

CPB Memorandum
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In focus: The metal-electro industry in the Netherlands 2001-2003¹

This year's production of metal-electro industry in the Netherlands will lag behind the level of 2001, which was already lowered by a gradual slowdown ending in a rather deep dip at the end of 2001. This forecast looks pessimistic but it hides underlying positive signs. For, departing from this bottom-level, in the course of this year an upward trend will set in, but probably too late and not strong enough to fully overcome this year to year dip. Thus despite these ascending lines this year's total real sales and production will yet decrease. Most of the positive effects of the upward trend during this year will be carried over to the more significant positive growth in 2003 on an annual basis, during which this upward trend is expected to continue. Profitability will recover only in 2003 supported by an accelerating growth of labour productivity at the cost of employment. So, after the rise in employment in recent years, the downturn since the second half of 2001 will continue its negative course in both years following.

¹ The forecasts in this Focus are valid until CPB publishes new industrial forecasts.

Gauging the value of the projections

This 'Industry in focus' sounds more definite than is justified by the uncertainties in future projections. The reason is that this clarifies the text. The figures do not pretend to prove with certainty what future brings. They give rather an indication of how we think about future developments on the basis of our current knowledge and explicit reasoning. This means that the projections can be brought under discussion, and this exactly indicates their value. One who finds the arguments plausible, can anticipate with policy on the basis of the projections.

The main line of reasoning

The reasoning of the metal-electro industry's outlook is roughly as follows.

1. To the industry, its international and Dutch environment are given. The elaborated argumentation for changes in this environment is published in the April issue of CPB Report (link: www.cpb.nl/eng/cpbreport).
2. The response of the metal-electro industry to the changes in its environments is assumed to be the same as in the past. Additional information from e.g. newspapers is processed as autonomous changes. Starting point of the forecast are the amounts of the items on the industry's statement of income in the year before the current year. The model is recursive for each industry. Mutual relations between industries follow the process chain, and this chain determines the sequence of computation of the industries' prospects.

The precise argumentation is published in Dutch as a CPB Memorandum (nr. 34, April 2002): 'De industrie in 2002-2003: De economie achter het scenario' (link: www.cpb.nl/nl/pub/memorandum/34/)

Why an Industry in focus?

This 'Industry in focus' is related to the "Central Economic Plan" (CEP), which yearly presents an economic forecast for the Dutch economy for the current year and the year to come. The CEP itself does not include an outlook for specific industries. Therefore these are published separately as 'Industry in focus' (in electronic form).

Definition of the metal-electro industry

Statistical definition: Statistics Netherlands, Standaard BedrijfsIndeling 1993, industry numbers 27-35. For further information, link link www.cbs.nl, search 'Standaarden', next 'SBI-indeling'.

Key figures for the metal-electro industry in the Netherlands ^a

	1999	2000	2001	2002	2003
	in billion euros				
Nominal value					
Sales	62.9	68.1	68.5	68.3	72.0
Cash flow	13.3	14.2	14.6	15.0	15.5
Investments		3.3	2.4	2.5	2.7
	x 1000 FTE				
Employment	382	385	382	372	369
	annual percentage changes				
In volume					
Sales	2.2	5.2	0.0	-¼	4¼
Prices					
Sales	-0.2	2.9	0.5	-¼	1¼
Unit operating costs	0.5	3.4	2.6	¼	¾

^a For an explanation of the used terms, see in the back of this 'Focus'.

Outlook for the metal-electro industry's environment

2001

In contrast with the rather optimistic expectations for 2001 at the beginning of that year (see Cep-op-maat 2001 or CEP 2001), in reality the Dutch metal-electro industry has suffered from the drastically changed international economic environment. On an annual basis world trade was yet still growing, but at a much slower rate than the year before (1,75% against 10,3% in 2000). Actually, world trade was decreasing continuously *during* the whole year 2001. Especially the dip of the ICT-hardware sector (mobile telephones, computers and parts, chips, and chip-making machinery) and the weak economic performance of Germany and the US (strengthened by "11 September") has worsened international economic situation. This situation was not only leaving deep marks on the Dutch economy as a whole, but especially also on Dutch export performance of the metal-electro industry. For, besides the falling demand for ICT-hardware, also the orders for other investment goods, like transport and other machinery equipment, lagged behind by postponement or cancellations last year.

Table 1 Key data of the environment ^a

	1999	2000	2001	2002	2003
	annual percentage changes				
International environment					
In volume					
Relevant world trade ^b	4.6	10.3	1.75	3	8¼
Foreign prices (euro)					
Import price of metal-electro products	-1.0	4.9	1.2	-¾	-½
Steel	-10.2	19.0	-9.9	-2½	2.00
Euro exchange rate (\$/euro)	1.07	0.92	0.90	0.90	0.92
Dutch environment					
In volume					
Gross domestic product	3.7	3.5	1.1	1½	2½
Production construction sector	6.4	3.2	2.6	1¾	1½
Consumption of durables	10.8	4.3	-0.9	5¼	5
Prices					
Wage rate companies in the Netherlands	3.1	4.9	4.4	5¼	4½

^a For an explanation of the used terms, see in the back of this 'Focus'.

^b "Relevant" world trade: foreign demand for *all* Dutch manufacturing products at *all* geographical markets which are important to Dutch manufacturing *as a whole*.

Also the home markets left limited compensation. The construction sector, as an important user of metal parts and components, and the consumer-market for durables was still growing, but only at a moderate rate. However, the domestic demand for investment goods (transport equipment and machinery) decreased and so did the consumer demand for new cars, even very dramatically (about 20%). Despite the economic downturn, total employment growth remained considerable in 2001. Consequently, labour productivity growth in the market sector has reached a post-1945 low (-1¼ %) and the labour market remained tight.

2002-2003

The prospects for this and next year are surrounded with much uncertainty. But some indicators give rise to better international economic perspectives (see for more details CEP 2002). It is expected that the terrorist assaults in the United States on the 11th of September 2001 and the reprisals that followed, could only delay the previously expected recovery of the international economy by just one or two quarters. The international cycle could bottom out early this year, in the absence of new major shocks.

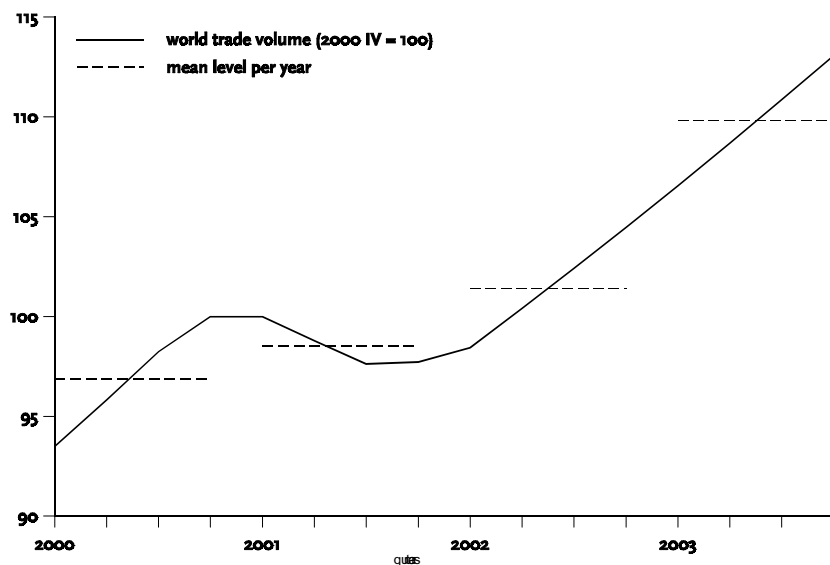
Steel war

However, one hopefully limited shock has already recently announced itself. The Bush-administration issuing import restraints to protect the US steel industry, has started a steel war. The danger is the spreading of further distortions unchecked to other steel markets and countermeasures elsewhere to. For former exporters to the US will seek compensation on other export markets pressuring steel prices downwards. Probably EU has to issue countermeasures not only against the US steel imports, but maybe also against steel imports from other non-EU-countries. So, the US exports the effects of its own inefficient steel overcapacity to the rest of the world.

The recovery is supported by strong monetary and fiscal responses, as well as by declining price increases. Inflation in the industrial world is clearly receding. World market prices will remain weak for a while, and low capacity utilisation and increasing unemployment will help to keep wage and price developments in check.

World trade volume is expected to rebound this year in sympathy with production, but due to the negative carryover from the present year, the average growth rate will be limited to about 3%. Figure 1 illustrates that this seemingly limited growth on annual basis hides the much more dynamic movements in the international cycle. After the dip in 2001 and after an hesitating start in 2002 world trade will grow *during* 2002 at an accelerating rate as a take-off to the expected much faster growth in 2003 continuing the same path during that year. So the already in 2002 accelerating growth is mostly reflected in the expected world trade growth (exceeding 8% on an annual basis).

Figure 1 World trade volume



The improving international environment is only very partly reflected in the current projection for the Dutch gross production growth of 1,4% this year and 2,4% next year. Because of a considerable deterioration of the price competitiveness of domestically produced exports Dutch exporters will lose market-shares. The demand for investment goods will lag behind, because enterprises will sell first their unwanted inventories, before raising production, utilisation rates and profitability. So it is expected that in 2002 investments will decrease further, but will recover in 2003. The growth of the domestic consumer market for cars will get an impulse to recover the deep dip in 2001 by rising to normal levels in 2002 and 2003.

The projected labour share in enterprise income will not increase further in 2002, but so profitability does not improve either. The last year's exceptional hike in consumer prices (4½ %) is expected to be lowered to 3 % this year and to 2¼ % in 2003 .

This year and next unemployment is expected to rise to 4½ % and in 2003 to almost 5% of the labour force.

Table 2 Sales of the Dutch metal-electro industry

	2001
	%
In foreign markets	54
In the Dutch market,	
of which Intermediates	33
Consumption goods	2
Machines, computers and vehicles	11
Total	100

Markets and some typical products of the metal-electro industry

<u>Markets for:</u>	<u>Products</u>
Intermediate products:	steel sheets, aluminum bars, metal construction materials and frames, machine components, semiconductors, containers, maintenance services, (parts of) engines.
Consumer durables:	household appliances and machinery, do-it-yourself machines, television sets, (mobile) phones, electronic games, shaving apparatus, passenger cars, bicycles.
Investment goods:	machines, computers, (motor) vehicles, vessels.

Prospects for the Dutch metal-electro industry**2001****Market developments**

In 2001 the Dutch metal-electro industries, especially electronics-, (non-electronic) machinery- and automotive industry, have experienced the repercussion of the international slowdown on general demand and of the fall in ICT-demand in the export markets. The home markets gave limited compensation. The general slowdown in demand was not the only reason. More specifically, also the introduction of higher VAT-tax-rate (a rise from 17,5% to 19% per 1 January 2001) has lead to a slowdown in consumer purchases in 2001 because of anticipated purchases of durable goods at the end of 2000. Especially the consumer market for new cars in 2001 was strongly pushed downwards. However, the domestic car-market play a minor role in the

production of the Dutch car-industry. Most cars home produced, are destined for abroad. Especially imports of cars were affected. More important for Dutch industries was the fall in the overall demand for investment goods last year.

Production

In these unfavourable circumstances it is not surprising that production levels decreased in almost all metal-electro branches last year. Only the iron and steel industry has raised its production level a little, despite the weak demand on the European steel market. This rise was mostly due to a technical revival from the introductory problems of a newly installed "continuous cast"-machine in 2000. Despite this rise, the Dutch steel-output remained still rather low: the utilisation rate rose from only 82% to 84%.

Employment, productivity and profitability.

The Dutch labour market is tight. So, despite decreased production and wage-drifts, employment of permanent personnel in the Dutch metal-electro industry remained more or less constant, partly because of a retarded positive reaction to the expansion in 2000, partly as a result of 'labour hoarding'. In the short run this 'labour-hoarding'-strategy leads to more labour costs, but, considering the shortage on the labour market, probably also to less recruitment costs when times become better. Instead, a large part of temporary employment has indeed vanished. Nevertheless, in most branches of the metal-electro industry labour productivity decreased, so that together with the wage rise, unit labour costs rose firmly and profitability decreased sharply. So it is not surprising that investments by the metal-electro industry as a whole decreased 30% in 2001.

Table 3 Key figures for the Dutch metal-electro industry ^a

	1999	2000	2001	2002	2003
	in billion euros				
Nominal value					
Sales	62.9	68.1	68.5	68.3	72.0
Purchased goods and services	44.1	48.2	49.4	49.0	51.8
Wages	13.3	14.2	14.6	15.0	15.5
Cash flow	5.6	5.8	4.5	4.3	4.8
Investments		3.3	2.4	2.5	2.7
	annual percentage changes				
In volume					
Sales	2.2	5.2	0.0	-¼	4¼
of which in foreign markets	4.3	8.2	-2.0	-½	4½
in the Dutch market	-0.2	1.7	2.0	-¼	3½
Value added	2.0	6.8	-1.6	-½	3
Labour productivity	1.0	6.1	-0.8	2¼	4
Prices					
Sales	-0.2	2.9	0.5	-¼	1¼
Unit operating costs	0.5	3.4	2.6	¼	¾
Purchased goods and services	0.0	4.7	1.9	-¾	1
Unit labour costs	1.7	1.5	2.9	2¾	-1
Number of employees (level, thousand FTE)	366	370	367	357	354
Labour share in income (%)	82.8	84.1	91.6	93¼	91¾

^a For an explanation of the used terms, see in the back of this 'Focus'.

An outlook: 2002-2003

Market developments offer new opportunities but

The already mentioned scenario of accelerating growth in world trade during 2002 and 2003 *seems* to show better perspectives to the Dutch metal-electro industry. This scenario is partly based on an expected moderate recovery of the ICT- markets in the next two years coming from a hesitating introduction of new technology (gprs-telephones, umts) in the communication sector and computer sector, and from accruing needs to replace obsolete apparatus. More important is the assumed general recovery of consumer and producer confidence which will attribute to more dynamics in trade and activities. With some delay increasing demand for investment goods in transport and machinery equipment will intensify this dynamics.

whether or not the Dutch metal-electro industry is capable to seize them all...

For a number of branches and enterprises opportunities to grow are sufficient following a strategy of keeping their market-shares, eventually at the cost of profit margins.

also depends on pricing strategies in relation to the pressure of labour costs

But many metal-electro enterprises in the Netherlands will at least try to maintain their profits, or, rather, they will try to or have to restore their profits. Several strategies are possible, but all are restricted. First, possibilities to rise prices of existing products are restricted by foreign competition abroad and on the home-market. Putting innovative products in the market is a way to avoid these competitive pressure to become more profitable, but at the same time riskier depending on consumer preferences. Second, cost savings are difficult to realise, because as long as the labour market at home is tight, the continuous wage drift drives unit labour costs upwards. In this respect, however, compensation can be found in levelling up labour productivity as a third possibility. This strategy demands a better use of existing employment by rising production. As mentioned, for a number of branches and enterprises opportunities to grow are sufficient. However for most other enterprises production growth in the short run is too (s)low or is coming too late. Only cutting jobs or leaving the "labour hoarding"-strategy is left. For some industrial activities none of this possibilities is useful anymore, resulting in ending up production or replacing production to lower-cost countries. All these possibilities and efforts to maintain or to raise profits and profit margins implicitly play a role in the prospects for the Dutch metal-electro industry.

very probably resulting in loss of market-shares

More concretely, it is expected that exporters will try to, at least partly, pass on their cost increases on export-prices and on inland customers. So export-prices will tend to rise faster than competitive prices abroad. Therefore Dutch metal-electro industry will face some loss of market-shares abroad, but also in the home-market.

Nevertheless during 2002 Dutch production opportunities become better at an accelerating rate, but.....

It is expected that, after unwanted inventories are used or sold, the growing demand on product markets during 2002 will stimulate first the production of the basic product industries (chips, iron and steel, aluminum). Operating on near commodity markets, in general this will not only

lead to more real activities in this industries, but also to opportunities to raise prices and profit margins.

Effects of the Steel War on Dutch steel production

The opportunity to raise steel prices will be strongly reduced if the recently announced distortions on the steel market by the US levies on imported steel become effective. It may cause a heavy restriction on Dutch export and production of steel. Near 10% of the Dutch production was exported to the US. A negative impact on production of about 5% is estimated, existing of about -7 % caused by decreasing exports to the US and +2% increase by intensifying competition on other markets at lower prices.

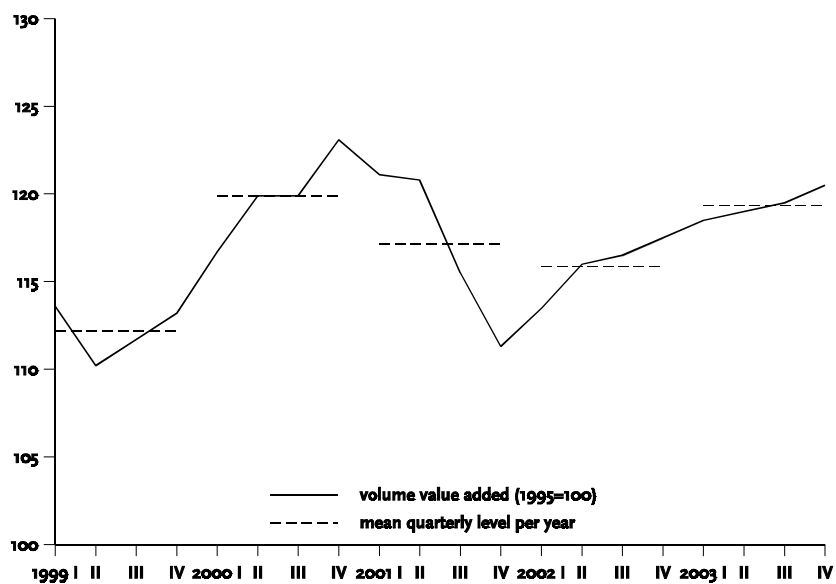
Later on in 2002, production in the metal-electro industry of parts and components will follow and growth will accelerate. So the metal product industry will return to a positive growth, also supported by the still growing demand by the inland construction sector.

these are , in most cases, unsatisfactory to return this year to a positive growth rate on an annual basis...

For some other metal-electro branches operating at the front of product cycles (especially chips), the accelerating recovery of international and inland demand during 2002 will not yet generate sufficient strength to overcome the 2001-dip, also due to some loss of market shares or by replacing production to abroad. So on an annual basis production will decrease again this year. During 2003 the earlier accelerated growth will continue. But in contrast with 2002, the starting point is relatively high (compared with the mean level of 2002). This difference is just reflected in the differences in the yearly growth rates of exports and production between both years. Also the production of investment goods (e.g. non-electronic and electronic machinery and the automotive industry) will face yet further decreasing production this year, but on the longer run better perspectives are expected. The reason is that it takes time, before in general (world) capacity utilisation rates and profitability return to a normal level again. So production growth will occur mainly in 2003. However, for the Dutch automotive industry and especially the passenger car industry these positive perspectives for the near future can be hampered or delayed. Reason: structural changes in co-ownership in the Dutch automotive industry (from Volvo to Daimler together with Mitsubishi) and the possibly necessary restructuring of production lines in 2004 cast their shadows.

Fig 2 summarizes the cyclical movements of the (projected) production of the metal-electro industry as a whole from 1999 to 2003.

Figure 2 Production metal-electro industry



and employment will fall further but productivity will rise.....

The opportunities to grow seems too meagre to maintain all employment in 2002 and 2003. The unsatisfactorily recovered or even lower production levels in 2002 will be accompanied with a yet stronger decrease in employment. Thus, at the cost of employment, in almost all branches labour productivity will be higher, but especially in 2003 because of the accelerating production.

Especially for metal product and (non-electronic) machinery a necessity to pay more attention to labour productivity exists, because its level is from an international point of view relatively low (see box).

Relatively low labour productivity level in metal products and non-electronic machinery industries

Most of the Dutch metal-electro industries have a low value added per worker compared to their foreign counterparts. Particularly the metal products and non-electronic machinery industries have relatively large catch-up or specialisation opportunities left, even when compared to the neighbour countries Germany and France. Only the electronic machinery and professional instruments industries achieved a higher productivity level than Germany and France. A part of the lead of Japan and the United States can be explained by the fact that employees in these countries work relatively more hours a year.

Metal products and non-electronic machinery may realize some additional productivity growth by far-going automatization and increases in scale, and by utilizing opportunities in markets with a larger growth potential. In this, the labour productivity levels of Germany and France set the targets for the two Dutch industries. This strategy will most likely involve a shake-out of underperforming companies.

The electronic machinery industry and, to a lesser degree, the professional instruments industry, have still an opportunity to catch up with Japanese and American levels of labour productivity. However, a high productivity growth, such as in the past few years, may only be achieved by exploiting new technological developments and further outsourcing of products in the final stages of their product life cycle. Productivity growth may weaken a little in the near future, although remaining high.

Value added per worker in 1996 (Netherlands = 100) ^a

	Germany ^b	France ^b	Japan	United States
Metal-electro industry	110	120	212	206
o.w. Metal products	135	130	145	184
Non-electronic machinery	111	177	178	302
Transport equipment	151	119	246	177
Professional instruments	53	67	159	100
Electronic machinery	70	97	216	266
Iron and steel	132	76	279	161

^a Source: OECD STAN database 1970-1997 (ISIC Rev.2). Underlying value added time series in 1987 prices. Comparative levels calculated with 1987 industry specific PPPs (Pilat, OECD, 1996).

^b Data for 1995 instead of 1996.

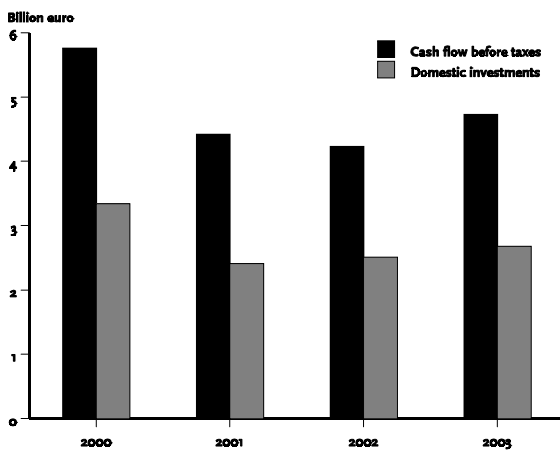
but not far enough to restore profitability before 2003.....

The productivity growth rate in 2002 will probably be insufficient to compensate wage rise, so in general profits and profit-margins can not be restored already in 2002 and will be even lowered further, but in 2003 the accelerating production attributing to an accelerating productivity growth rate may indeed help the recovery of profitability.

also postponing investment opportunities until 2003

During this year the utilisation rates and profits will restore slowly to create yet favourable circumstances to invest. So until 2002 the investment-level remains low. But in 2003 perspectives for investing will be better.

Figure 3 Cash flow and investments



The described scenario above is summarized and detailed for branches reflected in main figures in the table 4.

Table 4 Key figures for the metal-electro industries

	1999	2000	2001	2002	2003
annual percentage changes					
Sales volume					
Iron and Steel	-1.0	2.1	3.3	3	4¼
Non-ferrous metals	-1.0	2.1	-3.3	2	1½
Metal products	2.4	3.2	2.1	2½	3½
Non-electronic machinery	1.3	11.0	-0.6	-1	6¼
Electronics	3.9	6.5	-1.9	-¼	6
Automotive vehicles	2.8	0.5	-0.2	-5	-¼
Shipbuilding	-0.2	-1.6	0.8	-3	-¼
Number of employees (*1000)					
Iron and Steel	17	17	17	16	16
Non-ferrous metals	9	9	9	9	9
Metal products	97	98	98	98	99
Non-electronic machinery	85	86	87	85	83
Electronics	98	99	97	93	92
Automotive vehicles	29	30	29	26	25
Shipbuilding	16	16	16	15	15
Sales prices					
Iron and Steel	-7.5	16.4	-4.3	-0	¾
Non-ferrous metals	-7.5	16.4	2.3	-¼	½
Metal products	0.3	2.6	1.4	-½	1½
Non-electronic machinery	1.2	1.2	1.3	-0	1¼
Electronics	0.1	1.4	0.6	¾	1½
Automotive vehicles	-1.4	1.3	-0.5	-1½	¾
Shipbuilding	4.7	1.5	0.9	0	1
Unit operating costs					
Iron and Steel	-1.6	7.2	7.5	-¼	¾
Non-ferrous metals	-1.6	7.2	3.3	-1	1½
Metal products	-0.7	6.0	1.7	-¼	2
Non-electronic machinery	1.3	1.6	3.0	¾	¼
Electronics	0.9	1.7	2.4	1	¼
Automotive vehicles	0.6	3.5	2.2	-1¼	1
Shipbuilding	1.6	3.7	2.7	1	1¼
Unit labour costs					
Iron and Steel	0.8	2.4	-1.3	¼	-¼
Non-ferrous metals	0.8	2.4	7.6	1½	2½
Metal products	2.2	4.7	1.3	2¼	2
Non-electronic machinery	2.6	-4.3	5.1	3½	-3¾
Electronics	-0.4	1.0	3.5	2¼	-3¼
Automotive vehicles	3.3	7.1	0.6	½	1¼
Shipbuilding	4.0	4.1	0.1	6½	2¾

Explanation of used terms

Macro-economic variables

Gross domestic production	Gross domestic product at market prices (= domestic production at factor cost + indirect taxes – subsidies + depreciation)
Relevant world trade	Weighted average of volume changes of imports of agricultural goods, food and non-energy manufacturing products of customers countries, with Dutch export shares as weights
Wage rate	Wages, salaries and national security costs per employee in the Dutch market sector

Industry specific variables

Cash flow	Depreciation and income other than wages and net subsidies
Investments	Gross investments in fixed assets, tangible (for instance. company premises and machinery) and intangible (software packages and databases)
Labour share in income	Wages (including earnings self-employed) as share in the sum of wages and trading profit. Trading profit equals profits before taxation and before interest payments and including the earnings of self-employed
Purchased goods and services	Use of intermediates, raw materials and services in production
Sales	The industry's gross production at market prices
Unit labour costs	Compensation of employees per unit of real value added in manufacturing
Unit operating costs	Total costs of labour and purchased goods and services per unit of real value added in manufacturing
Value added	The value which labour and fixed capital add to the purchased goods and services. Accounting principle: gross domestic production at market prices less the costs of purchased goods and services
