditure by Reliability

	1800-1850				1850-1913			
	A	B	C	D	A	B	C	D
Private Consumer Expenditure								
communication	●				●			
transport		●			●			
rent		●			●			
education			●		●			
rice		●				●		
sugar		●				●		
tobacco		●				●		
tea		●				●		
potatoes		●				●		
beer		●				●		
butter		●				●		
bread		●				●		
spirits		●				●		
cheese		●				●		
coffee		●				●		
meat		●				●		
wine		●				●		
domestic servants			●			●		
fuel			●				●	
clothing			●				●	
milk			●				●	
other industrial goods			●				●	
other services			●				●	
horticultural goods				●				●
Investments: Machinery and Transport Equipment								
mining	●				●			
utilities	●				●			
rolling stock	●				●			
communication	●				●			
drainage		●				●		
merchant shipping		●				●		
public services		●				●		
agriculture			●				●	
industry and construction			●				●	
inland navigation			●				●	
trade			●				●	
road transport				●				●
Investments: Other buildings, residential		●				●		
buildings, non-residential		●				●		
stocks				●				●
Balance of Payments								
all items			●				●	

REFERENCES

Archival Sources

Algemeen Rijksarchief (A.R.A.; Public Record Office)

Collectie Goldberg
Financie van Holland
Stoomvaartmaatschappij Nederland (2.20.23)

Municipal Archive of Amsterdam

Bienfait (646)

STATISTICS AND OTHER PRIMARY SOURCES

Algemeene Staatsrekening 1842-1850
Algemeen Verslag van den Landbouw 1841-1844
Bescheiden betreffende de geldmiddelen 1846/59-1902
Beroepstellingen 1849-1909
De Economist 1853
Handelingen van de beide Kamers der Staten-Generaal van het Koninkrijk der Nederlanden 1814/1815-1850
Jaarcijfers van het Koninkrijk der Nederlanden 1881-1913
Staat van den Landbouw 1816-1828
Staatkundig en Staathuishoudkundig Jaarboekje 1849-1880
Statistiek van den Handel en de Scheepvaart 1846-1876
Statistiek van den In-, Uit- en Doorvoer 1877-1913
Statistiek der Rijksinkomsten 1903-1913
Statistiek van Voortbrenging en Verbruik 1913
Verslag van den toestand der provincie Noord-Holland 1853

LITERATURE

Albers, R.M., and P.D. Groote, 'Kapitaalvorming in spoor- en tramwegen, 1838-1913', *NEHA-Jaarboek voor Economische, Bedrijfs- en Techniek-geschiedenis* 57 (1994), 353-375

Albers, R.M., and P. Groote, 'The Empirics of Growth', *De Economist* 144 (1996), 429-444

Albers, R.M., *Capital formation in machinery and economic development in the Netherlands since 1800* (forthcoming)

Bakker, G.P. den, and W. van Sorge, 'Het onbenut arbeidsvolume in het Interbellum', *Economisch- en Sociaal-Historisch Jaarboek* 54 (1991) 212-240

Den Bakker, G. (1990), 'De keuze van indexcijferformules en gewichten. Een gevoeligheidsanalyse aan de hand van macro-reeksen voor het interbellum' *CBS Statistische onderzoekingen* M38

Bakker, G.P. den, *The Dutch interwar economy revisited. Construction and analysis of national accounts* (Ph.D. thesis; Voorburg, forthcoming)

Bie, R. van der, *"Eene doorlopende groote roes". De economische ontwikkeling van Nederland, 1913/1921* (Amsterdam, 1995)

Bieleman, J., 'Boeren en rekenmeesters - een repliek', *Tijdschrift voor Geschiedenis* 101 (1988) 206-221

Bijdragen van het Statistisch Instituut 5 (1889) 136-137

Boot, J.A.P.G., *De Twentsche katoennijverheid 1830-1873* (Amsterdam, 1935)

Brugmans, I.J., *De arbeidende klasse in Nederland in de 19e eeuw 1813-1870* (Utrecht/Antwerpen, 1978[11])

Burger, A., 'Dutch patterns of development: economic growth and structural change in the Netherlands, 1800-1910', *Economic and Social History in the Netherlands* 7 (1996) 161-180

Burger, A., *International comparisons of income and productivity: a comparative perspective on Dutch economic growth in the nineteenth century* (Ph.D. thesis; forthcoming)

Callewaert, A., 'Estimating Dutch industrial growth 1850-1914' [Paper presented at the workshop National Accounts] (Utrecht, 1992)

C.B.S., 'Berekeningen over het nationale inkomen van Nederland voor de periode 1900-1920' [by J.B.D. Derksen], *De Nederlandsche conjunctuur*. Speciale Onderzoekingen no. 4 ('s-Gravenhage, 1941)

C.B.S., 'Het nationale inkomen van Nederland 1921-1939', *Monografieën van de Nederlandse conjunctuur* no. 7 (Utrecht, 1948)

C.B.S., G.P. den Bakker, Th.A. Huitker, and C.A. van Bochove, *Macro-economische ontwikkelingen 1921-1939 en 1969-1985* (Den Haag, 1987)

C.B.S., *Nationale rekeningen 1991* (Den Haag, 1992)

Clemens, A.H.P., P. Groote, and R.M. Albers, 'The contribution of physical and human capital to economic growth in the Netherlands, 1850-1913', *Economic and Social History in the Netherlands* 7 (1996), 181-197

Daly, Herman E., and John B. Cobb Jr., *For the common good. Redirecting the economy towards community, the environment and a sustainable future* (Londen, 1989)

Eisner, Robert, 'Extended accounts for national income and product', *Journal of Economic Literature* 26 (1988) 1611-1684

Elfring, T., *Service employment in advanced economies.A comparative analysis of its implications for economic growth* (Groningen, 1988)

Feinstein, C.H., *National income, expenditure and output of the United Kingdom 1855-1965* (Cambridge, 1972)

Gales, B., 'Mijnbouw', in: H.W. Lintsen *et.al.* (eds.), *Geschiedenis van de techniek in Nederland* (Zutphen, 1993) 13-36

Gerding, M.A.W., *Vier eeuwen turfwinning. De verveningen in Groningen, Friesland, Drenthe en Overijssel tussen 1550 en 1950* (Wageningen 1995)

Gerschenkron, A., *Economic backwardness in historical perspective* (New Haven, 1962)

Gogel, I.J.A., *Memoriën en correspondentiën betrekkelijk den staat van 's Rijks geldmiddelen in den jare 1820* (Amsterdam, 1844)

Graaff, A. de, *De kolenvoorziening van Nederland* (Haarlem, 1943)

Griffiths, R.T., 'The role of taxation in wage formulation in the Dutch economy in the first half of the nineteenth century', in: *Ondernemende geschiedenis* (Den Haag, 1977)

Griffiths, R.T., *Industrial retardation in the Netherlands 1830-1850* (Den Haag, 1979)

Griffiths, R.T., *Achterlijk, achter of anders? Aspecten van de economische ontwikkeling van Nederland in de 19e eeuw* (Amsterdam, 1980)

Griffiths, R.T., ‘The creation of a national Dutch economy: 1795-1909’, *Tijdschrift voor geschiedenis* 95 (1982) 513-537

Griffiths, R.T., and J.M.M. de Meere, ‘The growth of the Dutch economy in the nineteenth century: back to basics?’, *Tijdschrift voor geschiedenis* 96 (1983) 563-572

Groote, P., ‘Work in progress. Capital formation in Dutch railways, 1839-1913’ [paper presented at a workshop on national accounts in Leuven] (Groningen, 1991)

Groote, P., *Kapitaalvorming in infrastructuur in Nederland 1800-1913* (Groningen, 1995)

Groote, P., and R.M. Albers, ‘Dutch Rail and Tramways in a Comparative Perspective’, *Economic and Social History in the Netherlands* 7 (1996), 41-55

Hall, H.C. van, ‘Bijdragen tot de statistiek van den Nederlandse landbouw’, *Tijdschrift ter bevordering van nijverheid* 9 (1846) 172-221

Harley, C. Knick, ‘Ocean freight rates and productivity, 1740-1913: the primacy of mechanical invention reaffirmed’, *Journal of economic history* 48 (1988) 851-876

Harris, Jonathan M., ‘Critiques of National Income Accounting and GNP: Overview Essay’, in: Frank Ackerman, David Kiron, Neva R. Goodwin, Jonathan M. Harris en Kevin Gallagher, *Human Well-Being and Economic Goals* (Washington DC, 1997) 335-341

Hofstee, E.W., *De demografische ontwikkeling van Nederland in de eerste helft van de negentiende eeuw* (Deventer, 1978)

Horlings, E., ‘De ontwikkeling van de Nederlandse bevolking in de negentiende eeuw, 1795-1913’ [unpublished research memorandum] (Amsterdam, 1993)

Horlings, E., J.P. Smits, and J.L. van Zanden, ‘Structural change in the Dutch economy 1800-1913’, in: A. Maddison and H. van der Wee, eds., *Economic growth and structural change. Comparative approaches over the long run on the basis of reconstructed national accounts* [Eleventh International Economic Congress Milan 1994, session B 13] (Milan, 1994)

Horlings, E., *The economic development of the Dutch service sector 1800-1850. Trade and transport in a premodern economy* (Amsterdam, 1995)

Horlings, E., en J.-P. Smits, 'Private consumer expenditure in the Netherlands, 1800-1913', *Economic and Social History in the Netherlands* 7 (1995) 15-40

Horlings, E., and J.L. van Zanden, 'Exploitatie en afscheiding. De financiën van de rijksoverheid in Nederland en België, 1815-1850' [paper presented at the conference 'Vergelijkende Historische Nationale Rekeningen in Nederland en België', Leuven, 28 November 1996] (Utrecht, 1996)

Jansen, M., *De industriële produktie in Nederland 1800-1850* (Amsterdam, 2000)

Jonge, J.A. de, *De industrialisatie in Nederland tussen 1850 en 1914* (Amsterdam, 1968)

Knibbe, M., *Agriculture in the Netherlands 1851-1950. Production and institutional change* (Amsterdam, 1993)

Korthals Altes, W.L., *Balance of Payments 1822-1939*, in: P. Dooren (ed.), *Changing economy of Indonesia: a selection of statistical source material from the early 19th century up to 1940*, vol. 7 (Amsterdam, 1987)

Kuperus, J.A. (1962) 'Honderd jaar bedrijfsresultaten van de Wilhelminapolder (1814-1913)', *Historia Agriculturae* 6, 117-273

Kuznets, S. W, *National Income and its composition, 1919-1938* (New York, 1941) 3-60

Kuznets, S.W., *Modern economic growth. Rate, structure and spread* (New Haven/London, 1966)

Laanen, J.T.M. van, *Money and banking 1816-1940*, in: P. Dooren (ed.), *Changing Economy of Indonesia* (Den Haag, 1980)

Lindblad, J.Th., and J.L. van Zanden, `De buitenlandse handel van Nederland, 1872-1913', *Economisch- en sociaal-historisch jaarboek* 52 (1989) 231-269

Malanima, P., *Energia e Crescita nell'Europa preindustriale* (Roma, 1996) 54-55

Meere, J.M.M. de, *Economische groei en levensstandaard in Nederland gedurende de eerste helft van de negentiende eeuw. Aspecten en trends* (Den Haag, 1982)

Metelerkamp, R., *De toestand van Nederland* (Rotterdam, 1804)

Mitchell, B.R., *British historical statistics* (Cambridge, 1990)

Money and Banking 1816-1940, in: W.M.F. Mansvelt (ed.), *Changing Economy of Indonesia: a selection of statistical source material from the early 19th century up to 1940*, vol. 6 (Den Haag, 1980)

North, D.C., 'Ocean freight rates and economic development 1750-1913', *Journal of Economic History* 18 (1958) 537-555

Nusteling, H.P.H., *De Rijnvaart in het tijdperk van stoom en steenkool 1831-1914* (Amsterdam, 1974)

Oomens, C.A., 'De loop der bevolking in de negentiende eeuw', *CBS Statistische Berichten* M35 (Den Haag, 1989)

Oomens, C.A., and G.P. den Bakker, 'De beroepsbevolking in Nederland 1849-1990', *Supplement bij de sociaal-economische maandstatistiek* 1994-2 ('s-Gravenhage, 1994)

Pons, G., *De bakens verzet. Een analyse van de Hollandse pekelharingvisserij met kielschepen in de periode 1814-1885* (Halsteren, 1996).

Posthumus, N.W., *Nederlandse prijsgeschiedenis*, 2 vols. (Leiden, 1946-1964)

Priester, P., *De economische ontwikkeling van de landbouw in Groningen 1800-1910* (Wageningen, 1991)

Public finance 1816-1939, in: W.M.F. Mansvelt (ed.), *Changing Economy of Indonesia: a selection of statistical source material from the early 19th century up to 1940* , vol. 2 (Den Haag, 1976)

Rapport van de commissie voor de mijnen ('s-Gravenhage, 1901)

Riel, A. van, *Postponed conformity* (Ph.D. thesis; Utrecht, forthcoming)

Riley, J.C., `The Dutch economy after 1650: decline or growth?', *Journal of European economic history* 13 (1984) 521-569

Roessingh, H.K., *Inlandse tabak* (Wageningen/Zutphen, 1976)

Sickenga, F.N., *Bijdrage tot de geschiedenis der belastingen in Nederland*, 2 vols. (Leiden, 1864)

Smits, J.P., 'The size and structure of the Dutch service sector in international perspective, 1850-1914', *Economic and social history in the Netherlands* 2 (1990) 81-98

Smits, J.P.H., *Economische groei en structurele veranderingen in de Nederlandse dienstensector 1850-1913* (Amsterdam, 1995)

Smits, J.P., 'Economische groei en de aantasting van natuurlijke hulpbronnen. Theoretische beschouwingen met een toespitsing op de Nederlandse situatie', *NEHA-Bulletin* 11,1 (1997) 3-34

Spiethoff, A., *Die wirtschaftlichen Wechsellagen* (Tübingen/Zürich, 1955)

Stuyvenberg, J.H. van, *Honderd jaar margarine, 1869-1969* (Den Haag, 1969)

Teijl, J., 'Nationaal Inkomen in Nederland in de periode 1850-1900', *Economisch- en Sociaal-Historisch Jaarboek* XXXIV (1971) 232-262

Teijl, J., 'Brandstofaccijns en nijverheid in Nederland gedurende de periode 1834-1864', in: J. van Herwaarden (ed.), *Lof der Historie* (Rotterdam, 1973) 153-184

UN, *System of National Accounts 1993* (Brussel/Luxemburg, 1993)

UN, *Human Development Report* 1999

Vermaas, A., `Real industrial wages in the Netherlands, 1850-1913' [paper for the Eleventh International History Congress in Milan] (Amsterdam, 1993)

Vermaas, A., *Wages, salaries and income inequality in the Netherlands, 1850-1913* (Ph.D. thesis; forthcoming 1995)

Verslag van de Staatscomissie, ingesteld bij K.B. van 15 dec. 1927 no. 34 tot het onderzoeken van de vraag of, en zo ja, in hoeverre en door welke oorzaken in de landbouw en tuinbouw een wanverhouding bestaat tussen de bodemprijzen en productiekosten enerzijds en de opbrengst anderzijds ('s Gravenhage, 1934)

Verstegen, Wybren, 'National wealth and income from capital in the Netherlands, c. 1805-1910', *Economic and Social History in the Netherlands* 7 (1996) 73-108

Verstegen, S.W., and J.L. van Zanden, 'Boeren als ondernemers. Vier landbouwbedrijven op de Veluwe in de negentiende eeuw (1808-1867)', *Jaarboek voor de geschiedenis van bedrijf en techniek* 4 (1987) 85-105

Voort, R. van der, *Overheidsbeleid en overheidsfinanciën in Nederland, 1850-1913* (Amsterdam, 1994)

Woude, A.M. van der, *Het Noorderkwartier. Een regionaal historisch onderzoek in de demografische en economische geschiedenis van westelijk Nederland van de late middeleeuwen tot het begin van de 19e eeuw* (Utrecht, 1983)

Zanden, J.L. van, *De industrialisatie in Amsterdam 1825-1914* (Bergen, 1987)

Zanden, J.L. van, *De economische ontwikkeling van de Nederlandse landbouw in de negentiende eeuw 1800-1914* (Wageningen, 1985)

Zanden, J.L. van, 'Economische groei in Nederland in de negentiende eeuw. Enkele nieuwe resultaten', *Economisch- en sociaal-historisch jaarboek* 50 (1987) 51-76

Zanden, J.L. van, 'De landbouw op de zandgronden van Oost-Nederland', *Tijdschrift voor Geschiedenis* 101 (1988) 190-205

Zanden, J.L. van, 'Regionale verschillen in landbouwproductiviteiten loonpeil in de Lage Landen aan het begin van de negentiende eeuw', *NEHA-Jaarboek* 57 (1994) 271-286

Zanden, J.L. van, 'The development of government finances in a chaotic period', *Economic and Social History in the Netherlands* 7 (1995)

Zanden, J.L., 'De Gouden Eeuw uit turf geboren?', *Tijdschrift voor Geschiedenis* 1997 (in print)

Zon, H. van, *Een zeer onfrisse geschiedenis: studies over niet-industriële vervuilingen in Nederland, 1850-1920* (Den Haag, 1986)