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Half a century of Dutch manufacturing
Annual Reports 1950-2000

Herman Noordman, Jeannette Verbruggen, Bert Minne

CPB Netherlands Bureau for Economic Policy Analysis
Van Stolkweg 14
P.O. Box 80510
2508 GM The Hague, the Netherlands

Telephone +31 70 338 33 80
Telefax +31 70 338 33 50
Internet www.cpb.nl

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Preface

About thirty years ago, CPB started a data base of the Dutch manufacturing branches, with time series from 1950 onwards, as far as available. This data book has been updated each year, and the number of topics increased, in line with the increased coverage of Statistics Netherlands. The data are used as input for scenario projections of the annual profit- and loss accounts of Dutch manufacturing, split into volume- and price components[1].

The large majority of data in the data base originates from Statistics Netherlands. Still, CPB has made substantial contributions to the dataset. First, CPB detailed the nominal data for the years before 1995, making them consistent with the industrial classification in the years thereafter. Second, for the period 1950-1987, CPB split nominal changes into volume and price components. Third, CPB made the figures of the period 1950-1969 which were based on the ISIC-classification compatible with the new SBI-classification, introduced by Statistics Netherlands in 1969. Finally, CPB systematically integrated the available data of Statistics Netherlands on branches of industry into one reference book.

In the course of time, the following CPB-employees carried out this work: Rob Bakker, Cees van den Bos, Jan de la Bije, Leo de la Bije, Piet van Kleef, Thomas Cool, Peter Eering, Maurits Fraenkel, Mr. Hagens, Hans den Hartog, Victor Herzberg, Arnold Kusters, Nico van Leeuwen, Mr. Menne, Bert Minne, Martin van Nieuwenhoven, Herman Noordman, Peter v.d. Smeede, Theo Szarzinsky, Twan Verschaeren, Gijs Vorstman, Jeannette Verbruggen, Martin Vromans en Jip Zeilmaker. We thank Nico van Stokrom and Piet Verbiest (Statistics Netherlands) for comments on earlier drafts.

There was a risk that the data and their sources would sink into oblivion. This publication prevents this. The data base aims to stimulate the study of Dutch manufacturing during the second half of the 20th century[2]. Also it facilitates economic research for scenario studies based on long time series.

Henk Don,
Director CPB

[1] The data are inputs in models, which are the instruments to make scenario projections. Examples are models of the Dutch textiles-, clothing- and shoe-industries (Den Hartog and Fraenkel, 1972), the chemical industry (Vromans, 1983) and the metal-electro industry (Bakker, Minne and Noordman, 1984). For the most recent model linking this outlook and the data base, see Creusen et al (2003).

[2] Manufacturing plays a key role the development and production of technology. Therefore, the data may be useful for economic historians. See for instance the large research project 'Technology in the Netherlands in the 20th century', which investigates the interplay between new technology and Dutch society (see Lintsen (ed), 1998, 2000) and De Jong (1999)).

1 Introduction

This document presents a data book of 18 (since 1993 of 21) manufacturing branches in the Netherlands, covering the second half of the 20th century. The data base contains annual profit- and loss accounts by branches of industry, in nominal values, and split into volume and price components. Data on employment, investment, energy use, bottlenecks of production and the demography of firms, as well as on Dutch manufacturing imports are presented. The data sources are extensively documented. The data and their sources can be downloaded from the internet-site www.cpb.nl/eng/data/

Which branches of industry are distinguished? Which topics are involved? What is the relation between the contents of the data book with economic policy? These questions are answered in section 2. The diversity in development of the manufacturing branches is illustrated in boxes, based on figures from the data book. Which products are specific to an industry? Section 3 presents them as product-market combinations. Section 4 gives the manual to download the figures. Section 5 presents the data sources. A precise description of the sources by branch can be downloaded from the above-mentioned internet-site.

2 Branches, topics and relation with economic policy

Distinguished branches

The branches of industry are listed in table 1.1. There are three reasons for the chosen level of detail. First, it is the lowest level of aggregation consistent with macroeconomic figures. Second, the division is in accordance with international statistics on manufacturing and thus permits international benchmarking in research on manufacturing branches. Third, the division corresponds with the institutions operating in the manufacturing industry, such as employers' organisations, trade unions and ministries, which makes this data book particularly useful for these institutions.

The link between the institutions and the distinguished branches is not surprising. Institutions are organised as a community of interests. Their interests concern goals of government policy (relating to the environment, energy, safety, innovation, education, and wage levels) or standardisation, which lead to efficient production on a higher level than that of the individual firm. These goals are related to distinct production technologies and the input of raw materials. This is reflected in the classification by branches in this data book, as can be illustrated by the following. Standardisation, innovation and high-level education are linked to discrete production technologies and new products, characteristics that apply to the electronic industry. Wage levels are particularly important for labour-intensive industries, such as the metal product industry, the machine industry and the clothing industry. The themes environment, energy and safety are linked to continuous processing and the input of oil. The basic chemical industry in particular fulfils these conditions.

Table 2.1 The branches of industry

	Positions 7– 8 [c]
Metal-electro industry	ME
Iron and steel	BF
Non-ferrous metals	BN
Metal products	MP
Machines	MT
Electronic industry	ET
Office-machines and computers [a]	EK
Audio and video equipment and telecommunication [a]	EA
Electrical and electronic components [a]	EO
Optical instruments and other metal-based products [b]	EM
Medical, optical and precision instruments [a]	EM
Cars	AU
Shipbuilding and –repair	TS
Aircraft and –repair, aerospace (and trains: import only)	TV
Bicycles	TF
Chemical industry	CH
Basic chemicals	BC
Final chemical products	CD
Plastic and synthetic products	RU
Paper and paper products	PK
Publishing and printing	GR
Textiles	TL
Clothing, apparel	KC
Leather and footwear	LS

[a] from 1993

[b] 1950– 1993

[c] the significance of this column is disclosed in section 4.

Topics

The data book contains data on the following topics (section 4 lists them in detail):

- The profit- and loss accounts, in nominal millions of Dutch guilders. A change in nominal value is split into a volume- and price change. Three markets are distinguished, viz. the market for consumer goods, investment goods and intermediates. These markets are explicit as far it concerns sales on the Dutch market. Of course, exports also consist of consumer goods, investment goods and intermediates. However, only their total is known. Profits follow from gross production minus all costs.
- Production, capacity utilisation and bottlenecks. Production is a key variable. The data book contains a few indicators, viz. gross production at producer prices, value added at market prices and at factor costs, and net value added at factor costs. These indicators are part of the profit- and loss accounts. On top of that, the so-called production index is added. This index is not derived from the profit- and loss accounts, but it is measured by Statistics Netherlands independently as a direct indicator of real gross value added. The rate of capacity utilisation of equipment is added in order to compute potential production. Moreover, the data book contains indicators that may help to explain deviations from full capacity, viz. the shares of firms which mention as bottlenecks: insufficient demand, a shortage of labour or a shortage of technical capacity.
- Factors of production. The data book contains data on employment, energy-use and several types of investment, like investments in computers, other equipment, software, research and development and factory buildings.
- Demography of firms. The number of firms and number of bankruptcies are included because they are related with the degree of competition, the use of economies of scale, and the costs of adjustment in manufacturing.
- Dutch imports of consumer goods, investment goods and intermediates, each with a volume and price component. These data link up with the profit- and loss account of Dutch manufacturing. The data book also includes data on re-exports. Re-exports are goods that are imported and exported again after a minor transformation. Re-exports are very large in the Netherlands, because the Netherlands houses many European distribution centres of manufacturing products.

Data book and economic policy

The contents of the data book are strongly related to the issues of economic policy, which has changed substantially over time, thereby calling for additional data to inform policy makers. The link between the presented data and economic policy is discussed below.

In the period 1950-1975, policies on manufacturing focused on demand management, with special incentive for promising industries. First, the government tried to control the business cycle by manipulating demand according to the prescriptions of Keynes. The data book reflects this focus on demand with the split in many markets, each of them supposedly driven by distinct determinants in the business cycle. (Net income of households drives the consumption market and it develops smoothly. In contrast, the market of equipment fluctuates strongly, as it is determined by the change in business production, which is an accelerator of the business cycle. Finally, the markets for intermediates may fluctuate heavily, due to changes in stocks). The EEC, created in 1958, aimed at increasing welfare by stimulating foreign competition. This increased the importance of the registration of Dutch imports, competing with domestic production. From about 1960 nominal import figures were included in the data book, as well as import prices of competitors, in order to measure price competitiveness of Dutch firms.

Second, the government actively wanted to improve the Dutch economic structure by stimulating specific industries with best prospects for the economy. With Marshall Aid, the government promoted the settlement of the basic chemical and the steel industry (before World War II the industry only made iron). Also the car industry was supported. The Dutch aircraft industry was indirectly supported by government research institutes on aircraft and offsets (the assembly of American fighter jets bought by the Dutch Ministry of Defence). The government also supported the shipbuilding industry by the purchase of war ships. This industrial policy fits with the classification of branches of manufacturing in the data book. Today, such targeted industrial policy has almost been abolished.

Around 1975, the emphasis of economic policy shifted in two ways. First, potential output and the comparative advantages of Dutch factors of production became the major policy concern. Technically speaking, the production function, which explains output (including quality improvement and new products) from the efforts of the factors of production, came to the forefront. The first reason for the shift in policy concern was that full employment was no longer considered as guaranteed. Policy makers became interested in potential production, and Statistics Netherlands started to measure capacity utilisation. Second, around 1975, Dutch manufacturing had largely completed its catch-up to American productivity levels. Consequently, technology became a policy issue, and Statistics Netherlands started to register expenditures on research and development. The third reason was that a clean environment became a policy goal, so that Statistics Netherlands began to register environmental investments. Fourth, energy saving became a policy issue, as the energy crisis of 1973 seemed to have led to structurally higher energy prices. Therefore, Statistics Netherlands started to

register energy use. More recently, ICT became a policy issue because of its assumed high impact on productivity, and statistics on investments in computers and software became available. The annual data book was gradually enlarged to take account of the above-mentioned developments.

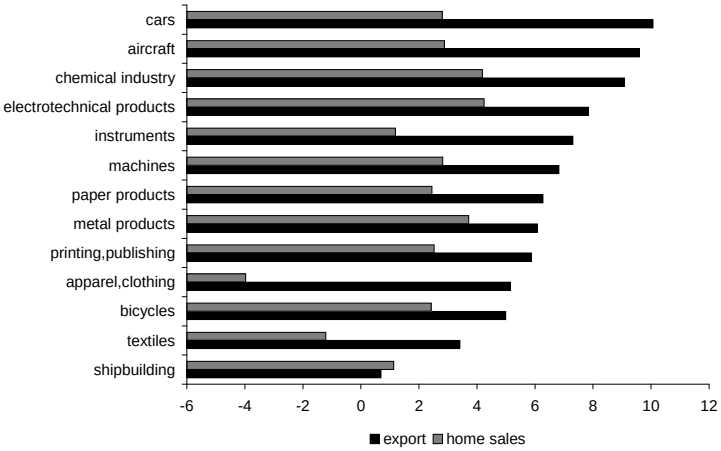
The second shift in policy emphasis since 1975 is that the government turned away from direct market intervention to the creation of favourable conditions for firms. In competition, the best firms should win. Also structural adjustment became an issue, stimulated by the OECD. The instruments were generic policy measures. The data book contains indicators on competition: Price competitiveness can be measured by the comparison of domestic and import prices. Figures on the number of firms and the number of bankruptcies indicate market entry and exit.

Boxes

Boxes illustrate some interesting trends based on figures from the dataset. The boxes are ranked as follows. First, boxes illustrate the development of sales in volume and prices. Next boxes show price making and market shares. They are followed by boxes on production, in their turn followed by boxes on the factors of production. Finally, boxes are presented on firm size and entry and exit.

Growth rates export and sales on home market by Dutch branch, 1953-2001, ranking export rates

(volume, average annual percentage per year)

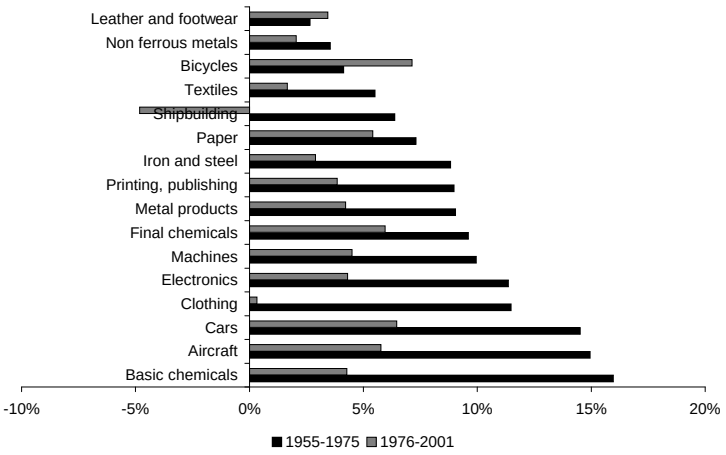


The second half of the century, the branches with the highest growth rates were the car, the aircraft, the chemical and the electronics industry. There are three reasons for this development. First, these branches produced goods, which were new at the time, and therefore they had high income elasticity. Second, these products became relatively cheap, so they substituted products of other branches. Third, Dutch manufacturing specialised in skilled and knowledge intensive branches. All four branches belong to this category. These same reasons led to low growth rates of shipbuilding, textiles, bicycles and clothing. For a large part, production of these industries was moved to low wage counties, which are abundant in low skilled cheap labour.

Export volume of Dutch manufacturing branches grew more than the sales in the Netherlands except shipbuilding. A main reason is that in the last half of the century, firms within branches specialised in brands, each brand with its own demand curve. Dutch exports are enhanced, because foreigners appreciate Dutch brands. In contrast, Dutch customers bought more and more foreign brands instead of Dutch brands, because these foreign brands better fit their preferences. Sales volume of Dutch producers of textiles and clothing on the Dutch market even declined, while export volume increased. These exports mainly concern high tech textiles and fashion goods.

Stability of growth rates export volume of goods, 1955-1975 and 1975--2000

Annual percentage changes, ranking growth rates 1955-1975.

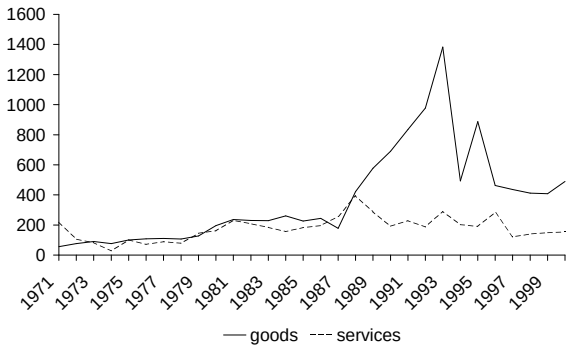


General trends are first that exports of all branches increased in both periods (except shipbuilding) and that growth rates were lower in 1975-2000 than in 1955-1975 (except for bicycles and leather and shoes). There are two main differences between the two periods. First, the variety in growth rates across the branches is higher in 1955-1975 than in 1975-2000. So growth rates were converging across the branches. Second, the ranking of growth rates differs between the periods. During 1955-1975, the emerging industries -basic chemicals, aircraft and cars- had the highest growth rates, and the clothing industry increased its exports strongly during 1955-1975, pursuing for foreign customers in its struggle for life.

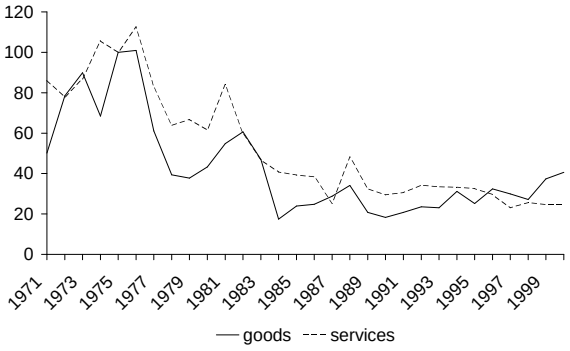
During 1975-2000 the ranking is different. The bicycle industry had the highest growth rate, followed by the final chemical industry, the paper industry and the car industry. Export volume of the clothing industry hardly changes, and exports of ships fell.

Export of goods and services, 1971-2001 (volume indices 1975=100)

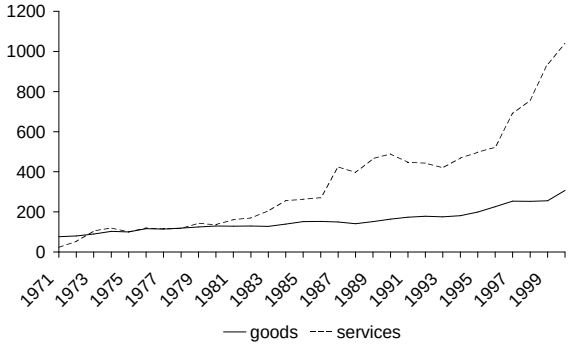
Aircraft industry



Shipbuilding



Electronic industry



In spite of the Fokker bankruptcy in 1996, the aircraft industry exported more goods in 2001 than in 1971. Exports of aircraft continued to grow strongly up to 1993, and notwithstanding the subsequent decline, the volume level was still higher in 2001 than in 1975. Before 1996, these exports were for a large part complete aircraft, but from 1997 onwards, these exports consist only of components. The exports of services of the aircraft industry consist of repair and maintenance in order of foreign airlines e.g. at Schiphol Airport. Also it concerned the assembly of American fighter jets by Fokker for foreign air forces. Compared with the exports of complete aircraft and aircraft components, the exports of services behaved smoothly. Still, the export volume of services declined strongly during 1988–2000.

Exports of ships and vessels showed a rise during 1971-1976, a sharp fall during 1976-1984, and no large change during 1985-2000. These developments were the result of the entry of Asian shipbuilders on the market and the extinction of the super oil tanker. Roughly, ship-repair and -maintenance by order of foreign ship owners (exports of services) developed in line with the exports of ships. A closer look even reveals that since 1984 ship repair and maintenance declined further, while exports of ships rose as Dutch shipbuilders started to concentrate on high quality niche markets.

Exports of services of the electronic industry grew faster than the exports of goods. In particular, the growth rate of services accelerated since 1995. The reason is that from 1995 receipts of intellectual property rights from foreign firms is registered as exports of services. These developments indicate that the Dutch electronic industry is becoming more and more an exporter of know-how instead of exporter of goods.

Composition of sales by Dutch branches on the home market in 1950, 1975 and 2000 (% shares)

Metal products

Cars

Printing and publishing

Electronics

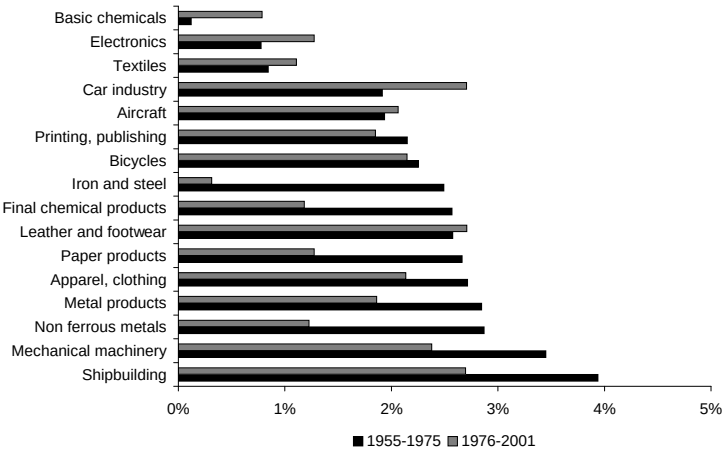
The metal products industry mainly produces intermediates. The decline of the share of consumer goods since 1950 is largely due to the switch to natural gas by Dutch households. In 1950, consumers bought fires to warm their houses with coal. Natural gas stimulated the substitution of fires by central heating devices. However, these devices are sold to the construction industry and not to consumers directly. Therefore the share of intermediates rose, and the share of consumption fell.

The share of sales of car components increased and the share of sales of complete cars dropped. In 1950, sales concerned almost only complete trucks and buses. Passenger car production started not until 1959. This explains the rise in the share of consumption in 1975 compared with 1950. In 2000, car components dominate sales. It indicates that the producers of complete cars outsourced much work to suppliers in order to increase their profitability.

In 2000, the electronic industry hardly sells complete goods in the Netherlands. This is a major shift compared with 1975, when consumer and investment goods dominated the revenues. This shift is partly due to the divestment of large units by Philips. Examples are the producer of defence electronics Thales (formerly HSA), the telecom-equipment producer Lucent, the producer of machines for semiconductors ASML, the producer of electronic components Neways Electronics and the software maker Origin. After their independence the firms kept their relations with Philips. The mutual deliveries with Philips are registered from their start as enterprise, and not when they were a Philips-unit. The result is a rise in the share of sales of intermediates.

In contrast to the other branches, the printing industry showed the same composition of sales during half a century.

Export prices, 1955-1975 and 1976-2001 (annual percentage change, ranking 1955-1975).

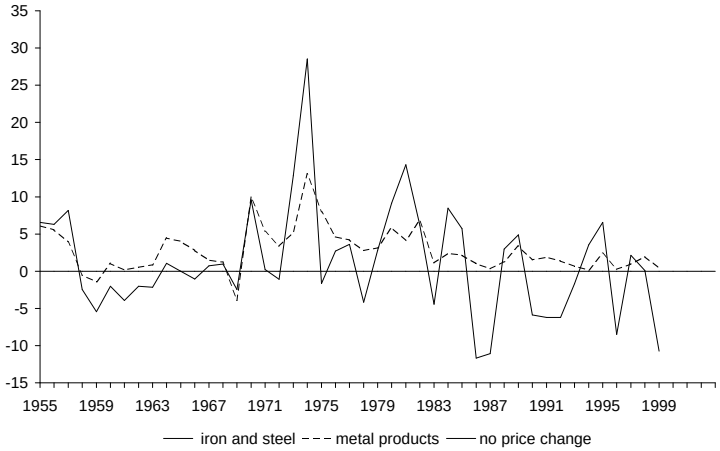


Demand for the products of a branch is stimulated by lower prices compared with the prices of the products of other branches. Therefore it is interesting to know the ranking of the price changes, in this case the export prices. During 1955-2001, the export prices of ships, machines and leather increased most. On the other hand, the export prices of basic chemicals, textiles and electronics rose least. This ranking shows some relation with sector growth indeed, as shipbuilding and the leather industry declined, while the basic chemical industry and the electronic industry emerged during the last half a century.

There was somewhat less variation in export price changes across industries in the period 1975-2001 than in the period 1955-1976. The ranking is fairly stable if we compare 1955-1975 and 1975-2001. Only the ranking of cars and non-ferrous metals changed a lot. This is probably due to the major change in the types of goods in the course of time. During 1975-2001, these branches produced passenger cars and aluminium, while production over 1950-1975 was dominated by trucks, copper and zinc. Noteworthy is the low price increase in textiles. In the course of time, this industry has shifted from a processor of natural materials to one of high performance plastic fibres. Since the last quarter of the century, the price of iron and steel has hardly changed.

Producer prices of the iron and steel industry and the metal products industry, 1955-1999

(annual percentage change of the price of gross production)

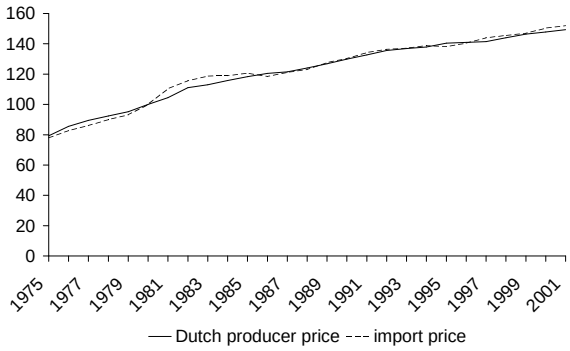


The producer price of the Dutch iron and steel industry follows the price on the European market. The period 1955-1999 can be split into three periods with different market regimes. During 1955-1972, iron and steel prices were fairly stable due to regulations by the European Coal and Steel Community (ECSC), which coordinated the blast-furnaces which were often State-owned. On top of that, price stabilisation was supported by fairly stable prices of coke, a major input in the production process of steel. Coke is a coal-product, and the prices of coal were fairly stable due to heavy subsidies to the European coal-mines. In the subsequent period, which ranged during 1973-1979, the iron and steel price rose by 6% per year. This period started with the energy crisis in 1973, which also led to higher prices of coke and consequently higher costs of a ton of steel. More importantly, however, during this period the European steel industry was transformed in order to meet market conditions. This transition according to the Plan Davignon implied agreed steel prices, production volumes and scrap of production capacity in the ECSC. The year 1979 was a good year for the European steel industry, also appearing from high price rises of steel. From 1980 on, iron and steel prices were determined by market forces. Prices remained stable on average, but market forces led to more price volatility than during the 50s and 60s of the former century.

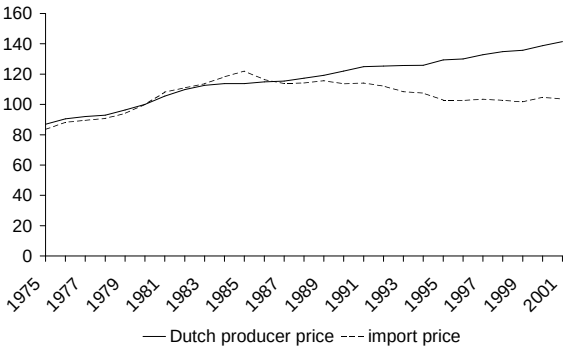
The metal products industry uses much steel as input. Therefore, steel prices are an important determinant of the costs of metal products, which in their turn have an impact on the producer prices of metal products. The figure shows that there is indeed a relation between the price changes of steel and of metal products. However, prices of metal products changed more smoothly. This is due to the more smooth development of labour costs and of capital costs. Furthermore it appears that the price of metal products rose more strongly than price of iron and steel, for during 1955-1999: the price of metal products rose 2,8% per year on average and the price of iron steel with 1,2%. The higher relative prices of metal products are the result that labour costs grew more than the than the costs of capital and raw materials.

Producer prices compared with import prices, 1975–2001 (price indices, 1980=100)

Machines

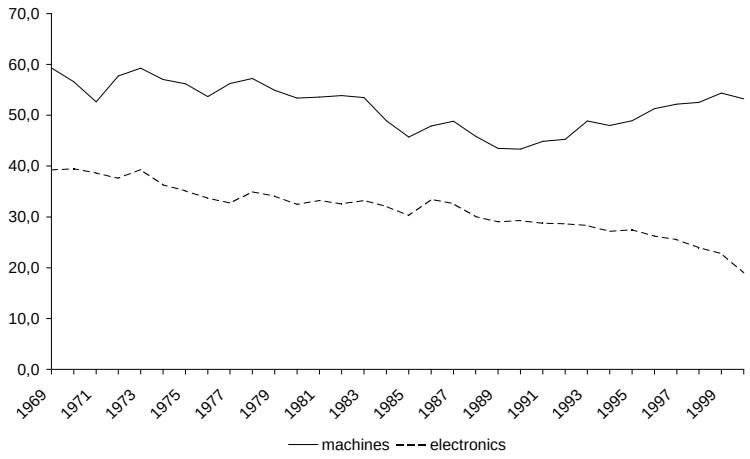


Electronics



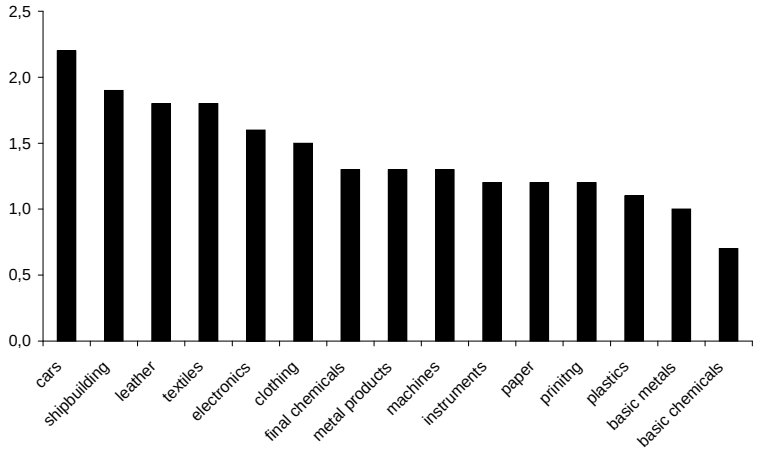
The Dutch producer prices of the machine industry develop in line with the import price of machines. The branch is not specialised, and producers adjust their prices to the price of foreign competitors. During 1975-1986 the same holds for the electronic industry. From 1986 onwards, however, Dutch producer prices rose, while import prices dropped. This largely reflects the penetration of ICT into the Dutch economy. The Netherlands hardly produces computers; almost all computers are imported. Consequently, the import price of electronic goods is more affected by the drastic computer price fall than the representative product price of the Dutch electronic industry.

Market shares of Dutch branches on the Dutch market, 1975 – 2001 (in %)



The market share of the Dutch machines in the Netherlands remained fairly constant. This is in line with the price competition position, which hardly changed as well. The market share of the Dutch electronic industry declined. At first sight, this is due to the higher price rises of the Dutch electronic industry compared with the import prices. However, the main explanation is that the Dutch industry sells goods which differ strongly from the electronic goods which are imported, while the income elasticity of imported goods was higher. For instance, the income elasticity of computers was high, as it turns out from the penetration of computers into the Dutch economy. These computers were imported, because the Netherlands did not produce computers.

Ratio growth rates of gross production to value added[a], 1984-2001 (volume)



In the course of time, manufacturing firms specialised on their key competences and key personnel. Other competencies and personnel were outsourced to independent suppliers, which grew to specialists in their own fields. At a macro-economic level, these re-organisations have enhanced productivity. For branches, they are measured as a higher growth rate of gross production than of value added (so their ratio greater than 1). The reason is that outsourced activities are purchased from other firms and consequently they contribute to gross production. In contrast, in house activities which are delivered from one unit to anther are not measured. All branches outsourced services, like services of canteens, fire brigades, security and administrations. Moreover, outsourcing in manufacturing grew by the trend to hire non-key personnel (in fact low-skilled workers) from employment agencies instead of employing them as own personnel.

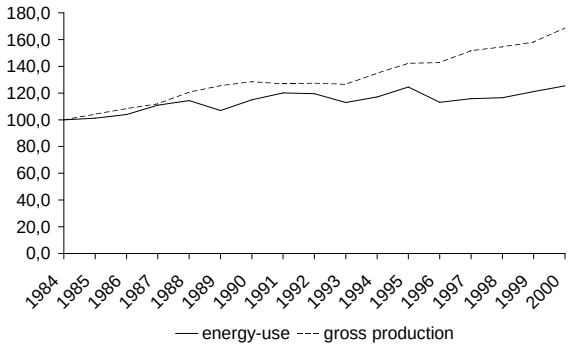
Branches with the highest ratio are the car industry, shipbuilding and the electronic, leather and textiles industry. These branches constitute the so-called make industry: branches with component production and assembly. In the course of time, firms in these branches have developed to integrators, by outsourcing work to specialised suppliers. The Integrators specialised in the sale of complete systems of products including the services, strategic research, co-ordinating the suppliers, and assembling components. The suppliers grew to co-developers with long-term contracts with the integrators. Examples of Dutch firms which explicitly developed to integrators are the car makers DAF and Nedcar, Damen Shipyards, the electronic firms Philips and Oce and the machine producer Stork.

Still two branches have a ratio less than or equal to 1, viz. the basic chemical and the basic metals industry. Also these branches outsourced services and personnel. However, the impact on the ratio was outweighed by the impact of energy saving of these energy-intensive branches. Energy saving leads to less purchases from energy-suppliers, and thus to less gross production, while value added is hardly affected.

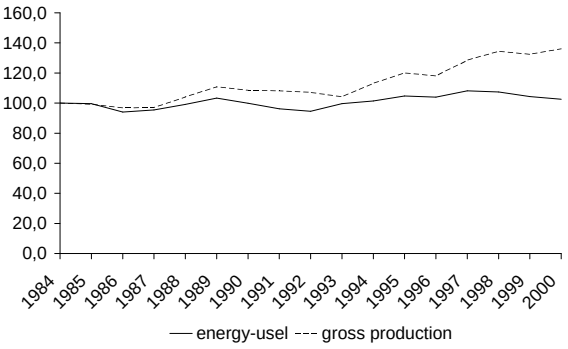
[a] Ratio = (X-Y) / absolute (Y) + 1, where X and Y respectively average annual growth rate of volume of gross production and value added.

Energy use [a] and gross production (volume indices 1984=100)

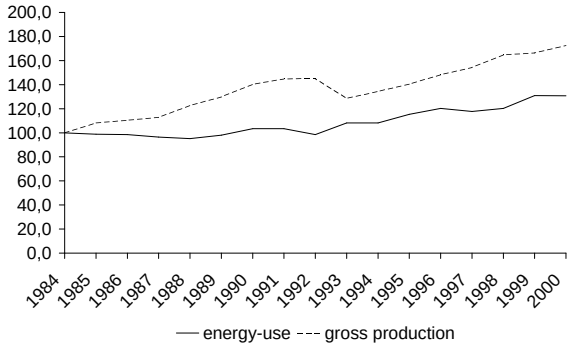
Chemical industry



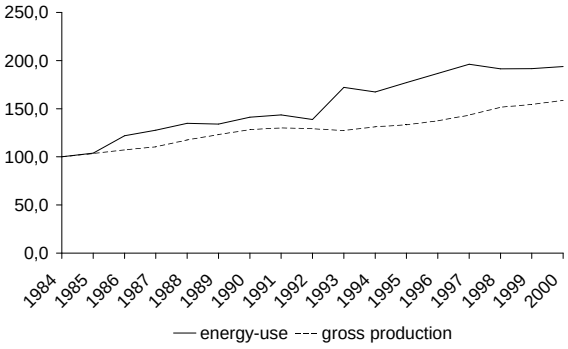
Basic metals industry



Metal product industry



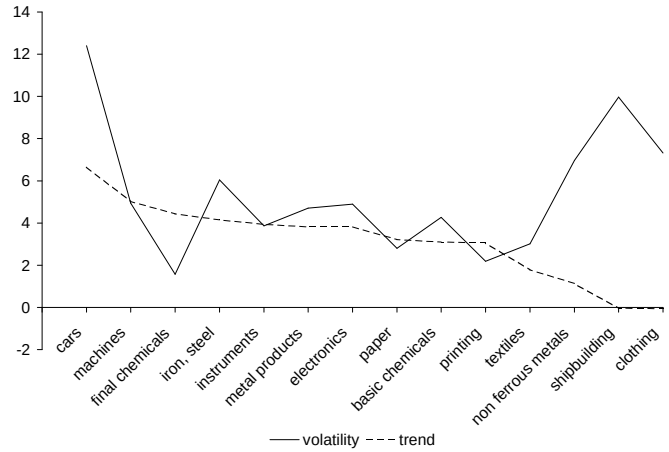
Paper and printing industry



Two oil crises and environmental policy forced manufacturing branches to save on energy. During 1984-2000, the chemical and the basic metals industry saved on energy as their volumes of production rose more than their use of energy. However, there are large annual fluctuations in the ratio of energy use to production. Reasons are that large energy saving projects are discontinuous and that factories with energy intensities which deviate from the industrial average start or stop production. This is clearly visible for the paper and printing industry, where the rise of energy use exceeded production growth. This does not imply that paper producers do not save on energy. The main reason for the sharp rise in energy use is the start of production of a newspaper factory in 1994, probably with high energy intensity. The metal product industry is far less energy intensive and it also saved considerably on its energy use.

[a] Energy measured in joules

Trends [a] and volatility [b] of production growth, 1984–2000 (ranking growth rates)



There is a large variety of average growth rates of gross production and the annual volatility of these rates across branches. During 1984- 2000, the machine and final chemical industry showed a relative fast and stable growth rate. The car industry stands out with the highest average growth rate and also with the highest fluctuations. In shipbuilding and the clothing industry, production fluctuates strongly around a stable, but low growth trend.

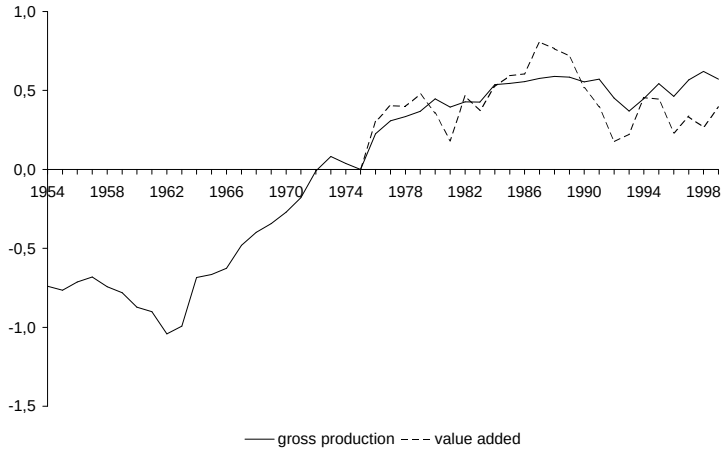
[a] Trend= average annual volume gross production growth rate in percentage during 1984-2000

[b] Volatility = standard deviation of annual production growth rates in percentage during 1984-2000

The non-ferrous industry: gross production and value added, 1954-1999

volume indices, 1975=1

natural logarithm



Three distinct periods can be distinguished: a decline of 3,5% per year during 1954-1962, a sharp rise of 7,8% per year during 1963-1984, and stable production with fluctuations during 1984-1999. The figure shows that value added grew in line with gross production since 1975, which indicates little change in the production technologies.

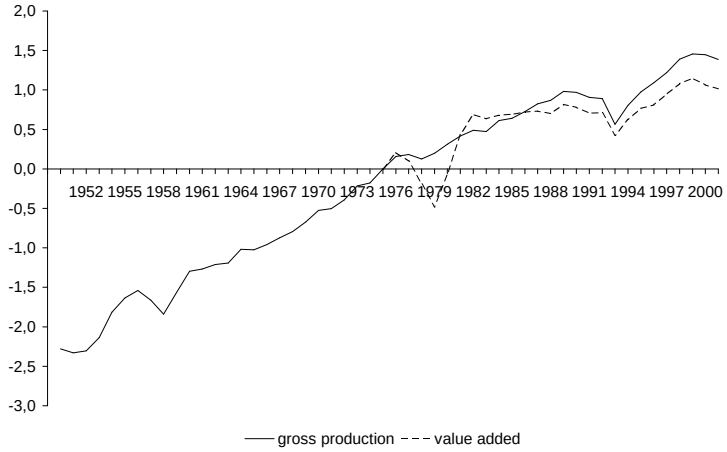
During 1954-1962, production consisted mainly of zinc by the Kempensche Zinkmaatschappij at Budel (at present PasmincoBudelZink), tin by Billiton at Arnhem and copper by Lips at Drunen (at present Boliden HME). The decline in production at branch level is due to the drop in the production of tin. Finally, the tin production factory war closed in 1971.

The rise in production is mainly due to the start of production of new factories with new products and their following growth. For instance, Granges-Essen (Sweden) at established a copper-factory at Zutphen in 1963, Aldel invested in an aluminium plant at Delfzijl in 1966, and Pechiney set up an aluminium factory at Vlissingen in 1971. On top of that, growth the non-ferrous industry was enhanced by the Kempensche Zinkmaatschappij, which built a new plant in 1973, based on the new electrolytic technology, while the old thermal production plant was scrapped. In 1980, zinc production capacity was increased.

From 1984 on, the non ferrous industry kept an almost stable production. The dip in 1991 is due to the entry of firms from the former Soviet Union on the Western-European market. These firms penetrated with price dumping, which led to a fall in aluminium prices and overcapacity in the Netherlands.

The car industry: gross production and value added, 1950– 2001

volume indices, 1975=1, natural logarithm



The car industry was the branch with the highest average growth rate in manufacturing and the greatest volatility as well. Four periods can be discerned, viz. 1950-1958, 1959-1980, 1981-1993, and 1994-2001. Each period starts with an acceleration of growth, a fairly constant growth rate and ands with a decline. The period 1950-1958 started with as main incumbent firms DAF (the truck producer), Ford (the assembler of passenger cars at Amsterdam) and some firms which produced buses. From than on, production grew strongly until the dip in the business cycle of 1958 hit this branch.

The period 1959-1975 started with the entry of DAF on the passenger car market with a plant at Eindhoven. Production of passenger cars could increase further after the start of production in a new factory at Born in 1967. Production of the car industry also increased in 1964 due to the entry of Scania with an assembly plant of trucks at Zwolle. The dip in the business cycle in 1974 hit the industry hard. The sales of passenger cars declined and DAF made losses. In 1975 Volvo took over DAF's passenger car division. That year the first Volvo car rolled off the assembly line and in 1976 the factory stopped to make DAF-type passenger cars. However, production by Volvo did not appear to be profitable in the long run. During 1978-1980, also the Ford plant in Amsterdam came into trouble and declined it production. The factory closed in 1981.

The period 1981-1993 starts with the Dutch State, which took over the Volvo factory at Born, which continued to produce Volvo cars. The car industry regained growth until 1990, when the branch came into trouble again. The Volvo-factory made losses and declined its production. In 1991, Nedcar was established, which took over the Volvo plant. Nedcar's shareholders were the Dutch State, Volvo and Mitsubishi. Nedcar started to assemble cars for Volvo and Mitsubishi on one assembly line. DAF became loss making as well and finally the firm went bankrupt in 1993.

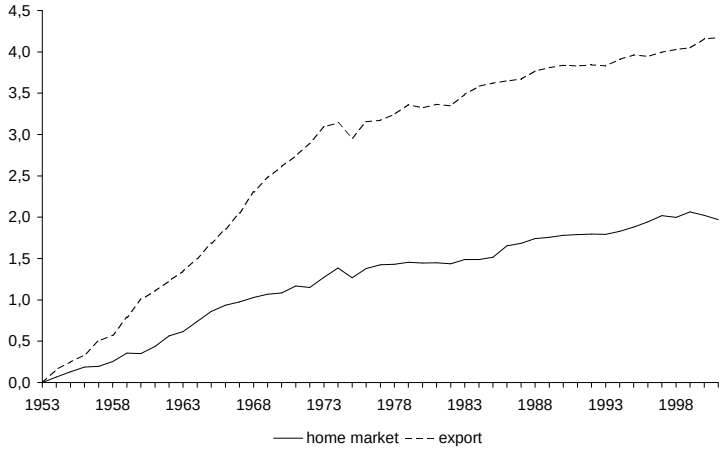
The period 1994-2001 starts with the production of a revived DAF at much lower level of production. Truck production developed favourable, supported by the take over of DAF by Paccar (USA) in 1996. From 1999 Nedcar came into trouble again. The firm sold its product development division PD&E to Benteler (a German firm), and consequently the Nedcar became an assembler of car-components. On top of that, Nedcar came in an awkward position when Ford took over Volvo's passenger car division. In 2001, production further declined due to the bankruptcy of bus producer Den Oudsten.

The figure shows that value added grew at a lower rate than gross production since 1986. This development is due to the increasing engagement of personnel from employment agencies and the outsourcing of work to independent suppliers.

Dutch chemical industry: exports and sales on home market

volume indices, 1953=1

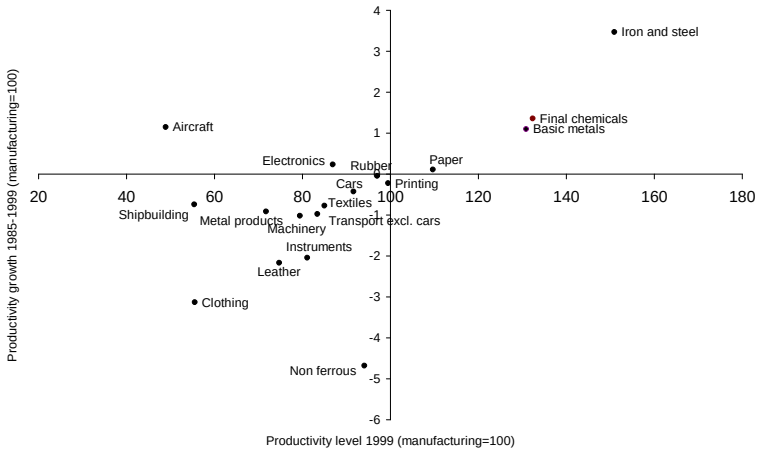
Natural logarithm



The development of sales of the Dutch chemical industry during the last half a century can be split into two distinct periods, viz. 1953-1973 and 1974-2000. During 1953-1773, the chemical industry grew at a fast and fairly constant rate, driven by exports, which showed a higher export rate than the sales in the Netherlands. During this period production was supported by low energy prices and the establishment of many petrochemical factories of foreign chemical companies in the Netherlands, in particular the Rotterdam area. These developments were supported by Dutch industrial policy and the economic integration of Europe (establishment European Economic Community).

The year 1974 marks a break in the growth rate. During 1974-2000, the growth rate of the chemical industry decelerated to a lower and fairly constant rate. Te main reasons were, the relatively higher prices of chemicals due to higher energy prices since the first oil crisis in 1973 and the costs of environmental policy measures (such as the need to environmental investments. Growth also decelerated as chemicals became more or less a mature good in Europe. From 1974, the growth rate of sales in the Netherlands almost equals export growth. A main reason is that the major part of sales in the Netherlands concerns chemical intermediates of one firm to another in the Botlek area, before a product further in the product chain is exported.

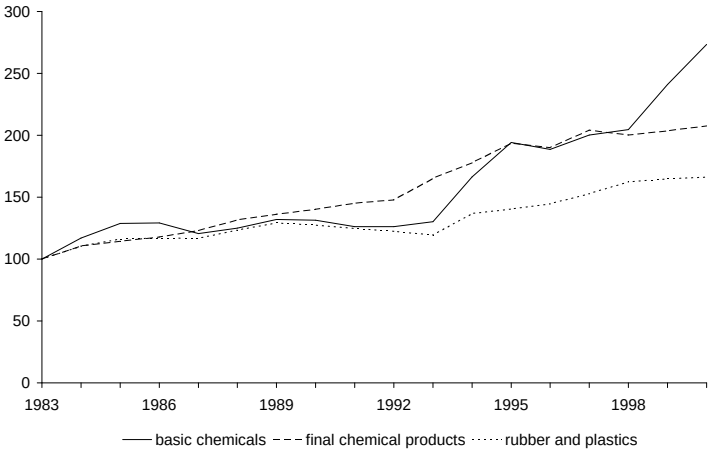
Substantial differences in development of labour productivity [a]



Productivity particularly increased in the basic material industries (basic chemicals, and iron and steel), and the high tech branches (final chemical products and electronics). In (basic) chemicals and the car industry, and to a lesser extent, electronics, shocks occurred, caused by far going restructuring and reorganisation within dominant firms.

In contrast, other branches experienced lower productivity growth. The strongly reorganised branches (aircrafts, shipbuilding, and clothing) still have the lowest productivity levels in 1999. Because of strong reductions, these branches play a minor role in industrial production at present. However, larger branches in metal processing also further dropped behind the manufacturing average. Particularly metal products and machines, those branches with the largest employment, experienced just a low productivity growth and level. Within the chemical industry, labour productivity of the rubber and plastics industry stayed behind that of final chemical products and basic chemicals. Still, its level is at the manufacturing average in 1999

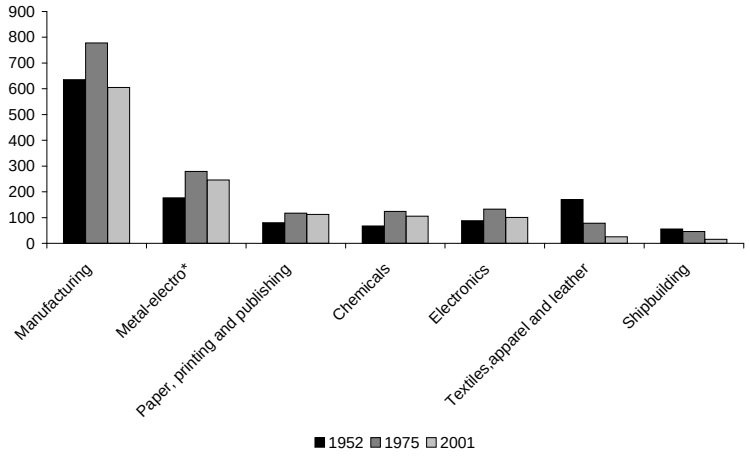
Labour productivity in the chemical industry



Source: Creusen and Rensman, 2003

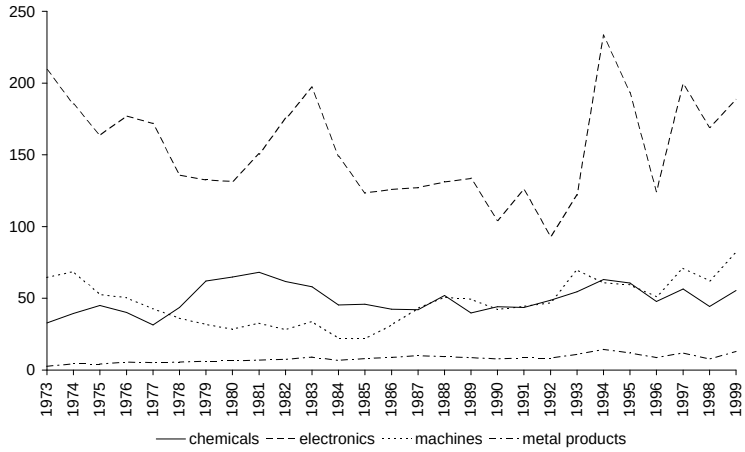
[a] Labour productivity = gross value added (at factor costs, constant prices) per hour worked

Employment in 1952, 1975 and 2001 (in thousands)



The Netherlands industrialised during 1950-1975 and the structure of manufacturing changed. New industries emerged which created many new jobs, such as basic chemicals, cars and aircraft. In contrast, employment in the textiles and clothing industries almost disappeared. Employment in total manufacturing peaked around 1975. Since then, employment fell in all branches of industry. The sharpest falls occurred in shipbuilding (after the industry stopped making oil tankers in 1976) and in the aircraft industry (which stopped producing complete airplanes in 1995).

Ratio investments in research and development to investments in fixed assets, 1973-1999 (*100)



The electronic industry invested much more in new knowledge than in hardware equipment, for R&D expenditures were 55% higher than the investments in fixed assets on average during 1973-1999. The trend was downwards during 1973-1992, which implies that this branch gradually emphasised tangible production. From 1992 –during Philips' Centurion operation- this trend was reversed, and the electronic industry gradually specialised by investing in knowledge production than in factories. The shocks in the ratio are mainly due to the investments in fixed assets, for fixed investments fluctuate much more than R&D-expenditures.

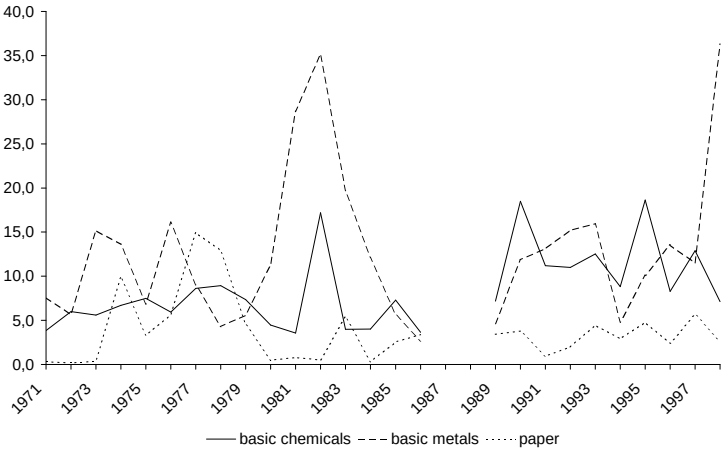
In the machine industry, the investments in R&D are about half the amount of investments in fixed assets. From 1984 on, the ratio rises, which implies that this branch specialised itself on the production of know-how on machines and machine systems instead on the production in factories.

Also in the chemical industry, the R&D-expenditures are about half of investments in factories. This ratio was rather constant during 1973-1999.

The metal product industry invests far less in R&D than in fixed assets, as this branch hardly developed new products. Still, R&D investments considerably grew in importance in the course of time. The reason is that during the 70s of the former century, R&D-investments were only 5% of investment in fixed assets, and this ratio doubled to about 10% in the 90s.

Share of environmental investments in total investments in fixed assets (*100), 1971-1998

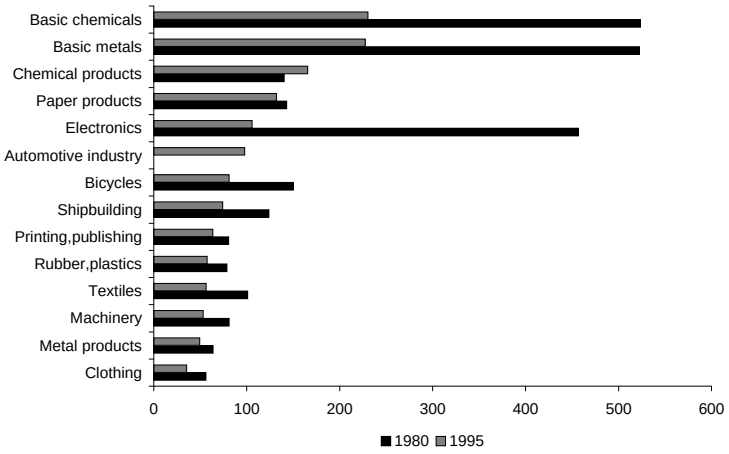
Environmental investments are investments in fixed assets due to regulations to improve the environment. The figures for the period 1971-1998 concern environmental investments that do not have private returns. The branches which invested most in the environment were the basic metals industry (13% of the investments in fixed assets were aimed at the environment during 1971-1998), the basic chemical industry (8,5%) and the paper industry (3,8%). They are energy- or water-intensive manufacturing branches, which would have polluted air and water considerably without specific measures. The environmental investments fluctuated strongly. In 1982, the basic metals and the basic chemical industry invested much in the environment. The paper industry invested much in the environment during 1975-1980, from then on these investments dropped to a lower share.



The other manufacturing branches have far less polluting production processes than the above mentioned branches. Consequently they had to invest less to fight pollution. For instance, the textiles, clothing and leather industry invested 2,4% of its investments in fixed assets in the environment, the metal products industry had a share of 1,8%, the plastic products industry had a share of 1% and the machine industry of 0,8%.

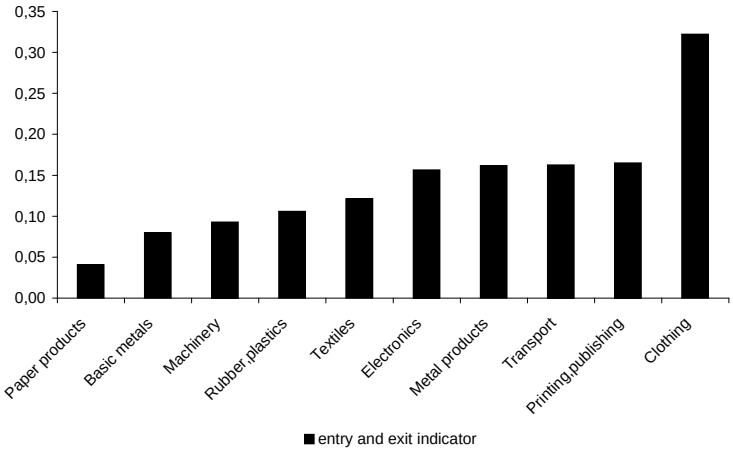
Firm size in 1980 and 1995 (ranking 1995)

Average number of employees per firm (> 10 employees)



Employment per firm increases with its fixed investments, the more so if its products have the character of a commodity (the larger the price elasticity of demand). The fixed costs of a firm are one of the determinants of the location of production, because industries with large fixed costs require large markets in their neighbourhood in order to be profitable. The reason is that profits depend on the average costs, which depend on the exploitation of economies of scale. The basic chemical industry and the basic metals industry have the highest number of employees per firm. Indeed, a production unit in these industries takes huge investments, and their products are commodities. In contrast, the metal product industry and the machine industry consist of firms with a small number of employees. Plants in these industries require only a small amount of investment, while their products are specialities. The ranking of the number of employees per firm is rather stable, as the ordering in 1995 does not differ significantly from the ranking in 1980. The number of employees per firm in the basic chemical industry, the basic metals industry and the electronic industry has diminished considerably between 1980 and 1995. This development points to lower fixed costs or to an increasing degree of specialisation in these branches.

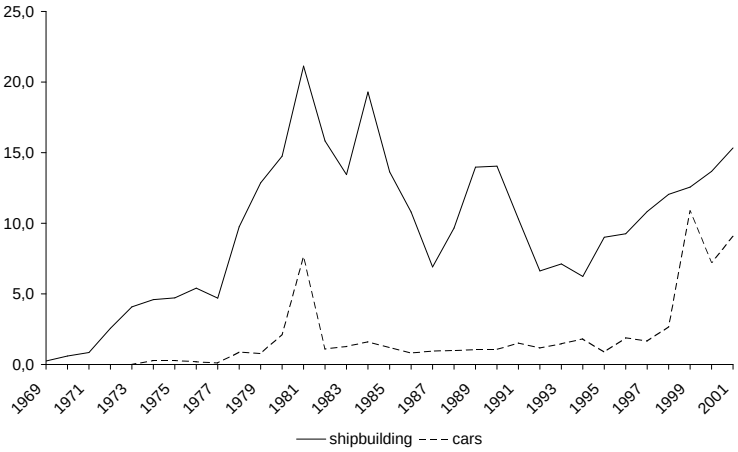
Entry and exit [a] (ranking average 1980-2000)



The bars in the figure show the number of firms which enter and exit as share of by the total number of firms by branch. The higher the bar, the lower the barriers to enter or to leave the market. By far, the barriers are highest in the paper industry. In this industry 5% new firms appear each year. Also by far, the barriers are the lowest in the clothing industry. About 35% of the number of firms changes each year. The sizes of barriers in the other branches differ little. Fixed investment costs are high entry barriers and there is a clear link between capital intensity and this ranking indeed, for the investments in a new paper or steel factory are high and they are low to set up a clothing plant.

[a] The entry and exit bar in the figure is defined as (E+X) / N*100 = (ΔN+2X)/N*100, where E=entry, X=number of bankruptcies, N=number of firms and ΔN=E – X. This indicator assumes that firms can only exit due to bankruptcy. However, there are more reasons for firms to leave the market. Unfortunately, for manufacturing only data on bankruptcies are available.

Shipbuilding and cars: received subsidies (percentage share in value added at market prices)



Branches in manufacturing hardly received subsidies except shipbuilding and the car industry.
Throughout the years, shipbuilding received by far the most subsidies among manufacturing branches. The ratio of subsidies to value added rose to 20% in 1981, in particular for the Rijn-Schelde-Verolme (RSV) wharfs and docks. After the bankruptcy of RSV in 1983, subsidies declined. However, from 1994 on, the subsidy-allowance increased.

The car industry hardly received subsidies until 1998. The year 1981 is an exception, when this branch received subsidies related to the following events. First, the Dutch State took over the Volvo factory at Born, which remained to produce Volvo cars. Second, Ford closed its assembly plant at Amsterdam. During 1999-2001 the share of subsidies rose, possibly linked to the selling of the Dutch State of its Nedcar-shares in 1999.

3 Product-market combinations by branch

The data book distinguishes three markets: the market for consumer goods, investment goods and intermediates. Which are the product-market combinations by branch of industry? The answer forms an idea on what the abstract figures are about. The tables 3.1–3.7 give the product-market combinations by branch. Note that some branches do not produce goods for all markets. For instance, the iron and steel industry does not make consumer goods and investment goods. This branch only produces intermediates, which are further processed by other branches, such as the metal product industry and the car industry. This implies that the corresponding figures on the profit and loss accounts are (almost) zero.

Table 3.1 Products of the basic metals industry

Iron an steel	
Consumer goods	not produced
Investment goods	not produced
Intermediates	sheets for car-makers, sheet for beer cans produced by the metal product industry, heavy sections, wire and concrete reinforcement bars for the construction industry, casting for engine blocks used by de machine- and transport equipment industries, stainless steel for pans
Non-ferrous metals	
Consumer goods	not produced
Investment goods	not produced
Intermediates	smelter products of aluminium for further processing in the aluminium industry, zinc roof gutters for the construction industry

Table 3.2 Products of the metal product and machine industries

Metal products	
Consumer goods	cutlery, scissors, pans, tools, blinds, cookers, fires
Investment goods	drilling platforms, steel bridges, greenhouses, metal containers, gas holders
Intermediates	screws, nuts, hangers, heating systems, radiators for the construction industry, tins to be filled by the food and drink industry, propellers for shipbuilders, off shore platforms
Machines	
Consumer goods	balances, do-it-yourself machines, lawn mowers, refrigerators, washing machines, vacuum cleaners, outboard motors
Investment goods	farming machines, food processing machines, textile printing machines, petrol pumps, metal removing machines, turbines for electricity generation, bulldozers, digging machines, cranes, lifts, conveyors
Intermediates	gear wheels, engines, shock absorbers, pumps for the oil industry, machine parts, maintenance of machines

Table 3.3 Products of the electronic industry

Electrical apparatus and electronics	
Consumer goods	light bulbs, electrical razors, audio-, TV and video sets, CDs, PCs, phones
Investment goods	power transmission lines, transformers, measurement apparatus, electro-medical equipment, telecommunication equipment, computers, copiers
Intermediates	transmission wires, lightning for professional use, accumulators, transistors, integrated circuits, electric motors, TV-tubes
Optical products and instruments	
Consumer goods	photo- and video cameras, spectacles, musical instruments
Investment goods	measuring equipment, medical-diagnostic instruments, microscopes, professional telescopes
Intermediates	parts of instruments, night glasses, pacemakers

Table 3.4 Transport equipment

Cars	
Consumer goods	passenger cars for private use, caravans
Investment goods	trucks, passenger cars for professional use, buses, trailers, fire engines
Intermediates	coach work, axles, car engines
Ships and ship repair	
Consumer goods	pleasure yachts
Investment goods	roll-on/roll-off ships, container- and refrigerator ships, dredgers, fishing vessels
Intermediates	ship-maintenance and repair
Aircraft, aerospace and rail	
Consumer goods	not made
Investment goods	airplanes, satellites (railway carriages: only imports in the Netherlands)
Intermediates	maintenance and repair of aircraft, parts of aircraft bodies and wings, solar panels for satellites
Bicycles and other transport	
Consumer goods	bicycles, motorbikes, baby buggies
Investment goods	shopping trolleys
Intermediates	parts of bicycles

Table 3.5 Chemical products

Basic chemicals	
Consumer goods	fertilizers for the garden, salt
Investment goods	construction of pipeline-networks on own production location
Intermediates	benzene and ethers for the primary plastics industry, primary plastics for the plastics industry, fibres for the textile industry, pigments for the paint industry, fertilizers for the agricultural industry
Final chemical products	
Consumer goods	do-it-yourself paints, medicines from drug-stores, cosmetics, washing powder
Investment goods	not produced
Intermediates	paints bought by contractors, medicines for hospitals, detergents for the agricultural industry, primary material for penicillin, glues, vitamins
Plastic and synthetic products	
Consumer goods	plastic toys, plastic bags, plastic domestic appliances
Investment goods	not produced
Intermediates	plastic tubes, window frames, plastic cable grooves, plastic packaging, plastic panels for the car industry

Table 3.6 Products of the paper industry and the printing/publishing industry

Paper and paper products	
Consumer goods	paper napkins, toilet and household paper, wall-paper from the shop
Investment goods	not produced
Intermediates	newsprint sold to printers, computer paper, packing paper, cardboards boxes for transport of products
Publishing and printing	
Consumer goods	newspapers, magazines, posters, books
Investment goods	not produced
Intermediates	printed packaging, advertising brochures, specialist journals

Table 3.7 Products of the textile-, clothing- and leather industry

Textiles	
Consumer goods	curtains, carpets, toilet paper, writing paper, envelopes, wall-paper from the shop
Investment goods	tarpaulins
Intermediates	pieces for the clothing industry, artificial turf for playing fields, heat resisting fabrics for plane chairs
Clothing, apparel	
Consumer goods	trousers, blouses, T-shirts, skirts, suits, coats
Investment goods	not produced
Intermediates	uniforms for the police, professional dress
Leather and footwear	
Consumer goods	shoes, leather bags
Investment goods	not produced
Intermediates	soles, pieces of leather

4 Manual

4.1 How to download the spreadsheets with figures?

The figures are available on spreadsheets in xls-format. There is a spreadsheet for each branch of industry, and one spreadsheet which contains the figures of all industries together.
The rows of a spreadsheet represent the topics and their figures. The columns represent the following items.

- column A: a rank number to enable you to sort the data in their original settings. This rank number is the rank number in database of “All industries”.
- column B: code name of a series
- column C: explanation of the code (in English)
- column D: explanation of the code (in Dutch)
- column E and further: years

The spreadsheets can be downloaded as follows:
Type www.cpb.nl/eng/data/ for the homepage of the data book
Select the preferred branch of industry under “branch of industry”. The spreadsheets of all industries have the same format in rows (topics) and columns (years). It implies that corresponding cells contain figures of the same topic of the same year. Select ‘All industries’ for the figures of all industries on one spreadsheet.

Section 4.2 discusses how the preferred time series can be selected. In the course of time economics, technology and institutions change, and therefore statistical definitions need to be adjusted regularly in order to remain actual and relevant. These re-definitions lead to autonomous shifts in the time series. These shifts will bias the results of economic analysis if their impacts are neglected. In order to correct for the re-definitions, section 4.3 mentions the main statistical re-definition. Finally, section 4.4 provides information on the significance of the signs in the cells of the spreadsheets.

4.2 Rows: names of time series

Each time series has a code of 8 characters. The code is built up as follows:

- Positions 1–3: Topic. The topics are mentioned in tables 4.1–4.6. The 3-character code is listed next to the topic on the same row of the table.
- Positions 4–5: Dimension. Table 4.7 presents the dimensions which are available. Not all dimensions are available for each topic. Therefore tables 4.1–4.6 mention the dimensions, which are available per topic.
- Position 6: underscore _
- Positions 7–8. Name of the branch of industry. The characters of the branches are listed in table 1.1. On top of that, table 4.8 presents some consolidations.

Examples of the names of series are:

BGPPP_TL	Export (BGP) price change (PP) of textiles (TL)
C__WN_ER	The nominal value of the Dutch market for consumer electronics
NUM_N_TS	Number of shipbuilders

For the complete list of variables of each industry see 4.5.

Table 4.1 Profit and loss accounts

	Topic		Available dimensions *
	Positions 1– 3		Positions 4– 5
Gross production at producer prices	XP_	= X7_ + NP_	WN, VP, PP
Change in stocks	NP_		WN, VP, PP
Total sales	X7_	= XP_ – NP_ = X5_ + B_P	WN, VP, PP
Dutch market, home made products	X5_	= CP_ + GP_ + IP_ + VP_	WN, VP, PP
Consumer goods	CP_		WN, VP, PP
Government expenditures	GP_		WN, VP, PP
Investment goods	IP_		WN, VP, PP
Intermediates	VP_		WN, VP, PP
Exports from home production of goods and services	B_P	= BGP + BD_	WN, VP, PP
Exports of goods	BGP		WN, VP, PP
Exports of services	BD_		WN, VP, PP
Costs and operating expenses			
Total use of intermediates	VCO	= PCO + MCO	WN, VP, PP
Home delivered	PCO		WN, VP, PP
Imported	MCO		WN, VP, PP
Wages, salaries and social benefit premiums	L__		WN, VP, PP
Cash flow			
Indirect taxes	TK_		WN, VP, PP
Received subsidies	SUB		WN, VP, PP
Depreciation	D__		WN, VP, PP
Profits before interest payments and direct taxes	Z__	= XP_ – VCO – L__– TK_+ SUB– D__	WN PM
Labour-income ratio (%)	AIQ		_Q
Home sales, including changes in stocks	X6_	= X5_ + NP_	WN, VP, PP

* For explanation see table 4.7

Table 4.2 Production, capacity utilisation and bottlenecks

	Topic		Available dimensions *
	Positions 1– 3		Positions 4– 5
Production indicators			
Gross production at producer prices	XP_	= X7_ + NP_	WN, VP, PP
Value added at market prices	YBM	= XP_ – VCO	WN, VP, PP
Production index (% change in volume)	YPI		_P
Value added at factor costs	YBF	=YBM – TK_ + SUB	WN
Net value added at factor costs	YNF	= YBF – D__	WN
Rate of capacity utilisation (real/full capacity)	Q__		QN
Production bottlenecks (% of firms)			
No bottlenecks	KP0		_Q
Insufficient demand	KP1		_Q
Shortage of labour	KP2		_Q
Shortage of technical capacity	KP3		_Q
Other bottlenecks	KP4		_Q

* For explanation see table 4.7

Table 4.3 Factors of production

	Topic	Dimensions *
	Positions 1– 3	Positions 4– 5
Employment		
Total employment (*1000)	A__ = AL_+ AZ_	CN
Number of employees (*1000)	AL_	CN
Number of employers (*1000)	AZ_	CN
Contractual yearly working hours (FTE)	ATC	_N
Labour participation (A/P ratio, persons per FTE) (*100%)	AP_	_Q
Investments		
Total assets [a]	E__ =E_G+ E_E+ E_A+E _O+E_K+E_I	WN
Buildings	E_G	WN
Machines and computers	E_E	WN
of which computers and office machines	E_C	WN
Road transport equipment (trucks and passenger cars)	E_A	WN
Other transport equipment	E_O	WN
Transfer taxes on real estate	E_K	WN
Immaterial assets (such as software)	E_I	WN
Environmental investment expenditures	EM_	WN
Research and development expenditures	R&D	WN
Energy-use		
Energetic (Peta Joules)	PJE	_N
Non-energetic (Peta Joules)	PJN	_N

[a] till 1995 excluding immaterial assets

* For explanation see table 4.7

Table 4.4 Demography of firms

	Topic	Dimension *
	Positions 1-3	Positions 4– 5
Number of firms	NUM	_N
Number of bankruptcies	FAL	_N

* For explanation see table 4.7

Table 4.5 Balance of trade

	Topics		Available dimensions *
	Positions 1– 3		Positions 4– 5
Total exports	BG6	= BGP + BGM	WN, VP, PP
Exports from home production	B_P	= BGP + BD_	WN, VP, PP
Exports of goods	BGP		WN, VP, PP
Exports of services	BD_		WN, VP, PP
Re-exports	BGM		WN, VP, PP
Total imports a	MGD	= MX5 +NM_ + BGM	WN, VP, PP
Imports for Dutch markets	MX5	= CM_ + GM_ + IM_ + VM_	WN, VP, PP
Consumer goods	CM_		WN, VP, PP
Government expenditures	GM_		WN, VP, PP
Investment goods	IM_		WN, VP, PP
Intermediates	VM_		WN, VP, PP
Change in stocks	NM_		WN, VP, PP
Re-exports	BGM		WN, VP, PP

[a] All imports are valued by c.i.f. prices: that is, without import duties, wholesale and retail margins and value added tax and the specific Dutch car tax.

* For explanation see table 4.7.

Table 4.6 Dutch markets

	Topics		Available dimensions
	Positions 1– 3		Positions 4– 5
Total Dutch market	XS_	= CS_ + GS_ + IS_ + V__ + N__	WN, VP, PP
Consumer goods	CS_	= CP_ + CM_	WN, VP, PP
Government expenditures	GS_	= GP_ + GM_	WN, VP, PP
Investment goods	IS_	= IP_ + IM_	WN, VP, PP
Intermediates	V__	= VP_ + VM_	WN, VP, PP
Change in stocks	N__	= NP_ + NM_	WN, VP, PP

Table 4.7 Dimensions

	Positions 4– 5
Nominal value in millions of Dutch guilders	WN
Volume change, annual in %, computed from nominal values and price changes	VP
Volume change, annual in %, measured	_P
Price change, annual in %	PP
Number	_N
Number * 1000	CN
Ratio	QN
Share in %	_Q

Table 4.8 Consolidated branches of industry

	Positions 7– 8	
Metal-electro industry	ME	= BS + MO + ET + TT
Basic metals	BS	= BF + BN
Metal products and machines	MO	= MP + MT
Electrical and electronic products	ER	= EK +EA + EO
Electrical and electronic products and instruments	ET	= ER + EM
Transport equipment (excluding cars)	T_	= TS + TV + TF
Transport equipment	TT	= AU + TS +TV + TF
Chemical-linked industries	CH	= BC + CD + RU
Paper, printing and publishing	PG	= PK + GR
Textiles, clothing. leather	TK	= TL + KC + LS

4.3 Columns: years and statistical re-definitions

Re-definitions branches in profit and loss accounts and imports

The columns contain the figures by year. The years 1969, 1987, 1993 and 1995 occur two times. The reason is that in these years the classifications of the branches of industries have been re-defined as regards the topics on the profit- and loss accounts and imports in nominal values. The label **V** refers to the definition before the re-definition. The observation can be compared with the previous year. The year labelled with **N** assigns to the observation after the statistical change. This one can be compared with the observation of the next year.

Consequently, the period since 1950 can be split in several periods where the observations between the years can be compared directly. Table 4.9 shows them and the table summarises the explanation of the statistical re-definition. The annexes provide the details.

1969: Consequences of the abolition turnover tax

In 1969, the turnover-tax was abolished in 1969 and substituted by the value added tax (VAT). This has had the following consequences:

- The price changes in 1969Vof Dutch firms on the Dutch market also include the abolishment of the turnover tax. Therefore, these prices drop in 1969V.
- The nominal sales of Dutch firms on the Dutch market up till 1968 include the amounts of the turnover tax. From 1969V the sales are excluded turnover tax and excluded value added tax. Therefore, nominal sales of Dutch firms on the Dutch market are often lower in 1969V than in 1968 because of the observed price fall. This price fall has no economic significance, except that can be used as deflator. There have been no indirect taxes on exports, so the values of exports have been undisturbed.
- The volume change is not disturbed, because the drop in value corresponds with the drop in price.

Re-definition employment

The number of employees during 1950-1969V is irrespective of the labour hours per week, from 1969N employment is measured in full time equivalents.

Table 4.9 Periods without time fractions

Profit- and loss accounts: Nominal values	
1950– 1968	Amounts including turnover tax, classification industries according to Standaard Bedrijfs-Indeling (SBI)– 1970
1969V	From 1969, amounts excluding turnover tax (in fact VAT), the industrial classification remains SBI– 1970
1969N – 1987V	Change classification of industries from SBI– 1970 to SBI– 1974
1987N – 1993V	Reshuffling firms between industries, classification industries remains SBI– 1974
1993N – 1995V	Change and extension of classification industries, from SBI– 1974 to SBI– 1993
1995N –	Change definitions topics on the accounts, the classification remains SBI– 1993
Prices on Dutch market	
1969	Including impact abolition turnover tax
Employment	
1950 – 1969V	Number of employees, irrespective labour hours per week
1969N –	Number of employees in FTE (full time equivalent)
1995 –	Contractual working hours
1995 –	Labour participation rate

4.4 Cells

Not every cell is filled with a figure, because of limitations in data availability or lack of information.

So: . Non available

4.5 List of variables

Table 4.10 List of variables: Car industry (_AU)

	CODE	DESCRIPTION
1	CP_WN_AU	Consumer goods: home made
2	CM_WN_AU	Consumer goods: imported
3	CS_WN_AU	Dutch consumer market
4	GP_WN_AU	Government expenditures: home made products
5	GM_WN_AU	Government expenditures: imported products
6	GS_WN_AU	Government expenditures: home market
7	IP_WN_AU	Investment goods: home produced
8	IM_WN_AU	Investment goods: imported
9	IS_WN_AU	Dutch market of investment goods
10	VP_WN_AU	Intermediates: home made
11	VM_WN_AU	Intermediates: imported
12	V__WN_AU	Dutch market of intermediates
13	XZ_WN_AU	Dutch market: all products
14	MX5WN_AU	Dutch market: all imported products
15	X5_WN_AU	Dutch market: home made products
16	BGPWN_AU	Exports: home made goods
17	BGMWN_AU	Re-exports
18	BG6WN_AU	Exports: all products (including re-exports)
19	BD_WN_AU	Exports of services
20	X7_WN_AU	Total sales of home made products and services
21	NP_WN_AU	Change in stocks of home made products
22	NM_WN_AU	Change in stocks of imported products
23	N__WN_AU	Total change in stocks of products
24	MGDWN_AU	Total imports
25	XP_WN_AU	Gross production at producer prices
26	PCOWN_AU	Used products and services: home delivered
27	MCOWN_AU	Used products and services: imported
28	VCOWN_AU	Total use of products and services
29	YBMWN_AU	Value added at market prices
30	TK_WN_AU	Indirect taxes
31	SUBWN_AU	Received subsidies
32	YBFWN_AU	Value added at factor costs
33	D__WN_AU	Depreciation
34	YNFWN_AU	Net value added at factor costs
35	LL_WN_AU	Wages, salaries and social benefit premiums
36	Z__WN_AU	Profits before interest and income tax
37	AL_MN_AU	Employment: number of employees (x 1000 FTE)
38	AZ_MN_AU	Employment: number of self-employed persons (x 1000 FTE)
39	A__MN_AU	Total employment: number of persons (x 1000 FTE)

Table 4.10	List of variables (pursued)	
	CODE	DESCRIPTION
40	E_GWN_AU	Investments: buildings
41	E_IWN_AU	Investments: immaterial (software e.g.) (as from 1995N)
42	E_EWN_AU	Investments: machinery (including computers)
43	E_AWN_AU	Investments: road transport equipment
44	E_OWN_AU	Investments: other transport equipment (ships, planes, rail)
45	E_QWN_AU	Investments: other
46	E_KWN_AU	Investments: transfer costs on real estate
47	E__WN_AU	Total investments (till 1995V excluding immaterial assets)
48	B_PWN_AU	Export sales: home made goods and services
49	X6_WN_AU	Dutch sales including building-up of stocks
50	XS_WN_AU	Dutch market including building-up of stocks
51	AIQ_Q_AU	Labour-income ratio
52	ATC_N_AU	Contractual yearly working hours (FTE)
53	AP__Q_AU	Labour participation ratio: number of persons per fte
54	R&DWN_AU	R&D-expenditures
55	Q__QN_AU	Rate of capacity utilisation (proportion)
56	YPI_P_AU	Production index:%-change
57	NUM_N_AU	Number of firms >10 number of employees
58	EM_WN_AU	Environment investment expenditures
59	E_CWN_AU	Investments in computers (included also in machinery)
60	FAL_N_AU	Number of bankruptcies
61	PJE_N_AU	Energetic use of energy (peta joules)
62	PJN_N_AU	Non-energetic use of energy (peta joules)
63	KP0_Q_AU	Bottlenecks of production: none
64	KP1_Q_AU	Bottlenecks of production: insufficient demand
65	KP2_Q_AU	Bottlenecks of production: labour shortage
66	KP3_Q_AU	Bottlenecks of production: lack of capacity
67	KP4_Q_AU	Bottlenecks of production: others (e.g. strikes)
Price changes		
68	CP_PP_AU	Consumer goods: home made
69	CM_PP_AU	Consumer goods: imported
70	CS_PP_AU	Dutch Consumer market
71	GP_PP_AU	Government expenditures: home made products
72	GM_PP_AU	Government expenditures: imported products
73	GS_PP_AU	Government expenditures: home market
74	IP_PP_AU	Investment goods: home produced
75	IM_PP_AU	Investment goods: imported
76	IS_PP_AU	Dutch market of investment goods
77	VP_PP_AU	Intermediates: home made
78	VM_PP_AU	Intermediates: imported
79	V__PP_AU	Dutch market of intermediates
80	XZ_PP_AU	Dutch market: all products
81	MX5PP_AU	Dutch market: all imported products
82	X5_PP_AU	Dutch market: home made products

Table 4.10 List of variables (pursued)		
	CODE	DESCRIPTION
Price changes		
83	BGPPP_AU	Exports: home made goods
84	BGMPP_AU	Re-exports
85	BG6PP_AU	Exports: all products (including re-exports)
86	BD_PP_AU	Exports of services
87	X7_PP_AU	Total sales of home made products and services
88	NP_PP_AU	Change in stocks of home made products
89	NM_PP_AU	Change in stocks of imported products
90	N__PP_AU	Total change in stocks of products
91	MGDPP_AU	Total imports
92	XP_PP_AU	Gross production at producer prices
93	PCOPP_AU	Used products and services: home delivered
94	MCOPP_AU	Used products and services: imported
95	VCOPP_AU	Total use of products and services
96	YBMPP_AU	Value added at market prices
97	D__PP_AU	Depreciation
98	LL_PP_AU	Wages, salaries and social benefit premiums
99	E_GPP_AU	Investments: buildings
100	E_IPP_AU	Investments: immaterial (software e.g.) (as from 1995N)
101	E_EPP_AU	Investments: machinery (including computers)
102	E_APP_AU	Investments: road transport equipment
103	E_OPP_AU	Investments: other transport equipment (ships, planes, rail)
104	E_QPP_AU	Investments: other
105	E_KPP_AU	Investments: transfer costs on real estate
106	E__PP_AU	Total investments (till 1995V excluding immaterial assets)
107	B_PPP_AU	Export sales: home made goods and services
108	X6_PP_AU	Dutch sales including building-up of stocks
109	XS_PP_AU	Dutch market including building-up of stocks
Volume change		
110	CP_VP_AU	Consumer goods: home made
111	CM_VP_AU	Consumer goods: imported
112	CS_VP_AU	Dutch Consumer market
113	GP_VP_AU	Government expenditures: home made products
114	GM_VP_AU	Government expenditures: imported products
115	GS_VP_AU	Government expenditures: home market
116	IP_VP_AU	Investment goods: home produced
117	IM_VP_AU	Investment goods: imported
118	IS_VP_AU	Dutch market of investment goods
119	VP_VP_AU	Intermediates: home made
120	VM_VP_AU	Intermediates: imported
121	V__VP_AU	Dutch market of intermediates
122	XZ_VP_AU	Dutch market: all products
123	MX5VP_AU	Dutch market: all imported products
124	X5_VP_AU	Dutch market: home made products

Table 4.10	List of variables (pursued)	
	CODE	DESCRIPTION
Volume change		
125	BGPVP_AU	Exports: home made goods
126	BGMVP_AU	Re-exports
127	BG6VP_AU	Exports: all products (including re-exports)
128	BD_VP_AU	Exports of services
129	X7_VP_AU	Total sales of home made products and services
130	NP_VP_AU	Change in stocks of home made products
131	NM_VP_AU	Change in stocks of imported products
132	N__VP_AU	Total change in stocks of products
133	MGDVP_AU	Total imports
134	XP_VP_AU	Gross production at producer prices
135	PCOVP_AU	Used products and services: home delivered
136	MCOVP_AU	Used products and services: imported
137	VCOVP_AU	Total use of products and services
138	YBMVP_AU	Value added at market prices
139	D__VP_AU	Depreciation
140	LL_VP_AU	Wages, salaries and social benefit premiums
141	AL_VP_AU	Employment: number of employees (x 1000 FTE)
142	AZ_VP_AU	Employment: number of self-employed persons (x 1000 FTE)
143	A__VP_AU	Total employment: number of persons (x 1000 FTE)
144	E_GVP_AU	Investments: buildings
145	E_IVP_AU	Investments: immaterial (software e.g.) (as from 1995N)
146	E_EVP_AU	Investments: machinery (including computers)
147	E_AVP_AU	Investments: road transport equipment
148	E_OVP_AU	Investments: other transport equipment (ships, planes, rail)
149	E_QVP_AU	Investments: other
150	E_KVP_AU	Investments: transfer costs on real estate
151	E__VP_AU	Total investments (till 1995V excluding immaterial assets)
152	B_PVP_AU	Export sales: home made goods and services
153	X6_VP_AU	Dutch sales including building-up of stocks
154	XS_VP_AU	Dutch market including building-up of stocks

5 Data sources

5.1 Introduction

This section provides the references which are used in order to make the data book. First, the literature is listed which is linked to the profit- and loss accounts and the imports, both in nominal millions of Dutch guilders and the corresponding price-changes. The changes in volume were derived from the definition that value equals price multiplied with volume. It concerns the subjects in tables 4.1, 4.5 and 4.6. Second, the references on the figures of production, capacity utilisation and bottlenecks, which correspond to table 4.2, are presented. Third, the references of the factors of production in table 4.3 are shown. Finally, the data sources of the demography of firms in table 4.4 are listed.

Per topic, detailed source-descriptions per topic are available in Dutch. They are downloadable from the internet site www.cpb.nl/eng/data/ . Each annex has the same structure. It starts with general remarks and follows with specific data-sources by branch and period. Finally it presents the references and lists abbreviations.

What is Statistics Netherlands, Basic material 1950– 1969?

Statistics Netherlands provided CPB with data for more detailed industries for the period 1950-1969 than Statistics Netherlands itself published. This collection of data is called ‘Basic material’. These data are closely linked to the figures published by Statistics Netherlands in their Production statistics of those days. In the beginning of the 70s of the former century, CPB used these data in two ways. First, CPB derived an industry classification which is consistent with the classification in this data book. Second, CPB transformed these data from the so-called ISIC-classification to the new Standaard Bedrijfs-Indeling-classification (SBI), which started in 1970.

The original data of the metal-electro industry provided by Statistics Netherlands are still present at CPB in handwritten form. The figures of the other manufacturing branches are lost. But the results of the work of CPB with these data have survived. These results are published in this data book.

5.2 Profit and loss accounts, imports and re-exports

Nominal values (National accounts/ input-output tables)

CPB, 1969, Centraal Economisch Plan 1969, Bijlage A

CPB, various years, Business cycle enquiries Hoogovens en Fokker

EUROSTAT, various volumes, Iron and Steel, Theme 4

Noordman, H.G.A/Afd. Metaalnijverheid, 1977, Branchegegevens betreffende produktie en verbruik voor de metaalnijverheid, CPB-mimeo nr 9, June 9th 1977

Noordman, H.G.A., 1977, Een eerste aanzet om te komen tot branchegegevens betreffende loonsommen en werkgelegenheid in de metaalnijverheid, CPB-mimeo, 11, June 30th 1977

Hoogovens, various volumes, Annual Report

Fokker, various volumes, Annual Report

Statistics Netherlands, undated, Basic material 1950-1969, unpublished detailed data

Statistics Netherlands, various volumes, Productiestatistiek Basismetaalindustrie

Statistics Netherlands, 1969, Maandstatistiek van de Binnenlandse Handel, August, pp. 453-455

Statistics Netherlands, 1974, Productiestructuur van de Nederlandse Volkshuishouding 1968-1970, Part VI Input-output tables, Voorburg

Statistics Netherlands, 1981, *Nationale rekeningen 1980, voorpublicatie 1977*, Voorburg

Statistics Netherlands, 1985, *Nationale Rekeningen 1969-1981 met herziene reeksen voor de jaren 1969-1976*, Voorburg

Statistics Netherlands, 1992, *Nationale Rekeningen 1991*, Band II, Revisie van methoden en uitkomsten op het jaar 1987, Voorburg

Statistics Netherlands, 1996, *Standaard Bedrijfsindeling 1993*, Voorburg

Statistics Netherlands, 1996, *Nationale Rekeningen, Deel Gereviseerde reeksen 1969-191976*, Deel Gereviseerde reeksen 1977-1986, Voorburg

Statistics Netherlands, 1997, *Nationale Rekeningen 1996*, Voorburg

Statistics Netherlands, 1999, *Nationale Rekeningen 1995, Revisiepublicatie*, Voorburg

What is Statistics Netherlands, Documentation of investments 1950–1975?

This collection of data on investments in nominal and in constant prices was provided by Statistics Netherlands to CPB. Statistics Netherlands did not publish these data. The investments are split in a number of types such as machines, trucks, passenger cars, ships, aircraft and trains. CPB processed these figures to prices of Dutch make investment goods by industry and the prices of the corresponding imports.

Price indices

CPB (1969), Centraal Economisch Plan 1969, Bijlage A

Minne B, 1973, Uitvoerwaarden, -prijzen en -hoeveelheden van goederen en diensten per bedrijfstak, periode 1950-1970, CPB-mimeo, June 7th 1973, nr 16

Minne B, J.H. van Veen, 1973, Consumptieprijzen, CPB-mimeo, June 9th 1973, nr 18

Nieuwenhoven M.A. van, 1967, Deflering van de belangrijkste intermediaire leveringen (outputs) van de bedrijfstakken landbouw en voedingsmiddelen (veehouderijproducten en overige producten) aan andere bedrijfstakken, CPB-mimeo, III 4, February 1969

Nieuwenhoven M.A. van, 1968, Deflering van intermediaire leveringen (outputs) van de bedrijfstakken textielnijverheid en schoeisel- en kledingindustrie aan andere bedrijfstakken, CPB-mimeo, III 4, February 21st 1968

Nieuwenhoven M.A. van, 1968, Deflering van de belangrijkste intermediaire leveringen (outputs) van de metaalindustrie aan andere bedrijfstakken, CPB-mimeo, III 6, February 27th 1968

Nieuwenhoven M.A van, 1969, Deflering van de intermediaire leveringen (outputs) van de chemische nijverheid en de raffinaderijen van petroleum aan andere bedrijfstakken, CPB-mimeo, III 2, January 21st 1969

Statistics Netherlands, undated, Basic material 1950-1969, unpublished detailed data

Statistics Netherlands, undated, Documentation of investments 1950-1975, unpublished detailed data.

Statistics Netherlands, various volumes, Maandstatistiek van de Prijzen

Statistics Netherlands, 1969, Maandstatistiek van de Binnenlandse Handel, August, pp. 453-455, Voorburg

UNCTAD, Monthly Commodity Price Bulletin

Vorstman G.J.Th, L.W.Ruitenberg, 1964, Het verbruik uit invoer van goederen en diensten van een aantal bedrijfstakken, 1948-1960, CPB-mimeo, July 31st 1964, I 14

5.3 Production, capacity utilisation and bottlenecks

Production indices

Statistics Netherlands, undated, Basic material 1950-1969, unpublished detailed data

Statistics Netherlands, various volumes, Maandstatistiek van de Industrie

Statistics Netherlands, 1980, Hoeveelheidsindexcijfers van de productie in de nijverheid (1975=100), Statistische onderzoekingen 1980

Zeilmaker J.U., 1974, Hoeveelheidsindexcijfers van de industriële produktie (1970=100), CPB-mimeo, III 30, September 27th 1974

Rate of capacity utilisation

Detailed source description: annex J

Kusters A, D. Lumer, J. Verbruggen, 1986, De constructie van bezettingsgraad- en productiecapaciteitsreeksen per sector, Dutch Ministry of Economic Affairs, Onderzoeksmemorandum nr.1 of working group Multisectormodellen

Minne, B., N.I.M. van Leeuwen, H.G.A. Noordman, 1980, Constructie en analyse van de bezettingsgraden van de branches binnen de Nederlandse metaalnijverheid, CPB Occasional Paper, nr. 20

Statistics Netherlands, various volumes, Conjunctuurtest, Quarterly Survey

Statistics Netherlands, various volumes, Industriemonitor, Quarterly Survey

Wiel, H.P. van der, A.E.Kuijpers, T.J.M. van Reijsen, 1995, Aangepaste bezettingsgraden vervoer en exposed,, CPB-mimeo, December 6th 1995, 95/III/24

Production bottlenecks

Statistics Netherlands, earlier years, Conjunctuurtest, Quarterly survey

Statistics Netherlands, later years, Industriemonitor, Quarterly survey

5.4 Factors of production

Employment

Fokker, various years, Annual Report

Hoogovens, various years, Annual Report

Noordman, H.G.A., 1977, Een eerste aanzet om te komen tot branchegegevens betreffende loonsommen en werkgelegenheid in de metaalnijverheid, CPB-mimeo, 11, June 1977

Statistics Netherlands, Basic material 1950-1969, unpublished detailed data

Statistics Netherlands, various volumes, Algemene Industriestatistiek, table ‘Kwartaalcijfers werkzame personen’

Statistics Netherlands, various volumes, Productiestatistiek

Statistics Netherlands, various volumes, Nationale Rekeningen, table ‘Arbeidsvolume werkzame personen’

Investments fixed assets (including software)

Bakker, R.C., B. Minne, 1982, De investeringen in outillage en transportmiddelen en de werkgelegenheid van de metaalindustrie naar branches, over de periode 1921-1980, CPB-mimeo, 31th August 1982, HA III, nr. 9

Statistics Netherlands, various volumes, *Statistiek* van de investeringen in vaste activa in de nijverheid

CPB, Korte lange reeksen, database from 1995

CPB, Bruto Investeringen in vaste activa, naar type en bestemming 1948-1996

Investments in computers

Statistics Netherlands, various volumes, Statistiek van de investeringen in vaste activa in de nijverheid

Environmental investments

Statistics Netherlands, various volumes, *Milieukosten van bedrijven*, table Milieu-investeringen naar

Research en development expenditures

Minne, B, 1997, Informatie- en communicatietechnologie en economische effecten in Nederland: Quickscan van een CBS-databank, report for Ministry of Economic Affairs, CPB-mimeo, 19/12/1997

OECD, 1996, *Research and Development expenditure in industry 1973-93*, Directorate for Science, Technology and Industry, Paris

OECD, 1997, *Research and Development expenditure in industry 1974-95*, Directorate for Science, Technology and Industry, Paris

OECD, 2000, *Research and Development expenditure in industry 1977-1998*, Directorate for Science, Technology and Industry, Paris

Statistics Netherlands, various volumes, Statistiek Speur-en ontwikkelingswerk, Voorburg

Statistics Netherlands, 1996, 1997, 1998, 1999, 2000, 2001), Kennis en Economie, Voorburg

Statistics Netherlands, 1997, Toelichting op data-verzameling door het CBS voor het onderzoek naar de economische effecten van ICT, Projectgroep Technologie, J.J.M.Pronk, C.H. v.d.Berg, December

Energy use

Statistics Netherlands, Energiedragersbalans, finaal gebruik van totaal energiedragers, energetische doeleinden en niet energetische doeleinden

5.5 Demography of firms

Number of firms

Statistics Netherlands, various volumes, Statistiek van de investeringen in vaste activa in de nijverheid, SBI-1974, Voorburg

Statistics Netherlands, various volumes, Statistiek van de investeringen in vaste activa in de nijverheid, SBI-1993, Voorburg

Statistics Netherlands, various volumes, Bedrijven in Nederland, Voorburg

Number of bankruptcies

Statistics Netherlands, Faillissementsstatistiek, table Uitgesproken faillissementen met betrekking tot bedrijven en instellingen naar bedrijfsactiviteit

References

Bakker R.C., B.Minne, H. Noordman , 1984, Een analyse van de Nederlandse metaalindustrie, CPB Occasional Paper 33

Creusen H, B. Minne, H. Noordman, M.Rensman, 2003, The Dutch manufacturing industry in 2002-2004: The economics behind the scenario, CPB Memorandum 69 (www.cpb.nl/nl/pub/memorandum/69/)

Creusen H, M. Rensman, 2003, Arbeidsproductiviteitsontwikkeling in de Nederlandse industrie, CPB Memorandum, September

Hartog H. den, M. Fraenkel, 1972, "An econometric model of the textile and clothing industries in the Netherlands", Paper presented to the 9th session of Senior Economic Advisors, Economic Commission for Europe, 20-25 March 1972

Jong, H.J. de, 1999, *De Nederlandse industrie 1913-1965*. Een vergelijkende analyse op basis van productiestatistieken (in Dutch), NEHA-series III part 29, Amsterdam, ISBN 90 57 42 021 X

Lintsen (ed), 1998, 2000, *Techniek in Nederland in de twintigste eeuw*, parts I, II, VI, Stichting Historie der Techniek Walburg Pers

Vromans M.W.A.M., 1983, Een model voor de middellange termijn van de chemische industrie, CPB Occasional Paper 31

Abstract

This document describes the contents of a data base of 18 manufacturing branches in the Netherlands, covering the second half of the 20th century. The data base contains annual profit- and loss accounts by branches of industry in nominal values, split into volume and price components, and the inputs of factors of production. Also the data base contains figures on Dutch imports of manufacturing products by branch. Boxes illustrate the diversity in development of the manufacturing branches, based on figures from the data base.