# UNCERTAINTY ANALYSIS OF THE UK-MRIO MODEL

Research Report to the Department for Environment, Food and Rural Affairs by the Stockholm Environment Institute and the University of Sydney







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### UNCERTAINTY ANALYSIS OF THE UK-MRIO MODEL

Results from a Monte-Carlo Analysis of the UK Multi-Region Input-Output Model (Embedded Emissions Indicator)

### Report to the Department for Environment, Food and Rural Affairs

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Views expressed in this report are those of the authors and do not necessarily reflect those of Defra.

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## **Glossary**

AT Analytical Table

BEET Balance of emissions embedded in trade

CO<sub>2</sub>-e Carbon dioxide equivalents CPI Consumer price index

CRAS Conflicting RAS (matrix balancing procedure)

Defra Department for Environment, Food and Rural Affairs

EEE Emissions embedded in exports
EEI Emissions embedded in imports
EET Emissions embedded in trade

FC Final consumption FD Final demand GHG Greenhouse gas

GTAP Global Trade Analysis Project GWP Global warming potential IEA International Energy Agency

IO Input-output

IPCC Intergovernmental Panel on Climate Change

MRIO Multi-region input-output

OECD Organisation for Economic Co-operation and Development

ONS Office for National Statistics

PPI Producer price index
PPP Purchasing power parity

RAS Synonym for a matrix balancing approach used mainly to update

input-output tables, developed by Richard A. Stone in 1961

RSE Relative Standard Error

ROW Rest of the world

SAM Social accounting matrix

SCP Sustainable consumption and production

SE Standard error

SIOT Symmetric input-output table
SRIO Single region input-output
SUT Supply and Use Table

UK- Multi-region input-output model with global coverage, including MRIO 1 the United Kingdom as one of the trading partners (also acronym

for the model developed in this project, with the '1' meaning that

this is the first stage of model development).

UNFCCC United Nations Framework Convention on Climate Change

See (United Nations 1999).

## 1 Introduction

The work described in this report is an extension to the 'Embedded Carbon Emissions Indicator' project in which the first stage of a multi-region input-output (MRIO) model was developed with the aim to set the basis for multi-country analyses of environmental impacts associated with UK trade flows, including detailed accounts of emissions embedded in trade flows to and from the UK. <sup>2</sup> A time series of direct and indirect carbon dioxide emissions associated with UK economic activities, in particular emissions that are embedded in imports to and exports from the UK, was calculated with this UK-MRIO 1 model.

One open question that had not been answered in this previous project was about the uncertainty of the results. The present work therefore set out to quantify the error margins associated with the results from the UK-MRIO 1 model. The sensitivity of the model system with respect to parameter uncertainty was to be tested by performing a Monte-Carlo analysis. This allows for the results to be presented with error margins.

A sensitivity analysis of the whole model system was therefore carried out by

- reviewing and justifying estimates for standard deviations of constraints,
- estimating IO table uncertainties from constraint uncertainties,
- estimating IO table uncertainties from matrix balancing,
- estimating multiplier uncertainties using Monte-Carlo simulations and
- calculating the error propagation for embedded emissions.

The calculations were carried out by The Centre for Integrated Sustainability Analysis (ISA) at the University of Sydney<sup>3</sup>, with the Stockholm Environment Institute<sup>4</sup> at the University of York providing initial uncertainty estimates and coordinating the report.

Although Monte-Carlo type analyses to determine possible errors from uncertainties in underlying databases is well described in the literature, only few economic and environment-economic studies actually go to such a length. No other environmental MRIO study has thus far undertaken a similarly thorough uncertainty analysis (for a review of such studies see Wiedmann et al. 2007; Wiedmann et al. 2008).

Wiedmann et al. (2008); project reference: EV02033; project website: http://www2.defra.gov.uk/research/project\_data/More.asp?I=EV02033&M=KWS&V=EV0203 3&SUBMIT1=Search&SCOPE=0

http://www.isa.org.usyd.edu.au

<sup>4</sup> http://www.sei.se

Section 2 describes how the uncertainties for the underlying data were derived; Section 3 explains the methodology and Section 4 present the results. Section 5 discusses the validity of the assumptions and calculations and concludes. For the definitions, general context and a detailed description of the UK-MRIO model and results we refer to the main report.<sup>2</sup>

## 2 Methodology for estimating uncertainties of model input data

## General procedure for estimating data uncertainties

We define the *order of magnitude* of a data item x as its logarithm  $\log_{10}(x)$ . For example, the order of magnitude of £1,000 is 3, the order of magnitude of £10,000 is 4. Let the absolute standard error of a data item x be  $\Delta x$ , so that its Relative Standard Error (RSE) is  $r_x = \Delta x/x$ . The absolute error in the logarithms (the "order-of-magnitude" error) is then

Eq. 1 
$$\Delta(\log_{10} x) \approx \log_{10}(x + \Delta x) - \log_{10}(x) = \log_{10}(\frac{x + \Delta x}{x}) = \log_{10}(1 + r_x)$$
.

Relative standard errors  $r_x$  can sometimes be obtained or derived from public data sources. If there are no data, error estimates can be solicited from informed judgement of statistical agency staff (Lenzen 2001). These relative standard error can then be transformed into the "order-of-magnitude" errors (or *log-normal errors*) by the approximation above.

The rationale for estimating error coefficients for the logarithms and not for the data values as such is based on the assumption that data are distributed lognormally, and not normally. The assumption of log-normality effectively ensures that all values in the error range of a data item remain positive.

Large data items are generally known with higher accuracy than small data items. This is due to the fact that large items often consist of many smaller data points (e.g. purchases by companies, emissions data from individual sources, etc.), thus cancelling out stochastic errors when accumulating. This holds in general for any data: For example employment in service sectors of an economy is large, because there is a large number businesses employing a small number of people. Another example is energy use in the electricity sector.

Even though there may not be many power plants in the country, the amount of black coal or natural gas is usually comprised of many supply batches adding up over the year.

For the sake of consistency and simplicity, we have chosen to regress all lognormal standard error data with a *linear function on the logarithms of the data*:

Eq. 2 
$$\log_{10}(1+r_x) = a \ln x + b$$
.

where a and b are regression coefficients.

In order to perform a Monte-Carlo analysis of the UK-MRIO model, the uncertainties of all underlying input data had first to be determined. There are five types of data with their specific uncertainties:

- UK input-output data,
- UK CO<sub>2</sub> data,
- GTAP input-output data for three world regions,
- CPI data used for deflation,
- International CO<sub>2</sub> data, and
- Trade data.

## **UK** input-output data

Input-output data for the UK were taken from the annual Supply and Use Tables reported by the Office for National Statistics (Wiedmann et al. 2008). The uncertainty of these data is well documented in the Annual Business Inquiry (ABI) published by ONS. The ABI reports the standard error for 'Total turnover', 'Approximate gross value added at basic prices', 'Total purchases of goods, materials and services' and 'Total net capital expenditure' by SIC 3-digit code for the years 1998 to  $2005.^5$  Altogether, this results in 2,166 data points x with as many absolute standard errors  $\Delta x$ , thus providing an excellent data pool from which RSE values can be calculated directly. Deriving the linear function on the logarithms of the data (2), results in the following equation (see also Figure 1):

Table: ABI Quality Measures, Annual Business Inquiry, Sections A-O Whole Economy -Standard Error By Group, Release Date 18/06/2007; accessed in February 2008 on <a href="http://www.statistics.gov.uk/abi/quality\_measures.asp">http://www.statistics.gov.uk/abi/quality\_measures.asp</a>.

Eq. 3 
$$y = \log_{10} (1 + r_x) = -0.0293 \ln(x) + 0.2945$$

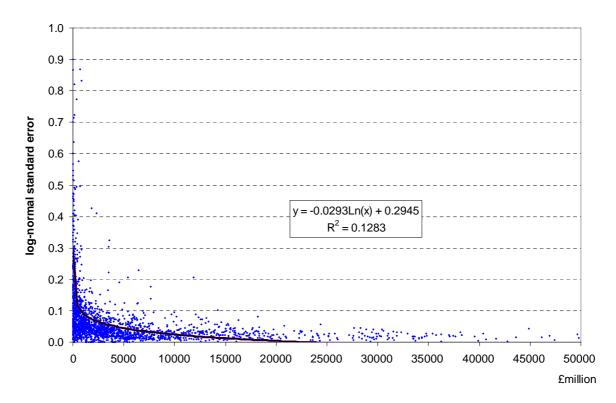


Figure 1: Error distribution of UK input-output data

For x > 16,500 £million the standard error becomes smaller than 1% and for x > 23,183 £million it would become negative when using Eq.3. We have therefore set  $\Delta x/x = 0.01$  as the minimum value for all x > 16,500 £million, to ensure positivity.

### UK CO<sub>2</sub> data

National carbon dioxide emissions data were taken from the Environmental Accounts (see Wiedmann et al. 2008). ONS does not currently classify uncertainty in respect of the Environmental Accounts per se, though uncertainty in considered for the core inventories (National Atmospheric Emissions Inventory and UK Greenhouse Gas Inventory) that form the basis of the ONS accounts. Annex 7 of an AEAT report (AEAT 2006) provides more detail in this respect.

We have therefore chosen the following approach to estimate the uncertainty of Environmental Accounts  $CO_2$  data. For the largest single value of  $CO_2$  emissions for a sector (172 Mt from electricity generation) a RSE of 2% was

<sup>&</sup>lt;sup>6</sup> Personal communication from Andrew Lelland, AEA Group, Warrington on 11 March 2008.

assumed, which is in line with the AEAT estimates (see Table A7.4a in AEAT 2006). For the smallest value (18 kt CO<sub>2</sub> from metal ore mining) it is reasonable to assume a much larger variation; some sectoral emission uncertainties can be over 300% (compare with Table A7.4b in AEAT 2006). Because of the lack of more precise information for CO<sub>2</sub> only, the RSE for the smallest value was set to 100%. The linear regression for the log-normal standard error of the smallest and the largest value is then:

Eq. 4 
$$y = \log_{10} (1 + r_x) = -0.0179 \ln(x) + 0.2246$$

Figure 2 shows a fitted curve; values between the extremes have been interpolated by using Eq. 4.

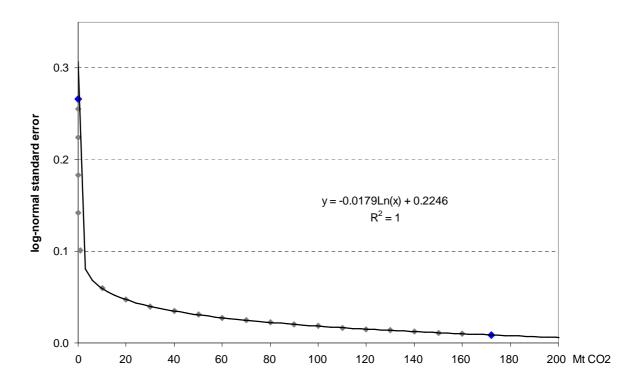


Figure 2: Error distribution of UK CO<sub>2</sub> emissions data (the smallest and the largest x-values – blue dots – were used to generate the line; intermediate points – grey dots – were fit to this assumed functional form).

## **GTAP** input-output data for three world regions

Two types of uncertainties are associated with the input-output data from GTAP for three world regions used for the UK-MRIO model (Wiedmann et al. 2008):

- 1) Uncertainties associated with the compilation of IO tables by GTAP and the aggregation to three world regions.
- 2) Structural change over time. We used data from two years, 1997 and 2001, for modelling the whole time period 1992 to 2004. Changes in the economic structure of the three world regions introduce systematic errors in the results.

The sections below describe how the uncertainties for 1) and 2) were derived.

#### Uncertainties associated with the compilation of GTAP IO tables

In order to compile its input-output database the Global Trade Analysis Project (GTAP) performs a number of process steps which influence the accuracy and precision of the data. To understand the uncertainty in the GTAP database requires a brief description of how it is constructed:<sup>7</sup>

Firstly, input-output data are submitted by database contributors. These contributions are voluntary and so the data can be rather old. For instance, Sweden is from 1985, most EU countries are from the early 1990's. The GTAP scales the data to match 2001 GDP in international dollars, which means the data have the *structure* of its base-year, but the *volume* of 2001. The uncertainty in the original data is not reported and different countries might have different "definitions" making comparisons difficult.

Secondly, input-output data are harmonized. The data needs to be converted to the GTAP format. This requires various aggregations and disaggregations. Disaggregation is the main issue with some countries aggregated to as low as 20 sectors (Russia). Further disaggregations are performed in the food and agriculture sectors. The uncertainty introduced in the harmonization process is unknown.

And thirdly, GTAP includes various additional data, such as trade and energy volumes, to update the input-output data. Trade data, for example, are rebalanced, then fed into the IO tables (as exports and imports). Changes in stocks are removed, etc. Once all the data have been linked it has to be "balanced" to obtain a global equilibrium. The uncertainty introduced in the balancing is unknown.

Despite these obviously significant error sources, the GTAP data are at the core of most global economic models and is used by most international organisations. GTAP is widely accepted as a reputable data source for

The following paragraphs are based on a personal communication with Dr Glen Peters, Industrial Ecology Programme, Norwegian University of Science and Technology (NTNU), Trondheim, in February 2008.

economic analysis. However, in most economic studies no uncertainty analysis is provided or only a rough estimate of possible error ranges.

Upon request for information on data uncertainty, GTAP referred to a report by Robert McDougall (McDougall 2006) as part of the GTAP documentation. This document has information indicating the extent of change in individual tables structure in order to accommodate international data such as trade targets, energy usage targets, and other international data sets. Table 19.6 from this document ("Selected Category Total Comparisons Between Unfitted and Fitted I-O Tables, US\$billion; page 19-11) includes over 100 data points on a sector level and was used for an error estimate, assuming that the differences between 'Unfitted/Initial' and 'Fitted/Final' represent a relative standard error. The resulting equation (5) and plot (Figure 3) show a reasonable correlation between log-normal standard error and financial data. Again, for x values larger than 1200 US\$billion, y was kept constant at 0.03 in order to reflect the uncertainty of the two largest x values in Figure 3 and to ensure positivity of all y.

Eq. 5 
$$y = \log_{10} (1 + r_x) = -0.0439 \ln(x) + 0.3418$$

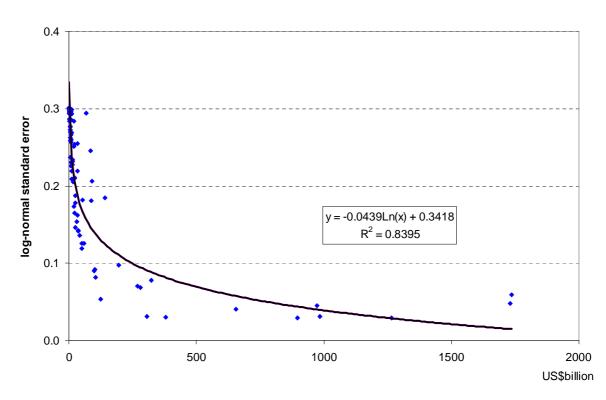


Figure 3: Error distribution of GTAP input-output data

Chapter 19: Updating and Adjusting the Regional Input-Output Tables (https://www.gtap.agecon.purdue.edu/resources/res\_display.asp?RecordID=2184).

This approximation is not an ideal representation of GTAP data uncertainties, but in the light of a missing alternative it is a workable substitute for the errors associated with the data compilation procedure described above.

#### Uncertainties associated with structural change over time

While the section above deals with the uncertainty inherent in the GTAP data of one year, this section deals with the structural changes over a four year time period. The UK-MRIO model uses GTAP IO data from 1997 and 2001. The economic structure – and thus the IO matrices – for the three world regions has changed over time. Although it can be assumed that these changes are of a systematic nature (i.e. changes are likely to go in one direction; e.g. some sectors become consistently more important over time while others loose in significance), we have not made sector specific assumptions on the directions of change. Rather, we have defined the changes observed between 1997 and 2001 as stochastic uncertainties that can either continue to go in one certain direction or in the other direction. With increasing distance from the base years 1997 and 2001, we have assumed that uncertainties grow with a linear annual rate, thus covering all possibilities of structural change over time.

The following procedure was applied. Prices in the GTAP IO tables for 2001 were corrected for inflation by dividing through the producer price index (PPI; taken from ONS), relative to 1997 on a sectoral level. Each cell value in the 1997 IO tables for all three world regions was then subtracted from the respective cell values in the 2001 tables. The resulting differences were converted in absolute values (removing the + or - signs) and defined as the relative standard error of the 1997 cell entries, resulting in the equation and plot provided below. A minimum value of 0.05 for the log-normal standard error was chosen for very large values of x. In the model, y values are divided by four to reflect annual change.

Eq. 6 
$$y = \log_{10} (1 + r_x) = -0.0445 \ln(x) + 0.4628$$

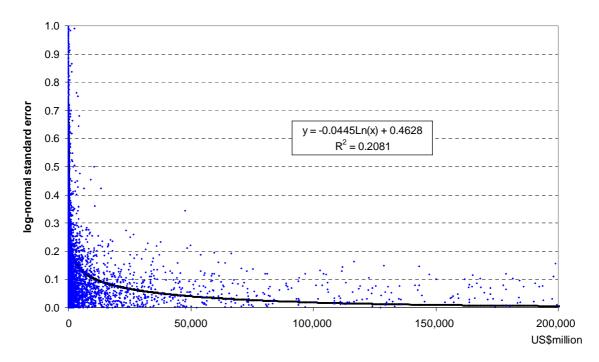


Figure 4: Error distribution of structural change in GTAP input-output data over a four year period.

#### Price indices used for deflation

As mentioned above, prices in the 1997 and 2001 IO tables from GTAP for the three world regions had to be corrected for inflation to be usable for other years in the time series. This was done by using the average producer price index (PPI) of selected countries in the three world regions, taken from OECD statistics<sup>9</sup>. Apart from the fact that these PPIs are averaged over the whole economy and are not specific to individual sectors, uncertainty is mainly introduced through variations between countries. From the OECD database, a statistically sufficient number of countries (15) was only available for the 'OECD Europe' region. For each year from 1992 to 2004 the average PPI of these 15 countries as well as the standard deviation was derived and overall relative variation was expressed as standard deviation over average. This variation depends on the year as PPIs are expressed as indices (base year 2000) and therefore the average variation over all years 1992 to 2004 of 10% was used as a general estimate of uncertainty for all years and world regions.

Dataset 'Price indices (MEI)', extracted on 5 Februray 2008 from OECD.Stat.com

## International CO<sub>2</sub> data

Carbon dioxide emissions data for the three world regions were compiled from IEA data (Wiedmann et al. 2008). No documentation of uncertainty could be found for this data set. Therefore the same error function as derived for the national CO<sub>2</sub> data was used (see above).

Another challenge in terms of uncertainty is posed by the mismatch of numbers of sectors in the UK tables (123 sectors) and GTAP tables (30 sectors). This leads to the situation that UK sectors that correspond to the same foreign sector get allocated the same foreign  $CO_2$  intensity (in kt  $CO_2/M\pounds$ ). As a result the carbon intensity of imports can systematically be over- or underestimated within a cluster of sectors. For example, GTAP distinguishes only one transport sector (and hence one carbon intensity for transport) whereas the UK table distinguishes five transport sectors with different  $CO_2$  intensities.

In principle it would be possible to determine the degree of variation within each block of corresponding sectors by using the variation of UK intensities within this block as a measure for variation of foreign intensities. However, it was not possible within the limited scope of this project to implement the necessary routines which would have required substantially more resources. It can be assumed that the combined variation of absolute CO<sub>2</sub> emissions per sector and total industrial output per sector cover most of the possible variations and that the uncertainties of aggregate results can still be determined with sufficient robustness.

#### Trade data

The total imports to the UK for each year and sector are directly taken form the UK Supply and Use Tables and therefore are associated with the uncertainty of UK IO data as described above. In addition to this, further uncertainty is introduced through the division of total trade into the three world regions. We used trade data from different sources to accomplish this task (for details see Wiedmann et al. 2008). The differences in the three-region split of trade data when using either SIC or SITC classification for the trade data can be used to determine the associated error. The equation and plot below capture the variation of over 1,200 data points that represent either trade transactions from the SUTs (SIC classification) or trade data from HMRC (<a href="www.uktradeinfo.com">www.uktradeinfo.com</a>, SITC classification).

Eq. 7 
$$y = \log_{10} (1 + r_x) = -0.0186 \ln(x) + 0.2111$$

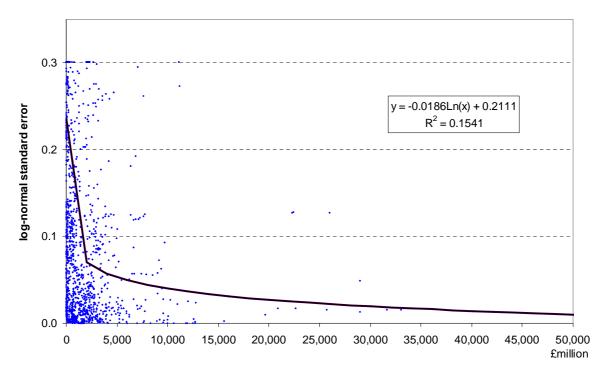


Figure 5: Error distribution of UK import data from three world regions.

## 3 Methodology for calculating the uncertainty of embedded emissions

#### Introduction

The UK input-output tables for the UK-MRIO model were obtained using a multi-proportional balancing algorithm (CRAS; described in the original consultancy report, Wiedmann et al. 2008), with the aim of having the entries of the input-output table (vectorised as  $\bf p$ ) satisfy constraints  $\bf c$  according to  $\bf Gp = \bf c$ , where  $\bf G$  is a constraints coefficients matrix, and  $\bf c$  holds the constraints values. The balancing algorithm starts with an initial estimate  $\bf p_0$  for  $\bf p$ , and arrives at a final solution  $\bf p^{(final)}$ . This  $\bf p^{(final)}$  is a vectorised form of the input-output table  $\bf T$ .

The aim of the present work was to establish uncertainty estimates for the carbon multipliers  $\mathbf{m}$ , which are calculated from  $\mathbf{T}$  according to  $\mathbf{m} = \mathbf{q} \; [\; \mathbf{l} \; - \; \mathbf{T} \; \hat{\mathbf{x}} \; ]^{\text{-1}}$ , where  $\mathbf{q}$  are sectoral carbon intensities,  $\mathbf{x}$  is sectoral gross output, and  $\mathbf{l}$  is a suitable unity matrix. These uncertainties will be expressed as standard deviations  $\Delta \mathbf{m}$ . A standard deviation  $\Delta \mathbf{m}$  denotes the 67% confidence interval around the mean  $\mathbf{m}$ ; in other words, 67% of a large number of observations of  $\mathbf{m}$  would fall into the interval  $[\; \mathbf{m} - \Delta \mathbf{m} \; , \; \mathbf{m} + \Delta \mathbf{m} \; ]$ .

In order to calculate the  $\Delta m$ , it is necessary to determine the standard deviations  $\Delta T$  of the input-output table T itself. Hence, the calculations carried out in this work proceed in 2 stages: 1) determine standard deviations  $\Delta T$  of T, and 2) determine standard deviations  $\Delta m$  of m. These stages are described in detail in the following.

## Estimate table uncertainties $\Delta T$ from balancing procedure

A first estimate of the uncertainties of  $\mathbf{p}$  (vectorised as  $\Delta \mathbf{p}$ ) can be obtained by the shift that the  $\mathbf{p}_0$  experience during the balancing run:  $\mathbf{dp}^{(0)} = \mathbf{p}^{(\text{final})} - \mathbf{p}_0$ . Results from the work performed in the previous project CRAS; described in the original consultancy report, (Wiedmann et al. 2008) has been used to quantify  $\mathbf{dp}^{(0)}$ .

#### Estimate table uncertainties from constraint uncertainties

The uncertainties of constraint values **c** are known as **dc**. These **dc** have been sourced for all constraint values, see Section 2 (uncertainties of model input data).

Taking the first estimate of the **dp** as a starting point, the uncertainties of the constraints would be  $dc^{(0)} = G dp^{(0)}$ . Generally,  $dc^{(0)} \neq dc = G dp$ .

The **dp** can now be subjected to a RAS-type adjustment process as follows:

- a) Calculate dc<sub>1</sub> / dc<sup>(0)</sup><sub>1</sub>
- b) Adjust  $dp_j^{(1)} = dp_j^{(0)} \times dc_1 / dc_1^{(0)} \forall j \text{ where } G_{1j} \neq 0, \text{ so that } dc_1 = \sqrt{\sum_j \left(G_{1j} dp_j^{(1)}\right)^2}$
- c) Calculate  $dc_2 / dc^{(0)}_2$ .
- d) Adjust  $dp_j^{(1)} = dp_j^{(0)} \times dc_2 / dc^{(0)}_2 \ \forall j \text{ where } G_{2j} \neq 0, \text{ so that } dc_2 = \sqrt{\sum_j \left(G_{2j} dp_j^{(1)}\right)^2}$
- e) And so on  $\forall$  c<sub>i</sub>
- f) And so on  $\forall$  dc<sub>i</sub> / dc<sup>(n)</sup><sub>i</sub>
- g) Exit if  $||\mathbf{dc} \mathbf{dc}^{(n)}|| \le \text{some small } \epsilon$ , else goto a) and calculate  $dc_1 / dc^{(n+1)}$
- h) The  $dp^{(n)}$  are the solution for  $\Delta p$ ; they are the uncertainties  $\Delta T$  of the entries of the input-output table T.

## Assembling uncertainties into one table

The  $\Delta T$  obtained from the stages above yield the standard deviations of the UK input-output tables for all years. Estimates of GTAP standard deviations and of carbon emissions were added, and from the combined information uncertainty tables dT and dq were constructed.

## **Estimate multiplier uncertainties using Monte-Carlo simulation**

Multipliers  $\mathbf{m}$  are calculated from direct intensities  $\mathbf{q}$ , the input-output table  $\mathbf{T}$  as well as gross output  $\mathbf{x}$  according to  $\mathbf{m} = \mathbf{q} \left[ \mathbf{l} - \mathbf{T} \hat{\mathbf{x}} \right]^{-1}$ , where  $\mathbf{l}$  is a suitable unity matrix. The uncertainties  $\mathbf{dm}$  of the multipliers  $\mathbf{m}$  cannot be obtained analytically, but for example via Monte-Carlo analysis (Bullard and Sebald 1977,1988; Lenzen 2001). Here, a perturbation of the input-output table  $\mathbf{T} \to \mathbf{T} + \mathbf{dT}$  results in perturbed gross output  $\mathbf{x} \to \mathbf{x} + \mathbf{dx}$ , and together with the perturbed direct intensities  $\mathbf{q} \to \mathbf{q} + \mathbf{dq}$ , they result in a perturbed multiplier  $\mathbf{m}$ 

 $\rightarrow$  **m** + **dm** = (**q** + **dq**) [ **I** - (**T** + **dT**) (**x** + **dx**) ] <sup>-1</sup>. This procedure has been repeated a large number of times (5,000 × per year), and multiplier uncertainties are extracted from the distribution of the **m** + **dm**.

In carrying out the Monte-Carlo analysis, we have followed a conservative approach, which results in slightly higher uncertainty estimates, in two aspects:

- 1. (Bullard and Sebald 1977,1988; Lenzen 2001) exclude "infeasible" Monte-Carlo runs with  $|\mathbf{dx}|/\mathbf{x}>3\%$ , since they assume that gross output is a macro quantity that known with relatively high certainty. However, we do not require this knowledge of gross output, and hence include all Monte-Carlo runs, thus including runs yielding higher standard deviations  $\Delta T$ .
- 2. Perturbing the input-output table  $T \to T + dT$  results in the perturbed table T + dT being unbalanced, that is row sums will not necessarily equal column sums. In theory, row sums and column sums must balance (gross input = gross output). Applying a RAS-type balancing procedure so that T + dT conformed to row and column balance, would result in a reduced perturbance, and hence in reduced standard deviations. We have decided not to balance the perturbed table in order to reflect uncertainty of gross input and output, thus resulting in elevated standard deviations.

5000 Monte-Carlo simulation runs were performed on two parallel UNIX processors, taking about 60 hours of calculation time, respectively.

## Error propagation and uncertainty in embedded emissions

Once the (carbon) multiplier uncertainties  $\Delta m$  have been calculated, the next and final stage is to combine this with the uncertainties in final demand  $\Delta y$  in order to obtain error margins for the actual embedded emissions. This step includes additions and subtractions and the resulting error propagation is dealt with in the usual way by applying the "square root of square sums" formula.

Embedded emissions uncertainties are hence calculated as follows. Let J be a set of sectors, and  $AE_i$  its embedded emissions. Using

- final demand y, with absolute standard deviation  $\Delta y$ ,
- multipliers m, with absolute standard deviation  $\Delta m$ ,
- sectoral embedded emissions E, with absolute standard deviation  $\Delta E$ ,
- aggregate embedded emissions AE, with absolute standard deviation  $\Delta AE$ .
- $E_i = m_i y_i$ , and
- $AE_i = \sum_{i \in J} E_i$ ,

Using the general error propagation for a function  $f(x_i)$  as

Eq. 8 
$$\Delta f = \sqrt{\left(\frac{\partial f}{\partial x_t}\right)^2 \Delta x_t^2}$$

we find

$$\Delta E_i = \sqrt{{m_i}^2 \Delta y_i^2 + \Delta {m_i}^2 y_i^2} \ \ \frac{\Delta E_i}{E_i} = \sqrt{\frac{\Delta y_i^2}{y_i^2} + \frac{\Delta {m_i}^2}{{m_i}^2}}$$

$$\Delta E_i = \sqrt{{m_i}^2 \Delta y_i^2 + \Delta {m_i}^2 y_i^2} \stackrel{\Delta E_i}{\rightleftharpoons} = \sqrt{\frac{\Delta y_i^2}{y_i^2} + \frac{\Delta {m_i}^2}{{m_i}^2}} \text{ and }$$

Eq. 10 
$$\Delta A E_j = \sqrt{\sum_{i \in J} \Delta E_i^2}$$

## 4 Results

## Results of the estimation of standard deviations of UK inputoutput table entries

The following graphs show the uncertainty of UK IO table entries as calculated with the methodology described above.

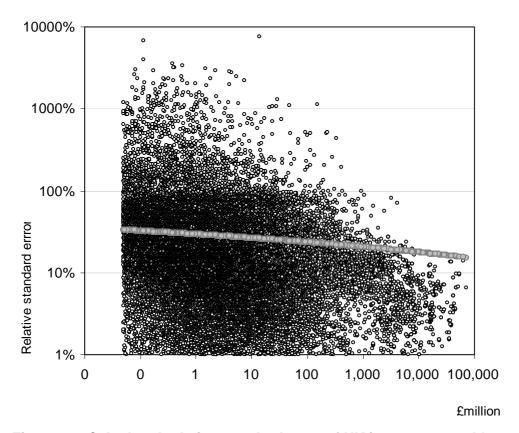


Figure 6: Calculated relative standard error of UK input-output table entries, 1992.

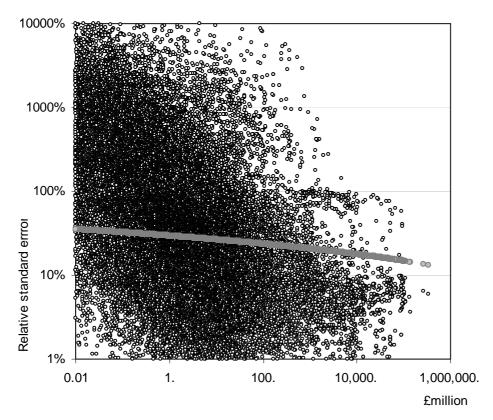


Figure 7: Calculated relative standard error of UK input-output table entries, 2004.

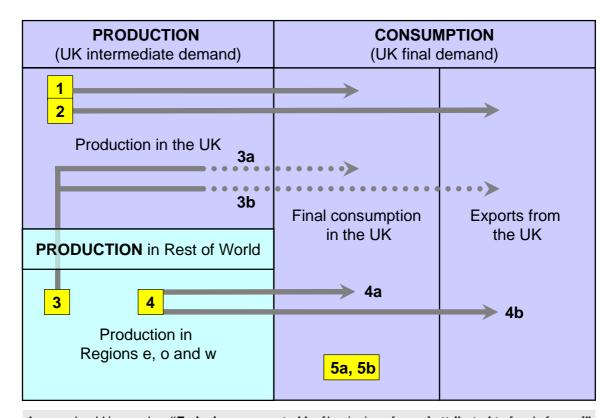
Black circles in these figures are the output of the first stage calculations – the standard deviations of the UK input-output table entries  $\bf a$ . As expected, these values group around the regressed standard deviations. This is because the constraints are sums of input-output table elements, linked via the constraints matrix  $\bf G$ , as in  $\bf G$   $\bf a$  =  $\bf c$ . Therefore, the standard deviations of the constraints are square-rooted sums of squares of standard deviations of the table elements. In a typical sum, some standard deviations of input-output table elements are smaller than those of the constraints, some are larger. This is what we see in the diagrams for 1992 and 2004.

Grey circles are generated from standard deviations (RSEs) of the constraints **c**, calculated via the regression formula. It is these errors that the errors of the input-output table elements have to conform to, via the error propagation formula (square root formula).

Generally speaking, these estimates are very conservative, see the methodology section above. This means that they cover the full range of possible uncertainty, thereby overestimating total uncertainty rather than underestimating it.

#### Results for embedded emissions

Before the uncertainty results are presented, we repeat the nomenclature used in the 'Embedded Emissions Report' (Wiedmann et al. 2008), for reference. **Error! Reference source not found.** and the text below explain the various 'streams' of (embedded) emissions caused by UK production and consumption.



Arrows should be read as "Emissions generated by [beginning of arrow] attributed to [end of arrow]"

Producer Emissions (production-based indicator): 1 + 2 + 5a + 5b

Consumer Emissions (consumption-based indicator): 1 + 3a + 4a + 5a + 5b

Figure 8: Depiction of emissions occurring through UK economic activity, including trade, and different principles of emissions accounting (Region e = OECD Europe, Region o = OECD non-Europe, Region w = non-OECD countries)

#### Legend to Figure 8Figure 1:

- 1 UK production emissions, including international aviation and shipping provided by UK operators, attributable to UK final consumption,
- 2 UK production emissions attributable to exports
- 3a Imported emissions through intermediate consumption of UK industry attributable to UK final consumption

- **3b** Imported emissions through intermediate consumption of UK industry attributable to UK exports
- **4a** Imported emissions direct to final demand attributable to UK final consumption
- 4b Imported emissions direct to final demand attributable to UK exports
- **5a** UK emissions generated by households not from private motoring (e.g. housing)
- **5b** UK emissions generated by households from private motoring

<u>Producer Emissions (PE):</u> A production-based indicator (emissions accounting based on the producer principle) adds together all emissions that are generated by UK resident units, including international aviation and shipping emissions from UK registered operators, i.e. **1 + 2 + 5a + 5b** (blue shaded areas in Figure 1).

<u>Consumer Emissions (CE)</u>: A consumption-based indicator (emissions accounting based on the consumption principle) adds together emissions that are required to satisfy final consumption in the UK (as shown in Figure 1), i.e. **1 + 3a + 4a + 5a + 5b**.

<u>UNFCCC national total:</u> This is calculated as the emissions occurring within the territory of the UK, including aviation and shipping between UK destinations. The UNFCCC national total is reconcilable with PE by means of the bridging data shown in Table 1.

<u>Emissions Embedded<sup>10</sup> in Imports (EEI)</u> are those emissions that occur outside the UK territory (green shaded areas) but are caused by UK economic activity (incl. production, consumption and exports): **3a + 3b + 4a + 4b**.

<u>Emissions Embedded in Exports (EEE)</u> are caused by exports from the UK (final demand from the rest of the world) and occur mostly on UK territory (2) but some of these emissions occur outside of the UK (3b + 4b) when imports are re-exported: 2 + 3b + 4b.

<u>Balance of Emissions Embedded in Trade (BEET)</u>: A balance of trade is defined as (value of) exports minus (value of) imports, i.e. if a country exports more than it imports it has a trade surplus, if it imports more than it exports it has a trade deficit. This principle can be adopted for emissions embedded in trade and the BEET becomes: **2 – 3a – 4a**.

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<sup>&</sup>lt;sup>10</sup> In the literature the term 'embodied' emissions seems to be more widespread. We treat 'embedded' and 'embodied' as synonyms.

The method of allocation for CE and PE is driven by consumption, as all emissions are ultimately allocated to final demand (all arrows in the figure end in the UK final demand box). The UNFCCC national total is driven by territorial definition.

The following graphs and tables present the uncertainty results for total embedded emissions. Detailed results broken down by economic sector can be found in Appendix A (Section 7). For details of the original results (without error margins) we refer to the original report.

The relative standard error (RSE) for total  $CO_2$  consumer emissions lies within 3.3% for 1994 and 5.5% for 2004 (see Table 1). The uncertainty range of +/-RSE covers 67% of all observed data from the Monte-Carlo analysis. 95% of all variation lies within a +/- 2RSE band (see Figure 9).

Table 1: Total CO<sub>2</sub> consumer emissions and their uncertainty ranges (results from the UK-MRIO 1 model; numbers in Mt of CO<sub>2</sub>)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Consumer Emissions (CE) (1+3a+4a+5a+5b)	647	639	634	653	651	661	680	665	681	732	730	763	762
Relative standard error	4.2%	3.4%	3.3%	4.4%	4.0%	4.3%	4.3%	5.0%	4.5%	4.9%	5.2%	5.4%	5.5%
Lower uncertainty (- standard error)	620	617	613	624	625	632	651	632	650	696	692	722	720
Upper uncertainty (+standard error)	674	661	655	681	677	689	710	698	711	768	768	805	804

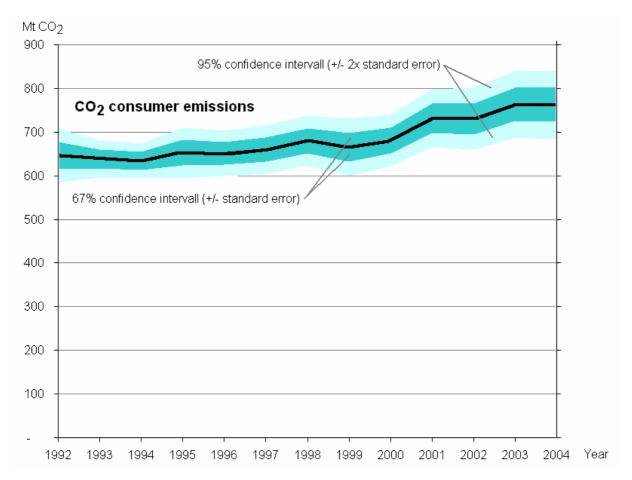


Figure 9: UK CO<sub>2</sub> emissions from a consumer perspective ("consumer emissions") between 1992 and 2004. Uncertainty ranges are presented as bands of +/- RSE and +/- 2RSE.

Statistically, there is a significant increase in consumer emissions; in the last four years CE were significantly higher than in the first five years of the time series.

Over the time period 1994 to 2004 there is a tendency towards larger error margins. It is likely that this increase is connected to the distance from the Analytical (IO) Table for 1995. The ATs 1995 were the only available information on the true structure of imports to the UK. The import matrices for all other years were derived through CRAS balancing to match actual year totals (Wiedmann et al. 2008). It is logical to assume that uncertainties rise when these totals are increasingly different from the 1995 base year, although this has not been proven analytically in this study. Other tendencies are overlapping, e.g. an increasing distance from the two base years for GTAP data, 1997 and 2001, will also increase error margins.

Table 2 and Figure 10 below show detailed results for  $CO_2$  emissions embedded in UK trade. The relative standard error for these results is larger than for total consumer emissions because additional uncertainties for IO and  $CO_2$  data for the three world regions come into play. Generally, the higher aggregated the results, the smaller is the relative error because the standard errors of parts of emissions are added together via the "square root of square sums" formula (see Eq.10). However, if a subtraction is involved in the calculation, as is the case for BEET (= 2-3a-4a), relative standard errors can become very large and even indefinite if the subtraction results in zero.

Table 2: CO<sub>2</sub> emissions embedded in UK trade and their uncertainties. (results from the UK-MRIO 1 model; numbers in Mt of CO<sub>2</sub>)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
EEI (3a+3b+4a+4b)	206	227	235	282	253	259	291	263	291	336	343	380	374
Absolute standard error of EEI	20.2	21.3	20.3	26.9	23.5	25.1	27.3	30.4	25.4	30.9	33.1	36.0	35.1
Relative standard error of EEI	9.8%	9.3%	8.6%	9.5%	9.3%	9.7%	9.4%	11.5%	8.7%	9.2%	9.7%	9.5%	9.4%
EEE (2+3b+4b)	179	196	202	223	222	199	217	196	219	229	222	242	242
Absolute standard error of EEE	9.7	10.7	11.5	16.2	16.5	14.8	16.9	13.9	11.7	14.2	14.0	16.6	16.6
Relative standard error of EEE	5.4%	5.5%	5.7%	7.3%	7.4%	7.5%	7.8%	7.1%	5.3%	6.2%	6.3%	6.9%	6.9%
BEET (2-3a-4a)	-27	-31	-33	-59	-30	-60	-74	-67	-72	-107	-121	-139	-132
EEI-EEE (= -BEET)	27	31	33	59	30	60	74	67	72	107	121	139	132
Absolute standard error of BEET	18.8	19.6	18.1	23.3	19.5	22.9	23.8	29.2	24.1	28.9	31.3	33.5	32.7
Relative standard error of BEET	70.2%	63.1%	54.9%	39.3%	64.7%	38.2%	32.3%	43.6%	33.5%	26.9%	26.0%	24.2%	24.8%

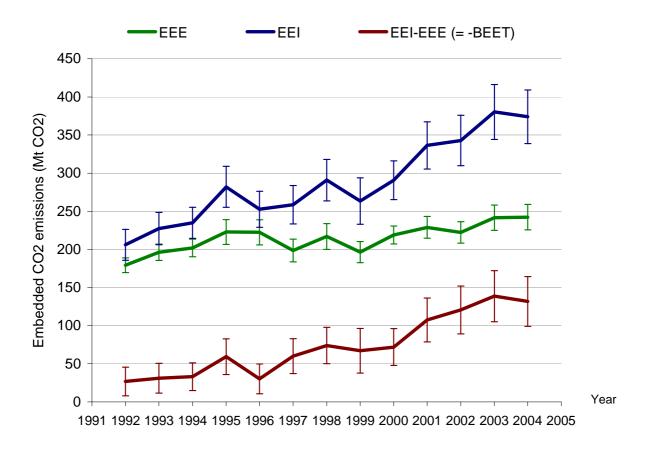


Figure 10: CO<sub>2</sub> emissions embedded in total UK imports (EEI), total UK exports (EEE) and the difference EEI-EEE (equal to -BEET) from 1992 to 2004. The error bars represent standard errors, covering 67% of data obtained with Monte-Carlo analysis.

Figure 10 shows that the increase in EEI is statistically significant, at least for the last four years compared to the first three years of the time series.

As discussed above, a small difference of two large numbers is always associated with a high relative error. If emissions embedded in trade were almost balanced, the error could become larger than BEET itself, and it would not be possible to conclude whether there was a net import or export. However, the results of the uncertainty analysis in this study show with statistical significance that EEI were higher than EEE in all years from 1992 to 2004 and that EEI were growing faster than EEE thus widening the gap between territorial (producer) emissions and consumer emissions.

As each data point in Figure 10 has a specified uncertainty it is reasonable to depict the general trend over time by a smoothed line that still lies within the standard error ranges but flattens the ups and downs from one year to another. Polynomial trendlines of fourth order seem to best represent the general trend; they are shown in the following figure.

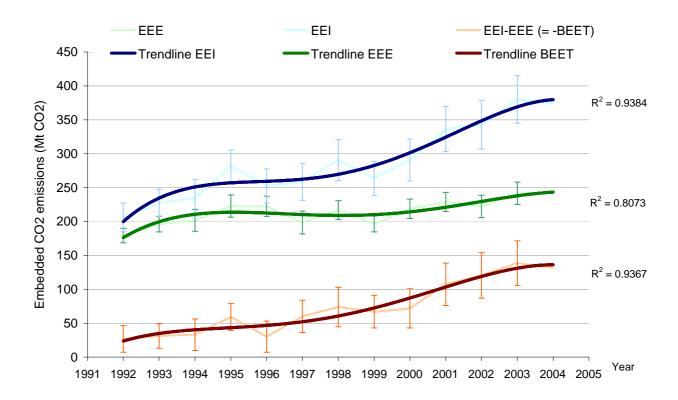


Figure 11: Polynomial trendlines for CO<sub>2</sub> emissions embedded in UK trade (the polynomial trendlines are of fourth order).

## 5 Discussion and Conclusions

#### **Discussion**

The presented analysis of uncertainties of UK-MRIO model results tries to capture all possible variations of underlying data and calculation procedures. For the majority of data this takes account of the random uncertainty of data points due to statistical variation and random errors. In other words, we have determined the stochastic variation of the whole model system.

There are also possible systematic error sources:

- structural change of foreign input-output data that cannot be captured systematically due to the lack of time series data;
- sectoral distinction of changes in prices of foreign input-output data over time;

- 3) systematic over- and underestimation of carbon intensities of foreign industries due to the mismatch of sectors in UK and foreign IO and CO<sub>2</sub> data;
- 4) change of import structure over time due to the lack of imports matrices (Analytical Tables) for the UK for years other than 1995; and
- 5) choice of price conversion factors, e.g. 'purchasing power parity' versus 'market exchange rate' or choice of lead countries for CPI.

In principle it is possible to investigate and model these systematic errors methodically. For each data cell in the environmental input-output system one could, in principle, assume a function associated with uncertainty over time. Also, some cell entries are dependent from each other and it is conceivable that this dependency can be defined mathematically. Such detailed modelling of systematic uncertainty, however, was way beyond the scope of the current study and instead we have dealt with the uncertainties arising from systematic changes by allowing a stochastic variation large enough to capture anticipated systematic variation.

As a result, the presented error margins can be seen as conservative estimates which are rather over- than underestimated. In other words, the calculated uncertainties are on the "safe side" and the true values are likely to lie within the presented error bars and confidence intervals.

A final note on the purpose of the UK-MRIO 1 model. For aggregated results (CO<sub>2</sub> consumer emissions), the relative standard error has been shown to be between 3.3% and 5.5%. Therefore, the estimate of total embedded emissions can be regarded as robust and reliable. One should bear in mind though that on an individual sector level these errors are generally higher (see Appendix A on page 30). Relative standard errors can be large, especially when the absolute value for E in a sector is small. Results on a sectoral level should therefore be interpreted with more caution, not least because of the sector aggregation leading to different product mixes in sectors from different countries/regions. At this stage, i.e. with the current resolution and underlying database, the UK-MRIO 1 model is not capable of performing detailed life-cycle analyses of individual products with sufficient accuracy. More work is needed if the model is to be developed with this aim.

#### **Conclusions**

This is the **first study in the world** that has undertaken a comprehensive Monte-Carlo analysis of the uncertainties in a global multi-region input-output model. <sup>11</sup> Uncertainty functions were determined for all input variables to the model, the IO tables uncertainties were estimated from constraint uncertainties and matrix balancing, 5000 Monte-Carlo simulation runs were carried out to determine the multiplier uncertainties and the error propagation for embedded emissions was calculated.

The results of the uncertainty analysis in this study show with statistical significance that CO<sub>2</sub> emissions embedded in UK imports (EEI) were higher than those for exports (EEE) in all years from 1992 to 2004 and that EEI were growing faster than EEE thus widening the gap between territorial (producer) emissions and consumer emissions.

We think that with the available resources, a comprehensive, adequate and robust estimation of uncertainties was undertaken. The results prove that the UK-MRIO model is robust enough to provide a reliable indication of CO<sub>2</sub> emissions embedded in UK economic activity, including trade from and to the UK.

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Weber and Matthews (2007) vary their MRIO calculations by using different input parameters for two of the major uncertainties in their model, the ROW approximation and the MER/PPP issue, and present "feasible ranges for EEE and EEI" (page 4876); but they do not carry out a Monte-Carlo analysis.

## 6 Acknowledgements

This work has been funded by the UK Department for Environment, Food and Rural Affairs under Project Reference EV02033.

We thank AEA Technology (Andrew Lelland, John Watterson), ONS (Ian Gazley, Sarah Green) and Defra (Jim Penman, Michele Pittini) for providing uncertainty data and information as well as valuable comments and feedback.

A special thanks goes to Dr Glen Peters from NTNU Trondheim for his explanation of GTAP data compilation and uncertainties and also to Dr Christopher Weber from Carnegie Mellon University.

## 7 Appendix A: Detailed Uncertainty Results for Embedded Emissions

The following tables show  $CO_2$  consumer emissions and associated uncertainty broken down by 123 economic sectors. Relative standard errors can be large, especially when the absolute value for E is small. The higher the results are aggregated the smaller the error becomes.

E (Mt CO2)   dE (Mt CO2)   dE/E		Uncertainty of embedded CO2 emissions by sector; year 1992	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
1 Agriculture, hunting and related service activities   2 Forestry, logging and related service activities   3. Fishing, operation of fish hatcheries and fish farms; servic   4 Mining of coal and lignitie; extraction of peak   5 Extraction of crude petroleum and neutral gas; service act   3.395   1.004   6 Mining of metal ores   7 Other mining and quarrying   1.071   1.072   1.071   8 Production, processing and preserving of meat and meat   9 Processing and preserving of fish and fish products; fruit   4.392   0.930   10 Vegetable and animal oils and fats   10 Vegetable and animal oils and fats   10 Vegetable and animal oils and fats   11 Dairy products   12 Grain milli products, starches and starch products   13 Prepared animal feets   0.699   14 Bread, rusks and biscuits; manufacture of pastry goods an   13 Prepared animal feets   0.699   14 Bread, rusks and biscuits; manufacture of pastry goods an   13 Prepared animal feets   0.699   17 Other food products   18 Alcoholic beverages   17 Other food products   18 Alcoholic beverages   19 Production of mineral waters and soft drinks   1.714   0.678   10 Tobacco products   19 Production of mineral waters and soft drinks   1.714   0.678   1.753   1.259   7 22 Textile weaving   2.3 Finishing of textile fibres   1.196   2.4 Made up textile articles, except apparel   2.5 Carpets and rugs   2.7 Kintted and crocheted fabrics and articles   2.8 Wearing apparent, dressing and dying of fur   3.4 Publishing, printing and resisping of leather; manufacture of luggage,   1.266   0.776   1.259   1.772   1.809   1.936   1.949   1.940   1.		, <b>,</b>	E (Mt CO2)		
2 Forestry, logging and related service activities 3 Fishing, operation of fish hatcheries and fish farms; servio 4 Mining of coal and lignite; extraction of peat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal cross 7 Other mining and quarrying 8 Production, processing and preserving of fish and fish products; fruit a 9 Processing and preserving of fish and fish products; fruit a 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.072 1 1.073 1 1.072 1 1.073 1	1	Agriculture, hunting and related service activities			14%
4 Mining of coal and lignitie, extraction of peat 5 Extraction of crude petroleum and natural gas, service act 3,395 7 Other mining and querrying 8 Production, processing and preserving of meat and meat t 9 Processing and preserving of fish and fish products; fruit a 1,071 1,172 1,173 9 Processing and preserving of fish and fish products; fruit a 4,392 0,930 10 Vegetable and animal oils and fats 0,664 0,204 11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 17 Other food products 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 17,744 0,678 20 Tobacco products 12 Preparation and spinning of textile fibres 13 Finishing of lextiles 14 Made-up textile articles, except apparel 1,196 1,396 1,397 1,196 1,397 1,39			0.054	0.365	674%
5 Extraction of crude petroleus         3.395         1.004           6 Mining of metal cores         0.92         0.288         3           7 Other mining and quarrying         1.071         1.072         1           8 Production, processing and preserving of fish and fish products; fruit a         4.392         0.930           10 Vegetable and animal oils and fats         0.654         0.204           11 Dairy products         4.596         0.973           12 Grain mill products, starches and starch products         0.893         0.201           13 Prepared animal feeds         0.699         0.159           14 Bread, rusks and biscuits; manufacture of pastry goods an         3.333         0.623           15 Sugar         0.197         0.116         16 Cocca; chocolate and sugar confectionery         1.966         0.568           17 Other food products         2.652         0.822         1.479         0.041         4           19 Production of mineral waters and soft drinks         1.714         0.678         0.041         4           10 Tobacco products         0.753         0.269         2         1.729         7           21 Reparation and spinning of textile fibres         0.175         1.259         7           22 Taxilie weaving         0.392 <td>3</td> <td>Fishing, operation of fish hatcheries and fish farms; service</td> <td>0.112</td> <td>0.113</td> <td>101%</td>	3	Fishing, operation of fish hatcheries and fish farms; service	0.112	0.113	101%
6 Mining of metal ores 7 Other mining and quarrying 1 071 8 Production, processing and preserving of meat and meat; 8 Production, processing and preserving of meat and meat; 9 Processing and preserving of fish and fish products; fruit a 4 .392 0 .930 10 Vegetable and animal oils and fats a 10 Vegetable and animal oils and fats a 12 Grain mill products, starches and starch products 12 Grain mill products, starches and starch products 0 .893 0 .201 13 Prepared animal feeds 0 .699 0 .159 14 Bread, rusks and biscuits; menufacture of pastry goods an 15 Sugar 16 Cocoa; chocolate and sugar confectionery 1 .965 17 Other food products 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 1.714 0.678 20 Tobacco products 10 Prepared animal spinning of textile fibres 10 Production of mineral waters and soft drinks 1.714 0.678 12 Textile weaving 13 Finishing of textile fibres 10 Production of mineral waters and soft drinks 1.714 0.678 12 Textile weaving 13 Finishing of textile fibres 10 Production of mineral waters 14 Made-up textile articles, except apparel 15 Carpets and rugs 16 Corter textiles 17 Knitted and crocheted fabrics and articles 18 Wearing apparel; dressing and dying of fur 19 Tanning and dressing of leather; manufacture of luggage, 10 Production of mineral waters and paperboard 11 Wood and twood products, except furniture 12 Production of mineral waters and paperboard 13 Production of mineral waters and paperboard 15 Coke, refined petroleum products and nuclear fuel 15 Carpets and dressing of leather; manufacture of luggage, 10 Production of recorded media 10 Corter furniture 10 Production of recorded media 10 Carpets and paperboard 10 Production of recorded media 10 Carpets and paperboard 10 Production of recorded media 10 Carpets and paperboard 10 Production of recorded media 10 Carpets and paperboard 10 Production of mineral waters and paperboard 10 Products 10 Products 10 Products 11 Products 11 Products 11 Products 11 Products 11 Products 12 Products 12 Products 14	4	Mining of coal and lignite; extraction of peat	0.694	0.888	128%
8 Production, processing and preserving of meat and meat ; 6.931 1.179 9 Processing and preserving of fish and fish products; fruit a 4.392 0.930 10 Vegetable and animal oils and fats 0.654 0.204 11 Dairy products 4.596 0.973 12 Grain mill products, starches and starch products 4.596 0.973 12 Grain mill products, starches and starch products 0.893 0.201 13 Prepared animal fedes 0.699 0.159 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.333 0.623 15 Sugar 0.197 0.116 16 Cocca; chocolate and sugar confectionery 1.965 0.568 17 Other food products 2.652 0.822 18 Alcoholic beverages 1.479 1.047 1.074 1.0678 19 Production of mineral waters and soft drinks 1.714 0.678 1.097 1.097 1.00	5	Extraction of crude petroleum and natural gas; service act	3.395	1.004	30%
8 Production, processing and preserving of meat and meat; 9 Processing and preserving of fish and fish products; fruit a 9 Processing and preserving of fish and fish products; fruit a 10 Vegetable and animal oils and fats 11 Dairy products 12 Grain mill products, starches and starch products 0.893 0.201 13 Prepared animal feeds 0.699 0.159 14 Bread, rusks and biscuits; manufacture of pastry goods an 13 Prepared animal feeds 15 Sugar 16 Cocca; chocolate and sugar confectionery 1.965 17 Other food products 17 Other food products 18 Alcoholic beverages 1.479 19 Production of mineral waters and soft drinks 1.714 0.678 20 Tobacco products 21 Preparation and spinning of textile fibres 21 Preparation and spinning of textile fibres 21 Preparation and spinning of textile fibres 22 Textile weaving 23 Finishing of textiles 0.0175 0.302 26 Other textiles 0.0170 0.013 24 Made-up textile articles, except apparel 1.196 0.336 25 Carpets and rugs 26 Other textiles 0.181 0.180 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 0.242 0.103 0.760 0.760 0.776 0.110 0.777 0.130 0.776 0.180 0.776 0.190 0.777 0.190 0.777 0.190 0.777 0.190 0.777 0.190 0.777 0.190 0.777 0.190 0.777 0.777 0.776 0.777	6	Mining of metal ores	0.092	0.288	314%
9 Processing and preserving of fish and fish products; fruit a 4,392 0,930 10 Vegetable and animal oils and fats 10 Vegetable and animal oils and fats 4,596 0,973 12 Grain mill products, starches and starch products 0,893 0,201 13 Prepared animal feeds 0,893 0,201 13 Prepared animal feeds 0,599 0,159 14 Bread, rusks and biscuits; manufacture of pastry goods an 3,333 0,623 15 Sugar 0,197 0,1116 16 Cocoa; chocolate and sugar confectionery 1,965 0,568 17 Other food products 2,2652 0,822 18 Alcoholic beverages 1,479 6,041 44 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of mineral waters and soft drinks 1,714 0,678 19 Production of fextiles 1,715 1,259 7	7	Other mining and quarrying	1.071	1.072	100%
10 Vegetable and animal oils and fats   10 Vegetable and animal oils and fats   11 Dairy products   12 Grain mill products, starches and starch products   0.893   0.201   13 Prepared animal feeds   0.699   0.159   14 Bread, rusks and biscuits; manufacture of pastry goods an   0.333   0.623   15 Sugar   0.197   0.116   16 Cocoas; chocolate and sugar confectionery   1.965   0.5568   17 Other food products   2.652   0.822   18 Alcoholic beverages   1.479   0.041   41   19 Production of mineral waters and soft drinks   1.714   0.678   20 Tobacco products   0.753   0.269   21 Preparation and spinning of textile fibres   0.175   1.259   7   22 Textile weaving   0.392   0.357   23 Finishing of fextiles   0.017   0.013   24 Made-up textile articles, except apparel   1.196   0.336   25 Carpets and rugs   0.731   0.216   0.181   0.130   27 Knitted and crocheted fabrics and articles   2.083   1.059   28 Wearing apparel; dressing and dying of fur   6.840   4.469   29 Tarning and dressing of leather; manufacture of luggage, 30 Footwear   1.286   0.776   33 Crockes   1.272   31 Wood and wood products, except furniture   1.258   0.572   32 Pulp, paper and paperboard   1.772   1.809   1.33   1.059   1	8	Production, processing and preserving of meat and meat ;	6.931	1.179	17%
11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13,333 16,533 15 Sugar 16 Cocoa; chocolate and sugar confectionery 1,965 17 Other food products 18 Alcoholic beverages 1,7 Other food products 19 Production of mineral waters and soft drinks 1,714 19 Production of mineral waters and soft drinks 1,714 19 Production of mineral waters and soft drinks 1,714 10,678 10 Tobacco products 10,753 10,269 11 Preparation and spinning of textile fibres 11,775 11,259 12 Textile weaving 10,392 13 Finishing of textiles 10,117 14 Made-up textile articles, except apparel 11,96 13,36 14,196 15 Cother textiles 11,96 13,36 14,196 15 Cother textiles 11,96 13,37 14,196 14,30 14,013 14,013 14,013 14,013 14,013 14,013 14,013 14,013 14,013 14,019 15,014	9	Processing and preserving of fish and fish products; fruit a	4.392	0.930	21%
12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 16 Cocoa; chocolate and sugar confectionery 17 Other food products 18 Alcoholic beverages 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 10 Cocoa; chocolate and sugar confectionery 19 Production of mineral waters and soft drinks 10 Tother food products 10 Tother conducts 11 Preparation and spinning of textile fibres 11 Preparation and spinning of textile fibres 12 Preparation and spinning of textile fibres 12 Preparation and spinning of textile fibres 13 Finishing of textiles 14 Made-up textile articles, except apparel 14 Made-up textile articles, except apparel 15 Carpets and rugs 16 Other textiles 17 Kinited and crocheted fabrics and articles 18 Wearing apparet; dressing and dying of fur 19 Tother and the spinning and textile fibrer and training and dressing of leather; manufacture of luggage, 10 Tatl 1258 10 Tother and spinning and textile fibrer and spinning and textile fibrer and spinning and textile and crocheted fabrics and articles 19 Tamining and dressing of leather; manufacture of luggage, 10 Tatl 1258 10 Tother and paperboard 10 Tother and paperboard 11 Try2 11 Robon 11 Try	10	Vegetable and animal oils and fats	0.654	0.204	31%
13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13.333 0.623 15 Sugar 0.197 0.116 16 Cocca; chocolate and sugar confectionery 1.965 0.568 17 Other food products 2.652 0.822 18 Alcoholic beverages 1.479 6.041 4. 19 Production of mineral waters and soft drinks 1.714 0.678 20 Tobacco products 0.753 0.2699 21 Preparation and spinning of textile fibres 0.175 1.259 7 22 Textile weaving 0.392 0.357 7 23 Finishing of textiles 0.017 0.013 24 Made-up textile articles, except apparel 1.196 0.336 2.216 0.391 0.216 0.391 0.216 0.391 0.216 0.391 0.391 0.216 0.391					21%
14 Bread, rusks and biscuits; manufacture of pastry goods an 1.5 Sugar 0.197 0.116 15 Sugar 0.197 0.116 16 Cocca; chocolate and sugar confectionery 1.965 0.568 17 Other food products 2.652 0.822 18 Alcoholic beverages 1.479 6.041 4.19 Production of mineral waters and soft drinks 1.714 0.678 20 Tobacco products 0.753 0.269 17 Preparation and spinning of textile fibres 0.175 1.259 7 2.2 Textile weaving 0.392 0.357 1.259 7 2.2 Textile weaving 0.392 0.357 2.2 Finishing of textile articles, except apparel 1.196 0.336 2.5 Carpets and rugs 0.731 0.216 0.336 2.5 Carpets and rugs 0.731 0.216 0.336 2.5 Carpets and rugs 0.731 0.216 0.130 2.7 Knitted and crocheted fabrics and articles 2.083 1.059 2.8 Wearing apparel, dressing and dying of fur 6.840 4.469 2.9 Tanning and dressing of leather; manufacture of luggage, 0.242 0.103 3.0 Footwear 1.286 0.776 1.286 0.776 1.286 0.776 1.286 0.572 3.2 Pulp, paper and paperboard 1.772 1.809 11 3.3 Articles of paper and paperboard 1.320 0.377 3.4 Publishing, printing and reproduction of recorded media 2.805 0.580 3.5 Coke, refined petroleum products and nuclear fuel 15.331 4.109 3.6 Industrial gases, dyes and pigments 0.252 0.164 3.7 Other inorganic basic chemicals 0.156 0.758 4.4 Sap and detergents, cleaning approducts - thermicals 0.156 0.758 4.4 Sap and detergents, cleaning approducts - thermicals 0.156 0.758 4.4 Sap and detergents, cleaning approducts - thermicals 0.166 0.758 4.4 Sap and detergents, cleaning approducts - thermicals 0.166 0.758 4.4 Sap and detergents, cleaning approducts 0.131 0.861 0.132 0.391 1.106 0.391 0					22%
15 Sugar 16 Cocoa; chocolate and sugar confectionery 1,965 17 Other food products 2,652 18 Alcoholic beverages 1,479 19 Production of mineral waters and soft drinks 1,714 19 Fooduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,714 19 Froduction of mineral waters and soft drinks 1,715 21 Freshald of the soft and so					23%
16 Cocoa; chocolate and sugar confectionery					19%
17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 1.714 0.678 20 Tobacco products 21 Preparation and spinning of textile fibres 22 Textile weaving 3392 0.357 23 Finishing of textiles 34 Made-up textile articles, except apparel 35 Garpets and rugs 36 Other textiles 37 Knitted and crocheted fabrics and articles 38 Wearing apparel; dressing and dying of fur 39 Fanning and dressing of leather, manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 41 Pasticles and pigments 41 Pasticles and pigments 42 Paints, varnishes and similar coatings, printing ink and ma 41 Pasticles and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals 44 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals notices 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 50 Ceramic goods 51 Distance and products 52 Centent line and plaster 53 Articles of pages and pages of products 54 Paints, varnishes and similar coatings, printing ink and ma 54 Pasticides and other agro-chemical products 55 Ceramic goods 56 Cheenicals 57 Cher chemical products 58 Partiles and other agro-chemical products 59 Ceramic goods 50 Ceramic goods		<u> </u>			59%
18 Alcoholic beverages         1.479         6.041         44           19 Production of mineral waters and soft drinks         1.714         0.678           20 Tobacco products         0.753         0.269           21 Preparation and spinning of textile fibres         0.175         1.259         7           22 Textile weaving         0.392         0.357         3           23 Finishing of textiles         0.017         0.013         3           24 Made-up textile articles, except apparel         1.196         0.336         2           25 Carpets and rugs         0.731         0.216         0.36         2           26 Other textiles         0.181         0.130         0.130         0.216         0.36         2           27 Knitted and crocheted fabrics and articles         2.083         1.059         2         2.083         1.059         2         2         0.242         0.103         0.30         0.242         0.103         0.036         0.00					29%
19 Production of mineral waters and soft drinks 20 Tobacco products 21 Preparation and spinning of textile fibres 21 Preparation and spinning of textile fibres 22 Textile weaving 23 Finishing of textiles 30.017 31 Finishing of textiles 30.017 32 Finishing of textiles 30.017 33 Finishing of textiles 30.017 31 O.216 32 Garpets and rugs 30.731 31 O.216 32 Garpets and rugs 31 O.310 32 Knitted and crocheted fabrics and articles 32 Meaning apparet; dressing and dying of fur 32 Wearing apparet; dressing and dying of fur 33 Robinson and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 41.258 42 Panning and dressing of leather; manufacture of luggage, 31 Wood and wood products, except furniture 41.258 42 Pulp, paper and paperboard 41.270 43 Articles of paper and paperboard 41.320 41.772 42 Pulpishing, printing and reproduction of recorded media 43 Coke, refined petroleum products and nuclear fuel 43 Other inorganic basic chemicals 43 Other inorganic basic chemicals 50 Coke, refined petroleum products and nuclear fuel 43 Other inorganic basic chemicals 50 Coke, refined petroleum products 50 Che refined petroleum products 50 Cother organic basic chemicals 50 Cother chemical products 50 Cother organic basic chemicals 50 Cother organic basic chemicals 50 Cother organic basic chemicals 50 Cother chemical products 51 Cother chemical products 52 Cother chemical products 53 Cother chemical products 54 Plastic products 55 Cother chemical products 56 Casting of metals 57 Structural metal products 57 S		•			31%
20   Tobacco products   21   Preparation and spinning of textile fibres   0.1753   1.259   7   22   Textilie weaving   0.392   0.357   23   Finishing of textiles   0.017   0.013   24   Made-up textile articles, except apparel   1.196   0.336   25   Carpets and rugs   0.731   0.216   26   Other textiles   0.181   0.120   0.731   0.216   26   Other textiles   0.181   0.130   0.276   27   Knitted and crocheted fabrics and articles   0.181   0.130   0.280   0.731   0.216   0.291   0.292   0.292   0.103   0.293   0.292   0.103   0.292   0.103   0.293   0.242   0.103   0.293   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.294   0.103   0.277   0.294   0.294   0.103   0.277   0.294   0.294   0.103   0.277   0.294   0.		•			408%
21 Preparation and spinning of textile fibres         0.175         1.259         7           22 Textile weaving         0.392         0.357         23 Finishing of textitles         0.017         0.013           23 Finishing of textitles         0.017         0.013         24 Made-up textile articles, except apparel         1.196         0.336           25 Carpets and rugs         0.731         0.216         0.216           26 Other textiles         0.181         0.130         0.731         0.216           26 Other textiles         0.181         0.130         0.216         0.252         0.021         0.033         1.059         0.28         0.073         0.216         0.013         0.029         29 Tanning and dressing of leather; manufacture of luggage,         0.242         0.103         0.033         0.059         0.024         0.033         0.076         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.033         0.059         0.037         0.037         0.037         0.037         0.037         0.037         0.037         0.037         0.033         0.037         0.037 <td></td> <td></td> <td></td> <td></td> <td>40%</td>					40%
22 Textile weaving       0.392       0.357         23 Finishing of textiles       0.017       0.013         24 Made-up textile articles, except apparel       1.196       0.336         25 Carpets and rugs       0.731       0.216         26 Other textiles       0.181       0.130         27 Knitted and crocheted fabrics and articles       2.083       1.059         28 Wearing apparel; dressing and dying of fur       6.840       4.469         29 Tanning and dressing of leather; manufacture of luggage,       0.242       0.103         30 Footwear       1.286       0.776         31 Wood and wood products, except furniture       1.258       0.572         32 Pulp, apper and paperboard       1.772       1.809       11         33 Articles of paper and paperboard       1.320       0.377         34 Publishing, printing and reproduction of recorded media       2.805       0.580         35 Coke, refined petroleum products and nuclear fuel       15.331       4.109         36 Industrial gases, dyes and pigments       0.252       0.164         37 Other inorganic basic chemicals       0.166       0.758       4.4         38 Pertilisers and nitrogen compounds       0.176       0.132         40 Plastics and synthetic rubber in primary forms					36%
23 Finishing of textiles 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Carpets and rugs 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produt 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastic sand synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 50 Cher mice products 51 Cher of the product of the products 52 Cher of the product of the products 53 Cher of the product of the products 54 Paints, varnishes and similar coatings, printing ink and ma 55 Cher of the products 56 Cher of the products 57 Structural metal plaster 58 Casting of metals 59 Ceremit, lime and plaster 50 Ceremic goods 50 Ceramic goods 50 Ceramic goods 50 Ceramic goods 57 Structural metal products 57 Structural metal products 58 Casting of metals 50 Contracte, plaster and cement; cutting, shaping 67 Casting of the plaster and construction products 57 Structural metal products 58 Casting of metals 50 Contracte, plaster and cement; cutting, shaping 67 Casting of Cast					718%
24 Made-up textile articles, except apparel       1.196       0.336         25 Carpets and rugs       0.731       0.216         26 Other textiles       0.181       0.130         27 Knitted and crocheted fabrics and articles       2.083       1.059         28 Wearing apparel; dressing and dying of fur       6.840       4.469         29 Tanning and dressing of leather, manufacture of luggage,       0.242       0.103         30 Footwear       1.286       0.776         31 Wood and wood products, except furniture       1.258       0.572         32 Pulp, paper and paperboard       1.772       1.809       11         33 Articles of paper and paperboard       1.320       0.377         34 Publishing, printing and reproduction of recorded media       2.805       0.580         35 Coke, refined petroleum products and nuclear fuel       15.331       4.109         36 Industrial gases, dyes and pigments       0.252       0.164         37 Other inorganic basic chemicals       0.166       0.758       4.         39 Fertilisers and nitrogen compounds       0.166       0.758       4.         40 Plastics and synthetic rubber in primary forms       1.106       3.368       3         41 Pesticides and other agro-chemical products       0.144       0.085					91%
25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 1,286 31 Wood and wood products, except furniture 1,258 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 47 Rubber products 48 Plastic products 49 Plastics and glass products 40 Plastics and similar coatings, printing ink and ma 41 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 47 Rubber products 48 Plastic products 49 Plastic products 40 Plastics and glass products 50 Ceramic goods 51 Biricks, tiles and construction products, baked in clay 51 Biricks, tiles and construction products, baked in clay 52 Cerement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 50 .0.786 50 .0.786 50 .0.779					75%
26 Other textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 88 Wearing apparel; dressing and dying of fur 99 Tanning and dressing of leather; manufacture of luggage, 10,242 10,103 30 Footwear 11,286 11,772 12,869 13 Wood and wood products, except furniture 11,258 12,772 13,809 11,773 13,774 14,109 15,774 15,					28% 30%
27 Knitted and crocheted fabrics and articles       2.083       1.059         28 Wearing apparel; dressing and dying of fur       6.840       4.469         29 Tanning and dressing of leather; manufacture of luggage,       0.242       0.103         30 Footwear       1.286       0.776         31 Wood and wood products, except furniture       1.258       0.572         32 Pulp, paper and paperboard       1.772       1.809       11         33 Articles of paper and paperboard       1.320       0.377         34 Publishing, printing and reproduction of recorded media       2.805       0.580         35 Coke, refined petroleum products and nuclear fuel       15.331       4.109         36 Industrial gases, dyes and pigments       0.252       0.164         37 Other inorganic basic chemicals       0.166       0.758       4         38 Other organic basic chemicals       0.256       1.098       4         39 Fertilisers and nitrogen compounds       0.176       0.132         40 Plastics and synthetic rubber in primary forms       1.106       3.368       3         41 Pesticides and other agro-chemical products       0.144       0.085         42 Paints, varnishes and similar coatings, printing ink and ma       0.355       0.131         43 Pharmaceuticals, medicinal chemical					72%
28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Eyelp, paper and paperboard 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastic products 40 Plastic products 41 Eyelic products 42 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastic products 40 Plastic products 41 Eyelic products 42 Plastic products 43 Plastic products 44 Soap and sproducts 45 Plastic products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastic products 40 Plastic products 41 Eyelic products 42 Plastic products 43 Plastic products 44 Plastic products 45 Bricks, tiles and construction products, baked in clay 50 Ceramic goods 51 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.391 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.671 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 50 Casting of metals 50 C					51%
29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical product 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Plastes or organical products 41 Plastics products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 41 Diagraphic products 42 Paints, varnishes and similar coatings and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.649 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 0.786 50 0.770					65%
30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical prod 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastics products 40 Plastics and glass products 50 Ceramic goods 50 Ceramic goods 50 Ceramic goods 51 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.002 51 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.002 51 Structural metal products 51 Casting of metals 52 Casting of metals 53 Control on 179 54 Tanks, reservoirs and containers of metal; manufacture of 50 Casting of metals 50 Carsting of metals 51 Tanks, reservoirs and containers of metal; manufacture of 50 Casting of metals 50 Casting of metals 50 Casting of metals					42%
31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical prod 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 50 Ceramic goods 51 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.002 51 Structural metal products 52 Casting of metals 56 Casting of metals 57 Structural metal products 50 Casting of metals 51 Casting of metals 52 Cament lime and plaster 53 Casting of metals 54 Casting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products 50 Casting of metals 51 Casting of metals 51 Casting of metals 52 Cament, insended containers of metal; manufacture of 50 Casting of metals 51 Casting of metals 52 Cament, insended containers of metal; manufacture of 53 Casting of metals 54 Casting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products					60%
32 Pulp, paper and paperboard 3 Articles of paper and paperboard 3 Publishing, printing and reproduction of recorded media 2 .805 3 Coke, refined petroleum products and nuclear fuel 3 Industrial gases, dyes and pigments 0 .252 0 .164 3 Other inorganic basic chemicals 0 .166 0 .758 4 Other organic basic chemicals 0 .166 0 .758 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .132 4 Other organic basic chemicals 0 .176 0 .133 0 .144 0 .085 0 .144 0 .085 0 .144 0 .085 0 .131 0 .368 0 .745 0 .131 0 .368 0 .745 0 .131 0 .368 0 .745 0 .148 0 .374 0 .386 0 .291 0 .585 0 .391 0 .585 0 .291 0 .585 0 .391 0 .585 0 .391 0 .585 0 .374 0 .188 0 .102 0 .623 0 .0985 0 .374 0 .188 0 .102 0 .684 0 .284 0 .481 0 .386 0 .096 0 .384 0 .096 0 .384 0 .096 0 .384 0 .002 0 .003 0 .717 0 .188 0 .002 0 .003 0 .717 0 .717 0 .717 0 .717 0 .717 0 .717					45%
33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 2.805 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastic products 40 Russas and glass products 41 Rubber products 42 Paints, varnishes and similar coatings, printing ink and ma 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping (case) 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 50 Carsas of Casting of metals 51 Casting of metals 52 Casting of metals 53 Casting of metals 54 Casting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 Carsas of Casting o					102%
34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Basic iron and steel and of ferro-alloys; manufacture of tut 54 Easting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 Caramic goods 50 Caramic goods 51 Casting of metals 50 Control and steel and of ferro-alloys; manufacture of 58 Tanks, reservoirs and containers of metal; manufacture of 59 Casting of metals 50 Caramic goods 50 Caramic goods 50 Casting of metals 50 Casting o					29%
35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping a 54 Casting of metals 55 Casting of metals 56 Casting of metals 50 Ceramic goods 50 Structural metal products 51 Tanks, reservoirs and containers of metal; manufacture of 51 Tanks, reservoirs and containers of metal; manufacture of 52 Cement, length and plaster 54 Tanks, reservoirs and containers of metal; manufacture of 55 Tanks, reservoirs and containers of metal; manufacture of 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Casting of metals 50 Casting of metals 51 Tanks, reservoirs and containers of metal; manufacture of 51 Tanks, reservoirs and containers of metal; manufacture of 52 Casting of metals 53 Casting of metals 54 Casting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products					21%
36 Industrial gases, dyes and pigments       0.252       0.164         37 Other inorganic basic chemicals       0.166       0.758       4         38 Other organic basic chemicals       0.256       1.098       4         39 Fertilisers and nitrogen compounds       0.176       0.132         40 Plastics and synthetic rubber in primary forms       1.106       3.368       3         41 Pesticides and other agro-chemical products       0.144       0.085         42 Paints, varnishes and similar coatings, printing ink and ma       0.355       0.131         43 Pharmaceuticals, medicinal chemicals and botanical produ       1.489       0.745         44 Soap and detergents, cleaning and polishing preparations       2.256       0.750         45 Other chemical products       1.413       0.861         46 Man-made fibres       0.291       0.585       2         47 Rubber products       1.125       0.391         48 Plastic products       2.524       0.741         49 Glass and glass products       1.012       0.623         50 Ceramic goods       0.985       0.374         51 Bricks, tiles and construction products, baked in clay       0.176       0.188       1         52 Cement, lime and plaster       0.563       0.096       0.284					27%
37 Other inorganic basic chemicals       0.166       0.758       4         38 Other organic basic chemicals       0.256       1.098       4         39 Fertilisers and nitrogen compounds       0.176       0.132         40 Plastics and synthetic rubber in primary forms       1.106       3.368       3         41 Pesticides and other agro-chemical products       0.144       0.085         42 Paints, varnishes and similar coatings, printing ink and ma       0.355       0.131         43 Pharmaceuticals, medicinal chemicals and botanical products       1.489       0.745         44 Soap and detergents, cleaning and polishing preparations       2.256       0.750         45 Other chemical products       1.413       0.861         46 Man-made fibres       0.291       0.585       2         47 Rubber products       1.125       0.391       0.585       2         48 Plastic products       1.012       0.623       0.623       0.623       0.623       0.374       0.623       0.374       0.188       1         50 Ceramic goods       0.985       0.374       0.188       1       0.563       0.096       0.284       0.284       0.284       0.284       0.284       0.284       0.284       0.284       0.284       0.284			0.252	0.164	65%
39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 1.106 3.368 31 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 65 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 50 Ceramic goodcs 51 Cappa 0.002 52 Cappa 0.003 53 Tanks, reservoirs and containers of metal; manufacture of 50 Cappa 0.0786 51 Cappa 0.0786			0.166	0.758	458%
40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Geramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.002 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 50 India O.179 58 Tanks, reservoirs and containers of metal; manufacture of 50 Caraining and onterious products 50 India O.188 51	38	Other organic basic chemicals	0.256	1.098	428%
40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Geramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.002 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 50 India O.179 58 Tanks, reservoirs and containers of metal; manufacture of 50 Caraining and onterious products 50 India O.188 51	39	Fertilisers and nitrogen compounds	0.176	0.132	75%
42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping a plastic procure and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 Casting of metal; manufacture of 51 Casting of metal; manufacture of 51 Casting of metal; manufacture of 52 Casting of metal; manufacture of 53 Casting of metal; manufacture of 54 Casting of metal; manufacture of 55 Casting of metal; manufacture of 56 Casting of metal; manufacture of 57 Casting of metal; manufacture of 58 Casting of metal; manufacture of 59 Casting of metal; manufacture of 50 Casting of metal; manufacture of 51 Casting of metals 52 Casting of metals 53 Casting			1.106	3.368	304%
43 Pharmaceuticals, medicinal chemicals and botanical products 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\varepsilon\$ 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 Casting of metals 50 Casting of metals 50 Casting of metals 50 Casting of metals 51 Casting of metals 52 Casting of metals 53 Casting of metals 54 Casting of metals 55 Casting of metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Casting of metals 70 Casting of metals 71 Casting of metals 71 Casting of metals 72 Casting of metals 73 Casting of metals 74 Casting of metals 75 Casting of metals 76 Casting of metals 77 Casting of metals 77 Casting of metals 78 Casting of metals 79 Casting of metals 70 Casting of metals 71 Casting of metals 72 Casting of metals 73 Casting of metals 74 Casting of metals 75 Casting of metals 75 Casting of metals 76 Cas	41	Pesticides and other agro-chemical products	0.144	0.085	59%
44 Soap and detergents, cleaning and polishing preparations       2.256       0.750         45 Other chemical products       1.413       0.861         46 Man-made fibres       0.291       0.585       20         47 Rubber products       1.125       0.391       0.391         48 Plastic products       2.524       0.741       0.623         49 Glass and glass products       1.012       0.623       0.623         50 Ceramic goods       0.985       0.374       0.374         51 Bricks, tiles and construction products, baked in clay       0.176       0.188       1         52 Cement, lime and plaster       0.563       0.096       0.284         53 Articles of concrete, plaster and cement; cutting, shaping and the container of the control of the con			0.355	0.131	37%
45 Other chemical products 46 Man-made fibres 0.291 0.585 27 47 Rubber products 1.125 0.391 48 Plastic products 2.524 0.741 49 Glass and glass products 1.012 0.623 50 Ceramic goods 0.985 0.374 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\epsilon\$ 63 Articles of concrete, plaster and cement; cutting, shaping \$\epsilon\$ 649 0.284 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179	43	Pharmaceuticals, medicinal chemicals and botanical produ	1.489	0.745	50%
46 Man-made fibres 0.291 0.585 2: 47 Rubber products 1.125 0.391 48 Plastic products 2.524 0.741 49 Glass and glass products 1.012 0.623 50 Ceramic goods 0.985 0.374 51 Bricks, tiles and construction products, baked in clay 0.176 0.188 1: 52 Cement, lime and plaster 0.563 0.096 53 Articles of concrete, plaster and cement; cutting, shaping 0.649 0.284 54 Basic iron and steel and of ferro-alloys; manufacture of tut 4.612 3.710 55 Basic precious and non-ferrous metals 1.781 1.308 56 Casting of metals 0.002 0.003 1.57 Structural metal products 57 Structural metal products 2.993 0.717 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179					33%
47 Rubber products       1.125       0.391         48 Plastic products       2.524       0.741         49 Glass and glass products       1.012       0.623         50 Ceramic goods       0.985       0.374         51 Bricks, tiles and construction products, baked in clay       0.176       0.188       1         52 Cement, lime and plaster       0.563       0.096         53 Articles of concrete, plaster and cement; cutting, shaping and the concrete, plaster and cement; cutting, shaping and concret		•			61%
48 Plastic products       2.524       0.741         49 Glass and glass products       1.012       0.623         50 Ceramic goods       0.985       0.374         51 Bricks, tiles and construction products, baked in clay       0.176       0.188       1         52 Cement, lime and plaster       0.563       0.096         53 Articles of concrete, plaster and cement; cutting, shaping and the plastic iron and steel and of ferro-alloys; manufacture of tult       4.612       3.710         55 Basic precious and non-ferrous metals       1.781       1.308         56 Casting of metals       0.002       0.003       1         57 Structural metal products       2.993       0.717         58 Tanks, reservoirs and containers of metal; manufacture of       0.786       0.179	_				201%
49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping (a) 54 Basic iron and steel and of ferro-alloys; manufacture of tut) 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 50 0.985 50 0.374 50 0.176 50 0.188 51 0.096 52 0.096 53 0.096 54 0.284 54 612 57 1.781 58 Tanks, reservoirs and containers of metal; manufacture of 57 0.786 58 0.179					35%
50 Ceramic goods       0.985       0.374         51 Bricks, tiles and construction products, baked in clay       0.176       0.188       10         52 Cement, lime and plaster       0.563       0.096         53 Articles of concrete, plaster and cement; cutting, shaping ε       0.649       0.284         54 Basic iron and steel and of ferro-alloys; manufacture of tult       4.612       3.710         55 Basic precious and non-ferrous metals       1.781       1.308         56 Casting of metals       0.002       0.003       1         57 Structural metal products       2.993       0.717         58 Tanks, reservoirs and containers of metal; manufacture of       0.786       0.179					29%
51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping a construction of concrete, plaster and cement; cutting, shaping a construction of concrete, plaster and cement; cutting, shaping a construction of concrete, plaster and cement; cutting, shaping a construction of concrete, plaster and cement; cutting, shaping a construction of concrete, plaster and cement; cutting, shaping a construction of con					62%
52 Cement, lime and plaster  53 Articles of concrete, plaster and cement; cutting, shaping and steel and of ferro-alloys; manufacture of tuk  54 Basic iron and steel and of ferro-alloys; manufacture of tuk  55 Basic precious and non-ferrous metals  56 Casting of metals  57 Structural metal products  58 Tanks, reservoirs and containers of metal; manufacture of  59 0.096  0.284  4.612  3.710  1.308  0.002  0.003  1.781  1.308  0.002  0.003  1.79		•			38%
53 Articles of concrete, plaster and cement; cutting, shaping a 0.649 0.284 54 Basic iron and steel and of ferro-alloys; manufacture of tult 4.612 3.710 55 Basic precious and non-ferrous metals 1.781 1.308 56 Casting of metals 0.002 0.003 1.781 57 Structural metal products 2.993 0.717 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179					106%
54 Basic iron and steel and of ferro-alloys; manufacture of tut 4.612 3.710 55 Basic precious and non-ferrous metals 1.781 1.308 56 Casting of metals 0.002 0.003 17 57 Structural metal products 2.993 0.717 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179		•			17%
55 Basic precious and non-ferrous metals       1.781       1.308         56 Casting of metals       0.002       0.003       1         57 Structural metal products       2.993       0.717         58 Tanks, reservoirs and containers of metal; manufacture of       0.786       0.179					44%
56 Casting of metals 0.002 0.003 1 57 Structural metal products 2.993 0.717 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179					80%
57 Structural metal products 2.993 0.717 58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179					73%
58 Tanks, reservoirs and containers of metal; manufacture of 0.786 0.179		<u> </u>			148%
					24% 23%
Joe i orging, pressing, stamping and roll forming or metal, pow U.514 U. 105					23% 32%
					32% 30%
					29%
					40%
					27%

Uncertainty of embedded CO2 emissions by sector; year 1992	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
	E (Mt CO2)	dE (Mt CO2)	dE/E
64 Agricultural and forestry machinery	0.928	0.239	26%
65 Machine tools	0.789	0.720	91%
66 Other special purpose machinery	1.343	2.034	151%
67 Weapons and ammunition	0.055	0.053	96%
68 Domestic appliances not elsewhere classified	1.753	0.518	30%
69 Office machinery and computers	4.857	3.041	63%
70 Electric motors, generators and transformers; manufacture	1.304	0.718	55%
71 Insulated wire and cable	0.220	0.083	38%
72 Electrical equipment not elsewhere classified	1.047	0.669	64%
73 Electronic valves and tubes and other electronic compone	0.236	0.213	90%
74 Television and radio transmitters and line for telephony an	1.555	0.598	38%
75 Television and radio receivers, sound or video recording o	1.559	0.818	53%
76 Medical, precision and optical instruments, watches and cl	2.591	1.143	44%
77 Motor vehicles, trailers and semi-trailers	14.120	4.343	31%
78 Building and repairing of ships and boats 79 Other transport equipment	0.702 1.463	0.486 0.349	69% 24%
· · · ·			
80 Aircraft and spacecraft 81 Furniture	0.764 6.477	1.147 3.382	150% 52%
82 Jewellery and related articles; manufacture of musical inst	5.835	3.368	58%
83 Sports goods, games and toys	8.524	4.982	58%
84 Miscellaneous manufacturing not elsewhere classified; rec	2.923	2.157	74%
85 Production and distribution of electricity	88.660	4.129	5%
86 Gas; distribution of gaseous fuels through mains; steam a	6.819	2.661	39%
87 Collection, purification and distribution of water	1.023	0.063	6%
88 Construction	38.932	4.123	11%
89 Sale, maintenance and repair of motor vehicles, and moto	7.073	1.240	18%
90 Wholesale trade and commission trade, except of motor vi	15.020	6.181	41%
91 Retail trade, except of motor vehicles and motor cycles; re	12.166	7.458	61%
92 Hotels and restaurants	27.397	5.619	21%
93 Transport via railways	3.064	8.423	275%
94 Other land transport; transport via pipelines	9.023	0.970	11%
95 Water transport	6.023	1.989	33%
96 Air Transport	19.289	7.868	41%
97 Supporting and auxiliary transport activities; activities of tra	1.270	1.010	79%
98 Post and courier activities	0.294	0.081	27%
99 Telecommunications	2.324	0.576	25%
100 Financial intermediation, except insurance and pension fu	1.052	0.162	15%
101 Insurance and pension funding, except compulsory social	7.873	1.012	13%
102 Activities auxiliary to financial intermediation	0.310	0.241	78%
103 Real estate activities with own property; letting of own property	0.047	0.038	80%
104 Letting of dwellings, including imputed rent	7.511	1.118	15%
105 Real estate activities on a fee or contract basis	0.190	0.021	11%
106 Renting of machinery and equipment without operator and	4.667	0.334	7%
107 Computer and related activities	1.921	0.319	17%
108 Research and development	0.106	0.042	40%
109 Legal activities	0.306	0.034	11%
110 Accounting, book-keeping and auditing activities; tax cons	0.014	0.007	47%
111 Market research and public opinion polling; business and r	0.210	0.032	15%
112 Architectural and engineering activities and related technic	0.881	0.205	23% 64%
113 Advertising 114 Other business services	0.058 1.132	0.037	64% 2093%
		23.692	
115 Public administration and defence; compulsory social sect 116 Education	35.232 17.178	5.155 1.088	15% 6%
117 Human health and veterinary activities	20.480	3.093	15%
118 Social work activities	7.146	0.792	11%
119 Sewage and refuse disposal, sanitation and similar activities	4.216	0.792	4%
120 Activities of membership organisations not elsewhere class	1.336	0.131	9%
121 Recreational, cultural and sporting activities	8.063	0.120	12%
122 Other service activities	2.702	0.632	23%
123 Private households with employed persons	0.206	0.005	3%
120 1 mate neadonoide with employed persons	86.41	0.003	3 /0
	59.23		
Total CO2 consumer emissions	647	+/- 27	+/- 4.2%
Total COL Collocation Cillipsions	<b>5</b> +1	., 21	1, 7.2./0

Uncertainty of embedded CO2 emissions by sector; year 1993	CO2 CONSUMER emissions E (Mt CO2)	Standard error of CO2 CONSUMER emissions dE (Mt CO2)	Relative error of CO2 CONSUMER emissions dE/E
1 Agriculture, hunting and related service activities	7.173		12%
•	0.064	0.853 0.280	440%
2 Forestry, logging and related service activities			
3 Fishing, operation of fish hatcheries and fish farms; service	0.090	0.068	75%
4 Mining of coal and lignite; extraction of peat	0.379	0.576	152%
5 Extraction of crude petroleum and natural gas; service act	2.513	0.882	35%
6 Mining of metal ores	0.002	0.002	76%
7 Other mining and quarrying	0.004	0.016	385%
8 Production, processing and preserving of meat and meat p	6.436	1.179	18%
9 Processing and preserving of fish and fish products; fruit a	4.054	0.918	23%
Vegetable and animal oils and fats	0.402	0.133	33%
1 Dairy products	4.273	1.030	24%
2 Grain mill products, starches and starch products	0.695	0.166	24%
3 Prepared animal feeds	0.591	0.150	25%
4 Bread, rusks and biscuits; manufacture of pastry goods an	3.003	0.619	21%
5 Sugar	0.142	0.111	78%
6 Cocoa; chocolate and sugar confectionery	1.806	0.533	30%
7 Other food products	2.364	0.708	30%
8 Alcoholic beverages	1.225	6.026	492%
9 Production of mineral waters and soft drinks	1.381	0.508	37% 34%
O Tobacco products	0.856	0.295	
1 Preparation and spinning of textile fibres	0.037	0.159	428% 41%
2 Textile weaving	0.049	0.020	
3 Finishing of textiles	0.009	0.015	167%
4 Made-up textile articles, except apparel	1.047	0.292	28%
25 Carpets and rugs 26 Other textiles	0.740	0.202	27%
	0.060	0.023	37%
7 Knitted and crocheted fabrics and articles	2.261	1.123	50%
8 Wearing apparel; dressing and dying of fur	7.112	4.636	65% 510/
9 Tanning and dressing of leather; manufacture of luggage,	0.191	0.097	51%
O Footwear	1.311	0.815	62%
11 Wood and wood products, except furniture	0.877	0.207	24%
2 Pulp, paper and paperboard	0.116 0.903	0.095 0.199	82% 22%
3 Articles of paper and paperboard	2.794	0.608	22%
4 Publishing, printing and reproduction of recorded media 5 Coke, refined petroleum products and nuclear fuel	13.174	3.986	30%
6 Industrial gases, dyes and pigments	0.040	0.015	36%
7 Other inorganic basic chemicals	0.000	0.013	3644%
8 Other organic basic chemicals	0.347	1.332	384%
9 Fertilisers and nitrogen compounds	0.268	0.057	21%
O Plastics and synthetic rubber in primary forms	0.208	0.136	299%
1 Pesticides and other agro-chemical products	0.029	0.019	65%
2 Paints, varnishes and similar coatings, printing ink and ma	0.198	0.019	40%
3 Pharmaceuticals, medicinal chemicals and botanical produ	0.996	0.260	26%
4 Soap and detergents, cleaning and polishing preparations	2.383	0.757	32%
5 Other chemical products	0.674	0.381	56%
6 Man-made fibres	0.006	0.014	239%
7 Rubber products	0.862	0.209	24%
8 Plastic products	1.559	0.283	18%
9 Glass and glass products	0.403	0.152	38%
O Ceramic goods	0.826	0.349	42%
1 Bricks, tiles and construction products, baked in clay	0.138	0.139	101%
2 Cement, lime and plaster	0.502	0.043	9%
3 Articles of concrete, plaster and cement; cutting, shaping a	0.342	0.039	11%
4 Basic iron and steel and of ferro-alloys; manufacture of tut	1.110	0.127	11%
5 Basic precious and non-ferrous metals	0.194	0.170	87%
66 Casting of metals	0.016	0.006	37%
7 Structural metal products	2.628	0.709	27%
8 Tanks, reservoirs and containers of metal; manufacture of	0.557	0.142	26%
9 Forging, pressing, stamping and roll forming of metal; pow	0.299	0.105	35%
O Cutlery, tools and general hardware	0.844	0.236	28%
1 Other fabricated metal products	1.056	0.258	24%
2 Machinery for the production and use of mechanical power	0.706	0.230	33%
3 Other general purpose machinery	3.000	0.908	30%

Uncertainty of embedded CO2 emissions by	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER	Relative error of CO2
sector; year 1993	E (Mt CO2)	emissions	emissions dE/E
64 Agricultural and forestry machinery	E (Mt CO2) 0.840	dE (Mt CO2) 0.268	32%
64 Agricultural and forestry machinery 65 Machine tools	0.804	0.639	79%
66 Other special purpose machinery	1.373	2.149	156%
67 Weapons and ammunition	0.001	0.051	5597%
68 Domestic appliances not elsewhere classified	1.680	0.496	30%
69 Office machinery and computers	4.473	3.484	78%
70 Electric motors, generators and transformers; manufacture	1.146	0.718	63%
71 Insulated wire and cable	0.426	0.148	35%
72 Electrical equipment not elsewhere classified	0.751	0.425	57%
73 Electronic valves and tubes and other electronic compone	0.095	0.021	22%
74 Television and radio transmitters and line for telephony an	1.411	0.728	52%
75 Television and radio receivers, sound or video recording o	1.493	0.752	50%
76 Medical, precision and optical instruments, watches and cl	2.451	1.126	46%
77 Motor vehicles, trailers and semi-trailers	11.221	3.217	29%
78 Building and repairing of ships and boats	0.727	0.326	45%
79 Other transport equipment	1.042	0.378	36%
80 Aircraft and spacecraft	1.296	1.406	108%
81 Furniture	6.496	4.636	71%
82 Jewellery and related articles; manufacture of musical inst	6.704	3.924	59%
83 Sports goods, games and toys	8.993	5.203	58%
84 Miscellaneous manufacturing not elsewhere classified; rec	3.019	2.421	80%
85 Production and distribution of electricity	77.200	2.516	3%
86 Gas; distribution of gaseous fuels through mains; steam a	6.912	2.639	38%
87 Collection, purification and distribution of water	0.936	0.049	5%
88 Construction	37.458	4.453	12%
89 Sale, maintenance and repair of motor vehicles, and moto	7.374	1.475	20%
90 Wholesale trade and commission trade, except of motor vi	15.846	5.337	34%
91 Retail trade, except of motor vehicles and motor cycles; re	12.797	6.861	54%
92 Hotels and restaurants	28.097	6.132	22%
93 Transport via railways	2.952	4.463	151%
94 Other land transport; transport via pipelines	9.303	0.845	9%
95 Water transport 96 Air Transport	5.867 20.065	1.958 7.830	33% 39%
97 Supporting and auxiliary transport activities; activities of tra	0.535	0.213	40%
98 Post and courier activities	0.309	0.213	15%
99 Telecommunications	2.390	0.681	29%
100 Financial intermediation, except insurance and pension fu	1.155	0.196	17%
101 Insurance and pension funding, except compulsory social	6.942	1.029	15%
102 Activities auxiliary to financial intermediation	0.259	0.061	23%
103 Real estate activities with own property; letting of own property	0.008	0.001	13%
104 Letting of dwellings, including imputed rent	7.868	1.402	18%
105 Real estate activities on a fee or contract basis	0.207	0.021	10%
106 Renting of machinery and equipment without operator and	4.496	0.368	8%
107 Computer and related activities	1.920	0.375	20%
108 Research and development	0.067	0.012	18%
109 Legal activities	0.292	0.017	6%
110 Accounting, book-keeping and auditing activities; tax cons	0.008	0.001	10%
111 Market research and public opinion polling; business and r	0.140	0.021	15%
112 Architectural and engineering activities and related technic	0.800	0.142	18%
113 Advertising	0.019	0.004	21%
114 Other business services	0.724	0.062	9%
115 Public administration and defence; compulsory social secu	34.837	5.185	15%
116 Education	15.501	1.026	7%
117 Human health and veterinary activities	19.103	3.393	18%
118 Social work activities	6.580	0.813	12%
119 Sewage and refuse disposal, sanitation and similar activities	4.090	0.189	5%
120 Activities of membership organisations not elsewhere clas	1.130	0.121	11%
121 Recreational, cultural and sporting activities	8.338	1.067	13%
122 Other service activities	2.726	0.688	25%
123 Private households with employed persons	0.208	0.006	3%
	90.34		
Total CO2 consumer emissions	59.44 <b>639</b>	+/- 22	+/- 3.4%
Total GOZ Consumer emissions	039	+/- 22	T/* 3.4 70

	Uncertainty of embedded CO2 emissions by sector; year 1994	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
	Scotor, year 1994	E (Mt CO2)	dE (Mt CO2)	dE/E
1	Agriculture, hunting and related service activities	7.114	0.844	12%
	Progressity, logging and related service activities	0.071	0.277	392%
	Fishing, operation of fish hatcheries and fish farms; service	0.077	0.044	57%
	Mining of coal and lignite; extraction of peat	0.065	0.662	1016%
		1.685	0.581	34%
	Extraction of crude petroleum and natural gas; service act			
	Mining of metal ores	0.005	0.008	143%
	Other mining and quarrying	0.013	0.014	106%
	Production, processing and preserving of meat and meat production and preserving of meat and meat production.	6.023	1.170	19%
	Processing and preserving of fish and fish products; fruit a	4.073	0.918	23%
	Vegetable and animal oils and fats	0.411	0.132	32%
	Dairy products	3.968	1.020	26%
	Grain mill products, starches and starch products	0.676	0.153	23%
	Prepared animal feeds	0.675	0.195	29%
14	Bread, rusks and biscuits; manufacture of pastry goods an	2.931	0.627	21%
15	Sugar	0.103	0.108	105%
16	Cocoa; chocolate and sugar confectionery	1.886	0.527	28%
17	Other food products	2.333	0.695	30%
18	Alcoholic beverages	1.416	6.946	491%
19	Production of mineral waters and soft drinks	1.398	0.508	36%
20	Tobacco products	0.881	0.316	36%
21	Preparation and spinning of textile fibres	0.051	0.068	132%
	? Textile weaving	0.070	0.019	27%
	Finishing of textiles	0.022	0.017	76%
	Made-up textile articles, except apparel	1.087	0.326	30%
	Carpets and rugs	0.725	0.214	29%
	Other textiles	0.081	0.026	32%
	Knitted and crocheted fabrics and articles	2.276	1.174	52%
	Wearing apparel; dressing and dying of fur	7.473	4.935	66%
	Tanning and dressing of leather; manufacture of luggage,	0.152	0.123	81%
	Footwear	1.501	0.920	61%
	Wood and wood products, except furniture	0.991	0.203	20%
	Pulp, paper and paperboard	0.039	0.040	103%
	Articles of paper and paperboard	0.829	0.417	50%
	Publishing, printing and reproduction of recorded media	3.150	0.695	22%
	Coke, refined petroleum products and nuclear fuel	13.764	3.929	29%
	industrial gases, dyes and pigments	0.067	0.012	19%
	Other inorganic basic chemicals	0.011	0.006	53%
	Other morganic basic chemicals  Other organic basic chemicals			
	Fertilisers and nitrogen compounds	0.280	1.363	487%
		0.313	0.069	22%
	Plastics and synthetic rubber in primary forms	0.007	0.225	3098%
	Pesticides and other agro-chemical products	0.035	0.019	53%
	Paints, varnishes and similar coatings, printing ink and ma	0.237	0.078	33%
	S Pharmaceuticals, medicinal chemicals and botanical produ	0.735	0.269	37%
	Soap and detergents, cleaning and polishing preparations	2.607	0.741	28%
	Other chemical products	0.741	0.371	50%
	Man-made fibres	0.025	0.018	74%
	Rubber products	0.921	0.228	25%
48	Plastic products	1.575	0.273	17%
49	Glass and glass products	0.459	0.149	33%
50	Ceramic goods	0.995	0.435	44%
51	Bricks, tiles and construction products, baked in clay	0.137	0.179	131%
52	Cement, lime and plaster	0.560	0.041	7%
53	Articles of concrete, plaster and cement; cutting, shaping a	0.393	0.036	9%
54	Basic iron and steel and of ferro-alloys; manufacture of tub	0.652	0.085	13%
	Basic precious and non-ferrous metals	0.048	0.159	334%
	Casting of metals	0.022	0.006	27%
	Structural metal products	2.317	0.607	26%
	Tanks, reservoirs and containers of metal; manufacture of	0.570	0.129	23%
	Forging, pressing, stamping and roll forming of metal; pow	0.212	0.059	28%
	Cutlery, tools and general hardware	0.895	0.236	26%
	Other fabricated metal products	0.968	0.231	24%
	! Machinery for the production and use of mechanical powe	0.695	0.223	32%
	6 Other general purpose machinery	3.151	0.867	28%
		0.101	0.001	2370

		Ctandard arrar of	Dolotive orrer of CO2
Uncertainty of embedded CO2 emissions by	CO2 CONSUMER	Standard error of CO2 CONSUMER	Relative error of CO2 CONSUMER
sector; year 1994	emissions	emissions	emissions
Sector, year 1994	E (Mt CO2)	dE (Mt CO2)	dE/E
64 Agricultural and forestry machinery	0.827	0.250	30%
65 Machine tools	0.773	0.328	42%
66 Other special purpose machinery	1.493	2.232	149%
67 Weapons and ammunition	0.117	0.060	52%
68 Domestic appliances not elsewhere classified	1.717	0.501	29%
69 Office machinery and computers	4.360	2.436	56%
70 Electric motors, generators and transformers; manufacture		0.459	39%
71 Insulated wire and cable	0.367	0.121	33%
72 Electrical equipment not elsewhere classified	0.656	0.447	68%
73 Electronic valves and tubes and other electronic compone	0.092	0.022	24%
74 Television and radio transmitters and line for telephony an	1.667	0.932	56%
75 Television and radio receivers, sound or video recording o	1.703	0.802	47%
76 Medical, precision and optical instruments, watches and c	2.489	1.357	55%
77 Motor vehicles, trailers and semi-trailers	12.185	3.405	28%
78 Building and repairing of ships and boats	1.700	0.607	36%
79 Other transport equipment	1.125	0.392	35%
80 Aircraft and spacecraft	2.098	1.568	75%
81 Furniture	7.018	1.847	26%
82 Jewellery and related articles; manufacture of musical inst		4.549	59%
83 Sports goods, games and toys	7.281	3.867	53%
84 Miscellaneous manufacturing not elsewhere classified; rec		1.682	56%
85 Production and distribution of electricity	73.041	2.241	3%
86 Gas; distribution of gaseous fuels through mains; steam at		1.964	29%
87 Collection, purification and distribution of water	0.899	0.055	6%
88 Construction	39.713	4.689	12%
89 Sale, maintenance and repair of motor vehicles, and moto		1.655 4.866	23% 32%
90 Wholesale trade and commission trade, except of motor versions and motor cycles; re		5.504	39%
92 Hotels and restaurants	28.058	6.321	23%
93 Transport via railways	3.068	2.320	76%
94 Other land transport; transport via pipelines	9.439	0.909	10%
95 Water transport	5.784	1.979	34%
96 Air Transport	21.147	8.490	40%
97 Supporting and auxiliary transport activities; activities of tra		0.164	30%
98 Post and courier activities	0.339	0.055	16%
99 Telecommunications	2.399	0.733	31%
100 Financial intermediation, except insurance and pension ful	1.080	0.204	19%
101 Insurance and pension funding, except compulsory social	6.512	1.032	16%
102 Activities auxiliary to financial intermediation	0.303	0.077	25%
103 Real estate activities with own property; letting of own property	0.007	0.001	15%
104 Letting of dwellings, including imputed rent	8.012	1.503	19%
105 Real estate activities on a fee or contract basis	0.216	0.024	11%
106 Renting of machinery and equipment without operator and		0.361	9%
107 Computer and related activities	2.338	0.527	23%
108 Research and development	0.068	0.013	19%
109 Legal activities	0.293	0.018	6%
110 Accounting, book-keeping and auditing activities; tax cons		0.001	10%
111 Market research and public opinion polling; business and i		0.016	17%
112 Architectural and engineering activities and related technic		0.164	19%
113 Advertising	0.017	0.004	23%
114 Other business services	0.641	0.061	9%
115 Public administration and defence; compulsory social secu		5.285	15%
116 Education 117 Human health and veterinary activities	14.311 19.241	0.988 3.744	7% 19%
118 Social work activities	6.566	0.870	13%
119 Sewage and refuse disposal, sanitation and similar activiti		0.870	5%
120 Activities of membership organisations not elsewhere clas		0.120	12%
121 Recreational, cultural and sporting activities	8.017	1.091	14%
122 Other service activities	2.635	0.714	27%
123 Private households with employed persons	0.211	0.006	3%
	86.00	0.000	370
	58.08		
Total CO2 consumer emissions	634	+/- 21	+/- 3.3%

	Uncertainty of embedded CO2 emissions by sector; year 1995	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
		E (Mt CO2)	dE (Mt CO2)	dE/E
1	Agriculture, hunting and related service activities	5.482	1.247	23%
2	Forestry, logging and related service activities	0.051	0.053	104%
	Fishing, operation of fish hatcheries and fish farms; service	0.053	0.095	178%
	Mining of coal and lignite; extraction of peat	0.316	0.722	229%
	Extraction of crude petroleum and natural gas; service act	2.894	2.803	97%
	Mining of metal ores	0.001	0.001	255%
	Other mining and quarrying	0.018	0.006	31%
	Production, processing and preserving of meat and meat p	5.551	1.395	25%
	Processing and preserving of fish and fish products; fruit a	3.953	1.163	29%
	Vegetable and animal oils and fats	0.285	0.240	84%
	Dairy products	3.822	1.261	33%
	Grain mill products, starches and starch products	0.564	0.296	53%
	Prepared animal feeds	0.588	0.209	36%
	Bread, rusks and biscuits; manufacture of pastry goods an	2.716	0.859	32%
	Sugar	0.101	0.145	143%
	Cocoa; chocolate and sugar confectionery	1.610	0.538	33%
	Other food products	2.243	0.825	37%
18	Alcoholic beverages	1.861	6.953	374%
19	Production of mineral waters and soft drinks	1.505	0.566	38%
20	Tobacco products	0.690	0.212	31%
	Preparation and spinning of textile fibres	0.011	0.116	1019%
	Textile weaving	0.069	0.075	109%
	Finishing of textiles	0.019	0.075	389%
	Made-up textile articles, except apparel	1.096	0.428	39%
	Carpets and rugs	0.609	0.269	44%
	Other textiles	0.080	0.062	77%
	Knitted and crocheted fabrics and articles	2.358	1.332	56%
	Wearing apparel; dressing and dying of fur	7.579	5.360	71%
	Tanning and dressing of leather; manufacture of luggage,	0.143	0.209	146%
	Footwear	1.388	0.982	71%
	Wood and wood products, except furniture	0.426	0.413	97%
	Pulp, paper and paperboard	0.016	0.057	366%
	Articles of paper and paperboard	0.561	0.728	130%
	Publishing, printing and reproduction of recorded media	2.932	0.890	30%
	Coke, refined petroleum products and nuclear fuel	9.998	4.204	42%
36	Industrial gases, dyes and pigments	0.079	0.143	182%
37	Other inorganic basic chemicals	0.019	0.020	107%
38	Other organic basic chemicals	0.060	0.055	91%
39	Fertilisers and nitrogen compounds	0.054	0.034	62%
40	Plastics and synthetic rubber in primary forms	0.079	0.050	63%
	Pesticides and other agro-chemical products	0.082	0.027	33%
	Paints, varnishes and similar coatings, printing ink and ma	0.210	0.080	38%
	Pharmaceuticals, medicinal chemicals and botanical produ	0.519	0.469	90%
	Soap and detergents, cleaning and polishing preparations	2.660	0.843	32%
	Other chemical products	0.911	0.590	65%
	Man-made fibres	0.024	0.384	1595%
	Rubber products	0.877	0.627	72%
	Plastic products	0.914	0.541	59%
	Glass and glass products	0.366	0.291	80%
	Ceramic goods	1.199	0.804	67%
	Bricks, tiles and construction products, baked in clay	0.117	0.499	428%
	Cement, lime and plaster	0.347	0.163	47%
53	Articles of concrete, plaster and cement; cutting, shaping $\boldsymbol{\epsilon}$	0.183	0.126	69%
54	Basic iron and steel and of ferro-alloys; manufacture of tut	0.205	0.680	332%
	Basic precious and non-ferrous metals	0.141	0.331	235%
	Casting of metals	0.028	0.016	58%
	Structural metal products	2.488	1.138	46%
	Tanks, reservoirs and containers of metal; manufacture of	0.714	0.273	38%
	Forging, pressing, stamping and roll forming of metal; pow	0.111	0.046	41%
	Cutlery, tools and general hardware	0.736	0.734	100%
	Other fabricated metal products	0.703	0.734	55%
	Machinery for the production and use of mechanical powe	0.795	0.519	65%
	Other general purpose machinery	4.003	1.617	40%
03	Outor general purpose machinery	4.003	1.017	40%

			Standard error of	Relative error of CO2
	Uncertainty of embedded CO2 emissions by	CO2 CONSUMER	CO2 CONSUMER	CONSUMER
	sector; year 1995	emissions	emissions	emissions
	Scotor, year 1999	E (Mt CO2)	dE (Mt CO2)	dE/E
64	Agricultural and forestry machinery	0.732	0.336	46%
	Machine tools	1.227	0.760	62%
66	Other special purpose machinery	2.500	1.695	68%
67	Weapons and ammunition	0.077	0.059	77%
68	Domestic appliances not elsewhere classified	1.842	0.703	38%
	Office machinery and computers	6.359	4.855	76%
	Electric motors, generators and transformers; manufacture	1.318	0.806	61%
	Insulated wire and cable	0.296	0.330	111%
	Electrical equipment not elsewhere classified	0.761	0.559	73%
	Electronic valves and tubes and other electronic compone	0.044	0.022	50%
	Television and radio transmitters and line for telephony an	1.937	1.162	60%
	Television and radio receivers, sound or video recording o	1.967	1.355	69%
	Medical, precision and optical instruments, watches and cl Motor vehicles, trailers and semi-trailers	2.436 12.491	1.921 4.682	79% 37%
	Building and repairing of ships and boats	1.095	0.302	28%
	Other transport equipment	1.198	0.392	33%
	Aircraft and spacecraft	0.616	0.533	87%
	Furniture	8.082	4.043	50%
_	Jewellery and related articles; manufacture of musical inst	5.809	4.417	76%
	Sports goods, games and toys	7.310	4.575	63%
	Miscellaneous manufacturing not elsewhere classified; rec	3.759	2.956	79%
	Production and distribution of electricity	66.560	13.807	21%
	Gas; distribution of gaseous fuels through mains; steam a	6.706	6.603	98%
87	Collection, purification and distribution of water	0.954	0.156	16%
88	Construction	41.352	8.136	20%
	Sale, maintenance and repair of motor vehicles, and moto	7.783	2.229	29%
	Wholesale trade and commission trade, except of motor v	15.197	5.267	35%
	Retail trade, except of motor vehicles and motor cycles; re	15.619	5.296	34%
	Hotels and restaurants	26.928	6.267	23%
	Transport via railways	2.714	4.929	182%
	Other land transport; transport via pipelines	9.008	4.231	47%
	Water transport	6.044	2.071	34%
	Air Transport Supporting and auxiliary transport activities; activities of tra	21.567 0.447	8.243 0.880	38% 197%
	Post and courier activities	0.310	0.330	46%
	Telecommunications	2.409	1.029	43%
	Financial intermediation, except insurance and pension fur	1.162	0.279	24%
	Insurance and pension funding, except compulsory social	6.320	1.134	18%
	Activities auxiliary to financial intermediation	0.268	0.130	48%
103	Real estate activities with own property; letting of own proj	0.009	0.020	227%
104	Letting of dwellings, including imputed rent	8.419	1.995	24%
105	Real estate activities on a fee or contract basis	0.220	0.091	42%
	Renting of machinery and equipment without operator and	3.855	0.522	14%
	Computer and related activities	2.663	0.830	31%
	Research and development	0.047	0.042	89%
	Legal activities	0.271	0.090	33%
	Accounting, book-keeping and auditing activities; tax cons	0.017	0.006	39%
	Market research and public opinion polling; business and r Architectural and engineering activities and related technic	0.073 0.882	0.020 0.248	27% 28%
	Advertising	0.014	0.248	69%
	Other business services	0.641	0.106	17%
	Public administration and defence; compulsory social secu	35.593	6.247	18%
	Education	14.736	1.779	12%
	Human health and veterinary activities	19.979	5.278	26%
	Social work activities	6.352	1.776	28%
119	Sewage and refuse disposal, sanitation and similar activiti	4.082	0.507	12%
	Activities of membership organisations not elsewhere class	1.056	0.147	14%
	Recreational, cultural and sporting activities	8.434	1.462	17%
	Other service activities	2.725	0.848	31%
123	Private households with employed persons	0.212	0.005	2%
		81.68		
	Tatal 000	56.82	1.00	.1 4 401
	Total CO2 consumer emissions	653	+/- 29	+/- 4.4%

	Uncertainty of embedded CO2 emissions by sector; year 1996	CO2 CONSUMER emissions E (Mt CO2)	Standard error of CO2 CONSUMER emissions dE (Mt CO2)	Relative error of CO2 CONSUMER emissions dE/E
	Agriculture, hunting and related service activities	7.752	1.286	17%
	Forestry, logging and related service activities	0.077	0.141	183%
	3 Fishing, operation of fish hatcheries and fish farms; service	0.077	0.049	68%
	4 Mining of coal and lignite; extraction of peat	0.298	0.431	145%
		1.599	0.431	45%
	5 Extraction of crude petroleum and natural gas; service act			
	6 Mining of metal ores	0.009	0.010	114%
	7 Other mining and quarrying	0.040	0.275	682%
	8 Production, processing and preserving of meat and meat p	6.397	1.473	23%
	9 Processing and preserving of fish and fish products; fruit a	4.575	1.105	24%
	0 Vegetable and animal oils and fats	0.436	0.168	38%
	1 Dairy products	3.989	1.238	31%
	2 Grain mill products, starches and starch products	0.814	0.258	32%
	3 Prepared animal feeds	0.757	0.411	54%
	4 Bread, rusks and biscuits; manufacture of pastry goods an	2.972	1.016	34%
	5 Sugar	0.156	0.106	68%
	6 Cocoa; chocolate and sugar confectionery	1.831	0.587	32%
	7 Other food products	2.439	0.783	32%
	8 Alcoholic beverages	1.460	1.097	75%
	9 Production of mineral waters and soft drinks	1.645	0.590	36%
	O Tobacco products	1.046	0.535	51%
	Preparation and spinning of textile fibres	0.015	0.049	335%
2	2 Textile weaving	0.053	0.021	40%
	3 Finishing of textiles	0.013	0.025	190%
2	4 Made-up textile articles, except apparel	1.132	0.482	43%
2	5 Carpets and rugs	0.625	0.232	37%
2	6 Other textiles	0.091	0.036	39%
2	7 Knitted and crocheted fabrics and articles	2.331	1.242	53%
2	8 Wearing apparel; dressing and dying of fur	7.530	5.228	69%
2	9 Tanning and dressing of leather; manufacture of luggage,	0.157	0.145	92%
3	0 Footwear	1.338	0.941	70%
3	1 Wood and wood products, except furniture	0.930	0.192	21%
3	2 Pulp, paper and paperboard	0.218	0.087	40%
3	3 Articles of paper and paperboard	0.835	0.543	65%
3	4 Publishing, printing and reproduction of recorded media	3.128	0.809	26%
3	5 Coke, refined petroleum products and nuclear fuel	14.569	5.350	37%
3	6 Industrial gases, dyes and pigments	0.037	0.020	54%
	7 Other inorganic basic chemicals	0.002	0.030	1205%
3	8 Other organic basic chemicals	0.007	0.660	9517%
3	9 Fertilisers and nitrogen compounds	0.171	0.069	40%
4	O Plastics and synthetic rubber in primary forms	0.002	0.074	3498%
4	1 Pesticides and other agro-chemical products	0.078	0.075	97%
	2 Paints, varnishes and similar coatings, printing ink and ma	0.240	0.093	39%
	3 Pharmaceuticals, medicinal chemicals and botanical produ	0.889	0.422	48%
	4 Soap and detergents, cleaning and polishing preparations	2.563	0.902	35%
	5 Other chemical products	0.975	0.418	43%
	6 Man-made fibres	0.006	0.028	446%
4	7 Rubber products	1.057	0.376	36%
	8 Plastic products	1.595	0.330	21%
	9 Glass and glass products	0.456	0.176	39%
	0 Ceramic goods	1.055	0.531	50%
	1 Bricks, tiles and construction products, baked in clay	0.154	0.138	90%
	2 Cement, lime and plaster	0.776	0.241	31%
	3 Articles of concrete, plaster and cement; cutting, shaping a	0.377	0.090	24%
	4 Basic iron and steel and of ferro-alloys; manufacture of tut	0.264	1.217	461%
	5 Basic precious and non-ferrous metals	0.175	0.176	101%
	6 Casting of metals	0.022	0.013	59%
	7 Structural metal products	2.767	1.301	47%
	8 Tanks, reservoirs and containers of metal; manufacture of	0.617	0.244	40%
	9 Forging, pressing, stamping and roll forming of metal; pow	0.084	0.038	45%
	O Cutlery, tools and general hardware	0.878	0.351	40%
	Other fabricated metal products	0.916	0.273	30%
	Machinery for the production and use of mechanical powe	0.770	0.261	34%
	3 Other general purpose machinery	4.366	1.505	34%

			Standard error of	Relative error of CO2
	Uncertainty of embedded CO2 emissions by	CO2 CONSUMER	CO2 CONSUMER	CONSUMER
	sector; year 1996	emissions	emissions	emissions
	sector, year 1990	E (Mt CO2)	dE (Mt CO2)	dE/E
64 /	Agricultural and forestry machinery	0.737	0.264	36%
	Machine tools	0.884	0.422	48%
	Other special purpose machinery	1.555	0.957	62%
	Weapons and ammunition	0.002	0.022	1048%
	Domestic appliances not elsewhere classified	1.881	0.834	44%
	Office machinery and computers	5.331	2.765	52%
	Electric motors, generators and transformers; manufacture	1.282	0.518	40%
	Insulated wire and cable	0.391	0.168	43%
72 l	Electrical equipment not elsewhere classified	0.551	0.259	47%
73 [	Electronic valves and tubes and other electronic compone	0.020	0.072	364%
74	Television and radio transmitters and line for telephony an	2.453	1.270	52%
75	Television and radio receivers, sound or video recording o	1.756	0.865	49%
76 1	Medical, precision and optical instruments, watches and cl	2.354	1.472	63%
77 [	Motor vehicles, trailers and semi-trailers	13.727	4.717	34%
78 I	Building and repairing of ships and boats	0.948	0.351	37%
79 (	Other transport equipment	1.052	0.415	39%
80 /	Aircraft and spacecraft	1.186	1.843	155%
_	Furniture	7.446	2.052	28%
	Jewellery and related articles; manufacture of musical inst	5.206	3.432	66%
	Sports goods, games and toys	6.441	3.441	53%
	Miscellaneous manufacturing not elsewhere classified; rec	3.153	1.896	60%
	Production and distribution of electricity	70.289	13.654	19%
	Gas; distribution of gaseous fuels through mains; steam a	7.533	7.430	99%
	Collection, purification and distribution of water	0.920	0.120	13%
	Construction	36.078	7.062	20%
	Sale, maintenance and repair of motor vehicles, and moto	8.117	1.958	24%
	Wholesale trade and commission trade, except of motor v	16.771	3.135	19%
	Retail trade, except of motor vehicles and motor cycles; re Hotels and restaurants	16.830 28.068	3.981 6.244	24% 22%
	Transport via railways	3.434	3.286	96%
	Other land transport; transport via pipelines	9.601	1.815	19%
	Water transport	6.216	2.190	35%
	Air Transport	21.781	9.169	42%
	Supporting and auxiliary transport activities; activities of tra	0.570	0.363	64%
	Post and courier activities	0.405	0.136	34%
	Telecommunications	2.665	1.084	41%
	Financial intermediation, except insurance and pension fur	1.563	0.410	26%
	Insurance and pension funding, except compulsory social	5.739	1.218	21%
	Activities auxiliary to financial intermediation	0.400	0.151	38%
	Real estate activities with own property; letting of own prop	0.009	0.001	17%
	Letting of dwellings, including imputed rent	7.767	1.904	25%
105 F	Real estate activities on a fee or contract basis	0.259	0.128	49%
106 F	Renting of machinery and equipment without operator and	4.264	0.639	15%
107 (	Computer and related activities	2.581	0.781	30%
108 [	Research and development	0.070	0.016	23%
	Legal activities	0.292	0.115	39%
	Accounting, book-keeping and auditing activities; tax cons	0.013	0.012	96%
	Market research and public opinion polling; business and I	0.071	0.025	36%
	Architectural and engineering activities and related technic	0.909	0.251	28%
	Advertising	0.018	0.006	34%
	Other business services	0.684	0.145	21%
	Public administration and defence; compulsory social secu	33.456	6.271	19%
	Education	17.152	2.151	13%
	Human health and veterinary activities	19.677	4.902	25%
_	Social work activities	6.875	2.025	29%
	Sewage and refuse disposal, sanitation and similar activition	3.975	0.490	12%
	Activities of membership organisations not elsewhere clas	0.968	0.141	15% 17%
	Recreational, cultural and sporting activities Other service activities	8.584	1.487	17% 30%
	Other service activities Private households with employed persons	2.828 0.212	0.849 0.022	30% 10%
123 1	i invate nousenolus with employeu persons	92.80	0.022	10%
		60.03		
	Total CO2 consumer emissions	651	+/- 26	+/- 4.0%
	. Juli OOL Johnstiller Chilippionis	001	7/- ∠0	i, - 7.0 /0

	Uncertainty of embedded CO2 emissions by sector; year 1997	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
		E (Mt CO2)	dE (Mt CO2)	dE/E
	Agriculture, hunting and related service activities	7.731	5.203	67%
	Profestry, logging and related service activities	0.066	0.194	296%
3	Fishing, operation of fish hatcheries and fish farms; service	0.027	1.506	5476%
4	Mining of coal and lignite; extraction of peat	0.139	0.441	318%
5	Extraction of crude petroleum and natural gas; service act	1.746	0.339	19%
	Mining of metal ores	0.006	0.008	146%
7	Other mining and quarrying	0.327	0.071	22%
8	Production, processing and preserving of meat and meat	5.815	3.526	61%
9	Processing and preserving of fish and fish products; fruit a	4.173	2.184	52%
10	Vegetable and animal oils and fats	0.277	0.397	143%
11	Dairy products	3.658	3.661	100%
12	Grain mill products, starches and starch products	0.640	0.712	111%
	Prepared animal feeds	0.797	0.629	79%
	Bread, rusks and biscuits; manufacture of pastry goods an	2.904	4.002	138%
	Sugar	0.046	0.266	579%
16	Cocoa; chocolate and sugar confectionery	1.766	1.083	61%
	Other food products	2.220	1.291	58%
18	Alcoholic beverages	1.708	1.831	107%
19	Production of mineral waters and soft drinks	1.505	0.767	51%
20	Tobacco products	1.072	0.596	56%
	Preparation and spinning of textile fibres	0.040	0.307	758%
	! Textile weaving	0.051	0.073	143%
	Finishing of textiles	0.056	0.026	47%
	Made-up textile articles, except apparel	1.186	0.945	80%
	Carpets and rugs	0.711	0.742	104%
	Other textiles	0.055	0.075	138%
27	Knitted and crocheted fabrics and articles	2.334	1.372	59%
28	Wearing apparel; dressing and dying of fur	8.161	6.556	80%
	Tanning and dressing of leather; manufacture of luggage,	0.150	1.071	715%
	Footwear	1.430	1.189	83%
31	Wood and wood products, except furniture	1.036	0.451	44%
	Pulp, paper and paperboard	1.045	3.050	292%
	Articles of paper and paperboard	0.799	1.813	227%
34	Publishing, printing and reproduction of recorded media	3.285	1.774	54%
	Coke, refined petroleum products and nuclear fuel	18.593	51.541	277%
	Industrial gases, dyes and pigments	0.004	0.109	2911%
	Other inorganic basic chemicals	0.024	2.512	10647%
38	Other organic basic chemicals	0.114	1.095	958%
39	Fertilisers and nitrogen compounds	0.231	3.196	1385%
40	Plastics and synthetic rubber in primary forms	0.008	2.000	>1000%
41	Pesticides and other agro-chemical products	0.028	0.060	213%
42	Paints, varnishes and similar coatings, printing ink and ma	0.303	2.352	776%
43	Pharmaceuticals, medicinal chemicals and botanical produ	0.856	0.872	102%
44	Soap and detergents, cleaning and polishing preparations	2.786	2.161	78%
45	Other chemical products	1.115	0.703	63%
46	Man-made fibres	0.003	0.493	>1000%
47	Rubber products	0.996	3.684	370%
	Plastic products	1.979	2.556	129%
	Glass and glass products	0.369	1.563	424%
	Ceramic goods	1.080	0.678	63%
51	Bricks, tiles and construction products, baked in clay	0.199	2.673	1342%
	Cement, lime and plaster	1.113	0.825	74%
53	Articles of concrete, plaster and cement; cutting, shaping a	0.287	0.120	42%
54	Basic iron and steel and of ferro-alloys; manufacture of tut	0.967	0.539	56%
	Basic precious and non-ferrous metals	0.061	1.823	2998%
	Casting of metals	0.017	0.011	67%
57	Structural metal products	3.487	1.403	40%
	Tanks, reservoirs and containers of metal; manufacture of	0.636	1.570	247%
	Forging, pressing, stamping and roll forming of metal; pow	0.053	0.052	97%
	Cutlery, tools and general hardware	1.492	1.720	115%
	Other fabricated metal products	1.310	0.974	74%
	Machinery for the production and use of mechanical powe	0.873	0.455	52%
	Other general purpose machinery	4.647	1.304	28%

Uncertainty of embedded CO2 emissions by sector; year 1997	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	E (Mt CO2)	dE (Mt CO2)	dE/E
64 Agricultural and forestry machinery	0.835	0.341	41%
65 Machine tools	1.278	0.666	52%
66 Other special purpose machinery	1.985	3.188	161%
67 Weapons and ammunition	0.025	0.036	142%
68 Domestic appliances not elsewhere classified	2.534	2.266	89%
69 Office machinery and computers	6.638	4.194	63%
70 Electric motors, generators and transformers; manufacture	1.363	0.897	66%
71 Insulated wire and cable	0.279	0.214	77%
72 Electrical equipment not elsewhere classified	0.330	2.439	739%
73 Electronic valves and tubes and other electronic compone	0.113	0.079	70%
74 Television and radio transmitters and line for telephony an	2.419	2.338	97%
75 Television and radio receivers, sound or video recording o	1.729	1.540	89%
76 Medical, precision and optical instruments, watches and cl	2.967	1.361	46%
77 Motor vehicles, trailers and semi-trailers	14.437	10.285	71%
78 Building and repairing of ships and boats	1.083	2.305	213%
79 Other transport equipment	1.043	0.604	58%
80 Aircraft and spacecraft	3.031	2.582	85%
81 Furniture	7.347	15.874	216%
82 Jewellery and related articles; manufacture of musical inst	7.596	5.467	72%
83 Sports goods, games and toys	6.921	4.071	59%
84 Miscellaneous manufacturing not elsewhere classified; rec	2.535	3.469	137%
85 Production and distribution of electricity	64.522	14.750	23%
86 Gas; distribution of gaseous fuels through mains; steam at	8.919	8.808	99%
87 Collection, purification and distribution of water	0.738	0.407	55%
88 Construction	37.038	6.264	17%
89 Sale, maintenance and repair of motor vehicles, and moto	11.026	6.750	61%
90 Wholesale trade and commission trade, except of motor vi	18.673 17.828	2.946 2.309	16% 13%
91 Retail trade, except of motor vehicles and motor cycles; re 92 Hotels and restaurants	27.424	4.513	16%
93 Transport via railways	4.572	34.029	744%
94 Other land transport; transport via pipelines	10.011	10.784	108%
95 Water transport	6.826	4.018	59%
96 Air Transport	24.469	30.638	125%
97 Supporting and auxiliary transport activities; activities of tra	1.159	0.635	55%
98 Post and courier activities	0.374	0.432	115%
99 Telecommunications	2.474	1.283	52%
100 Financial intermediation, except insurance and pension fu	1.775	0.291	16%
101 Insurance and pension funding, except compulsory social	5.926	0.488	8%
102 Activities auxiliary to financial intermediation	0.000	0.563	>1000%
103 Real estate activities with own property; letting of own property	0.008	0.001	16%
104 Letting of dwellings, including imputed rent	7.927	1.133	14%
105 Real estate activities on a fee or contract basis	0.313	0.252	81%
106 Renting of machinery and equipment without operator and	4.093	1.710	42%
107 Computer and related activities	3.090	0.556	18%
108 Research and development	0.083	0.009	11%
109 Legal activities	0.346	0.142	41%
110 Accounting, book-keeping and auditing activities; tax cons	0.024	0.011	45%
111 Market research and public opinion polling; business and r	0.074	0.016	21%
112 Architectural and engineering activities and related technic	0.881	0.976	111%
113 Advertising	0.000	0.028	>1000%
114 Other business services	0.659	0.518	79%
115 Public administration and defence; compulsory social sect	31.634	4.923	16%
116 Education	16.898	1.953	12%
117 Human health and veterinary activities	18.510	3.153	17%
118 Social work activities	6.342	1.905	30%
119 Sewage and refuse disposal, sanitation and similar activities	3.540	0.505	14%
120 Activities of membership organisations not elsewhere clas	0.851	0.039	5%
121 Recreational, cultural and sporting activities	7.975	5.364	67%
122 Other service activities 123 Private households with employed persons	2.661	1.218	46%
125 Frivate nousenous with employed persons	0.213 85.74	0.005	2%
	60.97		
Total CO2 consumer emissions	60.97 <b>661</b>	+/- 28	+/- 4.3%
Total OOL Colladiller chillasions	001	T/- 20	T1- T.J /0

	Uncertainty of embedded CO2 emissions by sector; year 1998	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
		E (Mt CO2)	dE (Mt CO2)	dE/E
1	Agriculture, hunting and related service activities	8.401	1.714	20%
	Forestry, logging and related service activities	0.086	0.134	155%
	Fishing, operation of fish hatcheries and fish farms; service	0.059	0.096	163%
	Mining of coal and lignite; extraction of peat	0.248	1.714	690%
	Extraction of crude petroleum and natural gas; service act	1.370	0.632	46%
	Mining of metal ores	0.008	0.013	176%
	Other mining and quarrying	0.834	0.490	59%
	Production, processing and preserving of meat and meat production and preserving of meat and meat production are production.	6.012	1.402	23%
		4.725	1.227	26%
	Processing and preserving of fish and fish products; fruit a			
	Vegetable and animal oils and fats	0.414	0.155	37%
	Dairy products	3.938	1.345	34%
	Grain mill products, starches and starch products	0.779	0.247	32%
	Prepared animal feeds	0.791	0.328	42%
	Bread, rusks and biscuits; manufacture of pastry goods an	3.003	0.944	31%
	Sugar	0.163	0.118	72%
	Cocoa; chocolate and sugar confectionery	1.637	0.520	32%
	Other food products	2.466	0.790	32%
18	Alcoholic beverages	1.870	1.235	66%
19	Production of mineral waters and soft drinks	1.653	0.567	34%
20	Tobacco products	1.581	0.789	50%
21	Preparation and spinning of textile fibres	0.003	0.042	1339%
	Textile weaving	0.033	0.019	56%
	Finishing of textiles	0.013	0.026	196%
	Made-up textile articles, except apparel	1.245	0.484	39%
	Carpets and rugs	0.558	0.203	36%
	Other textiles	0.084	0.034	41%
	Knitted and crocheted fabrics and articles	2.557	1.586	62%
	Wearing apparel; dressing and dying of fur	8.926	6.307	71%
	Tanning and dressing of leather; manufacture of luggage,	0.218	0.164	75%
	Footwear	1.441	1.066	74%
	Wood and wood products, except furniture	0.991	0.227	23%
	Pulp, paper and paperboard	0.050	0.136	272%
	Articles of paper and paperboard	0.709	0.502	71%
	Publishing, printing and reproduction of recorded media	3.137	0.769	25%
	Coke, refined petroleum products and nuclear fuel	8.976	3.771	42%
	Industrial gases, dyes and pigments	0.062	0.032	51%
37	Other inorganic basic chemicals	0.001	0.124	8448%
38	Other organic basic chemicals	0.020	0.670	3340%
39	Fertilisers and nitrogen compounds	0.340	0.181	53%
40	Plastics and synthetic rubber in primary forms	0.045	0.414	921%
	Pesticides and other agro-chemical products	0.057	0.080	139%
	Paints, varnishes and similar coatings, printing ink and ma	0.404	0.171	42%
	Pharmaceuticals, medicinal chemicals and botanical produ	0.949	0.510	54%
	Soap and detergents, cleaning and polishing preparations	2.393	0.879	37%
	Other chemical products	1.083	0.495	46%
	Man-made fibres	0.012	0.012	94%
	Rubber products	1.242	0.377	30%
	Plastic products	1.778	0.396	22%
	Glass and glass products	0.450	0.176	39%
	Ceramic goods	1.244	0.708	57%
	Bricks, tiles and construction products, baked in clay	0.148	0.209	141%
	Cement, lime and plaster	0.476	0.278	58%
	Articles of concrete, plaster and cement; cutting, shaping a	0.335	0.089	26%
	Basic iron and steel and of ferro-alloys; manufacture of tut	0.440	0.970	221%
55	Basic precious and non-ferrous metals	1.958	0.937	48%
56	Casting of metals	0.004	0.015	360%
57	Structural metal products	3.683	1.539	42%
	Tanks, reservoirs and containers of metal; manufacture of	0.638	0.248	39%
	Forging, pressing, stamping and roll forming of metal; pow	0.092	0.083	89%
	Cutlery, tools and general hardware	1.220	0.348	29%
	Other fabricated metal products	0.992	0.334	34%
	Machinery for the production and use of mechanical powe	0.916	0.308	34%
	Other general purpose machinery	4.379	1.415	32%
03	Caror gorioral parpose machinery	7.013	1.713	JZ /0

			Standard error of	Relative error of CO2
	Uncertainty of embedded CO2 emissions by	CO2 CONSUMER	CO2 CONSUMER	CONSUMER
	sector; year 1998	emissions	emissions	emissions
	Scotor, year 1000	E (Mt CO2)	dE (Mt CO2)	dE/E
64	Agricultural and forestry machinery	0.623	0.288	46%
	Machine tools	1.085	0.506	47%
66	Other special purpose machinery	2.134	1.129	53%
67	Weapons and ammunition	0.036	0.045	124%
68	Domestic appliances not elsewhere classified	1.999	0.656	33%
69	Office machinery and computers	7.681	4.533	59%
70	Electric motors, generators and transformers; manufacture	1.589	0.696	44%
	Insulated wire and cable	0.458	0.185	40%
	Electrical equipment not elsewhere classified	0.601	0.245	41%
	Electronic valves and tubes and other electronic compone	0.064	0.044	69%
	Television and radio transmitters and line for telephony an	3.050	1.535	50%
	Television and radio receivers, sound or video recording o	1.535	0.843	55%
	Medical, precision and optical instruments, watches and cl	2.994	1.511	50%
	Motor vehicles, trailers and semi-trailers	16.504	4.591	28%
	Building and repairing of ships and boats	0.610	0.214	35%
	Other transport equipment	1.044	0.353	34%
	Aircraft and spacecraft Furniture	3.896 8.692	3.079 3.482	79% 40%
_	Jewellery and related articles; manufacture of musical inst	6.441	3.462	61%
	Sports goods, games and toys	7.656	4.203	55%
	Miscellaneous manufacturing not elsewhere classified; rec	3.713	2.162	58%
	Production and distribution of electricity	64.860	12.969	20%
	Gas; distribution of gaseous fuels through mains; steam a	9.492	8.818	93%
	Collection, purification and distribution of water	1.276	0.158	12%
	Construction	39.579	8.017	20%
89	Sale, maintenance and repair of motor vehicles, and moto	10.060	2.289	23%
	Wholesale trade and commission trade, except of motor vi	17.902	3.437	19%
	Retail trade, except of motor vehicles and motor cycles; re	20.044	4.703	23%
92	Hotels and restaurants	28.968	6.415	22%
93	Transport via railways	3.686	6.415	174%
94	Other land transport; transport via pipelines	10.691	1.389	13%
	Water transport	7.168	2.471	34%
	Air Transport	27.946	11.023	39%
	Supporting and auxiliary transport activities; activities of tra	0.624	0.511	82%
	Post and courier activities	0.384	0.135	35%
	Telecommunications	3.108	1.244	40%
	Financial intermediation, except insurance and pension fur	1.864	0.359	19%
	Insurance and pension funding, except compulsory social	7.675	1.567	20%
	Activities auxiliary to financial intermediation  Real estate activities with own property; letting of own prop	0.379 0.009	0.118 0.001	31% 16%
	Letting of dwellings, including imputed rent	8.305	2.086	25%
	Real estate activities on a fee or contract basis	0.289	0.129	45%
	Renting of machinery and equipment without operator and	4.011	0.542	14%
	Computer and related activities	3.756	1.330	35%
	Research and development	0.097	0.020	20%
	Legal activities	0.324	0.111	34%
	Accounting, book-keeping and auditing activities; tax cons	0.019	0.009	47%
	Market research and public opinion polling; business and I	0.083	0.027	32%
	Architectural and engineering activities and related technic	0.981	0.273	28%
113	Advertising	0.018	0.004	21%
114	Other business services	0.600	0.093	16%
115	Public administration and defence; compulsory social secu	33.819	7.197	21%
	Education	17.634	2.292	13%
	Human health and veterinary activities	19.939	5.359	27%
	Social work activities	6.123	1.892	31%
	Sewage and refuse disposal, sanitation and similar activities	3.637	0.447	12%
	Activities of membership organisations not elsewhere clas	0.903	0.116	13%
	Recreational, cultural and sporting activities	8.021	1.440	18%
	Other service activities	2.926	0.874	30%
123	Private households with employed persons	0.214 87.73	0.016	8%
		60.48		
	Total CO2 consumer emissions	680	+/- 29	+/- 4.3%
			., 20	.,

2 Forestry, logging and related service activities 3 Fishing, operation of fish hatcheries and fish farms; servic 4 Mining of coal and lignite; extraction of peat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal ores 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat t 9 Processing and preserving of fish and fish products; fruit a 10 Vegetable and animal oils and fats 10 Vegetable and animal oils and fats 11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feldes 14 Bread, rusks and biscults; manufacture of pastry goods an 15 Sugar 16 Cooca: chocolate and sugar confectionery 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 19 Producton of mineral waters and soft drinks 10 Toperaperal on and spinning of textile fibres 10 Tobacco products 10 Tobacco products 11 Carparation of mineral waters and soft drinks 11 Fish of textiles 12 Terminating of textiles 12 Terminating of textile fibres 12 Terminating of textile fibres 13 Fishing of textiles 14 Made-up textile articles, except apparel 15 Carpets and rugs 16 Cooka chocoted fabrics and articles 17 Kinted and crocheted fabrics and articles 18 Wearing appareit, dressing and dying of fur 19 Temparation and spinning of textile fibres 10 Fish of the textiles 10 Fish of textiles 11 Fish of textiles 11 Fish of textiles 12 Fish of textiles 13 Wood and wood products, except apparel 14 Alde-up textile articles, except apparel 15 Carpets and rugs 16 Fish of textiles 17 Kinted and crocheted fabrics and articles 18 Fish of textiles 19 Fish of textiles 19 Fish of textiles 10		Uncertainty of embedded CO2 emissions by sector; year 1999	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
2 Forestry, logging and related service activities 3 Fishing, operation of fish hatcheries and fish farms; servic 4 Mining of rocal and lignife; extraction of peat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal orcs 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat t 9 Processing and preserving of fish and fish products; fruit a 10 Vegetable and animal oils and fats 10 Vegetable and animal oils and fats 11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods ar 15 Sugar 16 Cocoa: chocolate and sugar confectionery 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 19 Production of mineral waters and soft drinks 10 Teperaration and spinning of textile fibres 10 Teperaration and spinning of textile fibres 10 Teperaration and spinning of textile fibres 10 Todacco products 11 Fishing of textiles 12 Terminal products, sexcept apparel 12 Temperaration and spinning of textile fibres 13 Fibre fibres 14 Made-up textile articles, except apparel 15 Carpets and rugs 16 Coche textiles 17 Kinted and crocheled fabrics and articles 18 Wearing apparel; dressing and dying of fur 19 Temperaration and spinning of lextile fibres 19 Temperaration and spinning of lextile fibres 20 Tobacce and the spinning of lextile fibres 21 Temperaration and spinning of lextile fibres 22 Textile article articles, except apparel 23 Finishing of textiles 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Other textiles 27 Kinted and crocheled fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manu			E (Mt CO2)	dE (Mt CO2)	dE/E
A Mining of coal and lignite: extraction of peat  4 Mining of coal and lignite: extraction of peat  5 Extraction of crude petroleum and natural gas; service act  6 Mining of metal ores  7 Other mining and quarrying  1.398  7 Occasing and preserving of meat and meat   5.473  8 Production, processing and preserving of meat and meat   5.473  9 Processing and preserving of fish and fish products; fult a 4.275  1.781  10 Vegetable and animal oils and fats  10 Vegetable and animal oils and fats  11 Dairy products  12 Grain mill products, starches and starch products  13 Prepared animal feeds  13 Prepared animal feeds  14 Bread, rusks and biscults; manufacture of pastry goods an  15 Sugar  16 Cocoa; chocolate and sugar confectionery  1.564  18 Alcoholic beverages  19 Production of mineral waters and soft drinks  10 Tother food products  2.347  1.597  19 Production of mineral waters and soft drinks  1.550  20 Tobacco products  21 Testille weaving  22 Testille weaving  23 Finishing of testille strides, except apparel  24 Made-up testille articles, except apparel  25 Carpets and russ  27 Kinttle and crochetel fabrics and drinks  1.219  26 Other textilles  27 Kinttle and crochetel fabrics and articles  28 Wearing apparel; dressing and drying of fur.  29 Testille weaving  30 Footwear  31 Wood and wood products, except furniture  30 Footwear  31 Wood and wood products, except furniture  31 Wood and wood products, except furniture  32 Finishing of testilles  33 Fresite and cross and articles  34 Publishing, printing and dressing of leather; manufacture of luggage,  35 Coke, refined petrocheum products, and nuclear fuel  36 Industrial gases, dyes and pignents  39 Fertilities and introgen compounds  40 Plastics and paperboard  41 Peats and any and paperboard  42 Paints, varnishes and similar coatings, printing ink and m  43 Publishing, printing and reproduction of recorded media  45 Corearing poods  47 Rutber products  48 Plastics and mineral and policy forms  49 Class and glass products  40 Plastics and synthetic rubber in pr	1	Agriculture, hunting and related service activities	8.419	3.449	41%
4 Mining of coal and lignite, extraction of peat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal ores 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat † 9 Processing and preserving of fish and fish products; fruit a 1,398 8 Production, processing and preserving of meat and meat † 9 Processing and preserving of fish and fish products; fruit a 1,275 1 Vegetable and animal oils and fish 1 Vegetable and animal oils and fish 1 Vegetable and animal oils and fish 1 Processing and preserving of fish and fish products; fruit a 1 Grain mill products, starches and starch products 1 Grain mill products, starches and starch products 1 Grain mill products, starches and starch products 1 Prepared animal feeds 1 Sugar 1 Vegetable and animal feeds 1 Vegetable and supar confectionery 1 Vegetable and sugar confectionery 1 Vegetabl	2	Forestry, logging and related service activities	0.101	0.215	212%
5 Extraction of crude petroleum and natural gas; service act         0.171         0.765         44           6 Mining of metal ores         0.000         0.018         >100           7 Other mining and quarrying         1.398         0.702         5           8 Production, processing and preserving of fish and fish products; fuit a         4.275         1.781           10 Vegetable and animal oils and fats         0.377         0.227         6           11 Dairy products         3.945         2.840         7           12 Grain mill products, starches and starch products         0.683         0.551         8           13 Prepared animal fleeds         0.770         0.677         6           14 Bread, rusks and biscutis; manufacture of pastry goods an         2.844         2.080         7           15 Sugar         0.264         0.207         7         6           16 Cooca; chocolate and sugar confectionery         1.564         1.072         6           17 Other food products         2.347         1.597         6           18 Alcoholic beverages         2.197         6.728         30           20 Tobacco products         1.653         1.064         6           21 Preparation and spinning of textile fibres         0.035         0.099	3	Fishing, operation of fish hatcheries and fish farms; service	0.039	0.260	667%
6 Mining of metal ores 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat; 9 Processing and preserving of fish and fish products; fruit a 9 Processing and preserving of fish and fish products; fruit a 4.275 1. 781 3. 0.011 9 Processing and preserving of fish and fish products; 10 Vegetable and animal oils and fish 10 Vegetable and animal oils and fish 12 Grain mill products, starches and starch products 13 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 16 Cocoa; chocolate and sugar confectionery 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 10 Preparation and spinning of textile fibres 10 Preparation and spinning of textile fibres 10 Production of mineral waters and soft drinks 11 Fish 12 Preparation and spinning of textile fibres 10 Joaco products 12 Finishing of textiles 12 Finishing of textiles 13 Finishing of textiles 14 Finishing of textiles 15 Joaco products 15 Finishing of textiles 16 Joaco products 17 Finishing of textiles 17 Finishing of textiles 18 Joaco products 19 Joaco products 10 Joaco prod	4	Mining of coal and lignite; extraction of peat	0.162	4.579	2826%
8 Production, processing and preserving of meat and meat ; 5.473 3.011 5.9 Processing and preserving of fish and fish products; fruit a 4.275 1.781 4.4 10 Vegetable and animal oils and fats 0.377 0.227 6.1 10 July products 3.345 2.840 7.1 10 July products 4.2 12 Grain mill products, starches and starch products 0.883 0.551 1.3 Prepared animal feeds 0.770 0.677 8.5 12 12 Frapared animal feeds 0.770 0.677 8.5 12 12 Frapared animal feeds 0.207 1.5 Sugar 0.264 0.207 1.5 Sugar 0.254 1.5 Sugar 0.255 1.5 Sugar 0.254 1.5 Sugar 0.255 1	5	Extraction of crude petroleum and natural gas; service act	0.171	0.765	448%
8 Production, processing and preserving of meat and meat (	6	Mining of metal ores	0.000	0.018	>1000%
8 Production, processing and preserving of meat and meat   5.473   9 Processing and preserving of fish and fish products; fruit a	7	Other mining and quarrying	1.398	0.702	50%
9 Processing and preserving of fish and fish products; fruit a 4.275 1.781 1 Vegetable and animal oils and fats 10 Vegetable and animal oils and fats 3.945 2.840 7 1.2 Grain mill products, starches and starch products 0.683 0.551 1.3 Prepared animal feeds 0.770 0.677 8 1.3 Prepared animal feeds 0.770 0.677 8 1.4 Bread, rusks and biscuits; manufacture of pashry goods an 2.844 2.080 7 1.5 Sugar 0.264 0.207 7 1.5 Control of the food products 1.5 Sugar 0.264 0.207 7 1.5 Control of the food products 1.5 Sugar 1.5 Su			5.473	3.011	55%
10 Vegetable and animal oils and fats 11 Dairy products 12 Crain mill products, starches and starch products 13 Prepared animal feeds 13 Prepared animal feeds 13 Prepared animal feeds 15 Sugar 16 Cocoa; chocolate and sugar confectionery 17 Other food products 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 19 Production of mineral waters and soft drinks 10 Preparation and spinning of textile fibres 10 Preparation and spinning of textile fibres 10 Cocoa; chococate and sugar confectionery 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 10 Preparation and spinning of textile fibres 10 Preparation and spinning of textile fibres 10 Cocoa; Chococo products 11 Preparation and spinning of textile fibres 10 Cocoa; Chococo products 11 Preparation and spinning of textile fibres 10 Cocoa; Chococo products 11 Preparation and spinning of textile fibres 10 Cocoa; Chococo products 11 Preparation and spinning of textiles 10 Cocoa; Chocococococococococococococococococococ			4.275	1.781	42%
12 Grain mill products, starches and starch products 13 Prepared animal feeds 13 Prepared animal feeds 15 Sugar 16 Cocoa; chocolate and sugar confectionery 16 Cocoa; chocolate and sugar confectionery 17 Other food products 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 19 Production of mineral waters and soft drinks 10 Tobacco products 10 Tobacco products 10 Tobacco products 10 Tobacco products 11 Feed 10 Tobacco products 11 Feed 10 Tobacco products 12 Preparation and spinning of textile fibres 10 Tobacco products 11 Feed 10 Tobacco products 12 Preparation and spinning of textile fibres 10 Tobacco products 11 Feed 10 Tobacco products 12 Feed 10 Tobacco products 12 Feed 10 Tobacco products 13 Finishing of textiles 14 Made-up textile articles, except apparel 15 Carpets and rugs 16 Tobacco products 17 Knitted and crochaeld fabrics and articles 17 Knitted and crochaeld fabrics and articles 18 Wearing apparel; dressing and dying of fur 19 Tanning and dressing of leather; manufacture of luggage, 19 Tanning and dressing of leather; manufacture of luggage, 10 Tobacco products, except furniture 19 Todaco products 10 Todaco	10	Vegetable and animal oils and fats	0.377	0.227	60%
13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 10.264 10.207 77 16 Cocoa; chocolate and sugar confectionery 1.564 1.072 17 Other food products 2.347 1.597 6.728 30 18 Alcoholic beverages 2.197 6.728 30 19 Production of mineral waters and soft drinks 1.550 0.509 22 Textile weaving 23 Finishing of textile fibres 0.035 0.070 0.044 6.025 23 Finishing of textiles 0.026 0.030 11 24 Made-up textile articles, except apparel 1.219 0.476 25 Cother textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparet, dressing and dying of fur 29 Tanning and dressing of leather, manufacture of luggage, 29 Textile weaving 0.070 0.040 30 Flootwear 31 Wood and wood products, except furniture 0.985 0.527 32 Pulp, paper and paperboard 0.113 0.093 33 Articles of paper and paperboard 0.113 0.093 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 0.054 0.074 12 Painting and irresponded and nuclear fuel 0.085 0.082 0.093 0.094 0.094 0.095 0.116 0.055	11	Dairy products	3.945	2.840	72%
13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 10.264 10.207 77 16 Cocoa; chocolate and sugar confectionery 1.564 1.072 17 Other food products 2.347 1.597 6.728 30 18 Alcoholic beverages 2.197 6.728 30 19 Production of mineral waters and soft drinks 1.550 0.509 22 Textile weaving 23 Finishing of textile fibres 0.035 0.070 0.044 6.025 23 Finishing of textiles 0.026 0.030 11 24 Made-up textile articles, except apparel 1.219 0.476 25 Cother textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparet, dressing and dying of fur 29 Tanning and dressing of leather, manufacture of luggage, 29 Textile weaving 0.070 0.040 30 Flootwear 31 Wood and wood products, except furniture 0.985 0.527 32 Pulp, paper and paperboard 0.113 0.093 33 Articles of paper and paperboard 0.113 0.093 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 0.054 0.074 12 Painting and irresponded and nuclear fuel 0.085 0.082 0.093 0.094 0.094 0.095 0.116 0.055	12	Grain mill products, starches and starch products	0.683	0.551	81%
15 Sugar 16 Cocoa; chocolate and sugar confectionery 1.564 1.072 17 Other food products 2.347 1.597 18 Alcoholic beverages 2.197 6.728 33 19 Production of mineral waters and soft drinks 1.550 0.509 33 10 Tobacco products 1.653 1.064 6 21 Preparation and spinning of textile fibres 0.035 0.070 0.044 6 23 Finishing of textiles 0.026 0.030 11 24 Made-up textile articles, except apparel 1.219 0.476 25 Carpets and rugs 0.0495 0.252 26 Other textiles 0.016 0.055 4 0.495 0.252 27 Knitted and crocheted fabrics and articles 0.116 0.055 4 0.496 0.252 16 Waring apparet; dressing and dying of fur 19 Tanning and dressing of leather; manufacture of luggage, 0.274 0.318 0.700 0.310 0.700 0.318 0.700 0.310 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.7			0.770	0.677	88%
15 Sugar 16 Cocoa; chocolate and sugar confectionery 1.564 1.072 17 Other food products 2.347 1.597 18 Alcoholic beverages 2.197 6.728 33 19 Production of mineral waters and soft drinks 1.550 0.509 33 10 Tobacco products 1.653 1.064 6 21 Preparation and spinning of textile fibres 0.035 0.070 0.044 6 23 Finishing of textiles 0.026 0.030 11 24 Made-up textile articles, except apparel 1.219 0.476 25 Carpets and rugs 0.0495 0.252 26 Other textiles 0.016 0.055 4 0.495 0.252 27 Knitted and crocheted fabrics and articles 0.116 0.055 4 0.496 0.252 16 Waring apparet; dressing and dying of fur 19 Tanning and dressing of leather; manufacture of luggage, 0.274 0.318 0.700 0.310 0.700 0.318 0.700 0.310 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.700 0.885 0.700 0.7	14	Bread, rusks and biscuits; manufacture of pastry goods an	2.844	2.080	73%
17 Other food products         2.347         1.597         6           18 Alcoholic beverages         2.197         6.728         30           19 Production of mimeral waters and soft drinks         1.550         0.509         3           20 Tobacco products         1.653         1.064         6           21 Preparation and spinning of textile fibres         0.035         0.099         28           22 Textile weaving         0.070         0.044         6           23 Finishing of textiles         0.026         0.030         11           24 Made-up textile articles, except apparel         1.219         0.476         3           25 Carpets and rugs         0.495         0.252         5           26 Other textiles         0.116         0.055         4           27 Knitted and crocheted fabrics and articles         2.302         1.491         6           28 Wearing apparel; dressing and dying of fur         8.004         5.867         7           29 Tanning and dressing of leather, manufacture of luggage,         0.274         0.318         11           30 Footwear         1.463         1.072         7         5           21 Pulp, paper and paperboard         0.113         0.093         8           32 Pu	15	Sugar	0.264	0.207	78%
18 Alcoholic beverages         2.197         6.728         30           19 Production of mineral waters and soft drinks         1.550         0.509         3           20 Tobacco products         1.653         1.064         6           21 Preparation and spinning of textile fibres         0.035         0.099         25           22 Textile weaving         0.070         0.044         6           23 Finishing of textiles         0.026         0.030         11           24 Made-up textile articles, except apparel         1.219         0.476         3           25 Carpets and rugs         0.495         0.252         2           26 Other textiles         0.116         0.055         4           27 Knitted and crocheted fabrics and articles         2.302         1.491         6           28 Wearing apparel; dressing and dying of fur         8.004         5.867         7           29 Tanning and dressing of leather; manufacture of luggage,         0.274         0.318         11           30 Footwear         1.463         1.072         7           31 Wood and wood products, except furniture         0.985         0.527         5           32 Pulp, paper and paperboard         0.113         0.093         8           34	16	Cocoa; chocolate and sugar confectionery	1.564	1.072	69%
19 Production of mineral waters and soft drinks 20 Tobacco products 21 Preparation and spinning of textile fibres 22 Textile weaving 23 Finishing of textiles 30 0.026 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Other textiles 30 0.495 37 Kintled and crocheted fabrics and articles 38 Wearing apparel; dressing and dying of fur 39 Tanning and dressing of leather; manufacture of luggage, 30 0.274 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar cadings, printing ink and ma 45 Other remaind and products 45 Other chemicals nother in primary forms 46 Man-made fibres 47 Rubber products 48 Plastic products 48 Plastic products 49 Class and glass products 40 Plastics and synthetic rubber in primary forms 40 Other chemicals needing and products 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar cadings, printing ink and ma 45 Other chemicals needicinal chemicals and botanical product 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar cadings, printing ink and ma 45 Other chemical products 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Ceramic goods 51 Dough 57 Octable products 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 53 Octable 50 Oct	17	Other food products	2.347	1.597	68%
20 Tobacco products 21 Preparation and spinning of textile fibres 22 Pretation and spinning of textile fibres 23 Finishing of textiles 23 Finishing of textiles 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemicals and botanical produ 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chamicals, cleaning and polishing preparations 45 Other rumanic products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastics and synthetic rubber in primary forms 40 Ono 41 Pesticides and other agro-chemicals and botanical produ 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chamicals, cleaning and polishing preparations 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Articles of concrete, plaster and cement; cutting, shaping 6 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Basic precious and non-ferrous metals 57 Basic precious and non-ferrous metals 58 Chamical contracts 59 Careami, lime and plaster 50 Careami, lime and plaster 50 Basic precious and non-ferrous metals 50 Careami, lime and plaster 51 Bricks, tiles and construction products, baked in clay 51 Bricks and construction products, baked in clay 51 Bricks and construction products, baked in clay 51 Bricks and construction products, baked in clay 53 Articles of concrete, plaster	18	Alcoholic beverages	2.197	6.728	306%
21 Preparation and spinning of textile fibres         0.035         0.099         25           22 Textile weaving         0.070         0.0444         6           23 Finishing of textiles         0.026         0.030         11           24 Made-up textile articles, except apparel         1.219         0.476         3           25 Carpets and rugs         0.495         0.252         5           26 Other textiles         0.116         0.055         4           27 Kritted and crocheted fabrics and articles         2.302         1.491         6           28 Wearing apparel; dressing and dying of fur         8.004         5.867         7           29 Tanning and dressing of leather; manufacture of luggage,         0.274         0.318         11           30 Footwear         1.463         1.072         7           31 Wood and wood products, except furniture         0.985         0.527         5           32 Pulp, paper and paperboard         0.113         0.093         8           33 Articles of paper and paperboard         0.113         0.093         8           34 Publishing, printing and reproduction of recorded media         3.097         0.613         2           35 Coke, refined petroleum products and nuclear fuel         8.817         16.570<	19	Production of mineral waters and soft drinks	1.550	0.509	33%
22 Textile weaving	20	Tobacco products	1.653	1.064	64%
23 Finishing of textiles 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chemicals made determined products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastics products 40 Capa and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastics products 40 Capa and detergents, cleaning and polishing preparations 40 Capa and detergents, cleaning and polishing preparations 41 Pesticides and other agro-chemical sand botanical product 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Class and glass products 50 Ceremic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, paper and and paper and paper and paper and paper and paper and paper and a	21	Preparation and spinning of textile fibres	0.035	0.099	284%
24 Made-up textile articles, except apparel       1.219       0.476       32         25 Carpets and rugs       0.495       0.252       5         26 Other textiles       0.116       0.055       4         27 Knitted and crocheted fabrics and articles       2.302       1.491       6         28 Wearing apparel; dressing and dying of fur       8.004       5.867       7         29 Tanning and dressing of leather; manufacture of luggage,       0.274       0.318       11         30 Footwear       1.463       1.072       7         31 Wood and wood products, except furniture       0.985       0.527       5         32 Pulp, paper and paperboard       0.113       0.093       8         34 Publishing, printing and reproduction of recorded media       3.097       0.826       10         34 Publishing, printing and reproduction of recorded media       3.097       0.613       2         35 Coke, refined petroleum products and nuclear fuel       8.817       16.570       18         36 Industrial gases, dyes and pigments       0.058       0.074       12         37 Other inorganic basic chemicals       0.000       0.073       >100         38 Fertilisers and introgen compounds       0.434       0.206       4         40 Plast	22	Textile weaving	0.070	0.044	62%
25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produt 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, and nicked in clay 51 Bricks, tiles and offerro-alloys; manufacture of tut 52 Basic procious and non-ferrous metals 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys; manufacture of tut 50 Casac in and set eland of ferro-alloys;	23	Finishing of textiles	0.026	0.030	118%
26 Other textiles       0.116       0.055       4         27 Knitted and crocheted fabrics and articles       2.302       1.491       6         28 Wearing apparel; dressing and dying of fur       8.004       5.867       7         29 Tanning and dressing of leather; manufacture of luggage,       0.274       0.318       11         30 Footwear       1.463       1.072       7         31 Wood and wood products, except furniture       0.985       0.527       5         32 Pulp, paper and paperboard       0.113       0.093       8         34 Publishing, printing and reproduction of recorded media       3.097       0.613       2         34 Publishing, printing and reproduction of recorded media       3.097       0.613       2         35 Coke, refined petroleum products and nuclear fuel       8.817       16.570       18         36 Industrial gases, dyes and pigments       0.058       0.074       12         37 Other inorganic basic chemicals       0.000       0.073       >100         38 Other organic basic chemicals       0.193       0.956       49         39 Fertilisers and nitrogen compounds       0.434       0.206       4         40 Plastics and synthetic rubber in primary forms       0.000       0.140       5	24	Made-up textile articles, except apparel	1.219	0.476	39%
27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Plastos and other agro-chemical products 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 44 Other chemical products 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and other end cement; cutting, shaping a county of the construction and steel and of ferro-alloys; manufacture of tut 50 Basic precious and non-ferrous metals 50 Ceramic goods 51 L18 O.876 57 Basic precious and non-ferrous metals 50 Ceramic goods 51 L18 O.876 57 Basic precious and non-ferrous metals	25	Carpets and rugs	0.495	0.252	51%
28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 40 Plastics and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 52 Basic precious and non-ferrous metals 53 Articles of concrete, plaster and cement; cutting, shaping a control of tut 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 50 Caramic goods 51 L118 0.876	26	Other textiles	0.116	0.055	48%
29 Tanning and dressing of leather, manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 44 Pants, varnishes and similar coatings, printing ink and ma 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 52 Basic precious and non-ferrous metals 53 Pasic procus metals 54 Dasic procious and non-ferrous metals 55 Basic precious and non-ferrous metals 56 Cozaga Sasic precious and non-ferrous metals 57 Dasic products 58 Dasic precious and non-ferrous metals 59 Cament, lime and plaster 50 Cament Sasic precious and non-ferrous metals 51 Cament Sasic precious and non-ferrous	27	Knitted and crocheted fabrics and articles	2.302	1.491	65%
30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Pulp, paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 53 Bricks of concrete, plaster and cement; cutting, shaping \$\varepsilon 2.37 50 Ceramic goods 51 Articles of concrete, plaster and cement; cutting, shaping \$\varepsilon 2.37 51 Construction on the concrete, plaster and cement; cutting, shaping \$\varepsilon 2.37 51 Construction on and steel and of ferro-alloys; manufacture of tut 50 Basic precious and non-ferrous metals 51 Construction profects 51 Construction on and steel and of ferro-alloys; manufacture of tut 50 Ceramic goods 51 Construction on and steel and of ferro-alloys; manufacture of tut 50 Ceramic goods 51 Construction on a steel and of ferro-alloys; manufacture of tut 50 Ceramic goods 51 Construction products 51 Construction and non-ferrous metals 51 Construction products 52 Cement, lime and plaster 53 Construction products on the product of tut 54 Cement, lime and plaster 55 Construction and of ferro-alloys; manufacture of tut 56 Ceramic goods 57 Construction and non-ferrous metals 50 Ceramic goods 50 Ceramic goods 51 Construction products on the product of tut 50 Ceramic goods 51 Construction products 52 Cement, lime and plaster 54 Basic iron and steel and of ferro-alloys; manufactu	28	Wearing apparel; dressing and dying of fur	8.004	5.867	73%
31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 0.058 0.074 12 37 Other inorganic basic chemicals 0.000 0.073 38 Other organic basic chemicals 0.193 0.956 48 39 Fertilisers and nitrogen compounds 0.434 0.206 40 Plastics and synthetic rubber in primary forms 0.000 0.140 21 Paints, varnishes and similar coatings, printing ink and ma 41 Pesticides and other agro-chemical products 0.070 0.040 42 Paints, varnishes and similar coatings, printing ink and ma 0.417 0.226 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 2.040 0.881 45 Other chemical products 1.309 0.749 54 Man-made fibres 0.003 0.095 351 47 Rubber products 1.288 0.546 48 Plastic products 1.288 0.546 48 Plastic products 1.288 0.546 49 Glass and glass products 1.245 0.742 60 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 53 Articles of concrete, plaster and cement; cutting, shaping a 0.377 0.085 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.655 0.232 55 Basic precious and non-ferrous metals	29	Tanning and dressing of leather; manufacture of luggage,	0.274	0.318	116%
32 Pulp, paper and paperboard 33 Articles of paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and other agro-chemical products 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 44 Coap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Ceramic goods 41 Plastics and onstruction products, baked in clay 41 Plastics of concrete, plaster and cement; cutting, shaping a control of the control of th	30	Footwear	1.463	1.072	73%
33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chemicals, medicinal chemicals and botanical produ 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Bristics and glass products 41 Pistics and etergents, cleaning and polishing preparations 42 Ceramic goods 43 Pharmaceuticals, medicinal chemicals and botanical produ 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Drikes, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 53 Articles of concrete, plaster and cement; cutting, shaping a construction and steel and of ferro-alloys; manufacture of tut 50 Driver in the product of tut 50 Driver in	31	Wood and wood products, except furniture	0.985	0.527	54%
34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Plastics 40 Oceramic goods 41 Pesticides and onstruction products 42 Paints, varnishes and similar coatings, printing ink and ma 44 Soap and detergents, cleaning and polishing preparations 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 53 Articles of concrete, plaster and cement; cutting, shaping a coating and polestic on the company of the company o			0.113	0.093	82%
35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Ericks, tiles and construction products, baked in clay 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 51 1.118 50 Communication products and non-ferrous metals 51 1.118 51 0.576 51 1.118 51 0.576 52 0.003 53 0.003 54 0.003 55 0.232 55 Basic precious and non-ferrous metals			0.759	0.826	109%
36 Industrial gases, dyes and pigments       0.058       0.074       12         37 Other inorganic basic chemicals       0.000       0.073       >100         38 Other organic basic chemicals       0.193       0.956       49         39 Fertilisers and nitrogen compounds       0.434       0.206       4         40 Plastics and synthetic rubber in primary forms       0.000       0.140       >100         41 Pesticides and other agro-chemical products       0.070       0.040       5         42 Paints, varnishes and similar coatings, printing ink and ma       0.417       0.226       5         43 Pharmaceuticals, medicinal chemicals and botanical product       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in				0.613	20%
37 Other inorganic basic chemicals       0.000       0.073       >100         38 Other organic basic chemicals       0.193       0.956       48         39 Fertilisers and nitrogen compounds       0.434       0.206       4         40 Plastics and synthetic rubber in primary forms       0.000       0.140       >100         41 Pesticides and other agro-chemical products       0.070       0.040       5         42 Paints, varnishes and similar coatings, printing ink and ma       0.417       0.226       5         43 Pharmaceuticals, medicinal chemicals and botanical produ       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster			8.817		188%
38 Other organic basic chemicals       0.193       0.956       48         39 Fertilisers and nitrogen compounds       0.434       0.206       4         40 Plastics and synthetic rubber in primary forms       0.000       0.140       >100         41 Pesticides and other agro-chemical products       0.070       0.040       5         42 Paints, varnishes and similar coatings, printing ink and ma       0.417       0.226       5         43 Pharmaceuticals, medicinal chemicals and botanical produ       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         54 Basic iron and steel and of ferro-alloys;					129%
39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 0.000 0.140 >100 41 Pesticides and other agro-chemical products 0.070 0.040 42 Paints, varnishes and similar coatings, printing ink and ma 0.417 0.226 53 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 1.309 0.749 46 Man-made fibres 0.003 0.095 351 47 Rubber products 1.288 0.546 48 Plastic products 1.288 0.546 48 Plastic products 1.288 0.546 49 Glass and glass products 0.531 0.318 0 Ceramic goods 1.245 0.742 0 District on products, baked in clay 0.116 0.131 11 52 Cement, lime and plaster 0.145 0.044 0.377 0.085 0.232 0.377 0.085 0.232 0.376 0.377 0.085 0.232 0.376		· ·			>1000%
40 Plastics and synthetic rubber in primary forms  41 Pesticides and other agro-chemical products  42 Paints, varnishes and similar coatings, printing ink and ma  43 Pharmaceuticals, medicinal chemicals and botanical produ  44 Soap and detergents, cleaning and polishing preparations  45 Other chemical products  46 Man-made fibres  47 Rubber products  48 Plastic products  49 Glass and glass products  40 Geramic goods  51 Bricks, tiles and construction products, baked in clay  52 Date of the control of the contro					494%
41 Pesticides and other agro-chemical products       0.070       0.040       5         42 Paints, varnishes and similar coatings, printing ink and ma       0.417       0.226       5         43 Pharmaceuticals, medicinal chemicals and botanical products       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and construction and steel and of ferro-alloys; manufacture of tut       0.655       0.232       3         55 Basic precious and non-ferrous metals       1.118       0.876       7					48%
42 Paints, varnishes and similar coatings, printing ink and ma       0.417       0.226       5         43 Pharmaceuticals, medicinal chemicals and botanical products       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and construction and steel and of ferro-alloys; manufacture of tut       0.655       0.232       3         55 Basic precious and non-ferrous metals       1.118       0.876       7		· · · · · · · · · · · · · · · · · · ·			>1000%
43 Pharmaceuticals, medicinal chemicals and botanical products       1.321       0.719       5         44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       4         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and construction and steel and of ferro-alloys; manufacture of tut       0.655       0.232       3         55 Basic precious and non-ferrous metals       1.118       0.876       7					57%
44 Soap and detergents, cleaning and polishing preparations       2.040       0.881       44         45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and the control of the co					54%
45 Other chemical products       1.309       0.749       5         46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and the control of the contro		•			54%
46 Man-made fibres       0.003       0.095       351         47 Rubber products       1.288       0.546       4         48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and the control of the contro					43%
47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 51 1.288 52.003 53.016 54.003 55.003 56.003 57.003 58.003 59.003 50.		•			57%
48 Plastic products       2.003       2.305       11         49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and the plaster of the plaster and steel and of ferro-alloys; manufacture of the plaster o	_				3510%
49 Glass and glass products       0.531       0.318       6         50 Ceramic goods       1.245       0.742       6         51 Bricks, tiles and construction products, baked in clay       0.116       0.131       11         52 Cement, lime and plaster       0.145       0.044       3         53 Articles of concrete, plaster and cement; cutting, shaping and the plaster of the plaster and steel and of ferro-alloys; manufacture of the plaster of the pla					42%
50 Ceramic goods 1.245 0.742 66 51 Bricks, tiles and construction products, baked in clay 0.116 0.131 11 52 Cement, lime and plaster 0.145 0.044 3 53 Articles of concrete, plaster and cement; cutting, shaping 0.377 0.085 2 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.655 0.232 3 55 Basic precious and non-ferrous metals 1.118 0.876 7					115%
51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 0.377 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 51 Bricks, tiles and construction products, baked in clay 50 0.116 50 0.044 51 0.085 52 0.232 53 0.876					60%
52 Cement, lime and plaster  53 Articles of concrete, plaster and cement; cutting, shaping and concrete and cement and c					60%
53 Articles of concrete, plaster and cement; cutting, shaping a 0.377 0.085 2 54 Basic iron and steel and of ferro-alloys; manufacture of tuk 0.655 0.232 55 Basic precious and non-ferrous metals 1.118 0.876 7					113%
54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.655 0.232 3 55 Basic precious and non-ferrous metals 1.118 0.876 7		•			30%
55 Basic precious and non-ferrous metals 1.118 0.876 7					23% 35%
· · · · · · · · · · · · · · · · · · ·					
TO DE SERIOR OF MODERN			0.000	0.393	78% >1000%
ı Y		· ·			>1000% 33%
					49%
					49% 66%
					44%
					38%
					49%
					32%

	Uncertainty of embedded CO2 emissions by sector; year 1999	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER	Relative error of CO2 CONSUMER
	Sector; year 1999	E (Mt CO2)	emissions dE (Mt CO2)	emissions dE/E
64	Agricultural and forestry machinery	0.485	0.700	144%
	Machine tools	0.848	0.453	53%
	Other special purpose machinery	1.444	0.925	64%
	Weapons and ammunition	0.027	0.028	102%
68	Domestic appliances not elsewhere classified	1.749	0.746	43%
69	Office machinery and computers	7.625	4.509	59%
70	Electric motors, generators and transformers; manufacture	1.740	0.770	44%
71	Insulated wire and cable	0.447	0.151	34%
72	Electrical equipment not elsewhere classified	0.713	0.534	75%
	Electronic valves and tubes and other electronic compone	0.045	0.024	55%
	Television and radio transmitters and line for telephony an	3.414	1.877	55%
	Television and radio receivers, sound or video recording o	1.820	1.033	57%
	Medical, precision and optical instruments, watches and cl	2.934	1.640	56%
	Motor vehicles, trailers and semi-trailers	13.664	5.570	41%
	Building and repairing of ships and boats	0.744	0.435	58%
	Other transport equipment	0.848	0.335	39%
	Aircraft and spacecraft Furniture	3.784 8.729	2.898 3.902	77% 45%
_	Jewellery and related articles; manufacture of musical inst	8.729 5.053	3.902 3.225	45% 64%
	Sports goods, games and toys	7.092	4.294	61%
	Miscellaneous manufacturing not elsewhere classified; rec	3.528	3.265	93%
	Production and distribution of electricity	56.395	11.210	20%
	Gas; distribution of gaseous fuels through mains; steam a	12.710	8.315	65%
	Collection, purification and distribution of water	1.280	0.131	10%
	Construction	39.244	6.520	17%
89	Sale, maintenance and repair of motor vehicles, and moto	9.500	1.195	13%
	Wholesale trade and commission trade, except of motor vo	20.198	5.425	27%
91	Retail trade, except of motor vehicles and motor cycles; re	20.070	5.183	26%
92	Hotels and restaurants	27.101	5.782	21%
	Transport via railways	3.695	3.004	81%
	Other land transport; transport via pipelines	9.602	2.681	28%
	Water transport	7.125	2.404	34%
	Air Transport	29.753	11.377	38%
	Supporting and auxiliary transport activities; activities of transport activities activities of transport activities.	0.843	0.504	60%
	Post and courier activities	0.339	0.136	40%
	Telecommunications	2.883 2.229	0.679 0.279	24% 13%
	Financial intermediation, except insurance and pension ful Insurance and pension funding, except compulsory social	7.630	1.273	17%
	Activities auxiliary to financial intermediation	0.172	0.089	52%
	Real estate activities with own property; letting of own prop	0.008	0.012	143%
	Letting of dwellings, including imputed rent	8.390	3.748	45%
	Real estate activities on a fee or contract basis	0.309	0.202	65%
	Renting of machinery and equipment without operator and	3.924	0.538	14%
	Computer and related activities	3.407	0.492	14%
	Research and development	0.145	0.062	43%
109	Legal activities	0.337	0.147	44%
	Accounting, book-keeping and auditing activities; tax cons	0.045	0.035	78%
	Market research and public opinion polling; business and $\boldsymbol{r}$	0.071	0.023	32%
	Architectural and engineering activities and related technic	0.893	0.337	38%
	Advertising	0.022	0.027	128%
	Other business services	0.515	0.299	58%
	Public administration and defence; compulsory social secu	34.079	5.395	16%
	Education	16.597	2.292	14%
	Human health and veterinary activities	20.366	3.948	19% 36%
	Social work activities Sewage and refuse disposal, sanitation and similar activitie	6.190 3.540	2.225	36% 14%
	Activities of membership organisations not elsewhere clas	3.540 0.828	0.479 0.079	10%
	Recreational, cultural and sporting activities	7.226	1.033	14%
	Other service activities	2.698	0.292	11%
	Private households with employed persons	0.214	0.209	98%
		87.19	0.200	3370
		61.60		
	Total CO2 consumer emissions	665	+/- 33	+/- 5.0%

1 Agriculture, hunting and related service activities		Uncertainty of embedded CO2 emissions by sector; year 2000	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
1   Agriculture, hunting and related service activities   0.113   0.024   22°   22°   23°   15		, <b>,</b> ,	E (Mt CO2)		
2 Forestly, logging and related service activities 3 Fishing, operation of fish hatcheries and fish fames, service 4 Mining of roal and lignite; extraction of peat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal cres 7 Other mining and quarrying 4 Production, processing and preserving of meat and meat; 8 Production, processing and preserving of fish and fish products; fruit a 10 Vegetable and animal oils and fals 11 Vegetable and animal oils and fals 11 Oray products 12 Crain mill products, starches and starch products 13 Prepared animal feeds 14 Prepared animal feeds 15 Sugar 16 Cocca, chocolate and sugar confectionary 17 Other food products 18 Abroduction beverages 18 Production in miner and sugar confectionary 19 Production of minerel waters and soft drinks 10 Robotocop products 10 Toda or minerel waters and soft drinks 11 Robotocop products 11 Robotocop products 12 Preparation and spinning of textile fibres 10 Toda or minerel waters and soft drinks 10 Robotocop products 11 Preparation and spinning of textile fibres 10 Toda or minerel waters and soft drinks 10 Robotocop products 11 Preparation and spinning of textile fibres 10 Toda or minerel waters and soft drinks 10 Robotocop products 11 Preparation and spinning of textile fibres 10 Toda or minerel waters and soft drinks 10 Robotocop products 11 Preparation and spinning of textile fibres 10 Toda or minerel waters and soft drinks 10 Robotocop products 11 Preparation and spinning of textile fibres 10 Toda or Minimal Products or Minimal P	1	Agriculture, hunting and related service activities	8.491	1.502	18%
3 Fishing, operation of fish hatcheries and fish farms, service 4 Mining of oaal and lightic, extraction of post 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal ores 7 Other mining and quarrying 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat t 8 Production, processing and preserving of fish and fish products, fixuit a 10 Vegetable and animal oils and falis 11 Dairy products 11 Dairy products 11 Dairy products 12 Crain mill products, starches and starch products 13 Propared animal feeds 13 Programed animal feeds 14 Pread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 10 Cocca, choocalete and sugar confectionery 14 Age of Cocca, choocalete and sugar confectionery 15 Production of mineral waters and soft drinks 16 Cocca, choocalete and sugar confectionery 16 Cocca, choocalete and sugar confectionery 17 Other food products 17 Other food products 17 Other food products 18 Acorbic beverages 19 Production of mineral waters and soft drinks 16 Cocca, choocalete and sugar confectionery 19 Production of mineral waters and soft drinks 10 Cocca, choocalete and sugar confectionery 10 Cocca, choocalete and choocalet			0.113	0.024	22%
A Mining of coal and lightle; extraction of preat  5 Extraction of crude perfoleum and natural gas; service act  6 Mining of metal cres  7 Other mining and quarrying  4 Production, processing and preserving of meat and meat;  8 Production, processing and preserving of fish and fish products, fruit a  8 Production, processing and preserving of fish and fish products, fruit a  10 Vegetable and animal oils and fishs  11 Dairy products  12 Crain mill products, starches and starch products  12 Crain mill products, starches and starch products  13 Prepared animal feeds  14 Pread, rusks and biscuits; manufacture of pastry goods ar  15 Sugar  16 Cocas, chocolate and sugar confectionery  17 Other food products  18 Alcoholic beverages  17 Other food products  18 Alcoholic beverages  17 Orbacco products  19 Production of mineral waters and soft diniks  1 (a55)  20 Tobacco products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  11 Preparation and spinning of textile fibres  10 Costa products  12 Training of textiles  10 Costa products  13 Mode of the day					168%
5 Extraction of crude perfolemen and natural gas; service act         0.506         0.523         1044           6 Mining of metal ores         0.019         0.031         155           7 Other mining and quarrying         0.991         0.116         244           8 Poduction, processing and preserving of fish and fish products, fruit a         4.136         0.966         233           10 Vegetable and animal cills and fats         4.048         0.408         0.149         361           11 Dairy products         3.887         1.371         357         122         361         1.371         357           12 Orain mill products, starches and starch products         0.795         0.267         344         1.371         357         12         361         1.371         357         12         361         1.49         362         362         363         365         1.371         357         12         364 <td></td> <td></td> <td></td> <td></td> <td>201%</td>					201%
6 Mining of metal acres					104%
7 Other mining and quarrying         0.491         0.116         244           8 Production, processing and preserving of fish and fish products; fruit a         4.136         0.966         23³           9 Processing and preserving of fish and fish products; 10 yellow products         0.408         0.149         366           11 Dairy products         3.887         1.371         35¹           12 Grain mill products, starches and starch products         0.795         0.267         34⁴           13 Prepared animal feeds         0.805         0.359         45¹           14 Broad, rusks and biscuits, manufacture of pastry goods an         3.085         1.005         33³           15 Sugar         0.094         0.066         70°         16 Cocae; chocolate and sugar confectionery         1.446         0.462         32²           17 Other food products         2.299         0.706         31¹         18 Accholic beverages         1.703         1.234         72²           18 Accordict on firming of textile fibres         0.18         1.173         0.665         57²           21 Preparation and spinning of textile fibres         0.018         0.057         0.031         54²           22 Insisting of feathles except apparel         1.546         0.555         36³         25         26°					165%
8 Production, processing and preserving of meat and meat ; 9 Processing and preserving of fish and fish products; fruit a 4,136 0,966 23¹ 10 Vegetable and animal oils and fats 0,408 0,149 36¹ 11 Dairy products 5 0,795 0,267 34¹ 12 Grain mill products, starches and starch products 0,795 0,267 34¹ 13 Prepared animal feeds 0,369 45¹ 41 Brad, rusks and biscuits; manufacture of pastry goods an 3,085 1,005 33³ 15 Sugar 0,094 0,066 70¹ 16 Cocce; chocolate and sugar confectionery 1,446 0,462 32² 17 Other food products 2,299 0,706 31¹ 18 Alcoholic beverages 1,703 1,234 72² 19 Production of mineral waters and soft drinks 1,655 0,562 34² 20 Tobacco products 1,173 0,665 57¹ 21 Preparation and spinning of textile fibres 0,018 0,052 22² 22 Textile weaving 0,057 0,031 54⁴ 23 Finishing of fastiles spinning of textile fibres 0,018 0,052 22² 24 Made-up textile articles, except apparel 1,546 0,555 36² 25 Carpets and rugs 0,064 0,199 31¹ 26 Other textiles 2 27 Knitted and crocheted fabrics and articles 2,310 1,476 64⁴ 28 Wearing apparet; dressing and dying of fur 8,246 6,080 74² 29 Tanning and dressing of leather; manufacture of luggage, 0,164 0,139 85¹ 31 Wood and wood products, except furniture 1,085 0,201 18³ 32 Pub, paper and paperboard 0,235 0,097 41¹ 33 Articles of paper and paperboard 0,235 0,097 41¹ 34 Publishing, printing and reproduction of recorded media 3,245 0,741 23³ 35 Coke, refined petroleum products and nuclear tuel 14,024 6,526 47² 36 Industrial gasses, veys and jugments 0,066 0,090 126³ 37 Other incorpain basis chemicals 0,006 0,012 194⁴ 48 Soap and detergents, chemicals and botanical product 0,090 0,090 126³ 49 Painting and detergents, chemicals 10,006 0,006 0,012 194⁴ 40 Soap and detergents, chemicals 10,006 0,007 0,009 0		•			24%
9 Processing and preserving of fish and fish products; fruit a					
10 Vegetable and animal oils and fats   10 July products   3,887   1,371   35'   12 Grain mill products, starches and starch products   0,795   0,267   34'   13 Prespered animal feeds   0,805   0,359   45'   14 Bread, rusks and biscuits; manufacture of pastry goods an   3,085   1,005   33'   15 Sugar   0,094   0,066   70'   1446   0,462   32'   17 Other food products   2,299   0,706   31'   1446   0,462   32'   17 Other food products   2,299   0,706   31'   1446   0,462   32'   17 Other food products   2,299   0,706   31'   1446   0,462   32'   17 Other food products   1,703   1,234   72'   19 Production of mineral waters and soft drinks   1,655   0,562   34'   20' Tobacco products   1,173   0,665   57'   21 Preparation and spinning of textile fibres   0,118   0,052   222'   2 Textile weaving   0,057   0,031   54'   22 Textile weaving   0,643   0,199   31'   26 Other textiles   0,064   0,555   36'   26 Carpets and rugs   0,643   0,199   31'   26 Other textiles   0,121   0,038   31'   26 Other textiles   0,121   0,038   31'   26 Other textiles   0,121   0,038   31'   27 Knitted and crochated fabrics and articles   2,310   1,476   64'   28 Wearing apparel; dressing and dying of fur   29 Tarming and dressing of leather; manufacture of luggage, 0,164   0,139   85'   32 Pulp, paper and paperboard   0,235   0,097   41'   35 Other restiles   0,006   0,012   18'   31					
11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscults; menufacture of pastry goods an 15 Sugar 16 Cocos; chocolate and sugar confectionery 11.446 16 Cocos; chocolate and sugar confectionery 11.446 17 Other food products 12.299 18 Alcoholic beverages 17.03 19 Production of mineral waters and soft drinks 16.55 19 Production of mineral waters and soft drinks 11.655 10 Foce 19 Production of mineral waters and soft drinks 11.675 10 There parathon and spinning of textile fibres 10.173 10 Preparation and spinning of textile fibres 10.183 10 Tobacco products 11.773 10.665 17/1 12 Preparation and spinning of textile fibres 10.184 12 Textile weaving 10.057 12 Priparation and spinning of textile fibres 10.185 12 Foce 12 Textile weaving 10.057 12 Foce 13 Finishing of textiles 10.006 10.23 10.33 11 Start waters 10.006 10.23 10.006 10.23 10.007 10 Foce 10.007 10 Foce 10 Fo					
12 Grain mill products, starches and starch products 0.795 0.267 344 13 Prepared animal feeds 0.805 0.359 45 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.085 1.005 33* 15 Sugar 0.994 0.066 70* 16 Cocoa; chocolate and sugar confectionery 1.446 0.462 32* 17 Other food products 2.299 0.706 31* 18 Alcoholic beverages 1.703 1.234 72* 18 Alcoholic beverages 1.703 1.234 72* 19 Production of mineral waters and soft drinks 1.655 0.562 34* 12* 12* 19* Production of mineral waters and soft drinks 1.655 0.562 34* 12* 12* 12* 12* 12* 12* 12* 12* 12* 12					
13 Prepared animal feeds   14 Bread, rusks and biscuits; manufacture of pastry goods an   3,085   1,005   33     14 Bread, rusks and biscuits; manufacture of pastry goods an   3,085   1,005   33     15 Sugar   0,094   0,066   70     16 Cooas; chocolate and sugar confectionery   1,446   0,462   32     17 Other food products   2,299   0,706   31     18 Alcoholic beverages   1,703   1,234   72     19 Production of mineral waters and soft drinks   1,655   0,562   34     19 Production of mineral waters and soft drinks   1,655   0,562   34     20 Tobacco products   1,173   0,665   57     21 Preparation and spinning of textille fibres   0,018   0,052   282     22 Textille weaving   0,057   0,031   54     23 Finishing of textiles   0,006   0,023   353     24 Made-up textile articles, except apparel   1,546   0,555   36     25 Carpets and rugs   0,643   0,199   31     26 Other textiles   0,121   0,038   31     27 Knitted and crocheted fabrics and articles   2,310   1,476   64     28 Wearing apparel; dressing and dying of fur   8,246   6,080   74     29 Tanning and dressing of leather, manufacture of luggage,   0,164   0,139   85     30 Footwear   1,345   1,025   76     31 Wood and wood products, except furniture   1,085   0,201   18     32 Pulp, paper and paperboard   0,235   0,097   41     33 Articles of paper and paperboard   0,235   0,097   41     34 Publishing, printing and reproduction of recorded media   3,245   0,741   23     35 Coke, refined petroleum products and nuclear fuel   14,024   6,526   47     36 Industrial gases, dyes and pigments   0,068   0,018   31     37 Other inorganic basic chemicals   0,006   0,243   4277     38 Other organic basic chemicals   0,006   0,042   31     49 Plastics and synthetic rubber in primary forms   0,064   0,080   126     41 Pesticides and other agro-chemicals and botanical prod   0,458   0,004   34     49 Glass and glass products   1,366   0,398   2,99     40 Feed in the products   1,366   0,398   2,99     40 Feed in the paper of the paper of the paper of the paper of the p					
14 Bread, rusks and biscuits; manufacture of pastry goods an 0.094 0.066 70° 15 Sugar 0.094 0.066 70° 16 Cocca; chocolate and sugar confectionery 1.446 0.462 32° 17 Other food products 2.299 0.706 31° 11.8 Alcoholic beverages 1.703 1.234 72° 18 Alcoholic beverages 1.703 1.234 72° 19 Production of mineral waters and soft drinks 1.655 0.562 34° 120 Tobacco products 1.173 0.665 57° 120° 120° 120° 120° 120° 120° 120° 120					
16 Sugar					
16 Cocoa: chocolate and sugar confectionery					33%
17 Other food products 18 Alcoholic beverages 1.703 1.234 72' 18 Alcoholic beverages 1.703 1.234 72' 19 Production of mineral waters and soft drinks 1.655 2.652 2.7 Textile weaving 2.7 Extile weaving 2.8 Firnishing of textile fibres 2.8 Firnishing of textiles 3. O.006 3. O.031 3. 544 2.8 Firnishing of textiles 3. O.006 3. O.033 3. 533 3. 533 3. 534 3. Firnishing of textiles 3. O.006 3. O.033 3. 533 3. 644 3. O.006 3. O.033 3. 533 3. 644 3. O.006 3. O.033 3. 533 3. O.006 3. O.033 3. 0.199 3. 11 3. 644 3. O.199 3. 11 3. O.141 3. O.		<del>-</del>			70%
18 Alcoholic beverages         1,703         1,234         72'           19 Production of mineral waters and soft drinks         1,655         0,562         34'           20 Tobacco products         1,173         0,665         57'           21 Preparation and spinning of textile fibres         0,018         0,052         282'           22 Textile weaving         0,057         0,031         54'           23 Finishing of textiles         0,006         0,023         353'           24 Made-up textile articles, except apparel         1,546         0,555         36'           25 Carpets and rugs         0,643         0,199         31'           26 Other textiles         0,121         0,038         31'           27 Knitted and crocheted fabrics and articles         2,310         1,476         6.080         74'           28 Textiles and gaperit, dressing and dying of fur         8,246         6.080         74'         28 Textiles and articles         2,310         1,476         6.080         74'           29 Tanning and dressing of leather, manufacture of luggage, 1,64         1,044         6.080         74'         28 Textilisers and articles         2,310         1,476         6.080         74'           30 Frootwear         1,085         0,201					32%
19 Production of mineral waters and soft drinks		•			31%
20 Tobacco products		•			72%
21 Preparation and spinning of textile fibres					34%
22 Textile weaving 23 Finishing of textiles 24 Made-up textile articles, except apparel 25 Carpets and rugs 26 Other textiles 26 Other textiles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather, manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 32 Pup, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 30 Other organic basic chemicals 30 Other inorganic basic chemicals 30 Other inorganic basic chemicals 40 Plestics and synthetic rubber in primary forms 40 Plestics and synthetic rubber in primary forms 40 Plestics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varmishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical prod 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Class and glass products 49 Class and glass products 40 Class and glass products 41 Pesticides and other agro-chemical products 42 Paints, varmishes and similar coatings, printing ink and ma 45 Other chemicals, medicinal chemicals and botanical prod 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Class and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cerement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping i 54 Basic products 55 Basic precious and non-ferrous metals 56 Casting of metals 50 Cutlery, tools and general hardware 51 Drive frabricated metal products 51 Bricks, tiles and onstruction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping i 56 Casting of metals 57 Structural me			1.173	0.665	57%
23 Finishing of textiles         0.006         0.023         353'           24 Made-up textile articles, except apparel         1.546         0.555         36'           25 Carpets and rugs         0.643         0.199         31'           26 Other textiles         0.121         0.038         31'           27 Knitted and crocheted fabrics and articles         2.310         1.476         64'           28 Wearing apparel; dressing and dying of fur         8.246         6.080         74'           29 Tanning and dressing of leather; manufacture of luggage,         0.164         0.139         85'           30 Footwear         1.345         1.025         76'           31 Wood and wood products, except furniture         1.085         0.201         18'           32 Pulp, paper and paperboard         0.739         0.458         61'           34 Publishing, printing and reproduction of recorded media         3.245         0.741         23'           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47'           36 Industrial gases, dyes and pigments         0.058         0.018         31'           37 Other inorganic basic chemicals         0.006         0.243         427'           38 Other organic basic chemicals         <	21	Preparation and spinning of textile fibres	0.018	0.052	282%
24 Made-up textile articles, except apparel         1.546         0.555         36'           25 Carpets and rugs         0.643         0.199         31'           26 Other textiles         0.121         0.038         31'           27 Knitted and crocheted fabrics and articles         2.310         1.476         64'           28 Wearing apparel; dressing and dying of fur         8.246         6.080         74'           29 Tanning and dressing of leather; manufacture of luggage,         0.164         0.139         85'           30 Footwear         1.345         1.025         76'           31 Wood and wood products, except furniture         1.085         0.201         18'           32 Pulp, paper and paperboard         0.235         0.097         41'           33 Articles of paper and paperboard         0.749         0.458         61'           34 Publishing, printing and reproduction of recorded media         3.245         0.741         23'           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47'           36 Industrial gases, dyes and pigments         0.058         0.018         31'           37 Other inorganic basic chemicals         0.006         0.243         427'           38 Experimental Sand Sand Sand Sand S	22	Textile weaving	0.057	0.031	54%
25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 2.310 27 Knitted and crocheted fabrics and articles 2.310 28 Wearing apparei; dressing and dying of fur 29 Tanning and dressing of leather, manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 39 Certification of the production of recorded media 30 Coke, refined petroleum products and nuclear fuel 30 Coke, refined petroleum products and nuclear fuel 31 Coke, refined petroleum products and nuclear fuel 32 Coke, refined petroleum products and nuclear fuel 33 Fertilisers and nitrogen compounds 34 Other inorganic basic chemicals 35 Coke and industrial gases, dyes and pigments 36 Ounce of the production of recorded media 37 Other inorganic basic chemicals 39 Compounds 30 Compounds 31 Compounds 31 Compounds 32 Compounds 33 Compounds 34 Compounds 34 Compounds 35 Compounds 36 Compounds 37 Compounds 38 Compounds 39 Compounds 30 Compounds 31 Compounds 31 Compounds 31 Compounds 32 Compounds 33 Compounds 34 Compounds 34 Compounds 34 Compounds 35 Compounds 36 Compounds 36 Compounds 37 Compounds 38 Compounds 39 Compounds 30 Compounds 30 Compounds 30 Compounds 30 Compounds 30 Compounds 31 Compounds 31 Compounds 32 Compounds 33 Compounds 34 Compounds 34 Compounds 35 Compounds 36 Compounds 36 Compounds 36 Compounds 37 Compounds 38 Compounds 38 Compounds 39 Compounds 30 Com	23	Finishing of textiles	0.006	0.023	353%
26 Other textiles	24	Made-up textile articles, except apparel	1.546	0.555	36%
27 Knitted and crocheted fabrics and articles         2.310         1.476         64*           28 Wearing apparel; dressing and dying of fur         8.246         6.080         74*           29 Tanning and dressing of leather; manufacture of luggage,         0.164         0.139         85*           30 Footwear         1.345         1.025         76*           31 Wood and wood products, except furniture         1.085         0.201         18*           32 Pulp, paper and paperboard         0.749         0.458         61*           34 Publishing, printing and reproduction of recorded media         3.245         0.741         23*           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47*           36 Industrial gases, dyes and pigments         0.058         0.018         31*           37 Other inorganic basic chemicals         0.006         0.243         427*           38 Other organic basic chemicals         0.006         0.012         194*           40 Plastics and synthetic rubber in primary forms         0.06         0.012         194*           40 Plastics and other agro-chemical products         0.066         0.020         31*           41 Pesticides and other agro-chemical products         0.066         0.020         31*	25	Carpets and rugs	0.643	0.199	31%
28 Wearing apparel; dressing and dying of fur         8.246         6.080         74*           29 Tanning and dressing of leather; manufacture of luggage,         0.164         0.139         85*           30 Footwear         1.345         1.025         76*           31 Wood and wood products, except furniture         1.085         0.201         18*           32 Pulp, apper and paperboard         0.235         0.097         41*           33 Articles of paper and paperboard         0.749         0.458         61*           34 Publishing, printing and reproduction of recorded media         3.245         0.741         23*           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47*           36 Industrial gases, dyes and pigments         0.058         0.018         31*           37 Other inorganic basic chemicals         0.006         0.012         194*           39 Fertilisers and introgen compounds         0.110         0.044         41*           40 Plastics and synthetic rubber in primary forms         0.064         0.080         126*           41 Pesticides and other agro-chemical products         0.066         0.020         31*           42 Paints, varnishes and similar coatings, printing ink and ma         0.385         0.163         42* </td <td>26</td> <td>Other textiles</td> <td>0.121</td> <td>0.038</td> <td>31%</td>	26	Other textiles	0.121	0.038	31%
28 Wearing apparel; dressing and dying of fur         8.246         6.080         74*           29 Tanning and dressing of leather; manufacture of luggage,         0.164         0.139         85*           30 Footwear         1.345         1.025         76*           31 Wood and wood products, except furniture         1.085         0.201         18*           32 Pulp, apper and paperboard         0.235         0.097         41*           33 Articles of paper and paperboard         0.749         0.458         61*           34 Publishing, printing and reproduction of recorded media         3.245         0.741         23*           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47*           36 Industrial gases, dyes and pigments         0.058         0.018         31*           37 Other inorganic basic chemicals         0.006         0.012         194*           39 Fertilisers and nitrogen compounds         0.110         0.044         41*           40 Plastics and synthetic rubber in primary forms         0.064         0.080         126*           41 Pesticides and other agro-chemical products         0.066         0.020         31*           42 Paints, varnishes and similar coatings, printing ink and ma         0.385         0.163         42* </td <td>27</td> <td>Knitted and crocheted fabrics and articles</td> <td>2.310</td> <td>1.476</td> <td>64%</td>	27	Knitted and crocheted fabrics and articles	2.310	1.476	64%
29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 32 Pulp, paper and paperboard 0.749 0.458 61¹ 34 Publishing, printing and reproduction of recorded media 3 2.45 0.741 23³ 55 Coke, refined petroleum products and nuclear fuel 14.024 6.526 47³ 36 Industrial gases, dyes and pigments 0.058 0.018 31 Other inorganic basic chemicals 0.006 0.243 4277³ 38 Other organic basic chemicals 0.006 0.012 194⁴ 49 Piastics and synthetic rubber in primary forms 0.064 0.080 126¹ 41 Pesticides and other agro-chemical products 0.066 0.020 31¹ 42 Paints, varnishes and similar coatings, printing ink and ma 0.385 0.163 42¹ 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 2.134 0.863 40¹ 41 Pesticides and synthetic rubber 45 Other chemical products 1.371 0.622 45¹ 46 Man-made fibres 0.029 0.016 57² 47 Rubber products 1.366 0.398 29² 48 Plastic products 1.366 0.398 29² 48 Plastic products 1.386 0.398 29² 48 Plastic products 1.386 0.398 29² 49 Glass and glass products 51 Bricks, tiles and construction products, baked in clay 52 Ceremit, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.703 0.198 28² 55 Basic precious and non-ferrous metals 0.022 0.013 59 Forging, pressing, stamping and roll forming of metal; pow 0.116 0.040 34² 61 Other fabricated metal products 0.045 0.045 0.045 0.040 0.040 34² 62 Machinery for the production and use of mechanical powe 0.085 0.026 0.028 0.029 0.016 0.029 0.016 0.020 0.016 0	28	Wearing apparel; dressing and dying of fur	8.246	6.080	74%
30 Footwear 1.345 1.025 766 31 Wood and wood products, except furniture 1.085 0.201 188 32 Pulp, paper and paperboard 0.235 0.097 411 33 Articles of paper and paperboard 0.749 0.458 611 34 Publishing, printing and reproduction of recorded media 3.245 0.741 231 35 Coke, refined petroleum products and nuclear fuel 14.024 6.526 471 36 Industrial gases, dyes and pigments 0.058 0.018 311 37 Other inorganic basic chemicals 0.006 0.243 42771 38 Other organic basic chemicals 0.006 0.012 1941 39 Fertilisers and nitrogen compounds 0.110 0.044 411 40 Plastics and synthetic rubber in primary forms 0.064 0.080 1261 41 Pesticides and other agro-chemical products 0.066 0.020 311 42 Paints, varnishes and similar coatings, printing ink and ma 0.385 0.163 422 43 Pharmaceuticals, medicinal chemicals and botanical produ 1.097 0.478 444 44 Soap and detergents, cleaning and polishing preparations 2.134 0.863 400 45 Other chemical products 1.366 0.398 299 47 Rubber products 1.366 0.398 299 48 Plastic products 1.366 0.398 299 48 Plastic products 1.366 0.398 299 54 Bricks, tiles and construction products, baked in clay 0.278 0.112 400 52 Ceremit, lime and plaster 0.458 0.122 277 53 Articles of concrete, plaster and cement; cutting, shaping 0.525 0.103 0.198 288 55 Basic procious and non-ferrous metals 0.387 0.139 366 56 Casting of metals 0.029 0.013 599 57 Structural metal products 3.258 1.340 411 58 Tanks, reservoirs and containers of metal; manufacture of tut 0.703 0.198 288 57 Structural metal products 3.258 1.340 411 58 Tanks, reservoirs and containers of metal; manufacture of 0.702 0.254 366 59 Forging, pressing, stamping and roll forming of metal; pow 0.116 0.040 344 60 Cuttery, tools and general hardware 1.016 0.324 329 61 Other fabricated metal products 0.933 0.295 325 62 Machinery for the production and use of mechanical powe 0.852 0.286			0.164	0.139	85%
31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 48 Plastic products 49 Glass and glass products 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and polaster 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 4 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Forging, pressing, stamping and roll forming of metal; pow 60 Cutlery, tools and general hardware 61 Other fabricated metal products 61 Other fabricated metal products 62 Machinery for the production and use of mechanical pow 62 Machinery for the production and use of mechanical pow 63 Casting of metals 64 Machinery for the production and use of mechanical pow 65 Casting of metals 66 Casting of metals 77 Cocasting of metals 78 Cament, lime and plaster 79 Cocasting of metals 70 Cocast				1.025	76%
32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 37 Other inorganic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemicals products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Plastics of Corente, plaster and cement; cutting, shaping ε 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of tut 58 Tother products 59 Forging, pressing, stamping and foll forming of metal; pow 60 Cutlery, tools and general hardware 61 Other fabricated metal products 61 Other fabricated metal products 62 Machinery for the production and use of mechanical powe 62 Machinery for the production and use of mechanical powe 62 Machinery for the production and use of mechanical powe 63 Auchinery for the production and use of mechanical powe 64 Machinery for the production and use of mechanical powe 65 Casting of metals 66 Machinery for the production and use of mechanical powe 67 Machinery for the production and use of mechanical powe					18%
33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Glass and glass products 41 Rubber products 42 Glass and glass products 43 Planting products 44 Soap and the rubber in primary forms 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping acceptable products 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Forging, pressing, stamping and roll forming of metal; pow 50 Cutlery, tools and general hardware 50 Cutlery, tools and general hardware 50 Cutlery, tools and general hardware 51 Cutlery, tools and general hardware 52 Camenting for the production and use of mechanical powe 53 Catled Machinery for the production and use of mechanical powe 50 Cutlery, tools and general hardware 51 Cutlery, tools and general hardware 52 Catled Machinery for the production and use of mechanical powe					41%
34 Publishing, printing and reproduction of recorded media         3.245         0.741         23'           35 Coke, refined petroleum products and nuclear fuel         14.024         6.526         47'           36 Industrial gases, dyes and pigments         0.058         0.018         31'           37 Other inorganic basic chemicals         0.006         0.243         427''           38 Other organic basic chemicals         0.006         0.012         194'           39 Fertilisers and nitrogen compounds         0.110         0.044         41'           40 Plastics and synthetic rubber in primary forms         0.064         0.080         126'           41 Pesticides and other agro-chemical products         0.066         0.020         31'           42 Paints, varnishes and similar coatings, printing ink and ma         0.385         0.163         42'           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.097         0.478         44'           44 Soap and detergents, cleaning and polishing preparations         2.134         0.863         40'           45 Other chemical products         1.371         0.622         45'           46 Man-made fibres         0.029         0.016         57'           47 Rubber products         1.386         0.398         29'     <					61%
35 Coke, refined petroleum products and nuclear fuel 14.024 6.526 47' 36 Industrial gases, dyes and pigments 0.058 0.018 31' 37 Other inorganic basic chemicals 0.006 0.243 427' 38 Other organic basic chemicals 0.006 0.012 194' 39 Fertilisers and nitrogen compounds 0.110 0.044 41' 40 Plastics and synthetic rubber in primary forms 0.064 0.080 126' 41 Pesticides and other agro-chemical products 0.066 0.020 31' 42 Paints, varnishes and similar coatings, printing ink and ma 0.385 0.163 42' 43 Pharmaceuticals, medicinal chemicals and botanical produ 1.097 0.478 44' 45 Coap and detergents, cleaning and polishing preparations 2.134 0.863 40' 45 Other chemical products 1.371 0.622 45' 46 Man-made fibres 0.029 0.016 57' 47 Rubber products 1.366 0.398 29' 48 Plastic products 1.366 0.398 29' 49 Glass and glass products 1.366 0.398 29' 49 Glass and glass products 0.628 0.204 33' 50 Ceramic goods 1.357 0.643 47' 51 Bricks, tiles and construction products, baked in clay 0.278 0.112 40' 52 Cement, lime and plaster 0.458 0.122 27' 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.525 0.103 0.198 28' 55 Basic procious and non-ferrous metals 0.387 0.139 36' 56 Casting of metals 0.022 0.013 59' 57 Structural metal products 0.933 0.295 32' 62 Machinery for the production and use of mechanical powe 0.852 0.286 34'					23%
36 Industrial gases, dyes and pigments		• • •			47%
37 Other inorganic basic chemicals 0.006 0.243 42775 38 Other organic basic chemicals 0.006 0.012 1945 39 Fertilisers and nitrogen compounds 0.110 0.044 415 40 Plastics and synthetic rubber in primary forms 0.064 0.080 1266 41 Pesticides and other agro-chemical products 0.066 0.020 315 42 Paints, varnishes and similar coatings, printing ink and ma 0.385 0.163 425 43 Pharmaceuticals, medicinal chemicals and botanical produ 1.097 0.478 445 44 Soap and detergents, cleaning and polishing preparations 2.134 0.863 400 45 Other chemical products 1.371 0.622 455 46 Man-made fibres 0.029 0.016 577 47 Rubber products 1.366 0.398 296 48 Plastic products 1.366 0.398 296 48 Plastic products 1.388 0.374 200 49 Glass and glass products 1.357 0.643 476 50 Ceramic goods 1.357 0.643 476 51 Bricks, files and construction products, baked in clay 0.278 0.112 400 52 Cement, lime and plaster 0.458 0.122 276 53 Articles of concrete, plaster and cement; cutting, shaping a 0.525 0.103 200 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.703 0.198 286 55 Basic precious and non-ferrous metals 0.387 0.139 366 6 Casting of metals 0.022 0.011 59 57 Structural metal products 0.702 0.254 366 59 Forging, pressing, stamping and roll forming of metal; pow 0.116 0.040 344 60 Cutlery, tools and general hardware 1.016 0.324 326 61 Other fabricated metal products 0.933 0.295 326 62 Machinery for the production and use of mechanical powe 0.852 0.286					31%
38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 0.110 0.044 411 40 Plastics and synthetic rubber in primary forms 0.064 0.080 1266 41 Pesticides and other agro-chemical products 0.066 0.020 311 42 Paints, varnishes and similar coatings, printing ink and ma 0.385 0.163 427 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 1.371 0.622 457 46 Man-made fibres 0.029 0.016 577 47 Rubber products 1.386 0.398 299 48 Plastic products 1.388 0.374 200 49 Glass and glass products 0.628 0.204 331 50 Ceramic goods 1.357 0.643 476 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.458 0.102 0.478 0.478 0.112 0.406 0.525 0.103 0.207 0.478 0.112 0.622 0.707 0.198 0.286 0.204 0.331 0.458 0.102 0.458 0.102 0.458 0.102 0.458 0.102 0.458 0.102 0.458 0.103 0.458 0.104 0.404 0.404 0.404 0.404 0.404 0.404 0.406 0.404 0.406					
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41 Pesticides and other agro-chemical products       0.066       0.020       31°         42 Paints, varnishes and similar coatings, printing ink and ma       0.385       0.163       42°         43 Pharmaceuticals, medicinal chemicals and botanical products       1.097       0.478       44°         44 Soap and detergents, cleaning and polishing preparations       2.134       0.863       40°         45 Other chemical products       1.371       0.622       45°         46 Man-made fibres       0.029       0.016       57°         47 Rubber products       1.366       0.398       29°         48 Plastic products       1.388       0.374       20°         49 Glass and glass products       0.628       0.204       33°         50 Ceramic goods       1.357       0.643       47°         51 Bricks, tiles and construction products, baked in clay       0.278       0.112       40°         52 Cement, lime and plaster       0.458       0.122       27°         53 Articles of concrete, plaster and cement; cutting, shaping a       0.525       0.103       20°         54 Basic iron and steel and of ferro-alloys; manufacture of tut       0.703       0.198       28°         55 Basic precious and non-ferrous metals       0.387       0.139       36°		• ,			
42 Paints, varnishes and similar coatings, printing ink and ma       0.385       0.163       426         43 Pharmaceuticals, medicinal chemicals and botanical products       1.097       0.478       444         44 Soap and detergents, cleaning and polishing preparations       2.134       0.863       406         45 Other chemical products       1.371       0.622       455         46 Man-made fibres       0.029       0.016       576         47 Rubber products       1.366       0.398       299         48 Plastic products       1.888       0.374       206         49 Glass and glass products       0.628       0.204       331         50 Ceramic goods       1.357       0.643       476         51 Bricks, tiles and construction products, baked in clay       0.278       0.112       406         52 Cement, lime and plaster       0.458       0.122       276         53 Articles of concrete, plaster and cement; cutting, shaping and construction and steel and of ferro-alloys; manufacture of tut       0.703       0.198       286         55 Basic iron and steel and of ferro-alloys; manufacture of tut       0.703       0.198       286         56 Casting of metals       0.022       0.013       596         57 Structural metal products       3.258       1.34					
43 Pharmaceuticals, medicinal chemicals and botanical produt       1.097       0.478       44'         44 Soap and detergents, cleaning and polishing preparations       2.134       0.863       40'         45 Other chemical products       1.371       0.622       45'         46 Man-made fibres       0.029       0.016       57'         47 Rubber products       1.366       0.398       29'         48 Plastic products       1.888       0.374       20'         49 Glass and glass products       0.628       0.204       33'         50 Ceramic goods       1.357       0.643       47'         51 Bricks, tiles and construction products, baked in clay       0.278       0.112       40'         52 Cement, lime and plaster       0.458       0.112       20'         53 Articles of concrete, plaster and cement; cutting, shaping and containers of concrete, plaster and cement; cutting, shaping and containers of the concrete of the con		- · · · · · · · · · · · · · · · · · · ·			
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46 Man-made fibres 0.029 0.016 574 47 Rubber products 1.366 0.398 294 48 Plastic products 1.888 0.374 204 49 Glass and glass products 0.628 0.204 334 50 Ceramic goods 1.357 0.643 474 51 Bricks, tiles and construction products, baked in clay 0.278 0.112 405 52 Cement, lime and plaster 0.458 0.122 274 53 Articles of concrete, plaster and cement; cutting, shaping ε 0.525 0.103 205 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.703 0.198 285 55 Basic precious and non-ferrous metals 0.387 0.139 365 56 Casting of metals 0.022 0.013 595 57 Structural metal products 3.258 1.340 415 58 Tanks, reservoirs and containers of metal; manufacture of 0.702 0.254 366 59 Forging, pressing, stamping and roll forming of metal; pow 0.116 0.040 345 60 Cutlery, tools and general hardware 1.016 0.324 325 61 Other fabricated metal products 0.933 0.295 325 62 Machinery for the production and use of mechanical powe 0.852 0.286 345					40%
47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Forging, pressing, stamping and roll forming of metal; pow 60 Cutlery, tools and general hardware 61 Other fabricated metal products 62 Machinery for the production and use of mechanical powe 60 Rational Satisfactors 62 Machinery for the production and use of mechanical powe 60 Rational Satisfactors 61 Rational Satisfactors 62 Machinery for the production and use of mechanical powe 60 Rational Satisfactors 62 Machinery for the production and use of mechanical powe 60 Rational Satisfactors 61 Rational Satisfactors 62 Machinery for the production and use of mechanical powe 61 Rational Satisfactors 62 Machinery for the production and use of mechanical powe 63 Plastic products 64 Rational Satisfactors 65 Rational Satisfactors 66 Rational Satisfactors 67 Rational Satisfactors 67 Rational Satisfactors 68 Rational Satisfactors 69 Rational Satisfactors 60 Rational Satisfactors 61 Rational Satisfactors 62 Rational Satisfactors 61 Rationa		•			45%
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49 Glass and glass products       0.628       0.204       33°         50 Ceramic goods       1.357       0.643       47°         51 Bricks, tiles and construction products, baked in clay       0.278       0.112       40°         52 Cement, lime and plaster       0.458       0.122       27°         53 Articles of concrete, plaster and cement; cutting, shaping and to steel and of ferro-alloys; manufacture of tut       0.703       0.103       20°         54 Basic iron and steel and of ferro-alloys; manufacture of tut       0.703       0.198       28°         55 Basic precious and non-ferrous metals       0.387       0.139       36°         56 Casting of metals       0.022       0.013       59°         57 Structural metal products       3.258       1.340       41°         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       36°         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       34°         60 Cutlery, tools and general hardware       1.016       0.324       32°         61 Other fabricated metal products       0.933       0.295       32°         62 Machinery for the production and use of mechanical powe       0.852       0.286       34°					29%
50 Ceramic goods       1.357       0.643       476         51 Bricks, tiles and construction products, baked in clay       0.278       0.112       406         52 Cement, lime and plaster       0.458       0.122       276         53 Articles of concrete, plaster and cement; cutting, shaping and concrete, plaster and cement; cutting, shaping and concrete and cement concrete and cem					20%
51 Bricks, tiles and construction products, baked in clay       0.278       0.112       400         52 Cement, lime and plaster       0.458       0.122       270         53 Articles of concrete, plaster and cement; cutting, shaping at 50 Articles of concrete, plaster and cement; cutting, shaping at 60 Articles of concrete, plaster and cement; cutting, shaping at 60 Articles of concrete, plaster and cement; cutting, shaping at 60 Articles of 0.703       0.103       200         54 Basic iron and steel and of ferro-alloys; manufacture of tut 60 Articles of 0.703       0.198       280         55 Basic precious and non-ferrous metals 61 O.387       0.139       360         56 Casting of metals 70 Articles of 0.022       0.013       590         57 Structural metal products 81 Articles of 0.702       0.254       360         58 Tanks, reservoirs and containers of metal; manufacture of 0.702       0.254       360         59 Forging, pressing, stamping and roll forming of metal; pow 0.116       0.040       340         60 Cutlery, tools and general hardware 1.016       0.324       320         61 Other fabricated metal products 1.016       0.324       320         62 Machinery for the production and use of mechanical powe 1.025       0.286       340		•			33%
52 Cement, lime and plaster       0.458       0.122       276         53 Articles of concrete, plaster and cement; cutting, shaping & 0.525       0.103       206         54 Basic iron and steel and of ferro-alloys; manufacture of tult       0.703       0.198       286         55 Basic precious and non-ferrous metals       0.387       0.139       366         56 Casting of metals       0.022       0.013       597         57 Structural metal products       3.258       1.340       416         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       366         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       346         60 Cutlery, tools and general hardware       1.016       0.324       326         61 Other fabricated metal products       0.933       0.295       326         62 Machinery for the production and use of mechanical powe       0.852       0.286       346				0.643	47%
53 Articles of concrete, plaster and cement; cutting, shaping @       0.525       0.103       200         54 Basic iron and steel and of ferro-alloys; manufacture of tut       0.703       0.198       280         55 Basic precious and non-ferrous metals       0.387       0.139       360         56 Casting of metals       0.022       0.013       590         57 Structural metal products       3.258       1.340       410         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       360         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       340         60 Cutlery, tools and general hardware       1.016       0.324       320         61 Other fabricated metal products       0.933       0.295       320         62 Machinery for the production and use of mechanical powe       0.852       0.286       340					40%
54 Basic iron and steel and of ferro-alloys; manufacture of tult       0.703       0.198       286         55 Basic precious and non-ferrous metals       0.387       0.139       366         56 Casting of metals       0.022       0.013       597         57 Structural metal products       3.258       1.340       416         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       366         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       346         60 Cutlery, tools and general hardware       1.016       0.324       326         61 Other fabricated metal products       0.933       0.295       326         62 Machinery for the production and use of mechanical powe       0.852       0.286       346			0.458	0.122	27%
55 Basic precious and non-ferrous metals       0.387       0.139       360         56 Casting of metals       0.022       0.013       590         57 Structural metal products       3.258       1.340       410         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       360         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       340         60 Cutlery, tools and general hardware       1.016       0.324       320         61 Other fabricated metal products       0.933       0.295       320         62 Machinery for the production and use of mechanical powe       0.852       0.286       340	53	Articles of concrete, plaster and cement; cutting, shaping $\boldsymbol{\epsilon}$	0.525	0.103	20%
56 Casting of metals       0.022       0.013       596         57 Structural metal products       3.258       1.340       416         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       366         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       346         60 Cutlery, tools and general hardware       1.016       0.324       326         61 Other fabricated metal products       0.933       0.295       326         62 Machinery for the production and use of mechanical powe       0.852       0.286       346	54	Basic iron and steel and of ferro-alloys; manufacture of tuk	0.703	0.198	28%
56 Casting of metals       0.022       0.013       596         57 Structural metal products       3.258       1.340       416         58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       366         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       346         60 Cutlery, tools and general hardware       1.016       0.324       326         61 Other fabricated metal products       0.933       0.295       326         62 Machinery for the production and use of mechanical powe       0.852       0.286       346	55	Basic precious and non-ferrous metals	0.387	0.139	36%
58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       364         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       344         60 Cutlery, tools and general hardware       1.016       0.324       324         61 Other fabricated metal products       0.933       0.295       324         62 Machinery for the production and use of mechanical powe       0.852       0.286       344			0.022	0.013	59%
58 Tanks, reservoirs and containers of metal; manufacture of       0.702       0.254       364         59 Forging, pressing, stamping and roll forming of metal; pow       0.116       0.040       344         60 Cutlery, tools and general hardware       1.016       0.324       324         61 Other fabricated metal products       0.933       0.295       324         62 Machinery for the production and use of mechanical powe       0.852       0.286       344	57	Structural metal products	3.258	1.340	41%
59 Forging, pressing, stamping and roll forming of metal; pow 0.116 0.040 34' 60 Cutlery, tools and general hardware 1.016 0.324 32' 61 Other fabricated metal products 0.933 0.295 32' 62 Machinery for the production and use of mechanical powe 0.852 0.286 34'					36%
60 Cutlery, tools and general hardware 1.016 0.324 326 61 Other fabricated metal products 0.933 0.295 326 62 Machinery for the production and use of mechanical powe 0.852 0.286 346					34%
61 Other fabricated metal products 0.933 0.295 329 62 Machinery for the production and use of mechanical powe 0.852 0.286 349					32%
62 Machinery for the production and use of mechanical powe 0.852 0.286 34					32%
					34%
63 Other general purpose machinery 4.413 1.494 34 <sup>th</sup>					34%

	Uncortainty of amhadded CO2 amissisms but	CO2 CONSUMER	Standard error of	Relative error of CO2
	Uncertainty of embedded CO2 emissions by sector; year 2000	emissions	CO2 CONSUMER emissions	CONSUMER emissions
	Sector, year 2000	E (Mt CO2)	dE (Mt CO2)	dE/E
64	Agricultural and forestry machinery	0.523	0.153	29%
65	Machine tools	0.824	0.390	47%
	Other special purpose machinery	1.836	2.541	138%
	Weapons and ammunition	0.022	0.019	87%
	Domestic appliances not elsewhere classified	1.964	0.780	40%
	Office machinery and computers	7.125	3.908	55%
	Electric motors, generators and transformers; manufacture Insulated wire and cable	1.854	0.686	37%
1	Electrical equipment not elsewhere classified	0.636 0.730	0.263 0.371	41% 51%
	Electronic valves and tubes and other electronic compone	0.163	0.074	45%
	Television and radio transmitters and line for telephony an	4.024	2.261	56%
	Television and radio receivers, sound or video recording o	2.116	1.044	49%
	Medical, precision and optical instruments, watches and cl	2.447	1.046	43%
	Motor vehicles, trailers and semi-trailers	14.327	5.110	36%
78	Building and repairing of ships and boats	0.659	0.275	42%
	Other transport equipment	1.034	0.334	32%
	Aircraft and spacecraft	2.400	1.680	70%
_	Furniture	9.540	2.909	30%
	Jewellery and related articles; manufacture of musical inst	3.979	2.295	58%
	Sports goods, games and toys Miscellaneous manufacturing not elsewhere classified; rec	6.860 3.161	3.823 2.077	56% 66%
	Production and distribution of electricity	56.843	11.231	20%
	Gas; distribution of gaseous fuels through mains; steam a	17.684	10.077	57%
	Collection, purification and distribution of water	1.358	0.124	9%
	Construction	37.488	8.062	22%
89	Sale, maintenance and repair of motor vehicles, and moto	9.667	2.302	24%
90	Wholesale trade and commission trade, except of motor vo	17.467	4.301	25%
91	Retail trade, except of motor vehicles and motor cycles; re	21.155	7.334	35%
	Hotels and restaurants	28.548	6.629	23%
	Transport via railways	3.883	2.624	68%
	Other land transport; transport via pipelines	11.226	1.778	16%
	Water transport Air Transport	6.769 34.397	2.467 14.839	36% 43%
	Supporting and auxiliary transport activities; activities of transport	0.674	0.206	31%
	Post and courier activities	0.331	0.200	35%
	Telecommunications	3.129	1.405	45%
	Financial intermediation, except insurance and pension ful	2.495	0.595	24%
	Insurance and pension funding, except compulsory social	9.173	1.911	21%
102	Activities auxiliary to financial intermediation	0.255	0.081	32%
	Real estate activities with own property; letting of own prop	0.009	0.003	29%
	Letting of dwellings, including imputed rent	8.831	2.172	25%
	Real estate activities on a fee or contract basis	0.310	0.134	43%
	Renting of machinery and equipment without operator and	4.071	0.576	14%
	Computer and related activities Research and development	3.616 0.101	0.938 0.025	26% 25%
	Legal activities	0.101	0.025	25% 31%
	Accounting, book-keeping and auditing activities; tax cons	0.003	0.002	76%
	Market research and public opinion polling; business and r	0.063	0.017	27%
	Architectural and engineering activities and related technic	0.795	0.222	28%
	Advertising	0.035	0.007	21%
	Other business services	0.413	0.073	18%
	Public administration and defence; compulsory social secu	34.519	6.759	20%
	Education	16.109	2.044	13%
	Human health and veterinary activities	20.699	6.416	31%
	Social work activities	5.833	1.876	32%
	Sewage and refuse disposal, sanitation and similar activitic Activities of membership organisations not elsewhere clas	3.429 0.811	0.425 0.114	12% 14%
	Recreational, cultural and sporting activities	7.177	1.350	19%
	Other service activities	2.642	0.767	29%
	Private households with employed persons	0.214	0.006	3%
		87.73		
		61.24		
	Total CO2 consumer emissions	682	+/- 31	+/- 4.5%

	Uncertainty of embedded CO2 emissions by sector; year 2001	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
<u> </u>	Agriculture hunting and related service settivities	E (Mt CO2)	dE (Mt CO2)	dE/E
	Agriculture, hunting and related service activities	9.033	1.667	18%
	P. Forestry, logging and related service activities	0.102	0.031	30%
	Fishing, operation of fish hatcheries and fish farms; service	0.067	0.111	165%
	Mining of coal and lignite; extraction of peat	0.300	0.514	171%
	Extraction of crude petroleum and natural gas; service act	0.904	0.610	68%
	6 Mining of metal ores	0.003	0.008	244%
	Other mining and quarrying	0.082	0.042	51%
	B Production, processing and preserving of meat and meat production and preserving of meat and meat production.	5.849	1.397	24%
	Processing and preserving of fish and fish products; fruit a	4.606	1.133	25%
	Vegetable and animal oils and fats	0.446	0.164	37%
	Dairy products	3.797	1.349	36%
	? Grain mill products, starches and starch products	0.876	0.272	31%
	B Prepared animal feeds	0.806	0.384	48%
	Bread, rusks and biscuits; manufacture of pastry goods an	3.244	1.081	33%
	Sugar	0.110	0.078	71%
	6 Cocoa; chocolate and sugar confectionery	1.462	0.471	32%
	Other food products	2.499	0.782	31%
	3 Alcoholic beverages	2.029	1.286	63%
	Production of mineral waters and soft drinks	1.861	0.685	37%
	Tobacco products	1.273	0.722	57%
	Preparation and spinning of textile fibres	0.029	0.049	171%
	? Textile weaving	0.037	0.026	69%
	Finishing of textiles	0.026	0.030	118%
	Made-up textile articles, except apparel	1.825	0.726	40%
	5 Carpets and rugs 5 Other textiles	0.634	0.224	35%
		0.146	0.040	27%
	Knitted and crocheted fabrics and articles	2.592	1.881	73%
	Wearing apparel; dressing and dying of fur	9.786	7.518 0.195	77%
	Tanning and dressing of leather; manufacture of luggage,	0.228		86%
	Footwear	1.754 1.140	1.347 0.267	77% 23%
	Wood and wood products, except furniture Pulp, paper and paperboard	0.131	0.267	46%
	Representation of Paper Board Articles of paper and paperboard	0.131	0.597	74%
	Publishing, printing and reproduction of recorded media	3.477	0.823	24%
	Coke, refined petroleum products and nuclear fuel	16.518	8.929	54%
	6 Industrial gases, dyes and pigments	0.046	0.025	56%
	Other inorganic basic chemicals	0.066	0.246	375%
	Other inorganic basic chemicals  Other organic basic chemicals	0.028	0.019	69%
	Fertilisers and nitrogen compounds	0.094	0.047	50%
	Plastics and synthetic rubber in primary forms	0.003	0.075	2202%
	Pesticides and other agro-chemical products	0.035	0.028	79%
	Paints, varnishes and similar coatings, printing ink and ma	0.434	0.209	48%
	B Pharmaceuticals, medicinal chemicals and botanical produ	1.452	0.741	51%
	Soap and detergents, cleaning and polishing preparations	2.550	1.095	43%
	6 Other chemical products	1.430	0.660	46%
	6 Man-made fibres	0.014	0.012	90%
	Rubber products	1.285	0.393	31%
	B Plastic products	2.196	0.476	22%
	Glass and glass products	0.711	0.227	32%
	Ceramic goods	1.518	0.763	50%
	Bricks, tiles and construction products, baked in clay	0.132	0.080	60%
	? Cement, lime and plaster	0.333	0.086	26%
	Articles of concrete, plaster and cement; cutting, shaping a	0.450	0.110	25%
	Basic iron and steel and of ferro-alloys; manufacture of tut	0.777	0.227	29%
	Basic precious and non-ferrous metals	0.925	0.269	29%
	Casting of metals	0.012	0.010	78%
	Structural metal products	3.505	1.506	43%
	3 Tanks, reservoirs and containers of metal; manufacture of	0.719	0.302	42%
	Forging, pressing, stamping and roll forming of metal; pow	0.075	0.024	32%
	Outlery, tools and general hardware	1.118	0.410	37%
	Other fabricated metal products	1.231	0.423	34%
	2 Machinery for the production and use of mechanical powe	1.092	0.349	32%
	Other general purpose machinery	4.784	1.669	35%

			Standard error of	Relative error of CO2
	Uncertainty of embedded CO2 emissions by	CO2 CONSUMER	CO2 CONSUMER	CONSUMER
	sector; year 2001	emissions	emissions	emissions
	33333., <b>y</b> 04 250.	E (Mt CO2)	dE (Mt CO2)	dE/E
64	Agricultural and forestry machinery	0.653	0.208	32%
	Machine tools	0.829	0.422	51%
66	Other special purpose machinery	1.793	2.552	142%
67	Weapons and ammunition	0.096	0.042	43%
68	Domestic appliances not elsewhere classified	2.363	0.991	42%
	Office machinery and computers	6.997	3.749	54%
	Electric motors, generators and transformers; manufacture	1.867	0.687	37%
	Insulated wire and cable	0.495	0.255	51%
	Electrical equipment not elsewhere classified	0.444	0.460	104%
	Electronic valves and tubes and other electronic compone	0.028	0.097	351%
	Television and radio transmitters and line for telephony an	3.835	2.526	66%
	Television and radio receivers, sound or video recording o	2.700	1.371	51%
	Medical, precision and optical instruments, watches and cl	2.755	1.631	59%
	Motor vehicles, trailers and semi-trailers	16.723	6.343	38%
	Building and repairing of ships and boats  Other transport equipment	1.087 0.885	0.377 0.285	35% 32%
	Aircraft and spacecraft	3.295	2.632	80%
	Furniture	10.284	3.249	32%
_	Jewellery and related articles; manufacture of musical inst	3.934	2.384	32% 61%
	Sports goods, games and toys	6.716	3.868	58%
	Miscellaneous manufacturing not elsewhere classified; rec	3.254	2.228	68%
	Production and distribution of electricity	55.734	10.884	20%
	Gas; distribution of gaseous fuels through mains; steam a	21.084	11.736	56%
	Collection, purification and distribution of water	1.442	0.102	7%
	Construction	40.903	9.059	22%
89	Sale, maintenance and repair of motor vehicles, and moto	10.519	2.747	26%
90	Wholesale trade and commission trade, except of motor vi	18.189	5.164	28%
91	Retail trade, except of motor vehicles and motor cycles; re	23.857	9.791	41%
92	Hotels and restaurants	31.554	7.560	24%
	Transport via railways	4.127	5.159	125%
	Other land transport; transport via pipelines	12.117	1.840	15%
	Water transport	8.245	3.133	38%
	Air Transport	37.338	16.194	43%
	Supporting and auxiliary transport activities; activities of tra	0.936	0.209	22%
	Post and courier activities	0.337	0.121	36%
	Telecommunications	3.788	1.764	47%
	Financial intermediation, except insurance and pension fur Insurance and pension funding, except compulsory social	2.566 11.177	0.662 2.552	26% 23%
	Activities auxiliary to financial intermediation  Real estate activities with own property; letting of own prop	0.372 0.011	0.101 0.004	27% 38%
	Letting of dwellings, including imputed rent	9.491	2.521	27%
	Real estate activities on a fee or contract basis	0.364	0.151	42%
	Renting of machinery and equipment without operator and	3.950	0.585	15%
	Computer and related activities	3.291	0.906	28%
	Research and development	0.137	0.033	24%
109	Legal activities	0.378	0.125	33%
110	Accounting, book-keeping and auditing activities; tax cons	0.004	0.001	39%
111	Market research and public opinion polling; business and ı	0.027	0.018	68%
112	Architectural and engineering activities and related technic	0.955	0.253	26%
	Advertising	0.001	0.005	457%
	Other business services	0.448	0.085	19%
	Public administration and defence; compulsory social secu	37.358	7.433	20%
	Education	16.927	2.339	14%
	Human health and veterinary activities	24.278	8.601	35%
	Social work activities	6.662	2.061	31%
	Sewage and refuse disposal, sanitation and similar activities of membership arganisations not also where also	3.701	0.476	13%
	Activities of membership organisations not elsewhere clas	0.813	0.129	16% 20%
	Recreational, cultural and sporting activities Other service activities	7.700 2.942	1.547 0.856	20% 29%
	Private households with employed persons	2.942 0.215	0.006	3%
123	Titale nedectioned with employed persons	89.97	0.000	370
		62.01		
	Total CO2 consumer emissions	732	+/- 36	+/- 4.9%

Name			000 0000000000	Standard error of	Relative error of CO2
### Sector; year 2002    1 Agriculture, hunting and related service activities		Uncertainty of embedded CO2 emissions by	CO2 CONSUMER		
1 Agriculture, hunting and related service activities   9,867   1.710   17%   2 Forestry, logging and related service activities   0.116   0.020   18%   3 Fishing, operation of fish hatcheries and fish farms; service   0.077   0.120   1.65%   4 Mining of coal and ingline; extraction of peat   0.152   0.722   474%   6 Extraction of crude petroleum and natural gas; service act   0.939   0.715   76%   6 Mining of metal ores   0.034   0.035   10.5%   7 Other mining and quarrying   0.928   0.245   26%   8 Production, processing and preserving of fish and fish products; fruit a   4.716   1.189   25%   9 Processing and preserving of fish and fish products; fruit a   4.716   1.189   25%   1.189   1.200   2.25%   1.189   1.200   2.25%   1.200   1.			emissions		
1 Agriculture, hunting and related service activities   9,867   1.710   17%   2 Forestry, logging and related service activities   0.116   0.020   18%   3 Fishing, operation of fish hatcheries and fish farms; service   0.077   0.120   1.65%   4 Mining of coal and ingline; extraction of peat   0.152   0.722   474%   6 Extraction of crude petroleum and natural gas; service act   0.939   0.715   76%   6 Mining of metal ores   0.034   0.035   10.5%   7 Other mining and quarrying   0.928   0.245   26%   8 Production, processing and preserving of fish and fish products; fruit a   4.716   1.189   25%   9 Processing and preserving of fish and fish products; fruit a   4.716   1.189   25%   1.189   1.200   2.25%   1.189   1.200   2.25%   1.200   1.		, <b>,</b>	E (Mt CO2)		
2 Forestry, logging and related service activities 3 Fishing, operation of fish hatcheries and fish farms; service 4 Mining of road and lignite: extraction of opea to 1,152 5 Extraction of crude petrolum and natural gas; service act 0,399 0,715 6 Mining of metal ores 0,034 0,035 1,05% 6 Mining of metal ores 0,034 0,035 1,05% 7 Other mining and quarrying 0,928 0,245 2,028 8 Production, processing and preserving of meat and meat; 1,016 1,126	1	Agriculture, hunting and related service activities			
3 Fishing, operation of fish hatchenies and fish farms; service 4 Mining of ocal and ingline: extraction of peat 4 0.152 0.722 474% 6 Extraction of crude petroleum and natural gas; service act 0.393 0.715 76% 1 0.355 10.5% 7 Other mining and quarrying 0.928 0.245 26% 8 Production, processing and preserving of meat and meat   6.116 1.426 23% 1 0.928 1 0.928 0.245 26% 1 0.928 1 0.928 1 0.928 0.245 26% 1 0.929 1 0.928 1 0			0.116	0.020	18%
6 Extraction of crude petroleum and natural gas, service act         0.939         0.715         76%           6 Mining of metal ores         0.034         0.035         10%           7 Other mining and quarrying         0.928         0.245         26%           8 Production, processing and preserving of fish and fish products; fruit a         4.716         1.189         25%           1 Daily products         3.618         1.300         39%           12 Crain mill products is activated and a starch products         0.876         0.300         34%           13 Prepared animal feeds         0.885         0.381         4.300           14 Bread, rusks and biscuits; manufacture of pastry goods an         3.318         1.118         34%           15 Sugar         1.127         0.077         61%         36         0.000         7.95         32%           16 Cocoa; chocolate and sugar confectionery         1.477         0.487         33%         1.118         34%         1.8         1.200         7.077         61%         36         0.785         32%         1.8         1.000         7.955         32%         1.8         1.147         0.487         33%         1.147         0.077         61%         4.6         0.000         1.147         0.077			0.077	0.120	156%
6 Mining of metal acres         0.034         0.035         105%           7 Other mining and quarrying         0.928         0.245         26%           8 Production, processing and preserving of fish and fish products; fruit a         4.716         1.189         25%           9 Processing and preserving of fish and fish products; fruit a         4.716         1.189         25%           11 Darly products         3.818         1.189         25%           12 Carla mill products, starches and starch products         0.876         0.300         34%           13 Prepared animal feeds         0.845         0.381         1.118         34%           14 Bread, rusks and biscults; manufacture of pastry goods an         3.318         1.118         34%           15 Suger         0.127         0.077         61%           16 Cocca, chocolate and sugar confectionery         1.477         0.487         1334           17 Other food products         2.506         0.795         32%           18 Alcoholic beverages         2.074         1.341         65%           19 Production of mineral valers and solf drinks         1.842         0.700         36%           21 Preparation and spinning of textile fibres         0.013         0.572         4359%           22 Taxtile we	4	Mining of coal and lignite; extraction of peat	0.152	0.722	474%
7 Other mining and quarrying         0.928         0.245         28%           8 Potuction, processing and preserving of fish and fish products; fruit a         4.716         1.189         23%           9 Processing and preserving of fish and fish products         3.618         1.100         36%           11 Dairy products         3.618         1.300         36%           12 Grain mill products, starches and starch products         0.845         0.381         1.500         34%           13 Prepared animal feets, manufacture of pastry goods an         3.318         1.118         34%           15 Sugar         0.127         0.077         61%           16 Cocos; chocolate and sugar confectionery         1.477         0.487         33%           17 Other food products         2.506         0.795         32%           18 Alcoholic beverages         2.074         1.341         65%           29 Production of mineral waters and soft drinks         1.842         0.700         38%           21 Preparation and spinning of texilie fibres         0.013         0.572         4358%           21 Preparation and spinning of texilie fibres         0.013         0.572         4358%           22 Texilit weaving         0.036         0.032         99%           23 Finishin	5	Extraction of crude petroleum and natural gas; service act	0.939	0.715	76%
B Production, processing and preserving of meat and meat   6.116   1.426   23%   9 Processing and preserving of fish and fish products; fruit a   4.716   1.189   25%   10 Vegetable and animal ciols and fals   3.618   1.300   36%   11 Dainy products   3.618   1.300   36%   12 Grain mill products, starches and starch products   0.876   0.300   34%   13 Prepared animal feeds   0.845   0.381   45%   14 Bread, rusks and biscuits; manufacture of pastry goods an   3.318   1.118   34%   15 Sugar   0.127   0.077   61%   16 Cocca; chocolate and sugar confectionery   1.477   0.487   33%   17 Other food products   2.506   0.795   32%   18 Rokohici beverages   2.074   1.341   65%   18 Rokohici beverages   2.074   1.341   65%   19 Production of mineral waters and soft drinks   1.842   0.700   38%   19 Production of mineral waters and soft drinks   1.842   0.700   38%   21 Fresparation and spinning of textile fibres   0.013   0.572   4358%   22 Facility ewaving   0.036   0.032   0.0	6	Mining of metal ores	0.034	0.035	105%
9 Processing and preserving of fish and fish products; fruit a	7	Other mining and quarrying	0.928	0.245	26%
1 O Vegetable and animal oils and fats 1 Dairy products 3 618 1,300 36% 12 Grain mill products, starches and starch products 3 618 0,300 36% 13 Prepared animal feeds 4 Pread, rusks and biscuits; manufacture of pastry goods an 3,318 1,118 3 Fugar 0,127 0,077 61% 6 Cocoa; chocolate and sugar confectionery 1,477 0,487 33% 17 Other food products 2,506 0,795 32% 8 Alcoholic beverages 2,074 1,341 65% 18 Alcoholic beverages 2,074 1,341 65% 19 Production of mineral waters and soft drinks 1,842 0,700 33% 20 Tobacco products 1,128 0,740 66% 21 Preparation and spinning of textile fibres 0,013 0,572 4359% 22 Textile weaving 0,036 0,032 90% 23 Finishing of faxilie fibres 0,013 0,572 4359% 24 Made-up textile articles, except apparel 1,966 0,831 42% 25 Garpets and rugs 0,699 0,244 35% 26 Other textiles 2,420 1,758 73% 27 Knitted and crocheted fabrics and articles 2,420 1,758 73% 28 Wearing apparel; dressing and dying of fur 10,387 7,960 77% 29 Tarning and dressing of leather; manufacture of luggage, 0,209 0,190 91% 31 Wood and wood products, except furniture 1,190 0,364 31% 32 Pub, paper and paperboard 0,127 0,072 57% 33 Articles of paper and paperboard 0,127 0,072 57% 34 Publishing, printing and reproduction of recorded media 3,549 0,827 1,000 1,00	8	Production, processing and preserving of meat and meat ;	6.116	1.426	23%
11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13 Prepared animal feeds 15 Suguar 16 Cocoa; chocolate and sugar confectionery 17 Other food products 2,506 18 Alcoholic beverages 2,074 18 Alcoholic beverages 2,074 19 Production of mineral waters and soft drinks 19 Production of mineral waters and soft drinks 11,128 10 Tobacco products 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,128 11,1	9	Processing and preserving of fish and fish products; fruit a	4.716	1.189	25%
12 Grain mill products, starches and starch products 0.845 0.381 45% 13 Prepared animal fleeds 0.845 0.381 145% 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.318 1.118 34% 15 Sugar 0.127 0.077 61% 16 Cocoa; chocolate and sugar confectionery 1.477 0.487 33% 17 Other food products 2.506 0.795 32% 18 Alcoholic beverages 2.074 1.341 65% 18 Production of mineral waters and soft drinks 1.842 0.700 88% 18 Alcoholic beverages and soft drinks 1.842 0.700 88% 19 Production of mineral waters and soft drinks 1.842 0.700 88% 12 Preparation and spinning of textile fibres 0.013 0.572 4359% 12 Preparation and spinning of textile fibres 0.013 0.572 4359% 12 Preparation and spinning of textile fibres 0.013 0.572 4359% 12 Preparation and spinning of textile fibres 0.024 0.035 147% 147% 1486 1496 1496 1496 1496 1496 1496 1496 149			0.468	0.167	36%
13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13 18 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 16 Cocoa; chocolate and sugar confectionery 17 Other food products 2,506 0,795 32% 18 Alcoholic beverages 2,074 1,341 65% 19 Production of mineral waters and soft drinks 1,842 0,700 38% 20 Tobacco products 1,128 0,740 66% 21 Preparation and spinning of textile fibres 0,013 0,572 2 Textile weaving 0,036 0,032 23 Finishing of textiles 0,024 0,035 147% 24 Made-up textile articles, except apparel 1,966 0,831 142% 25 Carpets and rugs 26 Other textiles 0,156 0,047 30% 27 Knitted and crocheted fabrics and articles 27 Knitted and crocheted fabrics and articles 28 Wearing apparet; dressing and dying of fur 29 Taming and dressing of leather; manufacture of luggage, 0,209 0,190 30 Footwear 1,824 1,409 77% 31 Wood and wood products, except furniture 1,190 32 Pulp, paper and paperboard 33 Pulp, paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum production of recorded media 36 Industrial gases, dyse and pigments 39 Fortilisers and nitrogen controls 30 Fortilisers and introgen compounds 41 Presticies and introgen compounds 42 Pulp, in paper and paperboard 0,047 0,048 0,048 0,048 0,048 0,048 0,049 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,035 0,044 0,036 0,047 0,044 0,036 0,047 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,048 0,049 0,049 0,048 0,049		The state of the s			
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36 Industrial gases, dyes and pigments         0.045         0.025         57%           37 Other inorganic basic chemicals         0.099         0.048         49%           38 Other organic basic chemicals         0.233         0.120         51%           39 Fertilisers and nitrogen compounds         0.234         0.103         44%           40 Plastics and synthetic rubber in primary forms         0.069         0.093         134%           41 Pesticides and other agro-chemical products         0.205         0.050         25%           42 Paints, varnishes and similar coatings, printing ink and ma         0.234         0.103         44%           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.613         0.788         49%           44 Soap and detergents, cleaning and polishing preparations         2.864         1.220         43%           45 Other chemical products         1.284         0.641         50%           46 Man-made fibres         0.003         0.015         434%           47 Rubber products         1.291         0.413         32%           48 Plastic products         2.200         0.521         24%           49 Glass and glass products         0.652         0.238         36%           50 Ceramic goods         1.544 </td <td>34</td> <td>Publishing, printing and reproduction of recorded media</td> <td>3.549</td> <td>0.827</td> <td>23%</td>	34	Publishing, printing and reproduction of recorded media	3.549	0.827	23%
37 Other inorganic basic chemicals 38 Other organic basic chemicals 0.233 0.120 51% 39 Fertilisers and nitrogen compounds 0.234 0.103 44% 40 Plastics and synthetic rubber in primary forms 0.069 0.093 134% 41 Pesticides and other agro-chemical products 0.205 0.500 25% 42 Paints, varnishes and similar coatings, printing ink and ma 0.234 0.103 44% 43 Pharmaceuticals, medicinal chemicals and botanical produ 1.613 0.788 49% 44 Soap and detergents, cleaning and polishing preparations 2.864 1.220 43% 45 Other chemical products 1.284 0.641 50% 46 Man-made fibres 0.003 0.015 434% 47 Rubber products 1.291 0.413 32% 48 Plastic products 1.291 0.413 32% 50 Ceramic goods 1.544 0.780 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 1.025 0.254 25% 53 Articles of concrete, plaster and cement; cutting, shaping ε 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 0.840 0.266 32% 55 Tstructural metal products 3.376 1.427 42% 58 Tanks, reservoirs and containers of metal; manufacture of 0.605 0.389 64% 60 Cuttery, tools and general hardware 1.208 0.443 37% 61 Other fabricated metal products 1.257 0.443 35% 62 Machinery for the production and use of mechanical powe 0.880 0.319	35	Coke, refined petroleum products and nuclear fuel	16.081	10.191	63%
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62 Machinery for the production and use of mechanical powe 0.880 0.319 36%					35%
	62	Machinery for the production and use of mechanical powe			36%
			4.268	1.486	35%

	Uncertainty of embedded CO2 emissions by sector; year 2002	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
		E (Mt CO2)	dE (Mt CO2)	dE/E
64	Agricultural and forestry machinery	0.642	0.235	37%
	Machine tools	0.803	0.419	52%
	Other special purpose machinery	1.721	2.318	135%
	Weapons and ammunition	0.107	0.051	47%
	Domestic appliances not elsewhere classified	2.586	1.180	46%
	Office machinery and computers	6.141	3.260	53%
	Electric motors, generators and transformers; manufacture	1.648	0.584	35%
	Insulated wire and cable	0.411	0.182	44%
	Electrical equipment not elsewhere classified	0.647	0.478	74%
	Electronic valves and tubes and other electronic compone	0.034	0.087	258%
	Television and radio transmitters and line for telephony an	4.928	2.321	47%
	Television and radio receivers, sound or video recording o	3.019	1.606	53%
	Medical, precision and optical instruments, watches and cl	2.662	1.527	57%
	Motor vehicles, trailers and semi-trailers Building and repairing of ships and boats	16.737 0.987	6.881 0.292	41% 30%
		1.039	0.292	33%
	Other transport equipment Aircraft and spacecraft	4.170	3.299	79%
	Furniture	11.139	3.869	35%
_	Jewellery and related articles; manufacture of musical inst	4.623	2.686	58%
	Sports goods, games and toys	7.698	4.365	57%
	Miscellaneous manufacturing not elsewhere classified; rec	3.716	2.452	66%
	Production and distribution of electricity	51.914	10.591	20%
	Gas; distribution of gaseous fuels through mains; steam a	22.908	11.171	49%
	Collection, purification and distribution of water	1.289	0.104	8%
	Construction	40.715	9.419	23%
	Sale, maintenance and repair of motor vehicles, and moto	9.992	3.205	32%
	Wholesale trade and commission trade, except of motor vi	17.209	4.838	28%
	Retail trade, except of motor vehicles and motor cycles; re	23.429	10.876	46%
	Hotels and restaurants	32.301	8.044	25%
93	Transport via railways	4.072	6.812	167%
	Other land transport; transport via pipelines	12.724	1.977	16%
95	Water transport	10.016	3.205	32%
96	Air Transport	37.652	17.238	46%
97	Supporting and auxiliary transport activities; activities of tra	0.737	0.214	29%
98	Post and courier activities	0.333	0.121	36%
	Telecommunications	3.837	1.855	48%
	Financial intermediation, except insurance and pension ful	2.058	0.551	27%
	Insurance and pension funding, except compulsory social	8.481	1.932	23%
	Activities auxiliary to financial intermediation	0.303	0.083	28%
	Real estate activities with own property; letting of own prop	0.009	0.005	53%
	Letting of dwellings, including imputed rent	8.747	2.316	26%
	Real estate activities on a fee or contract basis	0.405	0.176	44%
	Renting of machinery and equipment without operator and	3.353	0.478	14%
	Computer and related activities	2.914	0.816	28%
	Research and development	0.146	0.038	26%
	Legal activities  Accounting book-keeping and auditing activities: tay cons	0.455 0.012	0.152 0.003	33% 27%
	Accounting, book-keeping and auditing activities; tax cons Market research and public opinion polling; business and I	0.012	0.003	21%
	Architectural and engineering activities and related technic	0.800	0.016	31%
	Advertising	0.000	0.006	1998%
	Other business services	0.490	0.008	1996%
	Public administration and defence; compulsory social secu	39.222	8.294	21%
	Education	15.719	2.278	14%
	Human health and veterinary activities	23.698	8.845	37%
	Social work activities	7.096	2.280	32%
	Sewage and refuse disposal, sanitation and similar activition	3.682	0.479	13%
	Activities of membership organisations not elsewhere clas	0.761	0.127	17%
	Recreational, cultural and sporting activities	8.502	1.736	20%
	Other service activities	2.696	0.836	31%
123	Private households with employed persons	0.216	0.006	3%
		86.89		
		63.89		
	Total CO2 consumer emissions	730	+/- 38	+/- 5.2%

1 Agriculture, hunting and related service activities		Uncertainty of embedded CO2 emissions by sector; year 2003	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
2 Forestry, logging and related service activities			E (Mt CO2)	dE (Mt CO2)	dE/E
3 Fishing, operation of fish hatcheries and fish fams; servior		•			18%
## A Mining of coal and lignite; extraction of peat  5 Extraction of crude petroleum and natural gas; service act  6 Mining of metal ores  7 Other mining and quarrying  8 Production, processing and preserving of meat and meat;  8 Production, processing and preserving of freat and meat;  8 Production, processing and preserving of fire at and meat;  10 Vegetable and animal oils and fish products; fruit a  11 Dairy products  12 Grain mill products, starches and starch products  13 Prepared animal feeds  13 Prepared animal feeds  14 Bread, nusks and biscuits; manufacture of pastry goods and start of 1.173  15 Sugar  16 Cocce; chocolate and sugar confectionery  17 Other food products  18 Alcoholic beverages  19 Production of mineral waters and soft drinks  19 Prepared on and spinning of textile fibres  20 Tobacco products  21 Preparation and spinning of textile fibres  22 Textile weaving  23 Finishing of textiles  24 Made-up textile articles, except apparel  24 Made-up textile articles, except apparel  25 Carpets and rugs  26 Other textiles  27 Knitted and crocheted fabrics and articles  28 Wearing apparel, dressing and dying of fur  33 Articles of posen and paperboard  34 Publishing, printing and reproducts on one of the starting and paperboard  35 Coke, refined petroleum products and nuclear fuel  40 Plastics of paper and paperboard  36 Industrial gases, dyse and pigments  40 Plastics of paper and paperboard  41 Presticies and and paperboard  42 Painting and dressing and dying of fur  43 Articles of paper and paperboard  44 Presticies of paper and paperboard  45 Coke, refined petroleum products and nuclear fuel  57 Kritted and crocheted fabrics and articles  58 Coke, refined petroleum products and nuclear fuel  59 Taning and dressing and paperboard  50 Coke refined petroleum products and nuclear fuel  50 Coke refined petroleum products  50 Coke refined petroleum products  50 Coke, refined petroleum products  50 Coke refined petroleum products  50 Coke refined petroleum products  50 Coke refined petroleum products	2	Prorestry, logging and related service activities	0.105	0.048	46%
6 Extraction of crude petroleum and natural gas; service act         0.640         0.665           6 Mining of metal ores         0.001         0.008           7 Other mining and quarrying         0.575         0.174           8 Production, processing and preserving of fine and fish products; fruit a         4.771         1.496           9 Processing and preserving of fish and fish products; fruit a         4.771         1.413           10 Vegetable and animal oils and falts         0.378         0.151           11 Dairy products         3.504         1.303           12 Grain mill products, starches and starch products         0.885         0.298           13 Prepared animal feeds         0.794         0.393           14 Bread, rusks and bisculist, manufacture of pastry goods an         3.447         1.173           15 Sugar         0.100         0.072           16 Cocoa; chocolate and sugar confectionery         1.407         0.457           17 Other food products         2.350         0.806           18 Alcoholic beverages         2.271         1.704           19 Production of mineral waters and soft drinks         1.886         0.736           20 Tobacco products         0.927         0.668           21 Preparation and spinning of textile fibres         0.059         0.045	3	Fishing, operation of fish hatcheries and fish farms; service	0.081	0.139	171%
6 Mining of metal ores         0.001         0.008           7 Other mining and quarrying         0.575         0.174           8 Production, processing and preserving of fish and fish products; fruit a         4.771         1.496           9 Processing and preserving of fish and fish products; fruit a         4.771         1.413           10 Vegetable and animal oils and fists         0.378         0.151           11 Dairy products         0.885         0.298           12 Grain mill products, starches and starch products         0.885         0.298           13 Prepared animal feeds         0.794         0.393           14 Bread, rusks and biscuits; manufacture of pastry goods an         3.447         1.173           15 Sugar         0.100         0.072           16 Cocoa; chocolate and sugar confectionery         1.407         0.457           17 Other food products         2.250         0.806           18 Alcoholic beverages         2.271         1.704           19 Production of mineral waters and soft drinks         1.866         0.736           20 Tobacco products         0.927         0.668           21 Preparation and spinning of textille fibres         0.927         0.668           22 Textile weaving         0.058         0.029           23 Finish	4	Mining of coal and lignite; extraction of peat	0.251	0.610	243%
7 Other mining and quarrying         0.575         0.174           8 Production, processing and preserving of fish and fish products, fruit a         4.711         1.496           9 Processing and preserving of fish and fish products, fruit a         4.711         1.413           10 Vegetable and animal oils and fals         0.378         0.151           11 Dairy products         3.504         1.303           12 Grain mill products, starches and starch products         0.885         0.298           31 Prepared animal feeds         0.794         0.393           14 Bread, rusks and biscuits; manufacture of pastry goods an         3.447         1.173           15 Sugar         0.100         0.072           16 Cocoa; chocolate and sugar confectionery         1.407         0.457           17 Other food products         2.350         0.806           18 Alcoholic beverages         2.271         1.704           19 Production of mineral waters and soft drinks         1.886         0.736           20 Tobacco products         0.927         0.668           21 Preparation and spinning of textile fibres         0.059         0.045           22 Textile weaving         0.058         0.029           23 Finishing of textile articles, except apparel         1.961         0.856 <t< td=""><td>5</td><td>Extraction of crude petroleum and natural gas; service act</td><td>0.640</td><td>0.665</td><td>104%</td></t<>	5	Extraction of crude petroleum and natural gas; service act	0.640	0.665	104%
8 Production, processing and preserving of fineat and meat; 9 Processing and preserving of fish and fish products; fruit a 4.711 1.413 10 Vegetable and animal oils and fats 0.378 0.151 11 Dairy products 3.3504 1.303 12 Grain mill products, starches and starch products 0.885 0.298 13 Prepared animal feeds 0.794 0.393 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.447 1.173 15 Sugar 0.100 0.072 16 Cocoa; chocolate and sugar confectionery 1.407 0.457 17 Other food products 2.256 0.806 18 Alcoholic beverages 2.271 1.704 19 Production of mineral waters and soft drinks 1.886 0.736 20 Tobecco products 0.927 0.668 21 Preparation and spinning of textile fibres 0.059 0.045 22 Textile weaving 0.058 0.029 23 Finishing of textiles 0.006 0.019 24 Made-up textile articles, except apparel 1.961 0.856 25 Carpets and rugs 0.683 0.225 26 Other textiles 0.195 0.065 29 Tok textiles 0.195 0.065 20 Tok textiles 0.195 0.	6	6 Mining of metal ores	0.001	0.008	560%
9 Processing and preserving of fish and fish products; fruit a 10 Vegetable and animal oils and fats 11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 16 Cocoa; chocolate and sugar confectionery 11,407 17 Other food products 18 Alcoholic beverages 18 Alcoholic beverages 19 Production of mineral waters and soft drinks 18 Alcoholic beverages 10 Tobacco products 10 Production of mineral waters and soft drinks 18 Alcoholic beverages 10 Tobacco products 10 Production of mineral waters and soft drinks 10 Tobacco products 10 Preparation and spinning of textile fibres 10 Tobacco products 10 Preparation and spinning of textile fibres 10 Tobacco products 10 Preparation and spinning of textile fibres 10 Tobacco products 10 Preparation and spinning of textile fibres 10 Tobacco products 10 Preparation and spinning of textile fibres 10 Preparation and Preparation and Architecture of Ungage, 10 Preparation and Pr	7	Other mining and quarrying	0.575	0.174	30%
10 Vegetable and animal oils and fats	8	Production, processing and preserving of meat and meat	6.077	1.496	25%
10 Vegetable and animal oils and fats   1.378   0.151			4.711	1.413	30%
11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 14 Bread, rusks and biscuits; manufacture of pastry goods an 15 Sugar 16 Coopa; chocolate and sugar confectionery 11,407 17 Other food products 18 Alcoholic beverages 12,271 17,704 19 Production of mineral waters and soft drinks 18 Alcoholic beverages 22,271 17,704 19 Production of mineral waters and soft drinks 18,866 17,366 20 Tobacco products 10,927 10,668 21 Preparation and spinning of textile fibres 10,059 12 Textile weaving 10,058 12 Firstile waving 10,058 12 Firstile waving 10,058 12 Firstile drived and spinning of textile fibres 12 Firstile waving 13 Firstile fibres 10,066 10,019 12 Made-up textile articles, except apparel 19,61 19	10	Vegetable and animal oils and fats	0.378	0.151	40%
12 Grain mill products, starches and starch products 0.885 0.298 13 Prepared animal feeds 0.794 0.393 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.447 1.173 15 Sugar 0.100 0.072 16 Cocoa; chocolate and sugar confectionery 1.407 0.457 17 Other food products 2.350 0.806 18 Alcoholic beverages 2.271 1.704 19 Production of mineral waters and soft drinks 1.886 0.736 20 Tobacco products 0.927 0.668 0.736 21 Preparation and spinning of textile fibres 0.927 0.668 0.029 23 Finishing of lextiles 0.059 0.045 22 Textile weaving 0.058 0.029 23 Finishing of lextiles 0.006 0.019 24 Made-up textile articles, except apparel 1.961 0.856 25 Carpets and rugs 0.683 0.255 26 Other textiles 0.195 0.065 27 Knitted and crocheted fabrics and articles 2.407 2.084 28 Wearing apparel; dressing and dying of fur 10.453 8.826 29 Tanning and dressing of leather; manufacture of luggage, 0.236 0.213 30 Foothear 1.711 1.391 31 400 and wood products, except furniture 1.246 0.433 2.Pulp, paper and paperboard 1.174 0.835 35 Coke, refined petroleum products and nuclear fuel 15.731 11.264 36 Industrial gases, clyes and pigments 0.057 0.087 39 Fertilisers and introgen compounds 37 Other inorganic basic chemicals 0.003 0.031 37 Other inorganic basic chemicals 0.003 0.031 37 Other inorganic basic chemicals 0.005 0.059 0.029 0.020 47 Rubber products in disclaration of the products of the products 1.551 1.027 44 Soap and detergents, cleaning and profuscular, printing ink and ma 0.269 0.130 43 Particles of paper and paperboard 1.551 1.027 44 Soap and detergents, cleaning and profuscular products 0.066 0.029 0.020 47 Rubber products 0.060 0.029 0.020 47 Rubber products 0.060 0.029 0.020 0.020 47 Rubber products 0.060 0.029 0.020			3.504	1.303	37%
13 Prepared animal feeds 14 Bread, rusks and biscuits; manufacture of pastry goods an 13.447 1.173 15 Sugar 0.100 0.072 16 Cocoa; chocolate and sugar confectionery 1.4.07 0.457 17 Other food products 2.350 0.806 18 Alcoholic beverages 2.271 1.704 19 Production of mineral waters and soft drinks 1.886 0.736 20 Tobacco products 0.927 0.668 21 Preparation and spinning of textile fibres 0.059 0.045 22 Textile weaving 0.058 0.029 23 Finishing of textiles 0.006 0.019 24 Made-up textile articles, except apparel 1.961 0.856 25 Carpets and rugs 0.683 0.255 26 Other textiles 0.065 27 Kritted and crocheted fabrics and articles 2.407 2.084 28 Wearing apparel; dressing and dying of fur 10.453 8.826 29 Tanning and dressing of leather; manufacture of luggage, 0.236 0.213 30 Frootwear 1.711 1.391 31 Wood and wood products, except furniture 1.246 0.433 32 Pulp, paper and paperboard 0.134 0.071 33 Articles of paper and paperboard 1.174 0.835 35 Coke, refined petroleum products and nuclear fuel 15.731 11.264 36 Industrial gases, dyes and pigments 0.036 0.053 31 Pother inorganic basic chemicals 0.003 0.031 1.264 32 Paints, arming and dresponduction of recorded media 3.782 0.996 35 Coke, refined petroleum products and nuclear fuel 15.731 11.264 36 Industrial gases, dyes and pigments 0.043 0.031 37 Other inorganic basic chemicals 0.003 0.031 1.264 38 Other organic basic chemicals 0.0057 0.087 39 Fertilisers and nitrogen compounds 0.162 0.076 40 Plastics and synthetic rubber in primary forms 0.036 0.053 41 Pesticides and other agro-chemical products 1.571 1.027 44 Soap and detergents, cleaning and polishing preparations 3.574 1.780 45 Other chemical products 1.362 0.567 48 Plastic products 1.362 0.567 49 Plastic, sand synthetic rubber in primary forms 0.036 0.053 41 Pesticides and of other agro-chemical products 1.569 0.029 42 Paints, varnishes and similar coatings, printing ink and ma 0.269 0.130 43 Pharmaceuticals, medicinal chemicals and botanical prod 44 Soap and detergents, cleaning and polishing preparations 3.574 1.780 45 Other			0.885	0.298	34%
14 Bread, rusks and biscuits; manufacture of pastry goods an   0.100   0.072     15 Sugar   0.100   0.072     16 Cocoa; chocolate and sugar confectionery   1.407   0.457     17 Other food products   2.350   0.806     18 Alcoholic beverages   2.271   1.704     19 Production of mineral waters and soft drinks   1.886   0.736     20 Tobacco products   0.927   0.668     21 Preparation and spinning of textile fibres   0.059   0.045     22 Textile weaving   0.058   0.029     23 Finishing of textiles   0.006   0.019     24 Made-up textile articles, except apparel   1.961   0.856     25 Carpets and rugs   0.683   0.255     26 Other textiles   0.195   0.066     27 Knitted and crocheted fabrics and articles   2.407   2.084     28 Wearing apparel; dressing and drying of fur   10.453   8.826     29 Tanning and dressing of leather; manufacture of luggage,   0.236   0.213     30 Footwear   1.711   1.391     31 Wood and wood products, except furniture   1.246   0.433     32 Pulp, paper and paperboard   0.134   0.071     33 Articles of paper and paperboard   0.134   0.071     33 Articles of paper and paperboard   0.134   0.071     33 Cher inorganic basic chemicals   0.003   0.031   1     36 Industrial gases, dyes and pigments   0.043   0.031     37 Other inorganic basic chemicals   0.003   0.031   1     38 Other organic basic chemicals   0.007   0.087     39 Fertilisers and nitrogen compounds   0.162   0.076     40 Plastics and synthetic rubber in primary forms   0.036   0.653     41 Pesticides and other agro-chemical groducts   0.060   0.029     42 Paints, varnishes and similar coatings, printing ink and ma   0.269   0.130     43 Publishing and detergents, cleaning and polishing preparations   1.694   1.070     44 Soap and detergents, cleaning and polishing preparations   1.694   1.070     45 Basic products   1.362   0.567     46 Man-made fibres   0.029   0.020     47 Rubber products   0.066   0.196     50 Casting of metals   0.045   0.045   0.056     51 Bricks, tiles and construction products, baked in clay   0.123   0.290			0.794	0.393	49%
15 Sugar 16 Cocoa; chocolate and sugar confectionery 1, 407 17 Other food products 2,350 0,806 18 Alcoholic beverages 2,271 1,704 19 Production of mineral waters and soft drinks 1,886 0,736 20 Tobacco products 0,927 0,668 21 Preparation and spinning of textile fibres 0,059 0,045 22 Textile weaving 0,058 0,029 23 Finishing of textiles 0,006 0,019 24 Made-up textile articles, except apparel 1,961 0,856 25 Carpets and rugs 0,065 27 Knitted and crocheted fabrics and articles 27 Knitted and crocheted fabrics and articles 28 Wearing apparet, dressing and dying of fur 28 Wearing apparet, dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 17 Wood and wood products, except furniture 1,711 1,711 1,711 1,711 1,711 1,714 1,714 1,714 1,714 1,714 1,714 1,715 1,714 1,714 1,715 1,714 1,714 1,715 1,714 1,714 1,714 1,715 1,714 1,714 1,715 1,714 1,715 1,716 1,717 1,716 1,717 1,			3.447		34%
16 Cocoa; chocolate and sugar confectionery 1 7 Other food products 2,350 0,806 18 Alcoholic beverages 2,271 1,704 19 Production of mineral waters and soft drinks 20 Tobacco products 2,377 0,668 21 Preparation and spinning of textile fibres 0,059 0,045 22 Textile weaving 0,058 0,029 23 Firnishing of textiles 0,006 0,0119 24 Made-up textile articles, except apparel 1,961 0,856 25 Carpets and rugs 0,683 0,255 26 Other textiles 1,961 27 Knitted and crocheted fabrics and articles 2,407 2,084 28 Wearing apparel, dressing and dying of fur 10,453 3,826 29 Tanning and dressing of leather; manufacture of luggage, 0,236 0,213 30 Footwear 1,711 1,391 31 Wood and wood products, except furniture 1,246 0,433 32 Pulp, paper and paperboard 1,174 0,835 34 Publishing, printing and reproduction of recorded media 3,782 0,996 35 Coke, refined petroleum products and nuclear fuel 1,174 1,126 36 Industrial gases, dyes and pigments 0,043 0,031 37 Other inorganic basic chemicals 0,045 0,076 0,087 39 Fertilisers and nitrogen compounds 0,162 0,076 0,093 41 Pesticides and other agro-chemical products 45 Man-made fibres 0,029 0,020 47 Rubber products 1,362 0,567 48 Plastic products 1,362 0,567 48 Plastic products 1,362 0,567 0,877 0,877 0,877 0,878 0,376 0,178 0,376 0,179 0,376 0,479 0,					72%
17 Other food products		•			32%
18   Alcoholic beverages   2.271   1.704     19   Production of mineral waters and soft drinks   1.886   0.736     20   Tobacco products   0.927   0.668     21   Preparation and spinning of textile fibres   0.059   0.045     22   Textile weaving   0.058   0.029     23   Finishing of textiles   0.006   0.019     24   Made-up textile articles, except apparel   1.961   0.856     25   Carpets and rugs   0.683   0.255     26   Other textiles   0.195   0.065     27   Knitted and crocheted fabrics and articles   2.407   2.084     28   Wearing appareit, dressing and dying of fur   10.453   8.826     29   Tanning and dressing of leather; manufacture of luggage,   0.236   0.213     30   Footwear   1.711   1.391     31   Wood and wood products, except furniture   1.246   0.433     32   Pulp, paper and paperboard   0.134   0.071     33   Articles of paper and paperboard   0.134   0.071     34   Publishing, printing and reproduction of recorded media   3.782   0.996     35   Coke, refined petroleum products and nuclear fuel   15.731   11.264     36   Industrial gases, dyes and pigments   0.043   0.031     37   Other inorganic basic chemicals   0.005   0.087     39   Fertilisers and nitrogen compounds   0.162   0.076     40   Plastics and synthetic rubber in primary forms   0.036   0.053     41   Pesticides and other agro-chemical products   0.060   0.029     42   Paints, varnishes and similar coatings, printing ink and ma   0.269   0.130     43   Pharmaceuticals, medicinal chemicals and botanical products   1.551   1.027     44   Soap and detergents, cleaning and polishing preparations   1.694   1.070     46   Man-made fibres   0.029   0.020     47   Rubber products   0.565   0.567     48   Plastic products   0.565   0.567     49   Glass and glass products   0.560   0.196     50   Ceramic goods   0.565   0.566     51   Structural metal products   0.560   0.196     52   Sasic precious and non-ferrous metals   0.566   0.196     55   Structural metal products   0.706   0.045   0.025     57   Structural metal products   0.706					34%
19 Production of mineral waters and soft drinks         1.886         0.736           20 Tobacco products         0.927         0.668           21 Preparation and spinning of textile fibres         0.059         0.045           22 Textile weaving         0.058         0.029           23 Finishing of textiles         0.006         0.019           24 Made-up textile articles, except apparel         1.961         0.856           25 Carpets and rugs         0.683         0.255           26 Other textiles         0.195         0.065           27 Knitted and crocheted fabrics and articles         2.407         2.084           28 Wearing apparel; dressing and dying of fur         10.453         8.826           29 Tanning and dressing of leather; manufacture of luggage,         0.236         0.213           30 Footwear         1.771         1.391           31 Wood and wood products, except furniture         1.246         0.433           32 Pulp, paper and paperboard         0.134         0.071           33 Articles of paper and paperboard         1.174         0.835           34 Publishing, printing and reproduction of recorded media         3.782         0.996           35 Coke, refined petroleum products and nuclear fuel         15.731         11.264		•			75%
20 Tobacco products	_	· · · · · · · · · · · · · · · · · · ·			39%
21 Preparation and spinning of textile fibres   0.058   0.029					72%
22 Textile weaving					76%
23 Finishing of textiles   0.006   0.019					50%
24 Made-up textile articles, except apparel       1.961       0.856         25 Carpets and rugs       0.683       0.255         26 Other textiles       0.195       0.065         27 Knitted and crocheted fabrics and articles       2.407       2.084         28 Wearing apparel; dressing and dying of fur       10.453       8.826         29 Tanning and dressing of leather; manufacture of luggage,       0.236       0.213         30 Footwear       1.711       1.391         31 Wood and wood products, except furniture       1.246       0.433         32 Pulp, paper and paperboard       0.134       0.071         33 Articles of paper and paperboard       1.174       0.835         34 Publishing, printing and reproduction of recorded media       3.782       0.996         35 Coke, refined petroleum products and nuclear fuel       15.731       11.264         36 Industrial gases, dyes and pigments       0.043       0.031         37 Other inorganic basic chemicals       0.003       0.031       1         38 Other organic basic chemicals       0.057       0.087         39 Fertilisers and nitrogen compounds       0.162       0.076         40 Plastics and synthetic rubber in primary forms       0.036       0.053         41 Pesticides and other agro-chemical pr					302%
25 Carpets and rugs 26 Other textiles 27 Knitted and crocheted fabrics and articles 27 Knitted and crocheted fabrics and articles 28 Wearing apparel; dressing and dying of fur 29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 Wood and wood products, except furniture 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceremic goods 51 Ericks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.567 53 Riccutural metal products 54 Cement, lime and plaster 55 Basic proclous and non-ferrous metals 56 Casting of metals 57 Structural metal products 57 Structural metal products 58 Casting of metals 59 Concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.506 0.196 0.025 0.025 0.025 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.027 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.027 0.026 0.026 0.026 0.026 0.027 0.026					44%
26 Other textiles  27 Knitted and crocheted fabrics and articles  28 Wearing apparel; dressing and dying of fur  10.453  8.826  29 Tanning and dressing of leather; manufacture of luggage,  29 Tanning and dressing of leather; manufacture of luggage,  30 Footwear  1.711  1.391  31 Wood and wood products, except furniture  1.246  0.433  32 Pulp, paper and paperboard  3.714  33 Articles of paper and paperboard  1.174  0.835  34 Publishing, printing and reproduction of recorded media  3.782  0.996  35 Coke, refined petroleum products and nuclear fuel  15.731  11.264  36 Industrial gases, dyes and pigments  0.043  30 Other inorganic basic chemicals  0.003  0.031  38 Other organic basic chemicals  0.057  0.087  95 Fertilisers and nitrogen compounds  0.162  0.076  40 Plastics and synthetic rubber in primary forms  0.036  0.053  41 Pesticides and other agro-chemical products  0.060  0.029  42 Paints, varnishes and similar coatings, printing ink and ma  0.269  0.130  43 Pharmaceuticals, medicinal chemicals and botanical prod  44 Soap and detergents, cleaning and polishing preparations  45 Other chemical products  1.694  1.070  46 Man-made fibres  0.029  0.020  47 Rubber products  1.694  1.070  48 Plastic products  1.694  1.070  49 Plastics products  1.694  1.070  40 Bass and glass products  0.786  0.316  50 Ceramic goods  1.600  1.004  51 Bricks, tiles and construction products, baked in clay  52 Cement, lime and plaster  53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$  54 Basic iron and steel and of ferro-alloys; manufacture of tut  0.562  0.169  55 Basic precious and non-ferrous metals  0.045  0.025  57 Structural metal products  3.705  1.620					37%
27 Knitted and crocheted fabrics and articles       2.407       2.084         28 Wearing apparel; dressing and dying of fur       10.453       8.826         29 Tanning and dressing of leather, manufacture of luggage,       0.236       0.213         30 Footwear       1.771       1.391         31 Wood and wood products, except furniture       1.246       0.433         32 Pulp, paper and paperboard       0.134       0.071         33 Articles of paper and paperboard       1.174       0.835         34 Publishing, printing and reproduction of recorded media       3.782       0.996         35 Coke, refined petroleum products and nuclear fuel       15.731       11.264         36 Industrial gases, dyes and pigments       0.043       0.031         37 Other inorganic basic chemicals       0.003       0.031         38 Other organic basic chemicals       0.057       0.087         39 Fertilisers and synthetic rubber in primary forms       0.036       0.053         41 Pesticides and other agro-chemical products       0.060       0.029         42 Paints, varnishes and similar coatings, printing ink and ma       0.269       0.130         43 Pharmaceuticals, medicinal chemicals and botanical prod       1.551       1.027         44 Soap and detergents, cleaning and polishing preparations       3.574<					33%
28 Wearing apparel; dressing and dying of fur       10.453       8.826         29 Tanning and dressing of leather; manufacture of luggage,       0.236       0.213         30 Footwear       1.711       1.391         31 Wood and wood products, except furniture       1.246       0.433         32 Pulp, paper and paperboard       0.134       0.071         33 Articles of paper and paperboard       1.174       0.835         34 Publishing, printing and reproduction of recorded media       3.782       0.996         35 Coke, refined petroleum products and nuclear fuel       15.731       11.264         36 Industrial gases, dyes and pigments       0.043       0.031         37 Other inorganic basic chemicals       0.003       0.031         38 Other organic basic chemicals       0.057       0.087         39 Fertilisers and nitrogen compounds       0.162       0.076         40 Plastics and synthetic rubber in primary forms       0.036       0.053         41 Pesticides and other agro-chemical products       0.060       0.029         42 Paints, varnishes and similar coatings, printing ink and ma       0.269       0.130         43 Pharmaceuticals, medicinal chemicals and botanical produ       1.551       1.027         44 Soap and detergents, clearning and polishing preparations       3.574					87%
29 Tanning and dressing of leather; manufacture of luggage, 30 Footwear 31 T.711 1.391 31 Wood and wood products, except furniture 41.246 0.433 32 Pulp, paper and paperboard 52 Pulp, paper and paperboard 53 Articles of paper and paperboard 54 Publishing, printing and reproduction of recorded media 55 Coke, refined petroleum products and nuclear fuel 56 Industrial gases, dyes and pigments 57 Other inorganic basic chemicals 58 Other organic basic chemicals 59 Fertilisers and nitrogen compounds 50 Fertilisers and nitrogen compounds 50 Fertilisers and other agro-chemical products 50 Paints, varnishes and similar coatings, printing ink and ma 57 Other chemical products 59 Paints, varnishes and similar coatings, printing ink and ma 50 Other chemical products 50 Other chemical products 51 Degree of the products 52 Other chemical products 53 Other chemical products 54 Degree of the products 55 Other chemical products 56 Other chemical products 57 Other chemical products 58 Other products 59 Other chemical products 50 Other products 50 Other chemical products 50 Othe					
30 Footwar   1.711   1.391   31 Wood and wood products, except furniture   1.246   0.433   32 Pulp, paper and paperboard   0.134   0.071   33 Articles of paper and paperboard   1.174   0.835   34 Publishing, printing and reproduction of recorded media   3.782   0.996   35 Coke, refined petroleum products and nuclear fuel   15.731   11.264   36 Industrial gases, dyes and pigments   0.043   0.031   37 Other inorganic basic chemicals   0.0057   0.087   38 Other organic basic chemicals   0.057   0.087   39 Fertilisers and nitrogen compounds   0.162   0.076   40 Plastics and synthetic rubber in primary forms   0.036   0.053   41 Pesticides and other agro-chemical products   0.060   0.029   42 Paints, varnishes and similar coatings, printing ink and ma   0.269   0.130   43 Pharmaceuticals, medicinal chemicals and botanical product   1.551   1.027   44 Soap and detergents, cleaning and polishing preparations   3.574   1.780   45 Other chemical products   1.694   1.070   46 Man-made fibres   0.029   0.020   47 Rubber products   1.362   0.567   48 Plastic products   2.452   0.659   49 Glass and glass products   0.786   0.316   50 Ceramic goods   1.600   1.004   51 Bricks, tiles and construction products, baked in clay   0.123   0.290   52 Cement, lime and plaster   0.541   0.139   53 Articles of concrete, plaster and cement; cutting, shaping   0.509   0.117   54 Basic iron and steel and of ferro-alloys; manufacture of tut   0.562   0.169   55 Basic precious and non-ferrous metals   0.045   0.025   57 Structural metal products   3.705   1.620					84%
31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 33 Pulp, paper and paperboard 34 Publishing, printing and reproduction of recorded media 3.782 34 Publishing, printing and reproduction of recorded media 3.782 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 40 Plastics and other agro-chemical products 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 43 Pharmaceuticals, medicinal chemicals and botanical produ 45 Other chemical products 46 Man-made fibres 47 Cother chemical products 48 Plastic products 49 Glass and glass products 40 Glass and glass products 41 Rubber products 42 Paints, varnishes and similar coatings, printing ink and ma 45 Other chemical products 46 Man-made fibres 47 Cother chemical products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Ceramic goods 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.509 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 0.506 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 50 Cotating of metals 51 Cotating of metals 52 Cotating of metals 53 Cotating of metals 54 Cotating of metals 55 Cotating of me					90%
32 Pulp, paper and paperboard 3 Articles of paper and paperboard 3 Articles of paper and paperboard 4 Publishing, printing and reproduction of recorded media 5 Coke, refined petroleum products and nuclear fuel 5 Coke refined petroleum products and nuclear fuel 5 Coke refined petroleum products 5 Coke, refined petroleum products 6 Coke refined petroleum products 7 Coke refined petroleum products 7 Coke refined petroleum products 8 Coke refined petroleum products 9 Coke refined petroleum products place refined products place refined products 9 Coke refined petroleum products place refined place refi					81%
33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 3.782 0.996 35 Coke, refined petroleum products and nuclear fuel 15.731 11.264 36 Industrial gases, dyes and pigments 0.043 0.031 37 Other inorganic basic chemicals 0.0057 0.087 39 Fertilisers and nitrogen compounds 0.162 0.076 40 Plastics and synthetic rubber in primary forms 0.036 0.053 41 Pesticides and other agro-chemical products 0.060 0.029 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 43 Pharmaceuticals, medicinal chemicals and botanical produ 45 Other chemical products 1.694 1.070 46 Man-made fibres 0.029 0.020 47 Rubber products 1.362 0.567 48 Plastic products 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 53 Articles of concrete, plaster and cement; cutting, shaping € 55 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 0.045 0.025 57 Structural metal products 3.705 1.620					35%
34 Publishing, printing and reproduction of recorded media 3.782 0.996 35 Coke, refined petroleum products and nuclear fuel 15.731 11.264 36 Industrial gases, dyes and pigments 0.043 0.031 37 Other inorganic basic chemicals 0.003 0.031 1 38 Other organic basic chemicals 0.057 0.087 39 Fertilisers and nitrogen compounds 0.162 0.076 40 Plastics and synthetic rubber in primary forms 0.036 0.053 41 Pesticides and other agro-chemical products 0.060 0.029 42 Paints, varnishes and similar coatings, printing ink and ma 0.269 0.130 43 Pharmaceuticals, medicinal chemicals and botanical produ 1.551 1.027 44 Soap and detergents, cleaning and polishing preparations 3.574 1.780 45 Other chemical products 1.694 1.070 46 Man-made fibres 0.029 0.020 47 Rubber products 1.362 0.567 48 Plastic products 2.452 0.6659 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 0.123 0.290 52 Cement, lime and plaster 0.541 0.139 53 Articles of concrete, plaster and cement; cutting, shaping ε 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.045 0.025 57 Structural metal products 3.705 1.620					53%
35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Relastic products 41 .362 42 0.567 43 Plastic products 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Ceramic goods 41 .600 42					71%
36 Industrial gases, dyes and pigments       0.043       0.031         37 Other inorganic basic chemicals       0.003       0.031       1         38 Other organic basic chemicals       0.057       0.087         39 Fertilisers and nitrogen compounds       0.162       0.076         40 Plastics and synthetic rubber in primary forms       0.036       0.053         41 Pesticides and other agro-chemical products       0.060       0.029         42 Paints, varnishes and similar coatings, printing ink and ma       0.269       0.130         43 Pharmaceuticals, medicinal chemicals and botanical produ       1.551       1.027         44 Soap and detergents, cleaning and polishing preparations       3.574       1.780         45 Other chemical products       1.694       1.070         46 Man-made fibres       0.029       0.020         47 Rubber products       1.362       0.567         48 Plastic products       2.452       0.659         49 Glass and glass products       0.786       0.316         50 Ceramic goods       1.600       1.004         51 Bricks, tiles and construction products, baked in clay       0.123       0.290         52 Cement, lime and plaster       0.541       0.139         53 Articles of concrete, plaster and cement; cutting, shaping & 0					26%
37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 49 Glass and glass products 40 Ceramic goods 50 Ceramic goods 51 Ericks, tiles and construction products, baked in clay 51 Articles of concrete, plaster and cement; cutting, shaping € 52 Ocenent, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping € 54 Dasic precious and non-ferrous metals 55 Structural metal products 57 Structural metal products 57 Structural metal products 50 Casting of metals 50 Casting of Casting of Casting of Casti		·			72%
38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Glass and glass products 41 Soap and construction products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 51 Ceramic goods 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping € 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 57 Structural metal products 58 Casting of metals 50 Costing of Costing Octonary 50 Costing of Costing Octonary 50 Costing of Costing Octonary 50 Costing of Costing					73%
39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 49 Glass and glass products 40 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping and polishing and polishing preparations 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Casting of metals 56 Casting of metals 57 Structural metal products 51 0.025 57 Structural metal products 50 0.026 50 0.026 50 0.026 50 0.026 50 0.026 50 0.027 50 0.027 50 0.028 50 0.029 50 0.0020 50 0.00		<u> </u>			1037%
40 Plastics and synthetic rubber in primary forms					152%
41 Pesticides and other agro-chemical products  42 Paints, varnishes and similar coatings, printing ink and ma  43 Pharmaceuticals, medicinal chemicals and botanical products  44 Soap and detergents, cleaning and polishing preparations  45 Other chemical products  46 Man-made fibres  47 Rubber products  48 Plastic products  49 Glass and glass products  40 Ceramic goods  41 L600  42 L452  43 L600  44 Ribes and construction products, baked in clay  45 Other chemical products  46 Man-made fibres  47 Rubber products  48 Plastic products  49 Glass and glass products  50 Ceramic goods  50 Ceramic goods  51 L600  52 Cement, lime and plaster  53 Articles of concrete, plaster and cement; cutting, shaping at the control of the		• •			47%
42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Geramic goods 40 Ceramic goods 41 Bricks, tiles and construction products, baked in clay 42 Cement, lime and plaster 43 Articles of concrete, plaster and cement; cutting, shaping \$\varepsilon\$ 46 D.506 47 Rubber products 48 Plastic products 49 Glass and glass products 40 Ceramic goods 40 Ceramic goods 41 Cement, lime and plaster 42 Cement, lime and plaster 43 Articles of concrete, plaster and cement; cutting, shaping \$\varepsilon\$ 48 D.509 49 Class and construction products, baked in clay 50 Cement, lime and plaster 51 Cement, lime and plaster 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\varepsilon\$ 54 D.509 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Structural metal products 59 Casting of metals 50 Concrete and steel and of ferro-alloys; manufacture of tut 50 Concrete and construction products 57 Structural metal products 58 D.130 59 Concrete and construction products 50 Concrete and construction products 51 Concrete and construction products 52 Concrete and construction products 53 Concrete and construction products 54 Concrete and construction products 55 Concrete and construction products 55 Concrete and construction products 56 Concrete and construction products 57 Concrete and construction products 58 Concrete and construction products 59 Concrete and construction products 50 Concrete and construction products 50 Concrete and construction products 50 Concrete and construction					148%
43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 49 Glass and glass products 40 Ceramic goods 41 Bricks, tiles and construction products, baked in clay 45 Cement, lime and plaster 46 Description and steel and of ferro-alloys; manufacture of tut 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping € 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 57 Structural metal products 58 Basic precious and non-ferrous metals 59 Structural metal products 50 Structural metal products 50 Structural metal products 50 Structural metal products 51 Structural metal products 52 Structural metal products 53 Structural metal products 54 Structural metal products 55 Structural metal products 56 Structural metal products 57 Structural metal products					48%
44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 1 .694 1 .070 46 Man-made fibres 0 .029 0 .020 47 Rubber products 1 .362 0 .567 48 Plastic products 2 .452 0 .659 49 Glass and glass products 0 .786 0 .316 50 Ceramic goods 1 .600 1 .004 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 0 .541 0 .139 53 Articles of concrete, plaster and cement; cutting, shaping € 0 .509 0 .117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0 .562 0 .196 56 Casting of metals 0 .025 57 Structural metal products 3 .705 1 .620					48%
45 Other chemical products 46 Man-made fibres 0.029 0.020 47 Rubber products 1.362 0.567 48 Plastic products 2.452 0.659 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 0.541 0.139 53 Articles of concrete, plaster and cement; cutting, shaping € 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.0045 0.025 57 Structural metal products					66%
46 Man-made fibres 0.029 0.020 47 Rubber products 1.362 0.567 48 Plastic products 2.452 0.659 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 0.123 0.290 52 Cement, lime and plaster 0.541 0.139 53 Articles of concrete, plaster and cement; cutting, shaping € 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.506 0.196 56 Casting of metals 0.045 0.025 57 Structural metal products 3.705 1.620					50%
47 Rubber products 48 Plastic products 2.452 0.659 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 0.541 0.139 53 Articles of concrete, plaster and cement; cutting, shaping € 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.506 0.196 56 Casting of metals 0.025 57 Structural metal products					63%
48 Plastic products 2.452 0.659 49 Glass and glass products 0.786 0.316 50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 0.541 0.139 53 Articles of concrete, plaster and cement; cutting, shaping ε 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.506 0.196 56 Casting of metals 0.045 0.025 57 Structural metal products					69%
49 Glass and glass products       0.786       0.316         50 Ceramic goods       1.600       1.004         51 Bricks, tiles and construction products, baked in clay       0.123       0.290         52 Cement, lime and plaster       0.541       0.139         53 Articles of concrete, plaster and cement; cutting, shaping ε       0.509       0.117         54 Basic iron and steel and of ferro-alloys; manufacture of tut       0.562       0.169         55 Basic precious and non-ferrous metals       0.506       0.196         56 Casting of metals       0.045       0.025         57 Structural metal products       3.705       1.620					42%
50 Ceramic goods 1.600 1.004 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping © 0.509 541 554 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 1.600 1.004 0.123 0.290 0.501 0.509 0.117 0.562 0.169 0.506 0.196 0.506 0.196	48	B Plastic products	2.452	0.659	27%
51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products  0.123 0.290 0.541 0.139 0.509 0.117 0.562 0.169 0.506 0.196 0.506 0.025					40%
52 Cement, lime and plaster  53 Articles of concrete, plaster and cement; cutting, shaping a 0.509  54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562  55 Basic precious and non-ferrous metals  60 Casting of metals  70 Casting of metals				1.004	63%
53 Articles of concrete, plaster and cement; cutting, shaping ₹ 0.509 0.117 54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.506 0.196 56 Casting of metals 0.045 0.025 57 Structural metal products 3.705 1.620	51	Bricks, tiles and construction products, baked in clay	0.123	0.290	235%
54 Basic iron and steel and of ferro-alloys; manufacture of tut 0.562 0.169 55 Basic precious and non-ferrous metals 0.506 0.196 56 Casting of metals 0.045 0.025 57 Structural metal products 3.705 1.620	52	? Cement, lime and plaster	0.541	0.139	26%
55 Basic precious and non-ferrous metals       0.506       0.196         56 Casting of metals       0.045       0.025         57 Structural metal products       3.705       1.620	53	Articles of concrete, plaster and cement; cutting, shaping a	0.509	0.117	23%
55 Basic precious and non-ferrous metals       0.506       0.196         56 Casting of metals       0.045       0.025         57 Structural metal products       3.705       1.620	54	Basic iron and steel and of ferro-alloys; manufacture of tut	0.562	0.169	30%
56 Casting of metals       0.045       0.025         57 Structural metal products       3.705       1.620		· · · · · · · · · · · · · · · · · · ·	0.506	0.196	39%
			0.045	0.025	56%
	57	Structural metal products	3.705	1.620	44%
58 Tanks, reservoirs and containers of metal; manufacture of 0.851 0.516		Tanks, reservoirs and containers of metal; manufacture of	0.851	0.516	61%
			0.013	0.024	182%
60 Cutlery, tools and general hardware 1.421 0.700					49%
61 Other fabricated metal products 1.496 0.640					43%
62 Machinery for the production and use of mechanical powe 1.203 0.577					48%
63 Other general purpose machinery 4.930 2.022					41%

		CO2 CONSUMER		Relative error of CO2
Uncertainty of embedde	-	emissions	CO2 CONSUMER	CONSUMER
sector; yes	ar 2003	F (M+ CO2)	emissions	emissions
64 Agricultural and forestry machin	uon/	E (Mt CO2) 0.788	dE (Mt CO2) 0.280	dE/E 35%
65 Machine tools	lery	0.766	0.280	85%
66 Other special purpose machine	rv	2.239	2.685	120%
67 Weapons and ammunition	.,	0.107	0.056	52%
68 Domestic appliances not elsewl	nere classified	2.888	1.543	53%
69 Office machinery and computer		6.881	5.051	73%
70 Electric motors, generators and	transformers; manufacture	1.848	1.017	55%
71 Insulated wire and cable		0.404	0.178	44%
72 Electrical equipment not elsewh		0.913	0.692	76%
73 Electronic valves and tubes and		0.035	0.030	85%
74 Television and radio transmitter		4.559	2.919	64%
75 Television and radio receivers,	=	3.796 3.727	2.719 2.378	72% 64%
<ul><li>76 Medical, precision and optical ir</li><li>77 Motor vehicles, trailers and sem</li></ul>		20.575	8.757	43%
77 Motor verticles, trailers and seri		1.501	0.546	36%
79 Other transport equipment		1.371	0.534	39%
80 Aircraft and spacecraft		4.969	4.307	87%
81 Furniture		12.120	5.174	43%
82 Jewellery and related articles; n	nanufacture of musical inst	5.615	4.048	72%
83 Sports goods, games and toys		8.452	5.456	65%
84 Miscellaneous manufacturing n	·	3.992	2.944	74%
85 Production and distribution of el		54.812	10.645	19%
86 Gas; distribution of gaseous fue	=	25.764	12.268	48%
87 Collection, purification and distr 88 Construction	ibution of water	1.352 44.128	0.238	18%
89 Sale, maintenance and repair o	f motor vehicles, and moto	10.532	10.439 3.004	24% 29%
90 Wholesale trade and commission		17.227	5.415	31%
91 Retail trade, except of motor ve		23.733	12.183	51%
92 Hotels and restaurants		32.175	8.463	26%
93 Transport via railways		3.905	6.742	173%
94 Other land transport; transport	via pipelines	12.929	1.894	15%
95 Water transport		9.847	3.405	35%
96 Air Transport		36.948	16.454	45%
97 Supporting and auxiliary transp	ort activities; activities of tra	0.719	0.243	34%
98 Post and courier activities		0.351	0.129	37%
99 Telecommunications 100 Financial intermediation, except	tingurance and panaion fu	4.321 1.857	2.300 0.495	53% 27%
100 Financial intermediation, exception 101 Insurance and pension funding,	· ·	7.285	1.733	24%
102 Activities auxiliary to financial in		0.330	0.095	29%
103 Real estate activities with own p		0.009	0.006	72%
104 Letting of dwellings, including in		9.037	2.486	28%
105 Real estate activities on a fee o		0.390	0.170	44%
106 Renting of machinery and equip	ment without operator and	2.885	0.419	15%
107 Computer and related activities		2.697	0.767	28%
108 Research and development		0.160	0.043	27%
109 Legal activities	andiking patienti	0.384	0.127	33%
110 Accounting, book-keeping and a		0.005	0.002	40%
111 Market research and public opin		0.041 0.784	0.015 0.242	37% 31%
<ul><li>112 Architectural and engineering a</li><li>113 Advertising</li></ul>	cuvilies and related technic	0.784	0.242	21%
114 Other business services		0.520	0.105	20%
115 Public administration and defen	ce; compulsory social secu	44.503	10.459	24%
116 Education	, , , , , , , , , , , , , , , , , , , ,	15.913	2.391	15%
117 Human health and veterinary ad	ctivities	26.195	10.785	41%
118 Social work activities		8.385	2.558	31%
119 Sewage and refuse disposal, sa		3.797	0.516	14%
120 Activities of membership organi		0.781	0.143	18%
121 Recreational, cultural and sport	ing activities	9.339	2.022	22%
122 Other service activities	and norsons	2.723	0.897	33%
123 Private households with employ	eu persons	0.216 87.72	0.005	2%
		63.20		
Total CO2 o	onsumer emissions	763	+/- 41	+/- 5.4%
				: 2::/0

2 Forestry, logging and related service activities  3 Fishing, operation of fish hatcheries and fish farms; service  4 Mining of coal and lignite: extraction of peat  5 Extraction of curit petrolleum and natural gas; service act  6 Mining of metal orss  7 Other mining and quarnying  9 320  9 0.955  7 Other mining and quarnying  9 320  9 0.955  8 Production, processing and preserving of fish and fish products; fruit a  10 Vegetable and animated is and fash products; fruit a  11 Dairy products  11 Dairy products  12 Carl mill products, starches and starch products  12 Prepared animal feeds  13 Prepared animal feeds  14 Prepared mining feeds  15 Sugar  16 Cocoa; chocalete and sugar confectionery  15 All Robonic beverages  17 Other flood products  18 Production of mineral waters and soft drinks  18 Robonic beverages  19 Production of mineral waters and soft drinks  18 Robonic beverages  19 Production of mineral waters and soft drinks  17 Separation of mineral waters and soft drinks  17 Separation of mineral waters and soft drinks  17 Separation of mineral waters and soft drinks  17 Reparation and spinning of textile fibres  19 Tobaccop products  20 Tobaccop products  21 Textile weaving  22 Textile weaving  23 Finishing of fexilities and articles  24 Made up textile articles, except apparel  19 Once 24 Made up textile articles, except apparel  19 Once 25 Carpets and rugs  26 Cher textiles  19 Once 26 Carpets and rugs  27 Knitted and crocheted fabrics and articles  28 Wearing apparel; diseasing and drink of fury  29 Tanning and dressing of leather; manufacture of luggage,  20 Forebream  19 Corporation of mining and particles of luggage,  21 Finishing of products  28 Wearing apparel; diseasing and drink of luggage,  29 Tanning and dressing of leather; manufacture of luggage,  30 Finishing apparel; diseasing and drink of luggage,  31 Wood and wood products, except furniture  10 All Products and paperboard  11 One 10 All Products  11 One 10 All Products  12 Finishing of products  13 Wood and wood products, except furnit		Uncertainty of embedded CO2 emissions by sector; year 2004	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
2 Forestry, logging, and related service activities 3 Fishing, operation of fish hatcheries and fish farms; service 4 Mining of road and lignite; extraction of opeat 5 Extraction of crude petroleum and natural gas; service act 6 Mining of metal arcs 7 Other mining and quarrying 8 Production, processing and preserving of meat and meat; 9 Processing and preserving of fish and fish products; fruit a 10 Vegetable and animated oils and fash products; fruit a 11 Dairy products is and fash products; fruit a 11 Dairy products is and fash products; fruit a 12 Grain mill products, starches and starch products 13 Prepared animal feeds 10 Vegetable and animated oils and fash products 11 Dairy products 12 Grain mill products, starches and starch products 13 Prepared animal feeds 14 Dairy and Luss and biscuits; manufacture of pasthy goods ar 15 Prepared animal feeds 16 Cocco, chocolate and sugar confectionery 15 All Dairy obtains 17 Other food products 18 Alkoholic beverlages 19 Production of mineral vaters and soft drinks 17 Alkoholic beverlages 19 Production of mineral vaters and soft drinks 17 Robin food products 10 Tobacco products 10 Tobacco products 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco products 11 Preparation and spinning of textells fibres 10 Tobacco prod		-	E (Mt CO2)	dE (Mt CO2)	dE/E
S Fishing, operation of fish hatchenies and fish farms; service at 0.064	1	Agriculture, hunting and related service activities	8.922	1.705	19%
3 Fishing, operation of fish hatcheries and fish farms; service at 4 Mining of local and lightics extraction of potal at 3.31 0.454 119% 5 Extraction of crude petroleum and natural gas; service act 0.664 0.674 102% 6 Mining of metal cross 7 Other mining and quarrying 0.320 0.085 27% 8 Production, processing and preserving of meat and meat ; 5.778 1.460 25% 6 Processing and preserving of first and fish products; fluit a 4.434 1.336 31% 10 Viegletable and animal tols and tals 0.351 10 Products 1.326 31% 10 Viegletable and animal tols and tals 0.351 10 Products 1.3279 1.216 37% 12 Grain mill products, starches and starch products 0.787 0.256 33% 12 Prepared animal feeds and starch products 0.787 0.256 33% 13 Prepared animal feeds 1.326 13 Prepared animal feed 1.326 13 Prepared 1.326 1	2	Forestry, logging and related service activities	0.087	0.045	51%
A Mining of coal and lignite; extraction of orpeat			0.064	0.054	
5 Extraction of crude petroleum and natural gas; service act         0.664         0.674         102%           6 Mining of metal ores         0.003         0.009         2.27%           7 Other mining and quarrying         0.320         0.085         2.27%           8 Production, processing and preserving of fish and fish products; fruit a         4.434         1.356         31%           1 Diary products         0.351         0.143         41%         1.356         31%           11 Diary products         0.276         0.256         3.37%         1.216         37%           12 Grain mill products, starches and starch products         0.787         0.256         3.37         51%           14 Bread, rusks and biscults; manufacture of pastry goods an         3.264         1.556         40%           15 Sugar         1.550         45%         1.556         0.070         45%           16 Cocoa; chocolate and sugar confectionery         1.311         0.457         35%           17 Other food products         2.341         0.777         35%           18 Alcoholic beverages         2.066         1.666         22%           19 Production of mineral waters and soft drinks         1.758         0.802         44%           20 Tobacco products         0.					
6 Mining of metal ores         0.003         0.009         297%           7 Other mining and quarying         0.320         0.085         227%           8 Production, processing and preserving of fish and fish products; fruit a         4.434         1.356         31%           1 O Vegelable and animal oils and fals         0.351         0.143         41%           1 1 Darry products         3.279         1.216         37%           12 Grain mill products, starches and starch products         0.787         0.256         33%           13 Prepared animal feeds         0.723         0.370         51%           14 Bread, rusks and biscuits; manufacture of pastry goods an         3.264         1.556         48%           15 Sugar         0.156         0.070         45%           16 Cocca, chocolate and sugar confectionery         1.311         0.457         33%           17 Other food products         2.341         0.777         33%           18 Robrobic beverages         2.066         1.666         82%           19 Production of mineral waters and soft drinks         1.758         0.802         45%           21 Preparation and spinning of textile fibres         0.015         0.121         789%           22 Faxilie veewing         0.049         0.03					
R Production, processing and preserving of meat and meat   5,778   1,460   25%   9 Processing and preserving of fish and fish products; fruit a					
8 Production, processing and preserving of meat and meat; 9 Processing and preserving of fish and fish products; fruit a 4.434 1.356 31% 10 Vegetable and animal oils and fals 2 10 Vegetable and animal oils and fals 3.279 1.216 37% 12 Grain mill products, starches and starch products 0.767 0.256 33% 13 Prepared animal feeds 0.723 0.370 51% 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.264 1.556 48% 15 Sugar 0.156 0.070 45% 16 Cocos; chocolate and sugar confectionery 1.311 0.457 35% 17 Other food products 2.341 0.777 33% 18 Alcoholic beverages 2.066 1.686 22% 19 Production of mineral waters and soft drinks 1.758 0.802 48% 20 Tobacco products 0.866 0.663 77% 21 Preparation and spinning of textille fibres 0.015 0.121 789% 22 Textile weaving 0.049 0.036 74% 23 Finishting of textile articles, except apparel 1.907 1.067 57% 26 Other textiles 2.76 Charles 2.164 1.900 3.88% 27 Kinted and croched fabrics and articles 2.154 1.900 3.88% 28 Wearing apparel; dressing and dying of fur 29 Textile wards and paper further further of the day		<u> </u>			
9 Processing and preserving of fish and fish products; fruit a					
10 Vegetable and animal oils and fats   0.351   0.143   41%   10 bairy products   3.279   1.216   37%   12 Grain mill products, starches and starch products   0.787   0.256   33%   13 Propared animal feeds   0.723   0.370   51%   14 Pread, rusks and biscuits; manufacture of pastry goods an   3.264   1.556   48%   15 Sugar   0.156   0.070   45%   15 Sugar   0.156   0.070   45%   16 Cocos; chocolate and sugar confectionery   1.311   0.457   35%   17 Other food products   2.341   0.777   33%   17 Other food products   2.341   0.777   33%   18 Alcoholic beverages   2.066   1.686   82%   20 Tobacco products   0.866   0.663   77%   22 Textile weaving   0.049   0.036   77%   22 Textile weaving   0.049   0.036   77%   22 Textile weaving   0.049   0.036   77%   23 Finishing of textile fibres   0.015   0.121   789%   22 Textile weaving   0.049   0.036   77%   25 Carpets and rugs   0.578   0.359   62%   26 Other textiles   0.062   0.064   43%   28 Wearing apparel; dressing and dying of fur   9.897   8.474   1.903   83%   28 Wearing apparel; dressing and dying of fur   9.897   8.474   1.903   83%   28 Wearing apparel; dressing and dying of fur   9.897   8.474   1.903   33%   31 Wood and wood products, except furniture   1.048   0.634   60%   32 Pulp, paper and paperboard   0.100   0.093   33%   31 Wood and wood products and nuclear fuel   18.739   13.299   71%   31 Wood and wood products and nuclear fuel   18.739   13.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299   71%   31.299					
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12 Grain mill products, starches and starch products 0.787 0.256 33% 13 Prepared animal feeds 0.723 0.370 51% 14 Bread, rusks and biscuits; manufacture of pastry goods an 3.264 1.556 48% 15 Sugar 0.156 0.077 45% 16 Cozoa; chocolate and sugar confectionery 1.311 0.457 35% 17 Other food products 2.341 0.777 33% 18 Alcoholic beverages 2.066 1.686 22% 19 Production of mineral waters and soft drinks 1.758 0.802 46% 20 Tobacco products 0.866 0.663 77% 21 Preparation and spinning of textile fibres 0.015 0.121 789% 21 Preparation and spinning of textile fibres 0.015 0.121 789% 21 Preparation and spinning of textile fibres 0.015 0.121 789% 21 Finishing of textile articles, except apparel 0.002 0.019 0.036 74% 25 Carpets and rugs 0.578 0.359 62% 26 Other textiles 2.216 4 Made-up textile articles, except apparel 1.907 1.087 57% 25 Carpets and rugs 0.578 0.359 62% 28 Wearing apparel; dressing and dying of fur 0.965 2154 1.903 88% 28 Wearing apparel; dressing and dying of fur 0.969 78 4.74 87% 29 Tanning and dressing of leather; manufacture of luggage, 0.224 0.451 201% 31 Footwear 1.546 1.290 83% 31 Wood and wood products, except furniture 1.048 0.634 60% 32 Pulp, paper and paperboard 0.100 0.093 93% 31 Articles of paper and paperboard 1.101 0.960 87% 34 Publishing, printing and reproduction of recorded media 3.727 0.980 26% 35 Coke, refined petroleum products and nuclear fuel 18.739 13.299 71% 36 Industrial gases, dyes and pigments 0.086 0.051 99% 34 Publishing, printing and reproduction of recorded media 3.727 0.980 2.025 30% 37 Other inorganic basic chemicals 0.069 0.122 176% 40 Plastics and principac compounds 0.057 0.091 1.60% 40 Plastics and synthetic rubber in primary forms 0.086 0.051 99% 34 Publishing, printing and reproduction of recorded media 3.727 0.980 0.025 30% 37 Other inorganic basic chemicals 0.069 0.122 176% 40 Plastics and other approximation of the printing or and an 0.086 0.051 99% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35 20% 35					
13 Prepared animal feeds					
14 Bread, rusks and biscuits; manufacture of pastry goods an   3.264   1.556   48%     15 Sugar					
15 Sugar 16 Cocoa: chocolate and sugar confectionery 1.311					
16 Cocoa; chocolete and sugar confectionery					45%
17 Other food products 18 Alcoholic beverages 2.066 1.686 82% 19 Production of mineral waters and soft drinks 1.758 0.802 46% 20 Tobacco products 0.866 0.663 77% 21 Preparation and spinning of textile fibres 0.015 1.121 23 Finishing of textiles 0.002 0.019 1.087 75% 24 Made-up textile articles, except apparel 1.907 1.087 57% 25 Carpets and rugs 0.049 0.036 43% 26 Other textiles 0.002 0.019 1.087 57% 26 Carpets and rugs 0.078 0.085 0.036 0.339 62% 26 Other textiles 0.085 28 Wearing apparel; dressing and dying of fur 29 Taming and dressing of leather; manufacture of luggage, 0.244 0.451 0.758 0.399 0.897 0.8474 0.768 0.789 0		•		0.457	
18 Alcoholic beverages         2.066         1.866         82%           19 Production of mineral waters and soft drinks         1.758         0.802         46%           20 Tobacco products         0.866         0.663         77%           21 Preparation and spinning of textile fibres         0.015         0.121         789%           22 Textile weaving         0.049         0.036         74%           23 Finishing of textiles         0.002         0.019         1065%           24 Made-up textile articles, except apparel         1.907         1.087         57%           25 Carpets and rugs         0.578         0.359         62%           26 Other textiles         0.085         0.036         43%           27 Knitted and crocheet afabrics and articles         2.154         1.903         88%           28 Wearing apparel; dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         2.01%           30 Footwear         1.546         1.290         33           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         1.101         0.960         87%			2.341		
19 Production of mineral waters and soft drinks 20 Tobacco products 21 Preparation and spinning of textile fibres 22 Textile weaving 23 Finishing of textiles 30,002 34 Finishing of textiles 30,002 35 Finishing of textiles 30,002 36 Finishing of textiles 30,002 36 Finishing of textiles 30,003 36 Finishing of textiles 30,085 30,036					82%
21 Preparation and spinning of textile fibres         0.015         0.121         788%           22 Textile weaving         0.049         0.036         74%           23 Finishing of textiles         0.002         0.019         1065%           24 Made-up textile articles, except apparel         1.907         1.087         57%           25 Carpets and rugs         0.578         0.359         62%           26 Other textiles         0.085         0.036         43%           27 Knitted and crocheted fabrics and articles         2.154         1.903         88%           28 Wearing apparet, dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         1.101         0.903         33%           33 Articles of paper and paperboard         1.101         0.960         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         <	19	Production of mineral waters and soft drinks	1.758	0.802	46%
21 Preparation and spinning of textile fibres         0.015         0.121         788%           22 Textile weaving         0.049         0.036         74%           23 Finishing of textiles         0.002         0.019         1065%           24 Made-up textile articles, except apparel         1.907         1.087         57%           25 Carpets and rugs         0.578         0.359         62%           26 Other textiles         0.085         0.036         43%           27 Knitted and crocheted fabrics and articles         2.154         1.903         88%           28 Wearing apparet, dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         1.101         0.903         33%           33 Articles of paper and paperboard         1.101         0.960         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         <	20	Tobacco products	0.866	0.663	77%
22 Textile weaving			0.015	0.121	789%
24 Made-up textile articles, except apparel         1.907         1.087         57%           25 Carpets and rugs         0.578         0.359         62%           26 Other textiles         0.085         0.036         43%           27 Knitted and crocheted fabrics and articles         2.154         1.903         88%           28 Wearing apparel; dressing and dying of fur         9.697         8.474         87%           29 Tranning and dressing of leather; manufacture of luggage.         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         0.100         0.093         33%           33 Articles of paper and paperboard         1.101         0.960         87%           34 Publishing, printing and reproduction of recorded media         3.727         0.980         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.061         0.122         176%           39 Fertilisers and nitrogen compou			0.049	0.036	74%
25 Carpets and rugs         0.578         0.359         62%           26 Other textilies         0.085         0.036         43%           27 Knittled and crocheted fabrics and articles         2.154         1.903         88%           28 Wearing apparel; dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         0.100         0.093         93%           33 Articles of paper and paperboard         1.101         0.960         87%           34 Publishing, printing and reproduction of recorded media         3.727         0.980         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Petrilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in pr			0.002	0.019	1065%
26 Other textiles	24	Made-up textile articles, except apparel	1.907	1.087	57%
27 Knitted and crocheted fabrics and articles         2.154         1.903         88%           28 Wearing apparel; dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         0.100         0.093         33%           33 Articles of paper and paperboard         1.101         0.960         87%           34 Publishing, printing and reproduction of recorded media         3.727         0.980         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.057         0.091         1160%           40 Plastics and synthetic rubber in primary forms         0.068         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44% <t< td=""><td></td><td></td><td>0.578</td><td>0.359</td><td>62%</td></t<>			0.578	0.359	62%
28 Wearing apparel; dressing and dying of fur         9.697         8.474         87%           29 Tanning and dressing of leather; manufacture of luggage,         0.224         0.451         201%           30 Footwear         1.546         1.290         83%           31 Wood and wood products, except furniture         1.048         0.634         60%           32 Pulp, paper and paperboard         0.100         0.093         93%           33 Articles of paper and paperboard         1.101         0.960         87%           34 Publishing, printing and reproduction of recorded media         3.727         0.980         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.021         0.145         690%           39 Fertilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in primary forms         0.086         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44%	26	Other textiles	0.085	0.036	43%
29 Tanning and dressing of leather, manufacture of luggage,       0.224       0.451       201%         30 Footwear       1.546       1.290       83%         31 Wood and wood products, except furniture       1.048       0.634       60%         32 Pulp, paper and paperboard       0.100       0.093       93%         33 Articles of paper and paperboard       1.101       0.960       87%         34 Publishing, printing and reproduction of recorded media       3.727       0.980       26%         35 Coke, refined petroleum products and nuclear fuel       18.739       13.299       71%         36 Industrial gases, dyes and pigments       0.082       0.025       30%         37 Other inorganic basic chemicals       0.021       0.145       690%         38 Other organic basic chemicals       0.069       0.122       176%         39 Fertilisers and nitrogen compounds       0.057       0.091       160%         40 Plastics and synthetic rubber in primary forms       0.086       0.051       59%         41 Pesticides and other agro-chemical products       0.068       0.051       59%         41 Pesticides and other agro-chemical products       0.068       0.051       59%         42 Paints, varnishes and similar coatings, printing ink and ma       0.346	27	Knitted and crocheted fabrics and articles	2.154	1.903	88%
30 Footwear 31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 32 Pulp, paper and paperboard 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 41.101 0.960 87% 34 Publishing, printing and reproduction of recorded media 3.727 0.980 26% 35 Coke, refined petroleum products and nuclear fuel 18.739 36 Industrial gases, dyes and pigments 0.082 0.025 30% 37 Other inorganic basic chemicals 0.021 0.145 690% 38 Other organic basic chemicals 0.057 0.091 160% 40 Plastics and nitrogen compounds 0.057 0.091 160% 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical prod 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 0.004 0.046 1141% 47 Rubber products 48 Plastic products 49 Glass and glass products 49 Glass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 52 Cerement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 58 Tanks, reservoirs and containers of metal; pow 69 Cutlery, tools and general hardware 1.319 60 Cutlery, tools and general hardware 1.329 61 Machinery for the production and use of mechanical powe 1.085 1.526 62 Machinery for the production and use of mechanical powe 1.085 1.526 1.085 1.526 1.085 1.526 1.085 1.526 1.085 1.526 1.085 1.085 1.526 1.085 1.526 1.085 1.526 1.086 1.087 1.080 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.091 1.090 1.090 1.090 1.091 1.090 1.090 1.090 1.090 1.090 1.090 1.090 1.090 1.090 1.0	28	Wearing apparel; dressing and dying of fur	9.697	8.474	87%
31 Wood and wood products, except furniture 32 Pulp, paper and paperboard 32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Glass and glass products 50 Ceramic goods 48 Plastic products 49 Glass and glass products 51 Biricks, tiles and construction products, baked in clay 52 Cerment, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping € 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Cutlery, tools and general hardware 50 Cutlery, tools and general hardware 51 Cuther for production and use of mechanical powe 50 Cutlery, tools and general hardware 51 Cuther fabricated metal products 51 Cuther fabricated metal products 51 Cuther fabricated metal products 52 Machinery for the production and use of mechanical powe 51 Cuther fabricated metal products 53 Cuther, tools and general hardware 54 Cuther fabricated metal products 55 Casting of metals 56 Casting of metals 57 Cuther fabricated metal products 58 Tanks, reservoirs and containers of metal; manufacture of 58 Casting of metals 59 Forging, pressing, stamping and roll forming of metal; pow 50 Cuthery, tools and general hardware 51 Cather fabricated metal products 51 Cather fabricated metal products 51 Cathe	29	Tanning and dressing of leather; manufacture of luggage,	0.224	0.451	201%
32 Pulp, paper and paperboard 33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 37 Other inorganic basic chemicals 38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 49 Plastics products 40 Plastics and synthetic rubber in primary forms 50 0.068 50 0.051 59% 50 0.086 60 0.051 59% 61 1.309 68% 64 0.129 637% 64 0.129 637% 65 Other chemical products 66 Man-made fibres 67 0.004 68% 68% 69 0.122 60 0.558 60 0.611 60 0.004 60 0.046 61 1141% 60 0.046 61 1141% 61 0.046 6	30	Footwear	1.546	1.290	83%
33 Articles of paper and paperboard 34 Publishing, printing and reproduction of recorded media 3.727 0.980 26% 35 Coke, refined petroleum products and nuclear fuel 35 Coke, refined petroleum products and nuclear fuel 36 Industrial gases, dyes and pigments 0.082 0.025 30% 37 Other inorganic basic chemicals 0.021 0.145 690% 38 Other organic basic chemicals 0.069 0.122 176% 39 Fertilisers and nitrogen compounds 0.057 0.091 160% 40 Plastics and synthetic rubber in primary forms 0.086 0.051 599% 41 Pesticides and other agro-chemical products 0.068 0.030 44% 42 Paints, varnishes and similar coatings, printing ink and ma 0.346 0.129 37% 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 1.770 1.080 61% 46 Man-made fibres 0.004 0.046 1141% 47 Rubber products 1.220 0.558 48 Plastic products 1.220 0.558 48 Plastic products 1.244 0.653 27% 49 Glass and glass products 0.730 0.321 44% 50 Ceramic goods 1.546 1.041 67% 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 53 Articles of concrete, plaster and cement; cutting, shaping \$\frac{1}{2}\$ 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 60 Cutlery, tools and general hardware 1.319 1.526	31	Wood and wood products, except furniture	1.048	0.634	60%
34 Publishing, printing and reproduction of recorded media         3.727         0.980         26%           35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.069         0.122         176%           39 Fertilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in primary forms         0.086         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44%           42 Paints, varnishes and similar coatings, printing ink and ma         0.346         0.129         37%           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.309         0.890         68%           44 Soap and detergents, cleaning and polishing preparations         3.413         1.782         52%           45 Other chemical products         1.770         1.080         61%           46 Man-made fibres         0.004         0.046         1141%           47 Rubber products         1.220         0.558         46%			0.100	0.093	93%
35 Coke, refined petroleum products and nuclear fuel         18.739         13.299         71%           36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.069         0.122         176%           39 Fertilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in primary forms         0.086         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44%           42 Paints, varnishes and similar coatings, printing ink and ma         0.346         0.129         37%           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.309         0.890         68%           44 Soap and detergents, cleaning and polishing preparations         3.413         1.782         52%           45 Other chemical products         1.770         1.080         61%           46 Man-made fibres         0.004         0.046         1141%           47 Rubber products         1.220         0.558         46%           48 Plastic products         2.424         0.653         27%           49 Glass an	33	Articles of paper and paperboard	1.101	0.960	87%
36 Industrial gases, dyes and pigments         0.082         0.025         30%           37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.069         0.122         176%           39 Fertilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in primary forms         0.086         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44%           42 Paints, varnishes and similar coatings, printing ink and ma         0.346         0.129         37%           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.309         0.890         68%           44 Soap and detergents, cleaning and polishing preparations         3.413         1.782         52%           45 Other chemical products         1.770         1.080         61%           46 Man-made fibres         0.004         0.046         1141%           47 Rubber products         1.220         0.558         46%           48 Plastic products         2.2424         0.653         2.7%           49 Glass and glass products         0.730         0.321         44%           50 Ceramic goods         1.			3.727		26%
37 Other inorganic basic chemicals         0.021         0.145         690%           38 Other organic basic chemicals         0.069         0.122         176%           39 Fertilisers and nitrogen compounds         0.057         0.091         160%           40 Plastics and synthetic rubber in primary forms         0.086         0.051         59%           41 Pesticides and other agro-chemical products         0.068         0.030         44%           42 Paints, varnishes and similar coatings, printing ink and ma         0.346         0.129         37%           43 Pharmaceuticals, medicinal chemicals and botanical produ         1.309         0.890         68%           44 Soap and detergents, cleaning and polishing preparations         3.413         1.782         52%           45 Other chemical products         1.770         1.080         61%           45 Other chemical products         1.770         1.080         61%           46 Man-made fibres         0.004         0.046         1141%           47 Rubber products         1.220         0.558         46%           48 Plastic products         2.424         0.653         27%           49 Glass and glass products         0.730         0.321         44%           50 Ceramic goods         1.546		·	18.739	13.299	71%
38 Other organic basic chemicals 39 Fertilisers and nitrogen compounds 40 Plastics and synthetic rubber in primary forms 41 Pesticides and other agro-chemical products 42 Paints, varnishes and similar coatings, printing ink and ma 42 Paints, varnishes and similar coatings, printing ink and ma 43 Pharmaceuticals, medicinal chemicals and botanical produ 43 Pharmaceuticals, medicinal chemicals and botanical produ 44 Soap and detergents, cleaning and polishing preparations 45 Other chemical products 46 Man-made fibres 47 Rubber products 48 Plastic products 48 Plastic products 49 Giass and glass products 49 Giass and glass products 50 Ceramic goods 51 Bricks, tiles and construction products, baked in clay 51 Bricks, tiles and construction products, baked in clay 52 Cement, lime and plaster 53 Articles of concrete, plaster and cement; cutting, shaping ε 54 Basic iron and steel and of ferro-alloys; manufacture of tut 55 Basic precious and non-ferrous metals 56 Casting of metals 57 Structural metal products 58 Tanks, reservoirs and containers of metal; manufacture of 59 Forging, pressing, stamping and roll forming of metal; pow 61 Other fabricated metal products 62 Machinery for the production and use of mechanical powe 63 Machinery for the production and use of mechanical powe 64 Machinery for the production and use of mechanical powe 65 Machinery for the production and use of mechanical powe					30%
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43 Pharmaceuticals, medicinal chemicals and botanical produt       1.309       0.890       68%         44 Soap and detergents, cleaning and polishing preparations       3.413       1.782       52%         45 Other chemical products       1.770       1.080       61%         46 Man-made fibres       0.004       0.046       1141%         47 Rubber products       1.220       0.558       46%         48 Plastic products       2.424       0.653       27%         49 Glass and glass products       0.730       0.321       44%         50 Ceramic goods       1.546       1.041       67%         51 Bricks, tiles and construction products, baked in clay       0.054       0.249       463%         52 Cement, lime and plaster       0.523       0.166       32%         53 Articles of concrete, plaster and cement; cutting, shaping and to the plaster of concrete, plaster and cement; cutting, shaping and to 1.086       0.116       23%         54 Basic iron and steel and of ferro-alloys; manufacture of tut       0.086       0.144       167%         55 Basic precious and non-ferrous metals       0.555       0.232       42%         56 Casting of metals       0.023       0.012       51%         57 Structural metal products       3.282       1.579       48%					
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61 Other fabricated metal products 1.529 0.651 43% 62 Machinery for the production and use of mechanical powe 1.085 0.526 48%					
62 Machinery for the production and use of mechanical powe 1.085 0.526 48%					
		Other general purpose machinery	4.635	1.978	43%

Uncertainty of embedded CO2 emi sector; year 2004	ssions by	CO2 CONSUMER emissions	Standard error of CO2 CONSUMER emissions	Relative error of CO2 CONSUMER emissions
		E (Mt CO2)	dE (Mt CO2)	dE/E
64 Agricultural and forestry machinery		0.733	0.298	41%
65 Machine tools		0.867	0.764	88%
66 Other special purpose machinery		1.890	2.428	128%
67 Weapons and ammunition	1	0.048	0.028	58%
68 Domestic appliances not elsewhere classified	l	2.745	1.479	54%
69 Office machinery and computers		6.302	4.698	75%
70 Electric motors, generators and transformers	, manulacture	1.809	0.984	54% 44%
71 Insulated wire and cable		0.501 0.980	0.220	
72 Electrical equipment not elsewhere classified	nia aamnana	0.090	0.707 0.039	72% 43%
<ul><li>73 Electronic valves and tubes and other electro</li><li>74 Television and radio transmitters and line for</li></ul>		4.053	3.108	43% 77%
74 Television and radio transmitters and line for 75 Television and radio receivers, sound or vide		4.090	3.020	74%
76 Medical, precision and optical instruments, w	-	3.500	2.252	64%
77 Motor vehicles, trailers and semi-trailers	attries and tr	18.905	8.695	46%
78 Building and repairing of ships and boats		1.213	0.427	35%
79 Other transport equipment		1.247	0.514	41%
80 Aircraft and spacecraft		3.264	2.723	83%
81 Furniture		12.040	5.417	45%
82 Jewellery and related articles; manufacture o	f musical inst	4.932	3.566	72%
83 Sports goods, games and toys		7.799	5.140	66%
84 Miscellaneous manufacturing not elsewhere	classified: rec	3.491	2.690	77%
85 Production and distribution of electricity	,	59.068	11.485	19%
86 Gas; distribution of gaseous fuels through ma	ins: steam a	28.215	13.046	46%
87 Collection, purification and distribution of wat		1.345	0.173	13%
88 Construction		45.772	10.514	23%
89 Sale, maintenance and repair of motor vehicl	es, and moto	10.713	3.024	28%
90 Wholesale trade and commission trade, exce		16.810	5.494	33%
91 Retail trade, except of motor vehicles and mo	tor cycles; re	24.436	13.274	54%
92 Hotels and restaurants	•	31.038	8.290	27%
93 Transport via railways		4.045	5.139	127%
94 Other land transport; transport via pipelines		12.191	2.059	17%
95 Water transport		9.269	3.994	43%
96 Air Transport		37.439	16.717	45%
97 Supporting and auxiliary transport activities; a	activities of tra	0.758	0.201	27%
98 Post and courier activities		0.339	0.160	47%
99 Telecommunications		4.320	2.220	51%
100 Financial intermediation, except insurance ar	ıd pension fuı	1.793	0.496	28%
101 Insurance and pension funding, except comp		6.940	1.649	24%
102 Activities auxiliary to financial intermediation		0.355	0.103	29%
103 Real estate activities with own property; letting	g of own prop	0.009	0.012	137%
104 Letting of dwellings, including imputed rent		8.666	2.300	27%
105 Real estate activities on a fee or contract bas		0.510	0.213	42%
106 Renting of machinery and equipment without	operator and	2.363	0.335	14%
107 Computer and related activities		2.579	0.739	29%
108 Research and development		0.126	0.035	28%
109 Legal activities	U 4.	0.661	0.216	33%
110 Accounting, book-keeping and auditing activi		0.011	0.003	25%
111 Market research and public opinion polling; b		0.042	0.014	33%
112 Architectural and engineering activities and re	elated technic	0.911	0.295	32%
113 Advertising 114 Other business services		0.015	0.004	26% 16%
		0.453	0.072	
115 Public administration and defence; compulso 116 Education	ry social sect	43.872 15.817	10.144 2.231	23% 14%
117 Human health and veterinary activities 118 Social work activities		26.750 8.943	10.603	40% 31%
119 Sewage and refuse disposal, sanitation and s	imilar activiti	3.773	2.810 0.506	13%
120 Activities of membership organisations not el		0.774	0.136	18%
120 Activities of membership organisations not en	SOWING CIGS	9.613	2.121	22%
121 Recreational, cultural and sporting activities 122 Other service activities		2.599	0.835	32%
123 Private households with employed persons		0.216	0.005	32% 2%
120 1 mate nousenous with employed persons		89.41	0.005	۷%
		63.49		
Total CO2 consumer e	missions	762	+/- 42	+/- 5.5%
Total CO2 consumer e	,1111331UII3	102	+/- 42	T/- 0.0%

## 8 Appendix G: References

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