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Rapport 2002:2

Environmental Impact of Swedish Trade

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Environmental Impact of Dwellings

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Environmental accounts

Environmental Impact of Swedish Trade

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Preface

Since 1993, Statistics Sweden has had a government commission to develop physical environmental accounts focusing on the connections between the environment and the economy. The environmental accounts connect economic data, such as value added and employment in different industries, with physical environmental data such as emissions, waste and use of material that stem from the activities. The environmental accounts also include environmental industries, environmental taxes and environmental protection expenditures.

Sweden is a small open economy with extensive world-wide trade. A large part of what we consume in Sweden is produced elsewhere in the world. Swedish consumption affects the environment in other countries where the products we import are produced. These emissions are not currently included in the environmental accounts. The ambition is to include all impact on the environment from Swedish consumption and production.

This study is a contribution to further develop and widen the use of the environmental accounts. We calculate the emissions in other countries caused by Swedish imports and compare it with the emissions from Swedish exports. The differences between these emissions are called the *net trade of emissions,* and show if Sweden is a net exporter or net importer of emissions. The emissions are also shown at an industry level, which makes it possible to compare the different industries.

The focus in this study is to examine different methods and propose the most suitable to further develop and use in the environmental accounts. The report is prepared on commission from Eurostat. The European Commission has contributed financially to the project. Jenny Westin and Anders Wadeskog have contributed in preparing this report.

Statistics Sweden, June 2002

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Swedish Summary

Miljöräkenskaper innebär att miljöstatistik systematiseras och redovisas tillsammans med ekonomisk statistik i ett gemensamt system. Syftet är att utnyttjandet av naturresurser och miljö ska behandlas på samma sätt som annan resursförbrukning i den nationella bokföringen. Miljöräkenskaperna försöker alltså visa sambanden mellan miljö och ekonomi, t.ex. uttag av naturresurser och utsläpp av luftföroreningar från en samhällssektor eller bransch. Hitintills har miljöräkenskaperna framförallt beskrivit det som händer inom Sverige, t.ex. svenskarnas luftutsläpp i Sverige. Men den svenska konsumtionen och produktionen påverkar även miljön i andra länder vid produktionen av de varor som Sverige importerar. På samma sätt är en del av den nationella miljöpåverkan kopplad till de varor som Sverige exporterar. Sverige är en liten öppen ekonomi med en omfattande handel med omvärlden.

Denna rapport är framförallt en metodologisk studie av olika sätt att beräkna utsläpp av koldioxid (CO_2), svaveldioxid (SO_2) och kväveoxider (NO_x) från svensk import och export. Resultatet används för att justera miljöräkenskaperna så att de återspeglar den ”verkliga” miljöpåverkan från svensk slutlig användning[1]. Vidare studeras hur stor andel av utsläppen som sker i andra länder.

Handelsbalans för utsläpp

Genom att jämföra export- och importutsläppen får man fram ett handelsnetto för utsläpp, se ***tabell A***. Importutsläppen är de utsläpp som sker i andra länder vid produktionen av de varor och tjänster som Sverige importerar. Exportutsläppen uppstår i Sverige vid produktionen av de varor och tjänster som Sverige exporterar till andra länder. Sverige är nettoimportör av CO_2- och SO_2-utsläpp, eftersom importutsläppen är större än exportutsläppen. Sverige är däremot nettoexportör av NO_x-utsläpp, eftersom exportutsläppen är större än importutsläppen.

Tabell A Nettoutsläpp[1] 1995, tusen ton

	Svensk produktion			**Netto-**
	totalt	export	import	**utsläpp**
CO_2	47 719	24 743	30 975	**-6 232**
SO_2	89	57	109	**-52**
NO_x	270	152	109	**43**

1) Nettoutsläpp = exportutsläpp - importutsläpp

Handelsjusterade miljöräkenskaper

Ambitionen är att miljöräkenskaperna ska återspegla de totala utsläppen förorsakade av svensk konsumtion och produktion. Därför bör miljöräkenskaperna justeras med de beräknade nettoutsläppen. Eftersom Sverige importerar 6 miljoner ton mer CO_2-utsläpp än vi exporterar bör miljöräkenskaperna justeras uppåt med detta

[1] Svensk slutlig användning innefattar privat och offentlig konsumtion, investeringar samt lagerförändringar.

värde. De justerade miljöräkenskaperna blir 72 miljoner ton, vilket är en ökning med 10%, se ***tabell B***. Den svenska konsumtionen och produktionen förorsakar så att säga 10% mer utsläpp än vad som kan utläsas av de traditionella miljöräkenskaperna. När det gäller SO_2 justeras miljöräkenskaperna uppåt med 52 tusen ton till 148 tusen ton, vilket är en ökning med 55%.

Tabell B Handelsjusterade miljöräkenskaper 1995, tusen ton

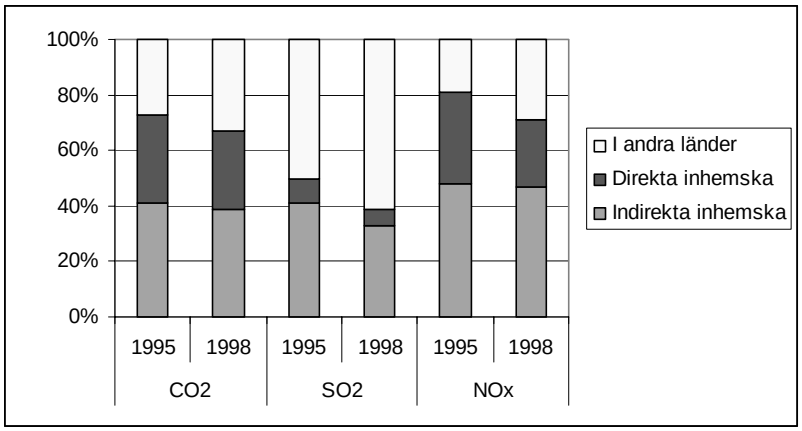
	Traditionella Miljöräkenskaper	Netto-utsläpp	Justerade Miljöräkenskaper
CO_2	65 797	-6 232	72 029
SO_2	96	-52	148
NO_x	352	42	310

Den svenska konsumtionen och produktionen orsakar lägre utsläpp av NO_x än vad som kan utläsas i det traditionella miljöräkenskapssystemet. De handelsjusterade miljöräkenskaperna är knappt 310 tusen ton, vilket är en minskning med 42 tusen ton, eller 12%.

Utsläpp från svensk konsumtion

I ***figur A*** visas hur utsläppen från den svenska konsumtionen fördelas på inhemska utsläpp och utsläpp i andra länder. De inhemska utsläppen delas in i direkta och indirekta utsläpp. De indirekta utsläppen uppstår i de olika näringlivsbranscherna vid produktionen av varor och tjänster för den svenska marknaden, dvs. de konsumeras i Sverige. Utsläppen från produktionen av varor och tjänster som exporteras ingår således inte. De direkta utsläppen uppstår vid privat och offentlig konsumtion, t.ex. privat bilkörning och uppvärmning av hus. Den svenska konsumtionen förorsakar utsläpp i andra länder, eftersom vi importerar varor och tjänster från andra länder, i vilka produktionen lett till utsläpp. Utsläpp i andra länder som uppkommer vid produktionen av de varor som vi importerar för att tillgodose produktionen i Sverige av varor och tjänster för exportmarknaden ingår inte i dessa beräkningar.

Figur A Utsläpp från svensk konsumtion 1995 and 1998, procent



År 1998 uppkom drygt 60% av de totala utsläppen av SO_2 från svensk konsumtion i andra länder. De indirekta inhemska utsläppen uppgick till 33% av de totala utsläppen, medan de direkta utsläppen bara var 6%.

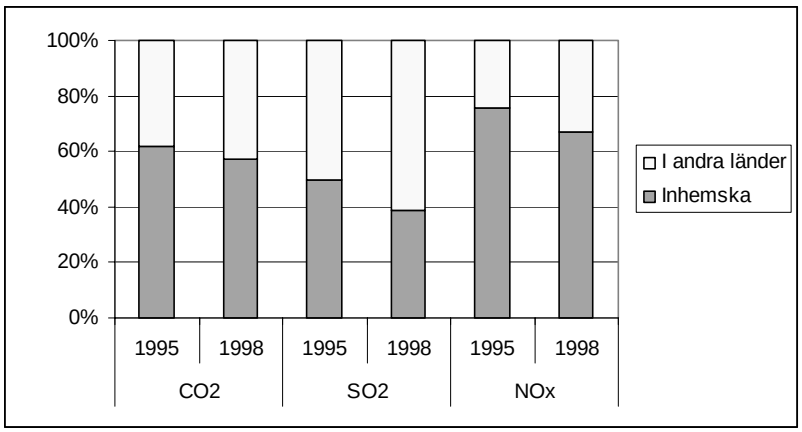
Andelen utsläpp i andra länder är lägre för CO_2 och NO_x, ca 30%. Följaktligen är andelen inhemska utsläpp högre än för SO_2. De direkta inhemska utsläppen uppgår till drygt 40% av de totala inhemska utsläppen. En förklaring är att privat bilkörning och uppvärmning av hus leder till högre utsläpp av CO_2 och NO_x än vad SO_2 gör. Andelen utsläpp i andra länder har ökat för samtliga ämnen mellan 1995 och 1998.

Utsläpp från svensk export

I ***figur B*** visas hur utsläppen från den svenska produktionen av exportvaror och -tjänster fördelas på inhemska utsläpp och utsläpp i andra länder. De inhemska utsläppen uppstår i Sverige vid produktionen av varor och tjänster som exporteras. För att tillgodose den svenska exportmarknaden behövs import av varor och tjänster. Denna import leder till utsläpp i andra länder.

En övervägande del, drygt 60%, av SO_2-utsläppen som uppkommer vid tillverkning av varor till exportmarknaden sker utomlands. Bara 40% av utsläppen sker alltså i Sverige. För CO_2 och NO_x är förhållandet det omvända, endast en mindre del av utsläppen sker i andra länder. Andelen utsläpp i andra länder har ökat mellan 1995 och 1998 för alla ämnen.

Figur B Utsläpp från svensk export 1995 and 1998, procent



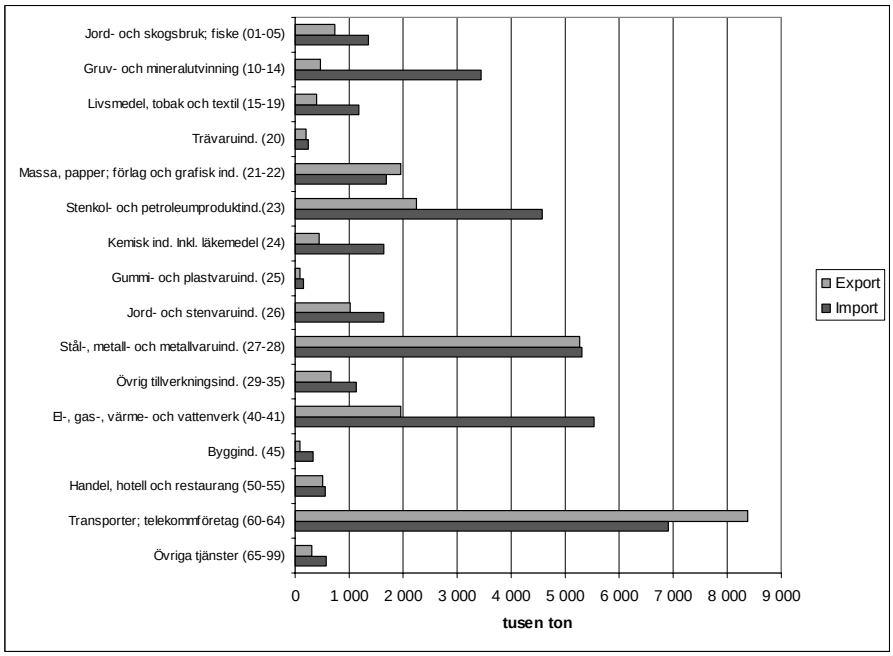
Redovisning på branschnivå

Import- och exportutsläppen kan även redovisas på branschnivå, se ***figur C***. Importutsläppen är volymjusterade[2] för att fokusera på sammansättningen av import- och exportvaror. Vissa branscher har högre utsläpp än andra, det gäller framförallt basindustrier, såsom gruv- och mineralutvinning (SNI 10-14), massa- och pappersindustrin samt förlag och grafisk industri (SNI 21-22), tillverkning av stenkols- och petroleumprodukter (SNI 23) och stål- och metallindustrin (SNI 27-28), men även energiproduktion (SNI 40-41) och transportbranscherna (SNI 60-64).

Importutsläppen av CO_2 är större än exportutsläppen för all branscher utom massa- och pappersindustrin samt förlag och grafisk industri (SNI 21-22) och transport-branscherna (SNI 60-64). Exportutsläppen för transportbranscherna uppgick till drygt 8 miljoner ton, medan importutsläppen var knappt 7 miljoner ton. Nettoex-porten uppgår till 1,5 miljoner och miljöräkenskaperna för denna branschgrupp bör justeras nedåt med detta värde.

Gruv- och mineralutvinningsindustrin (SNI 10-14) uppvisar den största skillnaden mellan export- och importutsläppen. Importutsläppen är mer än sju gånger så höga som exportutsläppen. Denna bransch är alltså nettoimportör av CO_2-utsläpp och miljöräkenskapssystemet bör justeras uppåt med 3 miljoner ton.

Figur C Export- och importutsläpp av CO_2 per bransch 1995, tusen ton

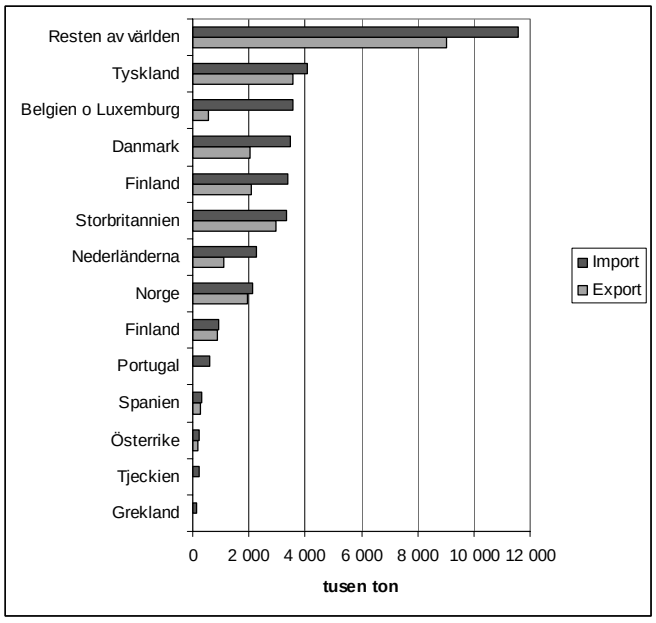


[2] Exporten och importen är volym(storleks)mässigt olika stora. Det innebär att skillnaderna i utsläpp dem emellan dels beror på skillnader i total volym och dels på sammansättning av import- respektive export-varor. För att komma ifrån volymeffekten justeras det totala importvärdet så att det blir lika stort som exportvärdet. Importen skalas helt enkelt upp med bibehållen struktur och den totala produktionen som behövs för att generera denna import översätts sedan till utsläpp, med de svenska utsläppskoefficienterna.

Redovisning på handelspartner

I ***figur D*** visas export- och importutsläppen fördelade på de handelspartners som ingår i den detaljerade branschstudien. Exportutsläppen visar de totala utsläppen i Sverige som uppkommer vid tillverkning av de varor och tjänster som exporteras till respektive handelspartner, medan importutsläppen visar de utsläpp som uppstår i andra länder för att tillgodose vår import. Importutsläppen är volymjusterade för att fokusera på sammansättningen av export- och importvaror.

Figur D Utsläpp av CO_2 per land 1995, tusen ton



Importutsläppen av CO_2 är större än exportutsläppen för samtliga handelspartners. De största utsläppen uppkommer som en följd av importen från resten av världen, knappt 12 miljoner ton, vilket motsvarar 32% av de totala importutsläppen. USA och Japan är två stora handelspartners som ingår i resten av världen. Våra övriga stora handelspartners; Tyskland, Danmark, Finland, Storbritannien, Nederländerna och Norge står också för förhållandevis höga utsläpp. Anmärkningsvärt är att Belgien och Luxemburg (ekonomisk union) står för 10% av de totala importutsläppen, men bara 4% av importvärdet. Tyskland, som är vår enskilt största handelspartner, står för 19% av det totala importvärdet, men bara 11% av importutsläppen.

Slutsatser

Sverige har i ett internationellt perspektiv låga utsläpp av framförallt SO_2, men också CO_2, trots en förhållandevis stor andel basindustri. Sverige har varit framgångsrik i att reducera utsläppen av SO_2 med hjälp av bättre reningsteknik och bättre val av bränslen. En stor del av den svenska elen produceras från vatten- och kärnkraft, vilket ger låga utsläpp. Sverige har en förhållandevis stor andel bioenergianvändning, framförallt inom massa- och pappersindustrin, vilket inte ger några nettoutsläpp av CO_2. I de flesta fall har de importerade varorna och tjänsterna högre utsläppsintensiteter än de exporterade.

Sverige har inte varit lika framgångsrik i att minska utsläppen av NO_x. Exporten är totalt sett mer utsläppsintensiv än importen.

Det är uppenbart att den påverkan ett lands konsumtion har på miljön inte är direkt kopplad till utsläppen inom landet. För att få en samlad bild av ett den miljöpåverkan som förorsakas av nationens konsumtion av varor och tjänster, är ett handelsjusterat miljöräkenskapssystem av största betydelse.

Summary

Introduction

Environmental accounts describe the connections between the environment and the economy, e.g. in natural resource extraction or the emissions of air pollutant by a given sector of society or industry. Traditionally, due to lack of data, the environmental accounts have described the events inside Sweden. Estimates of emissions to air, for example, are produced on the basis of the emissions in Sweden due to Swedish production and consumption. But Swedish consumption and production also affect the environment in other countries that produce the products we import. In the same way, part of the impact on our national environment is linked to the products Sweden exports.

This report is principally a methodological study of different ways to estimate the emissions of CO_2, SO_2 and NO_x due to Swedish imports and exports. The results from the most suitable method are chosen for further analyses. The results are used to adjust the environmental accounts, so that the system reflects the "true" impact of the Swedish final use. It is also interesting to study the size of the proportions of the emissions from the Swedish final use that occur in other countries.

Trade-adjusted environmental accounts

Sweden is a net *importer* of CO_2 and SO_2 emissions, since the import emissions in total are larger than the export emissions. The import emissions occur in other countries when they produce the goods and services that Sweden imports. The export emissions occur in Sweden when we produce the goods and services that we export to other countries. Sweden is a net *exporter* of NO_x emissions, since the export emissions in total are larger than the import emissions.

The environmental accounts are supposed to reflect the total emissions caused by Swedish consumption and production. It is therefore of vital importance that the accounts are adjusted by the net trade emissions. The environmental accounts for CO_2 are adjusted upwards by 6 million tonnes to 72 million tonnes in total, which is a 10% increase (***table A***). Swedes cause, so to speak, more emissions than can be seen in the traditional system. The environmental accounting system of SO_2 is adjusted upward by 52 thousand tonnes to 148 thousand tonnes, which is an increase of 55%.

Table A Trade-adjusted environmental accounts in total 1995, 1 000 tonnes

	Traditional Accounts	Net trade emissions	Adjusted Accounts
CO_2	65 797	-6 232	72 029
SO_2	96	-52	148
NO_x	352	42	310

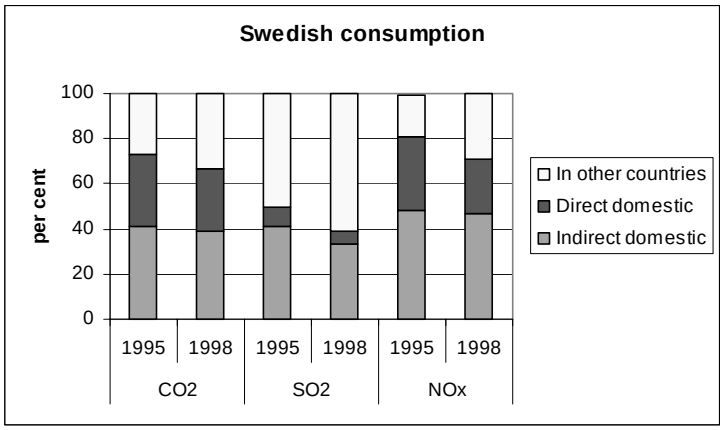
Swedes cause lower emissions of NO_x than can be seen in the environmental accounts. The trade-adjusted accounts are 310 thousand tonnes, which is a decrease of 42 thousand tonnes, or 12%.

Swedish consumption

The proportion of emissions in other countries and domestic emissions caused by Swedish consumption is presented in ***figure A.*** Domestic emissions are divided into direct and indirect emissions. Indirect emissions come from production of goods and services that are consumed in Sweden. The emissions from the production of goods and services that are exported are consequently not included. The direct emissions come from public and private consumption, for instance, driving private cars and heating houses. Swedish consumption causes emissions in other countries where goods and services imported to Sweden are produced. Emissions that are due to the production of goods that are imported to provide the domestic production of exported goods are not included in this figure.

In 1998 the indirect domestic emissions of SO_2 were one third of the total emissions caused by Swedish consumption, while the direct emissions were as low as 6%. The emissions in other countries due to Swedish consumption were 60%.

Figure A Emissions from Swedish consumption (method 2) 1995 and 1998, per cent



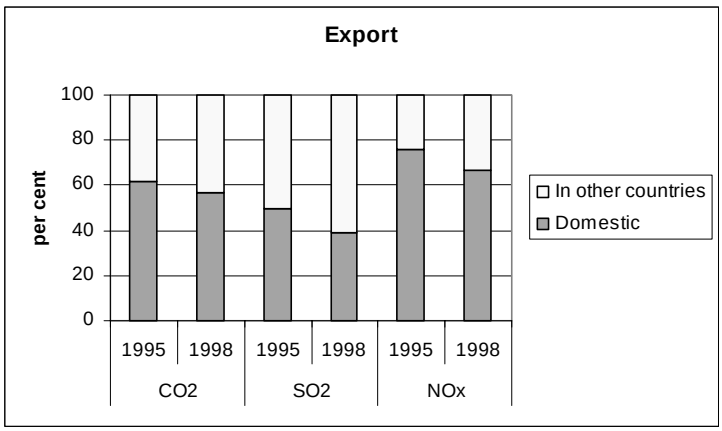
CO_2 and NO_x have lower proportions of emissions in other countries than SO_2, approximately 30%. Consequently the proportion of domestic emissions is higher. The direct domestic emissions correspond to more than 40% of the domestic emissions. One explanation is that private driving and heating of houses lead to high emissions of CO_2 and NO_x, but not SO_2.

The proportion of emissions in other countries has increased between 1995 and 1998 for all substances.

Swedish exports

Figure B presents the proportions of the emissions from Swedish exports. Domestic emissions arise from the production of goods and services that are exported. To provide the Swedish production of exported goods and services we need imports of goods and services. These imports lead to emissions in other countries.

Figure B Emissions from Swedish exports (method 2)
1995 and 1998, per cent



SO_2 has the highest proportions of emissions in other countries from the production of exported goods, 60% in 1998. The proportion was 43% for CO_2 and 33% for NO_x. The proportion of emissions in other countries has increased between 1995 and 1998 for all substances.

Sweden has low emissions from an international perspective, particularly of SO_2, but also of CO_2, in spite of having a high proportion of primary industry. Sweden has been successful in reducing its SO_2 emissions through improved treatment and better choice of fuels. A lot of the electricity in Sweden is produced by hydropower and nuclear power, which only causes low emissions. Sweden has a rather large proportion of bio energy, especially in manufacturing of pulp and paper, which results in no net surplus of CO_2 emissions. In most cases the imported products and services are much more emissions intensive than the exported. Sweden has not been as successful with the reduction of NO_x emissions. The exported products and services are in total more emissions intensive than the imported.

Obviously the impact a country's consumption has on the environment is not directly related to the emissions within the country. In order to obtain information on the environmental pressure related to a nation's total consumption of goods and services, a trade adjusted environmental accounting system is of vital importance.

1 Introduction

1.1 Background

Environmental accounts describe the connections between the environment and the economy, e.g. in natural resource extraction or the emissions of air pollutants by a given sector of society or industry. Traditionally, mainly due to lack of data, the environmental accounts have described the events inside Sweden. Estimates of emissions to air, for example, are produced on the basis of the emissions in Sweden due to Swedish production and consumption. But Swedish consumption and production also affect the environment in other countries where the products we import are produced. In the same way, part of the impact on our national environment is linked to the products Sweden exports.

Sweden is a small open economy with extensive worldwide trade. A large part of what we consume in Sweden is produced elsewhere in the world (equal to 38% of GDP in 1998). Similarly, what we ourselves produce is consumed in other parts of the world, equal to 44% of GDP. A previous report[3] indicates that as much as 80% of the emissions of SO_2 caused by Swedish final use occur in other countries (see ***section 1.3***).

An expanded (trade-adjusted) system of environmental accounts can be used for many different purposes and analyses. On a macro level the data can be used for estimation purposes, for example, the balance of trade for emissions, emission intensities (emissions divided by gross output or value added) for exports and imports, and the share of emissions in other countries caused by the domestic final use. Figures can also be presented at an industry level, for example in environmental economic profiles, which show for instance the different industries' contributions to total Swedish import and export emissions.

1.2 Objectives and aims

The objective of this report is to calculate the emissions of CO_2, SO_2 and NO_x that Swedish imports and exports give rise to, at both the macro and industry level. Our intention is to, on a macro level, calculate Sweden's balance of trade for emissions in a consistent way. We also want to analyse the environmental impact of different industries in an international perspective. The ambition and long-term objective is to obtain a system of environmental accounts that reflects all impacts on the environment caused by Swedish consumption and production.

This is mainly a methodological study that builds on an earlier, much coarser, analysis of the allocation of emissions between Sweden and its trading partners. The conclusions of the study are important for evaluating different ways of including emissions between trading partners in the national environmental accounts. There are simple methods to do this as well as more sophisticated methods using

[3] Statistics Sweden, Miljöpåverkan av svensk handel – resultat från en pilotstudie (in Swedish), rapport 2000:5.

country specific input-output matrices and harmonised environmental accounts in all countries (especially EU countries). There are both analytical and data problems involved in obtaining a more accurate estimate and the cost of a more laborious method has to be weighed against the added information it will provide for yearly estimates.

1.3 Results from a previous report

In the previous pilot study three different methods were examined. ***Table 1.1*** shows emissions from Swedish production, exports and imports. Export emissions are part of the emissions from Swedish production. By using the data on import and export emissions it is possible to estimate a balance of trade for emissions. The difference between exports and imports gives the net trade for emissions, the *net emissions*. Sweden's net emissions of CO_2 and SO_2 were negative in 1993, while net emissions of NO_x were positive. This means that the goods and services that Sweden imported lead to higher emissions of CO_2 and SO_2 in other countries than Sweden's exports lead to in Sweden.

Table 1.1 Emissions of CO_2, SO_2 and NO_x 1993, 1 000 tonnes

	Emissions from:			
	Domestic production[1]	export	import	Net emissions[2]
CO_2	45 400	21 500	36 300	-14 800
SO_2	94	57	128	-71
NO_x	295	135	109	26

1) The emissions that the Swedish production of goods and services give rise to. These are not equal to all Swedish emissions, since direct emissions from households are not included. Export emissions are part of the emissions from domestic production.
2) Net emissions = export emissions – import emissions.

Computing the emissions intensities, i.e. emissions per money unit produced, makes it possible to compare the export and import emissions for CO_2, SO_2 and NO_x (see ***table 1.2***). Comparisons of intensities become easier and clearer if they are related to one another, i.e. if the import intensity is divided by the export intensity. An emissions ratio under 100% means that exports are more emissions intensive than imports. Imports are considerably more emissions intensive than exports for both CO_2 and SO_2, with values of *190%* and *253%*, respectively. For NO_x, on the contrary, exports are more emissions intensive than imports - the value is *91%*.

Table 1.2 Emissions intensities for exports and imports 1993, 1 000 tonnes (CO_2) and tonnes (SO_2, NO_x) per SEK million

	Export intensity	Import intensity	Emissions ratio[1]
CO_2	0.03	0.06	190%
SO_2	0.09	0.22	253%
NO_x	0.21	0.19	91%

1) Import intensity / Export intensity.

Export emissions account for *just under half* of all emissions of CO_2 and NO_x from Swedish production (see ***table 1.3***). The corresponding figure for SO_2 is about *60%*.

Table 1.3 Export and import shares of emissions, 1993

	Export emissions / total domestic emissions	Import emissions / total domestic emissions	Import emissions / domestic final use[1]
CO_2	47%	80%	60%
SO_2	61%	136%	78%
NO_x	46%	37%	40%

1) Emissions from Domestic final use = Emissions from Swedish production + import emissions - export emissions. Emissions from direct consumption, i.e. emissions directly from households, are not included.

The share of the emissions arising from Swedish final use[4] that occurs beyond the country's borders is computed by dividing the import emissions by the emissions from Swedish final use (Swedish production + imports - exports). As shown in ***table 1.3,*** an overwhelming proportion of the SO_2 emissions occurs outside Sweden, almost *80%*. *60%* of the emissions of CO_2 occurs in other countries and *40%* for NO_x.

[4] This report examines only the emissions that result from production in Sweden. The emissions from Swedish final use therefore do not include direct emissions, i.e. emissions directly from households, e.g. from driving a private car or from heating.

2 Methods and sources

2.1 Introduction

The environmental impact of Swedish trade can be calculated in different ways depending on the level of ambition and available data. One purpose of this study is to describe different methods that can be used for estimating emissions in other countries due to imports to Sweden. The proposed methods are described in more detail below.

All calculations are based on the Swedish environmental and national accounts, e.g. input-output (IO) matrices and emissions by industry. The IO-matrices provide a picture of the linkages between different production sectors in the economy. For each industry included, the matrices show how much has been purchased from the other industries in terms of input goods and how much has been supplied to other industries and to final demand.

The IO-matrices used are constructed from preliminary Supply and Use tables for 1995 and 1998. These are in the process of being revised and an official set of IO-tables for 1995 will be published later this year.

The IO-matrices include all import of goods and services as inputs for domestic production (indirect imports) as well as imports for final use (direct imports). Exports, private and public consumption, investments and changes in stocks are components of final demand that are met by both domestic and imported supply of goods and services. Emissions, both within Sweden and from trading partners, are calculated for exports and for the rest of final demand that is considered domestic use.

Although the national accounts include data on imports and exports, they are not allocated by trading partner. Therefore we have also gathered statistics on import and export of goods from the foreign trade statistics at Statistics Sweden. The countries included are all EU member states and the Czech Republic, Japan, Norway, Switzerland, USA and ROW (rest of the world). The share of imports and exports for each product group and trading partner is calculated.

The disaggregation of industries varies in the different methods. Basically, the first two methods use data disaggregated into almost 100 industries, while with method 3, where NAMEA-data is used, it was necessary to aggregate into 29 industries. In all cases, disaggregation was done according to the NACE rev.1 classification that is used in the NAMEA[5] system (see ***table 1*** in the appendix). The years 1995 and 1998 are studied in the first two methods, while the NAMEA data only has reasonable coverage for 1995.

Imports and exports of services are gathered from background material for the balance of payments compiled by the Central Bank of Sweden. The balance of pay-

[5] NAMEA stands for National Accounting Matrix including Environmental Accounts.

ments is based on foreign transactions, which are gathered from banks, financial institutions and directly from governments and companies. The payments are classified by codes depending on the kind of transaction. Prior to 1997, import and export of services were not allocated by country. In order to come up with a reasonable allocation of services over exporting/importing countries for 1995 we have used the allocation derived from the 1998 tables.

2.2 Description of the methods

2.2.1 Method 1 - Swedish emission coefficients

Method 1 is the most common approach for estimating emissions in the rest of the world due to domestic final use. Basically, this method calculates the emissions that would have occurred domestically if domestic producers produced all goods and services that are imported.

The analysis is straightforward in that it just calculates the production necessary to substitute for imported goods and services, using IO-analysis, and then applies the average emission coefficients to this added production.

The weakness with this approach is of course that it assumes that all trading partners have production technologies, energy systems, emission coefficients, etc., that are roughly equal to Sweden.

2.2.2 Method 2 - Foreign emission coefficients

Method 2 builds on method 1 in that it calculates the emissions avoided by not producing all that is imported domestically. The additional step in this method consists of calculating the differences between domestic macro emission coefficients and that of a weighted average of all trading partners.

The data on emissions are gathered from reports by EEA, OECD and Eurostat and from New Cronos[6] and UNFCCC. Gross Domestic Product (GDP) is taken from a report by the IMF. Using the coefficients for the individual countries (total emissions / GDP), a *total weighted* emission coefficient for imports is calculated for CO_2, SO_2 and NO_x, respectively, according to the formula below. The coefficients (and the sources, reports, etc.) are presented in ***table 1*** in the appendix

[6] New Cronos is Eurostat's database.

$$Coeff_{imp} = ((Em_{n1} / GDP_{n1}) * Imp\ share_{n1}) + ((Em_{n2} / GDP_{n2}) * Imp\ share_{n2}) + \ldots.. + ((Em_{n18} / GDP_{n18}) * Imp.share_{n19})$$

$Coeff_{imp}$ = Total emission coefficient for imports
Em_{n} = Total emissions in country n
GDP_{n} = Total GDP in country n
$Imp\ share_{n}$ = Country n's share of Swedish imports from the studied countries

Using this, import emissions are recalculated using the emission relation between the Swedish and the import coefficients and the emissions estimated by method 1 according to the formula below.

$$Relations\ of\ emissions = Coeff_{imp} / Coeff_{Sw}$$

$$Imp\ em_{2} = Imp\ em_{1} * (Coeff_{imp} / Coeff_{Sw})$$

$Imp\ em_{1}$ = import emissions calculated in method 1
$Imp\ em_{2}$ = import emissions calculated in method 2

2.2.3 Method 3 - Foreign industry level emission coefficients

Method 3 uses more detailed emissions data from the NAMEA compilations at Eurostat together with trade data for imports and exports. For each trading partner, the vector of imports is translated into production in all industries necessary to supply the Swedish economy with that specific import. These allocated production values (per industry and country) are then multiplied by the emission coefficients (by industry and country) from the NAMEA compilations.

Such data was available for 15 countries in 1995 (Germany is not included in the figures for SO_2 and NO_x, due to the lack of NAMEA data) and only 5 countries in 1998. For the rest of the world the same assumptions and conditions apply as in method 2. In ***tables 5*** in the appendix the coefficients used in method 3 for the other countries (which are not included in the NAMEA countries) are shown.

We have gathered environmental accounting data from the "harmonised" NAMEA system[7]. Some of the NAMEA data are adjusted by using the percentage distribution of gross output according to the comments in the NAMEA system. Gross output is gathered from New Cronos. Emission coefficients are then calculated for the

[7] The data comes partly from the specific NAMEA tables from Eurostat and partly from the NAMEA compilation "NAMEAs for air emissions, Results of pilot studies".

different industries in each country (see ***tables 6*** in appendix), according to the formula below.

$Coeff_{i1} = (Em_{i1} / GO_{i1})$

$Coeff_{i1}$	=	Emission coefficient in industry 1
Em_{i1}	=	Emissions in industry 1
GO_{i1}	=	Gross Output in industry 1

To be able to relate these coefficients to the Swedish coefficient in the IO matrix, gross output is converted into SEK. The average exchange rate gathered from New Cronos is used (see ***table 3*** in the appendix).

As a special exercise, emissions from a volume-adjusted import are calculated. This is done using the structure from the import vector and the volume of the export vector. The difference in this case between domestic and foreign emissions should reflect the composition of the exports and imports, rather than the absolute differences between them.

2.2.4 Method 4 - Foreign input-output matrices

Our original idea was to contrast the results obtained using method 3 with a more full-blown IO-analysis, using the economic tables and emission coefficients of various trading partners. The object of this would be to see how much the results would vary, i.e. whether or not method 3 was good enough.

As Eurostat is about to collect IO-tables for 1995 for all member countries the prospect of being able to link these with the NAMEA and trade data and thereby be able to do a EU-wide IO-analysis of the trade patterns is interesting. Time will tell if it will be possible.

Due to various reasons, we have not been able to get the necessary IO and emissions data from our trade partners. We do however have some IO-calculated emission intensities for final demand for Denmark for 1995. These are used for a very preliminary comparison of our method 3 with data specific to other countries. It is probable that the final demand emissions intensities will be introduced into the NAMEA data at Eurostat. This means that this kind of exercise could be done more regular in the future.

2.3 Trade

2.3.1 Original country

Since 1995, when Sweden joined EU and the Intrastat system, it has been more difficult to recognise the origin of a specific product and consequently in which country the emissions arise. When importing products from other EU member countries it is only necessary to report the dispatching country, not the original producing country. When importing from countries outside EU, third countries, the original country is still specified. A study done by the department of foreign trade[8] indicates that in 1994, 87% of Swedish imports originated in the dispatching country. In this study it is therefore assumed that the original country is the same as the dispatching country.

2.3.2 Mirror studies

In theory two trading partners compile corresponding sets of data, i.e. exports from one country correspond to imports in the partner country. The correspondence of exports and imports has been examined in some mirror studies[9]. These studies find that there are small and in some cases even large discrepancies. Small discrepancies can be explained by differences in methods, definitions, etc. The explanations for larger discrepancies are not understood as well and are examined in the mirror studies, for instance the trade between Sweden and Finland, and Sweden and Norway.

The Sweden – Finland relation seems stable until 1995, the year both countries became members of the EU. In 1995, Finnish imports exceeded Swedish exports to Finland by 566 million ECU. This means that the total Finnish arrivals are 21% above the Swedish total dispatches and positive for all the product categories. Even when the figures had been adjusted for the impact of a rather large Swedish suppression to ensure confidentiality there is still about 7% to be explained. Vehicles (NACE 34.10) and mineral fuels (NACE 23) show quite large discrepancies. Swedish imports were 87 million ECU lower than Finnish exports to Sweden, which represents a total discrepancy of minus 3%. The impact of Sweden's suppression of data for confidentiality increased the differences to 17%. Machinery (NACE 29), inorganic chemicals (NACE 24.13) and plastics (NACE 24.16) show large discrepancies.

The Norwegian exports minus the Swedish imports did not differ much in total in 1995. However there were some notable differences for mineral fuels, plastics (NACE 25.2) and fish (NACE 05). The Swedish export value, on the other hand, exceeded the import value of Norway by 11% or 495 million ECU. This mismatch is negative for almost all large value products, in particular all kinds of machinery and vehicles.

[8] In-house promemoria 26th of June 1997 (in Swedish), Ska uppgift om ursprungsland införas i intrastatstatistiken över införseln från EU?, Statistics Sweden.
[9] Statistics Sweden, The Mirror Statistics Exercise between the Nordic Countries 1995.

The mirror study identified some main reasons for discrepancies:

- Confidentiality — The export figures are more widely suppressed than the import figures. This would add to the theoretically expected bias of product group import values exceeding export values. Suppression due to confidentiality was found to have a substantial impact on figures of trade in energy products, chemicals, machinery and vehicles.

- Partner country — In the data transmissions to Eurostat on extra-commodity imports, the country of origin is provided as the main partner country. In order to compare exports with imports by country of consignment, it has therefore been necessary to exchange national data.

- Transhipments — Movements of goods from a non-EU country, destined for one or more other EU countries, is an important category of transhipments. A transhipment in the opposite direction is a movement of goods from one EU country to a third (non-EU) country. An example is the movement of motor vehicles from the Netherlands and transported via Sweden to Norway. The cars are produced in Swedish owned enterprises in the Netherlands. The vehicles are recorded as Swedish Intrastat arrivals and third-country exports to Norway. The Netherlands appears on the declaration as country of origin and consignment.

- Classification — Even at the six-digit level instances were identified where different classifications of the same merchandise were the source of discrepancies.

We cannot expect the export and import data to always match. These two sets of information are not necessary identical and might each be correct despite the mismatching. They should be looked upon as supplementary to each other, since they are simply pictures from different sites along the way of the flow of goods.

The fact that there may be large discrepancies in exports and imports may affect the results of this study. No specific study of this is done within this report.

2.3.3 Composition of imports and exports

In 1998, total imports to Sweden were SEK 685 billion, while exports from Sweden were SEK 808 billion. The net trade surplus was SEK 123 billion. In ***tables 7*** in the appendix the values of exports and imports for 1995 and 1998 are shown. The 19 studied trade partners correspond to 79% of the total export value and 86% of the total import value. Our largest exporting country is Germany with 11% of total exports, followed by the UK (10%), Norway (9.5%) and USA (9.1%). More than 16% of our imports come from Germany followed by the UK (11%), the Netherlands (7.4%) and Norway (7.2%).

Almost half of Sweden's imports in 1998 consist of *processed goods* (NACE 15-19, 29-37, 24.4), while 25% consists of *primary goods* (NACE 01-14, 20-28 excl. 24.4). Transports (NACE 60-64) accounts for 15% and services (NACE 50-55, 65-99) for 10%. Energy products (NACE 40-41) and construction (NACE 45) correspond to less than 1%. Chemicals and chemical products, office machinery and computers, electrical machinery, motor vehicles, supporting and auxiliary transport activities (harbours) and juridical and economic consulting activities are especially large import products and services.

Sweden's exports consist of 52% processed goods, 29% primary goods and 9% each of transports and services. Major exported products are wood products, pulp and paper, medicines, iron and steel, electronic components, machinery and motor vehicles.

2.4 Differences between environmental accounts and environmental statistics

The environmental accounts use the same principle of division as the national accounts, i.e. emissions are divided into different activities in the society that cause the emissions, such as industries, private consumption and public consumption. The traditional environmental statistics are divided into different sources of emissions, for instance traffic and energy production. These emissions are reported to IPCC (Intergovernmental Panel on Climate Change) and others.

In the traditional environmental statistics all emissions within the national border are included. This means that emissions caused by tourists and foreign ships on Swedish territory are included in the statistics.

In the environmental accounts only emissions that are connected to national economic activities are included. The emissions in Sweden from tourists and foreign ships are therefore not included. On the other hand the emissions from Swedish registered ships in other territory are included in the environmental accounts. Even the emissions caused by Swedish tourists in other countries should be included, but because of lack of data this is a problem. This study is a step forward for including these emissions. The emissions are recorded for the industries or households that cause the emissions.

The harmonised NAMEA tables, which are compiled by Eurostat, are based on the NACE rev. 1 system[10] mainly on a 2-digit level. The transport and energy industry is on a 3-digit level and the service sector is on a more aggregated level.

[10] NACE rev. 1 is a EU classification of different activities in the society such as industries and private and public consumption. In Sweden the corresponding classification is called SNI92.

3 Results

This section gives a macro level overview of the results estimated by the four methods. The results are presented as net emissions, emissions intensities and shares of emissions in other countries, i.e. the proportion of emissions caused by Swedish final use that occurs in other countries. In ***section 3.5***, the different methods are compared and discussed. The most adequate method is chosen and the data are used for more thorough analyses in ***section 4***.

3.1 Method 1 - Swedish emissions coefficients

Estimates of import emissions are made on the basis of Swedish emissions coefficients on an industry level. It is assumed that foreign production resembles Swedish production and that it produces an equal amount of air pollutants.

3.1.1 Net trade emissions

In ***table 3.1*** the emissions from domestic production, exports and imports are shown. Export emissions are a part of the domestic emissions. More than half of the domestic production emissions are due to production of goods and services that are exported.

Imports consist of indirect and direct imports. The former are goods and services that are an input to other production and the latter are goods and services that go directly to consumption. The emissions from direct imports correspond to about 20% of the total import emissions. The main part of the emissions is consequently caused by indirect imports. Table 3.1 shows the total import emissions.

Table 3.1 Emissions from domestic production, exports and import and net trade emissions (method 1) 1995 and 1998, 1 000 tonnes

	1995				1998			
	Domestic production	export	import	**Net trade emissions**	Domestic production	export	import	**Net trade emissions**
CO_2	47 719	24 743	20 471	**4 272**	48 861	26 045	22 476	**3 569**
SO_2	89	57	36	**21**	84	52	37	**15**
NO_x	270	152	104	**48**	272	156	117	**39**

Using the data on imports and exports it is possible to estimate the balance of trade for emissions. The difference between the exports and imports, the *net trade emissions*, is positive for all substances in both years, which means that the export emissions are higher than the import emissions. Net emissions decreased between 1995 and 1998.

3.1.2 Emissions intensities

In an environmental perspective two aspects of the imports and exports are interesting, their size (volume) and their composition. The size of exports and imports, i.e. the traditional balance of trade, varies over time as part of the business cycle. In 1995 and 1998, as in general, exports were larger than imports. The composition of imports and exports differs quite a lot and gives rise to more or less emissions. To exclude or minimize the size effect we compare the emissions intensity, i.e. the emissions per produced Swedish money unit, of imports and exports, respectively (***table 3.2***).

Comparisons of intensities become easier and clearer if they are related to one another, i.e. if the import intensity is divided by the export intensity. The emissions ratios are lower than 100% for all substances. This means that exports are more emissions intensive than imports. The export and import intensities are almost equal for CO_2.

Table 3.2 Emission intensities (method 1) 1995 and 1998, tonnes per SEK million

	1995				1998			
	Sw. prod. intensity	Export intensity	Import intensity	Emissions ratio[1]	Sw. prod. intensity	Export intensity	Import intensity	Emissions ratio[1]
CO_2	28.81	36.56	35.41	97%	26.41	32.96	31.44	95%
SO_2	0.054	0.084	0.062	74%	0.045	0.066	0.052	79%
NO_x	0.163	0.225	0.180	80%	0.147	0.197	0.164	83%

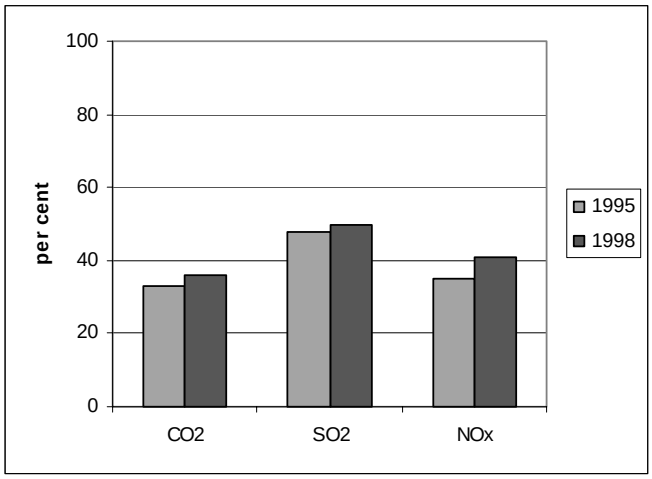
1) Import emissions intensities / export emissions intensities

Note that the emissions intensity for domestic production (including exports) is considerably lower than export and import intensities. One explanation is that a large part of domestic production consists of services, which are considered much less emissions intensive than the production of goods. An extensive share of the produced goods is exported. Sweden exports many primary goods, such as wood, pulp, paper and basic metals, which are more emissions intensive.

3.1.3 Shares of emissions in other countries

The share of the emissions arising from Swedish final use that occurs outside the border is calculated by dividing the import emissions by the emissions from Swedish final use. Import emissions include both emissions that are an input to production of goods and services exported and emissions that are due to domestic consumption only. As shown in ***figure 3.1***, almost half of the SO_2 emissions due to Swedish final use occur outside Sweden. The shares are lower for CO_2 and NO_x, but all substances have increased between 1995 and 1998.

Figure 3.1 Share of emissions in other countries (method 1) 1995 and 1998



3.2 Method 2 - Foreign emission coefficients

In this method it is assumed that all goods have emissions intensities equal to the national average for each country. Emissions coefficients for 19 main trade partners are calculated by dividing the countries' total emissions of CO_2, SO_2 and NO_x by GDP. Using the coefficients for the individual countries, a *total* emissions coefficient for imports is calculated for CO_2, SO_2 and NO_x, respectively. The relation between the emission coefficient for Sweden and the total for imports is used to estimate the import emissions in this method, see ***table 3.3***.

Table 3.3 Calculation of import emissions (method 2) 1995 and 1998

	1995			1998		
	Imp. emissions method 1	Emission relation	Imp. emissions method 2	Imp. emissions method 1	Emission relation	Imp. emissions method 2
CO_2	20 471	1.482	30 338	22 476	1.733	38 951
SO_2	36	2.615	94	37	3.750	139
NO_x	104	0.903	94	117	1.243	145

3.2.1 Net trade emissions

Table 3.4 shows the net emissions estimated using method 2. The Swedish production emissions, including export emissions, are the same as in method 1.

Table 3.4 Emissions from domestic production, exports and import and net trade emissions (method 2) 1995 and 1998, 1 000 tonnes

	1995				1998			
	Domestic production	export	import	**Net trade emissions**	Domestic production	export	import	**Net trade emissions**
CO_2	47 719	24 743	30 338	**-5 595**	48 861	26 045	38 951	**-12 906**
SO_2	89	57	94	**-37**	84	52	139	**-87**
NO_x	270	152	94	**58**	272	156	145	**11**

The net trade emissions are negative for CO_2 and SO_2, both in 1995 and 1998. This means that the import emissions are higher than the export emissions. The net emissions have more than doubled between 1995 and 1998, mostly due to the large increase of the import emissions. In contrast, the net emissions are positive for NO_x, but decreased between 1995 and 1998.

3.2.2 Emissions intensities

As can be seen in ***table 3.5***, the emissions ratio is above 100% for both CO_2 and SO_2, which means that import intensities are higher than export intensities. This means that the emissions of SO_2 per money unit, from the production of the goods and services we import, are considerably higher in other countries than in Sweden. The emissions ratios vary a lot between 1995 and 1998. For instance the ratio for SO_2 was 195% in 1995 and nearly 300% in 1998.

Table 3.5 Emission intensities (method 2) 1995 and 1998, tonnes per SEK million

	1995				1998			
	Sw. prod. intensity	Export intensity	Import intensity	Emissions ratio[1]	Sw. prod. intensity	Export intensity	Import intensity	Emissions ratio[1]
CO_2	28.81	36.56	52.48	144%	26.41	32.96	54.49	165%
SO_2	0.054	0.084	0.164	195%	0.045	0.066	0.196	298%
NO_x	0.163	0.225	0.163	72%	0.147	0.197	0.204	103%

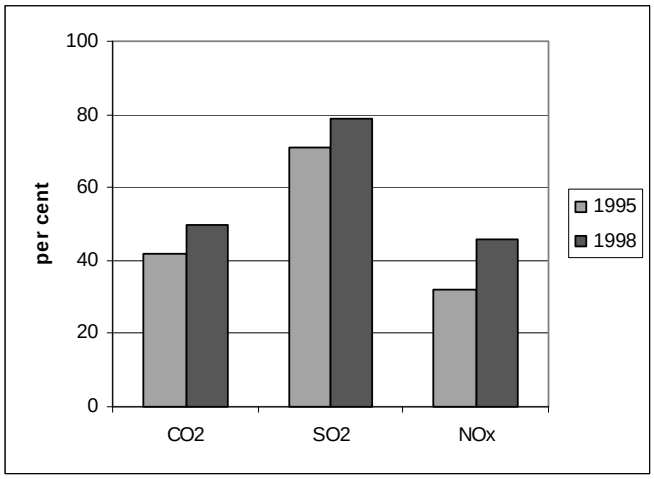
1) Import emissions intensities / export emissions intensities

The emissions ratio for NO_x was 72% in 1995, which indicates that exports were more emissions intensive than imports. On the other hand the ratio was just above 100% in 1998.

3.2.3 Shares of emissions in other countries

In 1998 almost 80% of the SO_2 emissions caused by Swedish final use occurred in other countries, see ***figure 3.2***. For CO_2 and NO_x the shares were almost 50% in 1998. The shares have increased for all substances between 1995 and 1998.

Figure 3.2 Share of emissions in other countries (method 2) 1995 and 1998



3.3 Method 3 - Foreign industry level emission coefficients

Emissions are estimated using other countries' environmental accounts data from the NAMEA system, i.e. economic and emissions data at an industry breakdown. Such data was available for 15 countries in 1995 (excluding Germany for SO_2 and NO_x). The same assumptions and conditions apply for the rest of the world as in method 2.

3.3.1 Net trade emissions

Swedish production and export emissions are the same as in the previous methods. Net trade emissions are negative for both CO_2 and SO_2 (see ***table 3.6***) because the import emissions are higher than the export emissions. The net trade emissions of NO_x are however positive.

Table 3.6 Emissions from domestic production, exports and import and net trade emissions (method 3) 1995, 1 000 tonnes

	Domestic production	export	import	**Net trade emissions**
CO_2	47 719	24 743	30 975	**-6 232**
SO_2	89	57	109	**-52**
NO_x	270	152	110	**42**

3.3.2 Emissions intensities

The emissions ratio is above 100% for CO_2 and SO_2, which means that the import intensities are higher than the export intensities, see ***table 3.7***. The ratio is highest for SO_2, where the import intensity is more than two times as high as the export intensity. This implies that production in other countries, in general, has much higher emissions of SO_2 per produced money unit than the production in Sweden (of the goods exported).

Table 3.7 Emissions intensities (method 3) 1995, tonnes per SEK million

	Export intensity	Import intensity	Emissions ratio[1]
CO_2	36.56	53.58	147%
SO_2	0.084	0.189	224%
NO_x	0.225	0.189	84%

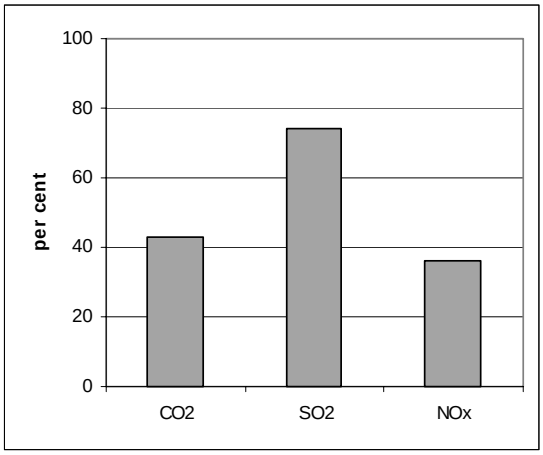
1) Import emissions intensities / export emissions intensities

In 1995 the emissions ratio for NO_x was 84%, which indicates that exports were more emissions intensive than imports.

3.3.3 Shares of emissions in other countries

Approximately three-fourths of the SO_2 emissions caused by Swedish final use occurs in other countries, see ***figure 3.3***. The shares of CO_2 and NO_x emissions are much lower, 43% and 36%, respectively.

Figure 3.3 Share of emissions in other countries (method 3) 1995



3.4 Method 4 - Foreign input-output matrices

As stated earlier, the original idea was to use actual input-output (IO) data and environmental accounts data from a few trading partners to calculate a more precise measure of the emissions from exports to Sweden. This was, unfortunately, not possible to do within the time frame of this project.

Instead we have done a comparison for one trading partner, Denmark, based on emissions intensities in their final demand as a proxy for a real IO-calculation.

In method 3, the NAMEA data used for Denmark includes bunkering, while the IO-calculated emissions intensities for Final Demand that we obtained from Statistics Denmark excluded bunkering. We therefore had to calculate new emissions in Denmark using method 3, so the totals for Denmark differ from those presented earlier.

In ***table 10*** in the appendix the breakdown of the 29 NACE categories is presented. These are by Final Demand instead of by emitting industry as in previous tables. Emissions from each industry / commodity thus represent emissions from all industries involved in producing the goods and services needed to satisfy that final demand.

Table 3.8 Emissions in Denmark from imported goods and services 1995 – comparing method 3 and 4, tonnes

	Emissions in Denmark		Relation
	Method 3	Method 4	M4/M3
CO_2	1 690 344	1 655 500	98%
SO_2	5 382	4 611	86%
NO_x	6 636	6 441	97%

In ***table 3.8*** the emissions in Denmark caused by the production of the goods and services imported to Sweden and the relation between the methods are presented. Although there are differences between the different industries / commodities, the overall impression is that method 3 and method 4 give reasonably equivalent results.

3.5 Methodological comparison

3.5.1 Comparisons

Table 3.9 gives an overview of the net trade emissions in 1995 estimated using methods 1, 2 and 3. Method 4 is not comparable with the other methods, since it only concerns one country. As can be seen, the net trade emissions of NO_x are positive for all methods and there are no large differences. The net trade emissions of CO_2 and SO_2 are positive in method 1 and negative in method 2 and 3. Methods 2 and 3 show only small differences.

Table 3.9 Net trade emissions estimated by the different methods 1995, 1 000 tonnes

	Method 1	Method 2	Method 3
CO_2	4 272	-5 595	-6 232
SO_2	21	-38	-52
NO_x	48	58	43

In method 1 all emissions ratios are below 100%, which means that the exports are more emissions intensive than the import, (***table 3.10***). The emissions ratios for CO_2 and SO_2 are above 100% in methods 2 and 3, which implies that imports are more emissions intensive than exports. Methods 2 and 3 show only small differences, especially for CO_2.

Table 3.10 Emissions ratios[1] estimated by the different methods 1995, per cent

	Method 1	Method 2	Method 3
CO_2	97%	144%	147%
SO_2	74%	195%	224%
NO_x	80%	72%	84%

1) Import emissions intensities / export emissions intensities

The shares of emissions in other countries caused by Swedish final use are presented in ***table 3.11***. NO_x shows only small differences between the methods. The proportions of SO_2 and CO_2 are almost identical between method 2 and 3. The two latter methods seem to result in higher proportions than the first method concerning CO_2 and SO_2.

Table 3.11 Share of emissions in other countries estimated by the different methods 1995, per cent

	Method 1	Method 2	Method 3
CO_2	33%	42%	43%
SO_2	48%	71%	74%
NO_x	35%	33%	36%

3.5.2 Which method is most adequate?

Using method 1 we primarily obtain differences that are due to the composition of imported and exported products, e.g. raw materials versus more processed goods. This method shows how large the amount of emissions would be if the imported products were produced in Sweden. The result shows that Sweden is a net exporter of emissions of all substances and that exports are more intensive than imports. The production of primary goods is often more emissions intensive than production of more processed goods and services. Sweden exports a large amount of primary goods.

Method 2 measures the effect of the fact that other countries generally differ from Sweden in their emissions intensity. Since the result in method 2 shows that imports are more emissions intensive than exports for all substances in 1998, this indicates that Sweden produces goods and services in a cleaner way. In 1995, exports were more emissions intensive for NO_x than imports. The export emissions of SO_2 were larger than the import emissions for products such as paper, basic chemicals, iron, steel and water transport services using method 1. With method 2, on the contrary, export emissions were smaller for these products than the import emissions.

Method 3 emphasises differences in emissions that are due to both the composition of goods and services imported and the fact that different industries produce different amounts of emissions, i.e. that they differ in emissions intensities. The basis for the estimations is NAMEA data from 15 countries.

Method 4 is a refinement of method 3. We have access to Denmark's emissions intensities in final demand, which gives an opportunity to estimate the emissions with the availability of the country specific emissions coefficients of production. The result was quite close to that in method 3, but since only one country is studied no further conclusions can be drawn.

To sum up, method 1 is not sufficient in these kinds of analyses, since it only uses domestic emissions coefficients. It seems that this method underestimates the "true" values of the emissions. Method 2 is in some ways quite close to the results in method 3 and can therefore be sufficient and useful for some analyses. Method 3 seems to give the most overall coverage and reflects the "true" values in a sufficient way. Method 4 probably gives the most "true" and country specific result, but it requires IO-matrices (or emissions intensities for final demand) from other countries, which are not possible to attain at the time being.

Method 3 gives, in this study, the best overall coverage and is therefore used for analyses at the industry level in the next section (***part 4***). The method makes it possible to study emissions in other countries and in different industries. Method 2 is sufficient for analyses at the macro level (especially when studying proportions of emissions abroad) and is therefore used in ***section 4.1*** since it gives the opportunity to study both 1995 and 1998.

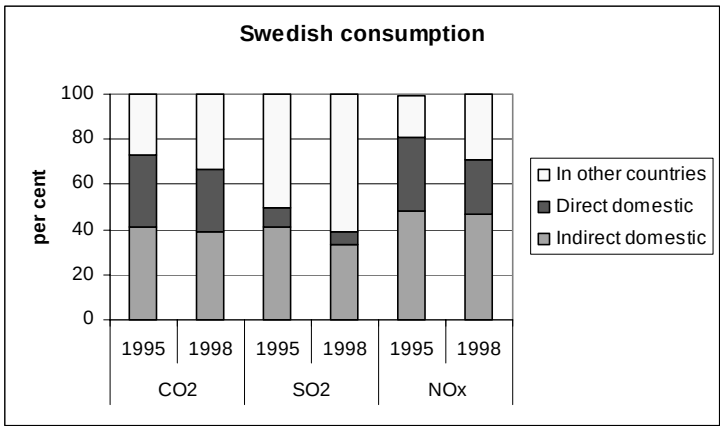
4 Analyses

4.1 Swedish consumption and exports

The proportion of emissions in other countries and domestic emissions caused by Swedish consumption are presented in ***figure 4.1.*** The indirect emissions come from production of goods and services that are later consumed in Sweden. The emissions from the production of goods and services that are exported are consequently not included. The direct emissions come from public and private consumption, for instance driving private cars and heating houses. Swedish consumption causes emissions in other countries where imported goods and services are produced. Emissions that are due to the production of goods that are imported to provide the domestic production of exported goods are not included in this figure. The results from method 2 are used to be able to study both 1995 and 1998 (methods 2 and 3 show only small differences for this analysis).

In 1998 the indirect domestic emissions of SO_2 were one-third of the total emissions caused by Swedish consumption, while the direct emissions were as low as 6%. The emissions in other countries due to Swedish consumption were more than 60%. This implies that a larger part of the emissions from Swedish consumption occur abroad.

Figure 4.1 Emissions from Swedish consumption (method 2) 1995 and 1998, per cent

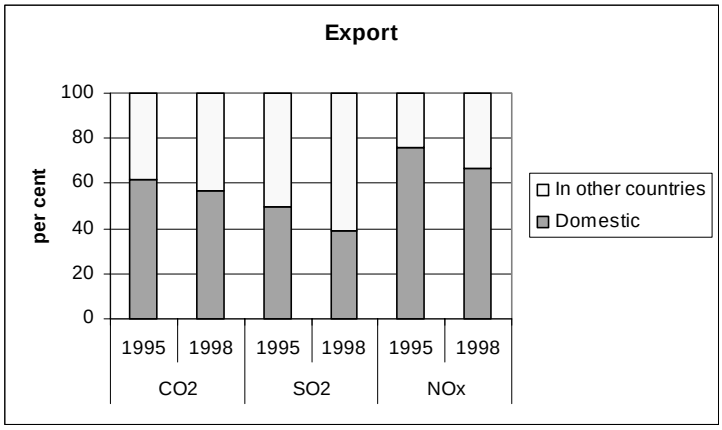


Approximately 30% of the emissions of CO_2 and NO_x is in other countries, which is lower than the proportion for SO_2. Consequently the proportion of domestic emissions is higher. The direct domestic emissions correspond to more than 40% of total domestic emissions. One explanation is that private driving and heating of houses leads to high emissions of CO_2 and NO_x, but not SO_2.

The proportion of emissions in other countries has increased between 1995 and 1998 for all substances.

In ***figure 4.2*** the proportions of the emissions from Swedish exports are presented. The domestic emissions arise from the production of goods and services that are exported. To provide the Swedish production of exported goods and services we need imports of goods and services. These imports lead to emissions in other countries.

Figure 4.2 Emissions from Swedish export (method 2) 1995 and 1998, per cent



SO_2 has the highest proportions of emissions in other countries from the production of exports, 60% in 1998. The proportion for CO_2 was 43% and the proportion for NO_x was 33%. The proportion of emissions in other countries has increased between 1995 and 1998 for all substances.

4.2 Trade adjusted environmental accounts

This section presents trade adjusted environmental accounts. The net trade emissions estimated by method 3 are used to compile the adjusted environmental accounts that reflect the total emissions caused by Swedish final use. Import emissions include both emissions that are due to the input to production of goods and services exported and emissions that are due to domestic consumption only.

Tables ***4.1-3*** have particularly interesting industries to show the effects of the trade adjustments. All 29 industries are presented in ***table 8*** in the appendix. In total the Swedish consumption causes more emissions of CO_2 than the traditional environmental accounts shows. The trade-adjusted accounts in total correspond to 72 million tonnes of CO_2 emissions, which is six million tonnes more than the traditional (or non-adjusted) environmental accounts. This is an increase of 10%.

When studying the adjusted accounts at the industry level it appears that, for instance, the mining and quarrying industries (NACE 10-14) must be adjusted upwards by 2.5 million tonnes CO_2 (***table 4.1***). This is because the emissions from production of the imported goods in this group are so much higher than the emissions from the production of the goods that Sweden exports. The adjusted accounts are almost four times as high as the traditional or non-adjusted accounts.

Table 4.1 Trade-adjusted environmental accounts, emissions of CO_2 (method 3) 1995, tonnes

NACE	Traditional Accounts	Net trade emissions	Adjusted Accounts
10-14	626 198	-2 476 049	3 102 246
15-16	1 181 020	-366 785	1 547 805
21-22	2 375 311	519 980	1 855 331
23	3 695 825	-1 671 075	5 366 900
24	537 865	-965 147	1 503 012
27-28	6 305 816	743 759	5 562 057
40-41	8 739 756	-2 770 160	11 509 916
60-64	12 759 373	2 489 368	10 270 006
Total	**65 797 227**	**-6 231 662**	**72 028 889**

The electricity, gas and water supply industries (NACE 40-41) must be adjusted upwards by 2.8 million tonnes CO_2, an increase of 32%. By buying electricity and gas from other countries (import emissions are higher than the export emissions), Swedish consumption leads to higher emissions of CO_2 than can be seen in the traditional environmental accounts.

The trade-adjusted environmental accounts are 2.5 million tonnes CO_2 lower for the transport services (NACE 60-64) than can bee seen in the traditional accounts, which is a decrease of 20%.

In ***table 4.2*** the trade-adjusted accounts for SO_2 are presented. In total the emissions of SO_2 must be adjusted upwards by 52 thousand tonnes to reflect the "true" emissions the Swedish final use leads to. This is an increase of 55%! The industries of pulp, paper and publishing (NACE 21-22) have positive net emissions (8 thousand tonnes), which results in a downward adjustment of the environmental accounts (the Swedes give rise to lower emissions than can be seen in the traditional accounts). This is a decrease of 50%.

For coke, refined petroleum products and nuclear power (NACE 23), the opposite is true - the adjusted accounts are almost 12 thousand tonnes (or 3 times) higher than the traditional.

Table 4.2 Trade-adjusted environmental accounts, emissions of SO_2 (method 3) 1995, tonnes

NACE	Traditional Accounts	Net trade emissions	Adjusted Accounts
10-14	1 166	-19 652	20 818
15-16	1 134	-1 166	2 300
21-22	15 763	8 064	7 698
23	5 176	-11 729	16 905
26	7 754	-2 535	10 288
27-28	7 447	-3 316	10 763
40-41	18 084	-12 582	30 666
60-64	22 229	-4 627	26 856
Total	**96 074**	**-52 099**	**148 173**

The trade-adjusted accounts for NO_x are 42 thousand tonnes lower than the traditional accounts, which is a decrease of 12% (***table 4.3***). For agriculture and fishing (NACE 01-02) the accounts are adjusted downwards by 5.8 thousand tonnes.

Table 4.3 Trade adjusted environmental accounts, emissions of NO_x (method 3) 1995, tonnes

NACE	Traditional Accounts	Net trade emissions	Adjusted Accounts
01-02	36 102	5 799	30 303
10-14	3 333	-6 474	9 807
21-22	21 920	17 178	4 743
40-41	15 905	-5 212	21 117
60-64	124 753	29 815	94 939
70-75	25 703	4 158	21 545
Total	**352 260**	**42 330**	**309 930**

4.3 Breakdown at industry level

In this section the import and export emissions estimated by method 3 are presented, divided into 18 industries. The import emissions are volume adjusted[11] to focus on the composition of the imported and exported goods and services. Germany is not included in the figures of SO_2 and NO_x (due to the lack of NAMEA data). The export and import emissions by industry and country are presented in ***tables 9*** in the appendix.

Some industries have larger emissions than others, especially the primary industries such as mining and quarrying (NACE 10-14), manufacture of pulp and paper (NACE 21), manufacture of coke and petroleum products (NACE 23) and manufacture of basic metals (NACE 27-28), but also energy production (NACE 40-41) and transport activities (NACE 60-64). In ***section 4.4*** six industries are analysed and studied more thoroughly.

All import emissions of CO_2 are larger than the export emissions, except for pulp, paper and publishing (NACE 21-22) and transport industries (NACE 60-64), see ***figure 4.3***. Mining and quarrying (NACE 10-14) shows the largest differences between the export and import emissions. The import emissions are more than seven times as high as the export emissions.

[11] Exports and imports differ in size. This means that the differences in emissions depend partly on differences in size and partly on the composition of the exported and imported goods. To eliminate the volume effect the total import value has been adjusted to the value of the exports (see also section 2.4).

Figure 4.3 Emissions of CO_2 per industry (method 3) 1995, 1 000 tonnes

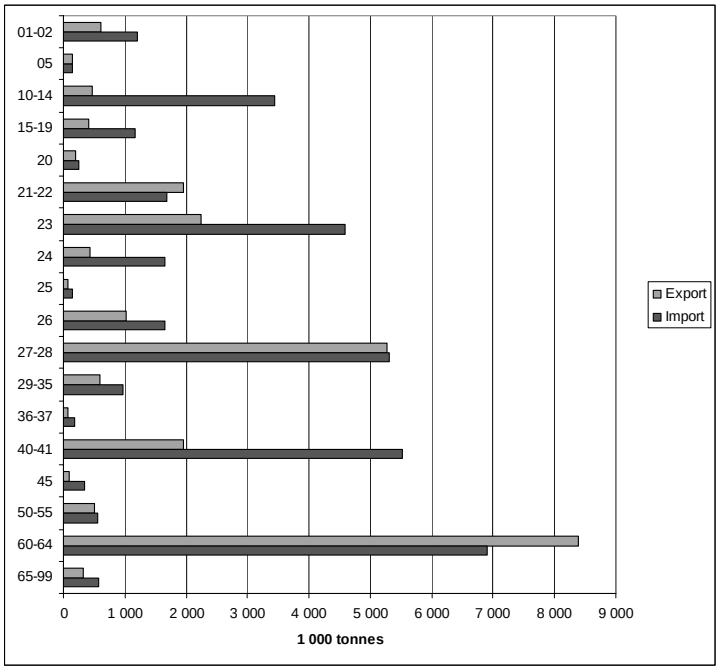
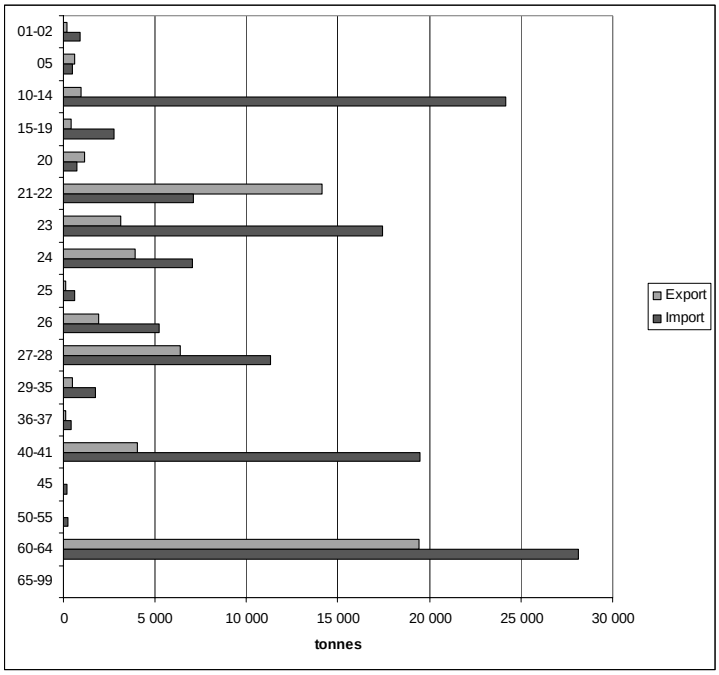


Figure 4.4 presents the emissions of SO_2. Almost all industries have higher import emissions than export emissions, with the exception of fishing (NACE 05), manufacture of wood and wood products (NACE 20) and pulp, paper and publishing (NACE 21-22). As in the case of CO_2, mining and quarrying (NACE 10-14) shows the largest differences for SO_2, and the import emissions are 24 times as high as the export emissions.

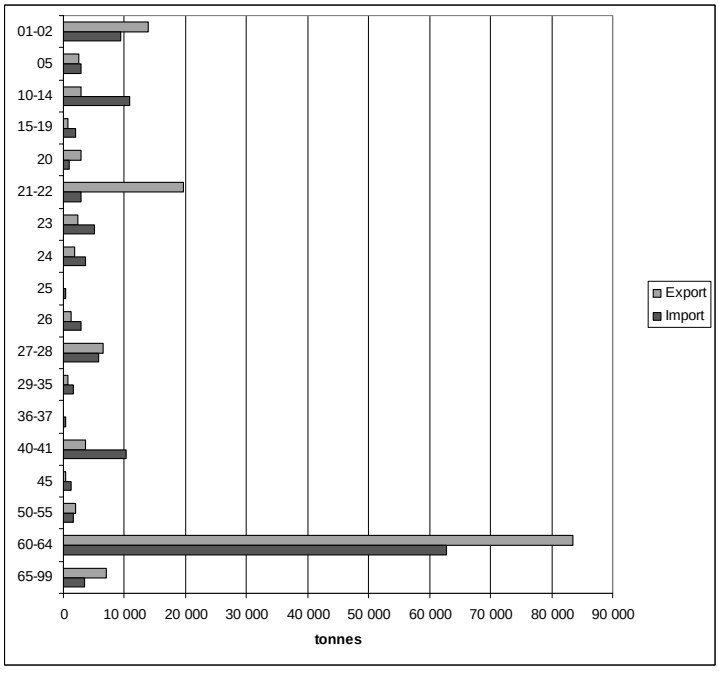
Export emissions are twice as high as import emissions for pulp, paper and publishing (NACE 21-22). This industry is described in more detail in ***section 4.4***.

Figure 4.4 Emissions of SO_2 per industry (method 3) 1995, tonnes



As can be seen in ***figure 4.5***, export emissions exceed import emissions for seven of the 18 industries, for instance agriculture and forestry (NACE 01-02), transports (NACE 60-64) and other services (NACE 65-99). The transport industry has by far the highest emissions: the export emissions of NO_x correspond to 84 thousand tonnes.

Figure 4.5 Emissions of NO_x per industry (method 3) 1995, tonnes



4.4 Environmental Economic profiles

Economic and environmental information can be combined to produce environmental economic profiles. These profiles provide an overview of the percentage contributions made by different industries to the economy, energy use and emissions, relative to the Swedish economy as a whole.

Figure 4.6 shows environmental economic profiles for six selected industries, which gives an opportunity to study some industries more thoroughly. The economic importance is shown by the industry's share of total value added, export value and import value. The share of energy consumption is shown as use of fuels. Environmental impact is presented in terms of the share of the total Swedish emissions of CO_2, SO_2 and NO_x. The shares of total export and import emissions are also shown. All figures are for 1995. In ***tables 7.1-2*** in the appendix the export and import values for all industries are presented. The rest of the world is all countries except those presented in these tables.

Agriculture, hunting and forestry (NACE 01-02)
These industries account for a low proportion of economic values, especially the import value. Imports consist of fruit, berries, vegetables and forest products. The products mainly come from rest of the world (50%), the Netherlands (20%) and Germany (10%). Exports consist mainly of grain and forest products. A large proportion of the exports goes to our neighbours, Denmark, Finland and Norway.

These industries have rather low use of fuel and low emissions of CO_2 and SO_2. On the other hand they produce a large proportion of Sweden's total NO_x emissions (approximately 10%). They are responsible for high proportions of both import and export emissions. In physical terms, i.e. tonnes, the import emissions of SO_2 and CO_2 are higher than the export emissions (***figures 4.3-4***). The opposite is true for NO_x - export emissions are higher than import (***figure 4.5***).

The Netherlands is a large importing country, but they do not have as large proportions of the emissions of SO_2 and NO_x (under 7%) in this group of industries, while the CO_2 emissions are somewhat larger (16%). The rest of the world has 55% of the NO_x emissions.

Manufacturing of pulp, paper and paper products; publishing, printing and reproduction of recorded media (NACE 21-22)
The industries in this group, particularly the pulp and paper industries, account for a large proportion of Sweden's export value (approximately 10%). The exports consist of pulp and paper (approximately 85% of total exports from these industries), while the import of these products corresponds to 40% of the total imports to Sweden. Other large import products are products from the publishing industry such as records, books, etc. The imports mainly come from the rest of the world (20%), Germany (18%) and Finland (17%), while the exports go to rest of the world (24%), Germany (21%) and UK (15%).

The manufacture of pulp is based mainly on wood, which leaves large quantities of waste materials and residues after processing that can be used in energy production. As a result, the industry is responsible for a very high percentage of the total bio fuels use (approximately 60%). Since the industry uses little fossil fuel, CO_2 emissions are quite low.

The proportion of export emissions is larger than the proportion of import emissions for all substances. These industries account for 16% of the total emissions of SO_2 in Sweden. The proportion of the export emissions of SO_2 is 25%. In physical terms, i.e. tonnes, the export emissions of SO_2 are twice as high as the import emissions (see ***figure 4.4***) and the export emissions of NO_x are almost seven times as high as the import emissions (see ***figure 4.5***).

Finland, which is a large importing country, accounts for half of the import emissions of CO_2 from this industry. Finland has, on the other hand, low proportions of the SO_2 and NO_x import emissions. Germany accounts for 8% of the CO_2 import emissions and unfortunately Germany is not included in the calculations of SO_2 and NO_x. Germany is included in the values of the rest of the world, which have high proportions of import emissions for SO_2 and NO_x.

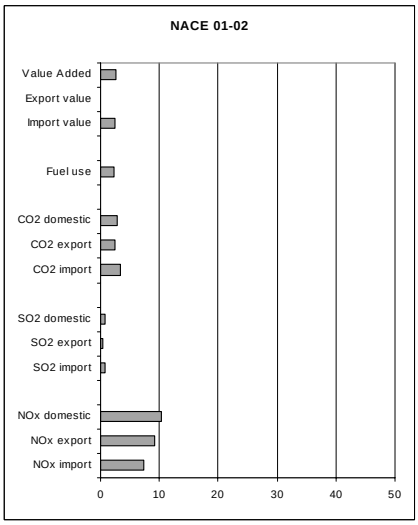
As mentioned before, this industry in Sweden exports a large amount of basic products, while imports consist of more processed products. This is reflected in the higher export emissions of SO_2 and NO_x. The export emissions of CO_2 are, on the contrary, almost as high as the import emissions (see ***figure 4.3***). One explanation is that this industry in Sweden uses a lot of bio fuels in their production, which causes low emissions of CO_2. In Germany approximately 60% of the total electricity is produced by fossil combustion. In Finland 40% comes from fossil fuel and in Sweden only 5% (note that the proportions are for the whole country)[12].

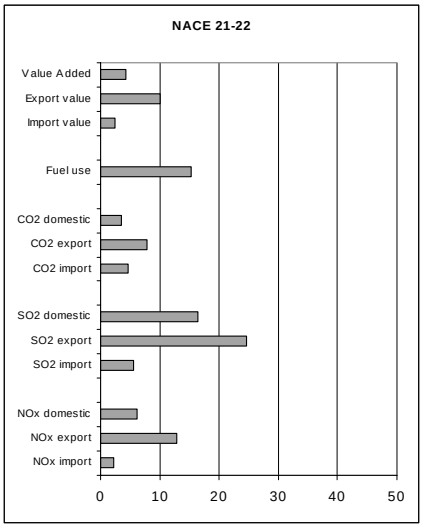
Manufacture of coke, refined petroleum products and nuclear fuel (NACE 23)
The proportion of value added is very low (0.2%) for this industry, while the export and import values are around 2% (the import value is slightly higher). One-fifth of the exports goes to each of Germany, UK and rest of the world and 16% goes to Denmark. The imports come from rest of the world (22%), Finland (17%) and Denmark (15%).

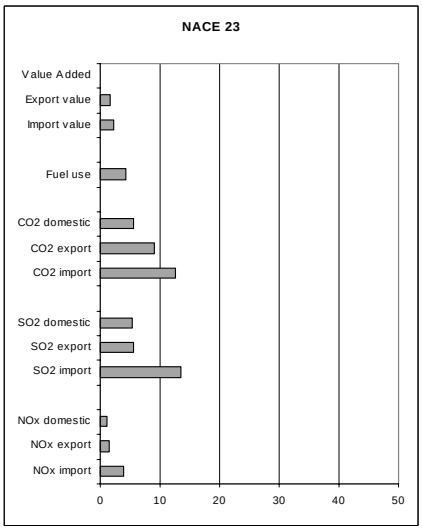
The proportion of import emissions is higher than the proportion of export emissions, especially for SO_2 (the proportion is 14%). As can be seen in *figure 4.4* the import emissions of SO_2 in tonnes are nearly six times as high as the export emissions. The import value from the UK is 13%, while the UK's proportions of the import emissions of SO_2 and NO_x are about 30%. Finland, on the other hand, is a quite large import country, but has rather low percentages of the SO_2 and NO_x import emissions from this industry.

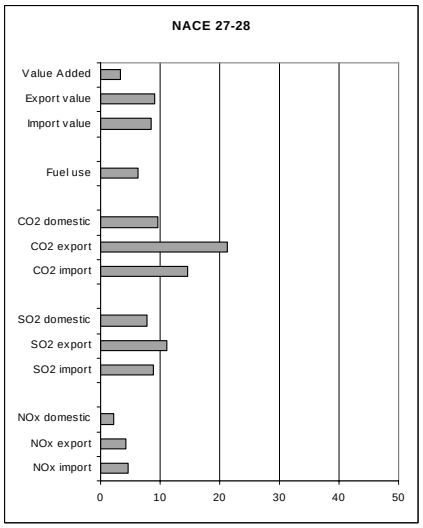
[12] Ministry of industry, employment and communications, Ds 2001:63 (in Swedish), Svensk basindustri – konkurrenskraft och hållbar utveckling.

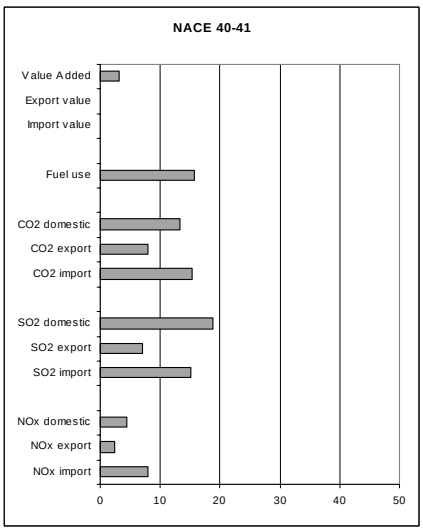
Figure 4.6 Environmental economic profiles 1995, shares of total

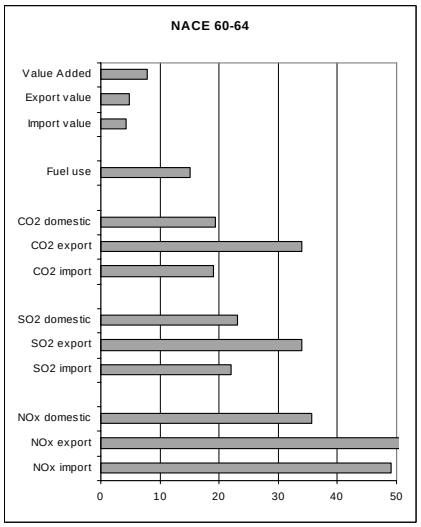












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Manufacture of basic metals and fabricated metal products (NACE 27-28)
These industries account for 9% of the export value from Sweden and 8.6% of total import value. The proportion of value added is lower - 3.3%. The imported and exported products also have almost the same composition; 70% are basic metals and 30% are fabricated metal products. Sweden has a niche in alloyed steel (more than half of the total alloyed steel comes from Sweden)[13]. About 32% of the exports goes to the rest of the world, 17% to Germany and 10% to UK and Denmark, respectively. The imports mainly come from Germany (23%), rest of the world (20%) and UK (10%).

These industries have small proportions of the NO_x emissions. The proportion of export emissions of CO_2 is more than 20%, while the proportion of import emissions is 15%. In tonnes the export and import emissions of CO_2 and NO_x resemble each other (***figures 4.3*** and ***4.5***), while the import emissions of SO_2 are almost twice as high as the export emissions (***figure 4.4***). The UK accounts for a large proportion of the import emissions, as does Denmark.

Since the composition of imported and exported goods is almost the same, this indicates that the production in Sweden is much cleaner concerning SO_2 than the production in other countries in general. Sweden has been successful in reducing SO_2 emissions by better use of fuel and better technology. Production in Sweden and in other countries in general seems to cause the same emissions of CO_2 and NO_x.

Electricity, gas and water supply (NACE 40-41)
This group of industries has low values of exports and imports, since most of the produced electricity, gas and water is consumed within the country. The value added amounts to 3% of the total value in Sweden. Only electricity and gas (NACE 40) is traded, not water supply. Almost half of the electricity and gas is exported to Finland, 30% to Germany and 18% to Denmark. As much as 85% of the imported electricity and gas comes from Norway and 12% from Denmark.

The proportion of fuel use is large (16%), as well as the domestic emissions of CO_2 (13%) and SO_2 (19%). The proportions of import emissions are larger than the proportions of export emissions for all substances. In physical terms the import emissions of SO_2 are almost five times as high as the export emissions, while the corresponding figures for CO_2 and NO_x are three times as high (***figures 4.3-5***).

Even though almost all electricity and gas comes from Norway, they have very low proportions of the import emissions (about 1%) in this group. Denmark has, on the contrary, large proportions of the import emissions (30% of CO_2 and SO_2 and 40% of NO_x).

[13] Ministry of industry, employment and communications, Ds 2001:63 (in Swedish), Svensk basindustri – konkurrenskraft och hållbar utveckling.

Transport, storage and communication (NACE 60-64)
This group of industries has a rather high proportion of the country's value added (8%), while the export and import values are each 5%. In economic terms, supporting and auxiliary transport activities and travel agencies (NACE 63) is the largest industry followed by water transport (NACE 61). About 47% of the exported transport services goes to the rest of the world and 10% each to UK and Norway. Almost half of the imports come from the rest of the world, while UK accounts for 10% and Denmark and Germany for 8% each.

When studying emissions, the water transport industry (NACE 61) is the dominant industry, followed by land transport (NACE 60). The supporting and auxiliary transport activities and travel agencies industry (NACE 63) has very low emissions. Transport, storage and communication (NACE 60-64) accounts for 15% of Sweden's total use of fuel. The domestic emissions of all substances are large, for instance these industries give rise to 35% of Sweden's total NO_x emissions.

The export emissions of NO_x from these industries are as much as 55% of the total export emissions in Sweden. The proportions of export emissions are larger than the proportions of import emissions for all substances. But in physical terms the import emissions of SO_2 exceed the export emissions by 9 thousand tonnes (***figure 4.4***).

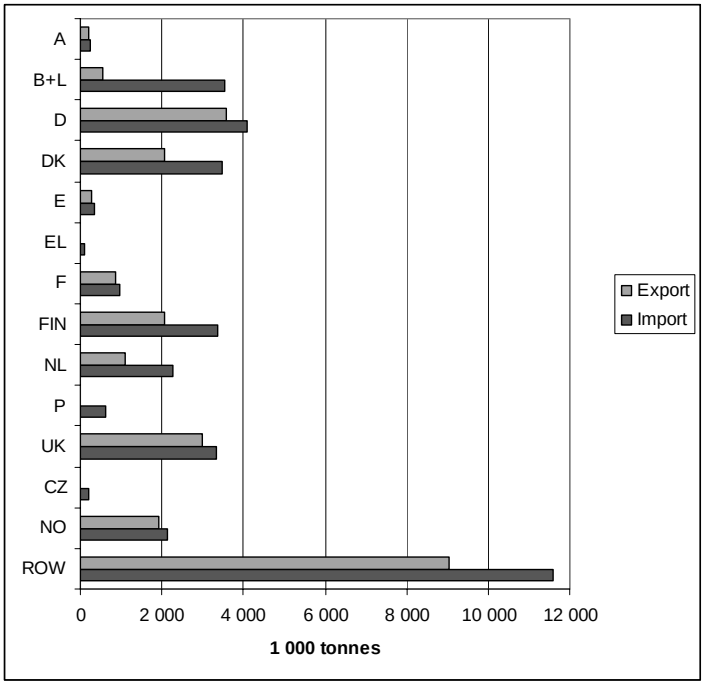
The percentage of the import of transport services from Denmark is about 7%, but Denmark accounts for larger proportions of the import emissions of SO_2 and NO_x. Norway also has quite large proportions of these emissions. One explanation is the problems with bunkering and the extensive international shipping in Denmark and Norway.

4.5 Trading partners

It is interesting to study the differences in import and export emissions between Sweden and our trading partners (***figures 4.7-9***). Germany is not included in the figures of SO_2 and NO_x (due to the lack of NAMEA data). The figures show the total emissions that our imports cause in the trading country and the total emissions that our exports to the specific trading country cause in Sweden. The import emissions are volume adjusted to focus on the composition of the imported and exported goods and services (see also ***sections 4.3*** and ***2.3***). Export and import values are presented in ***tables 7.1-2*** in the appendix. The rest of the world (ROW) corresponds to all countries, except those presented in these tables.

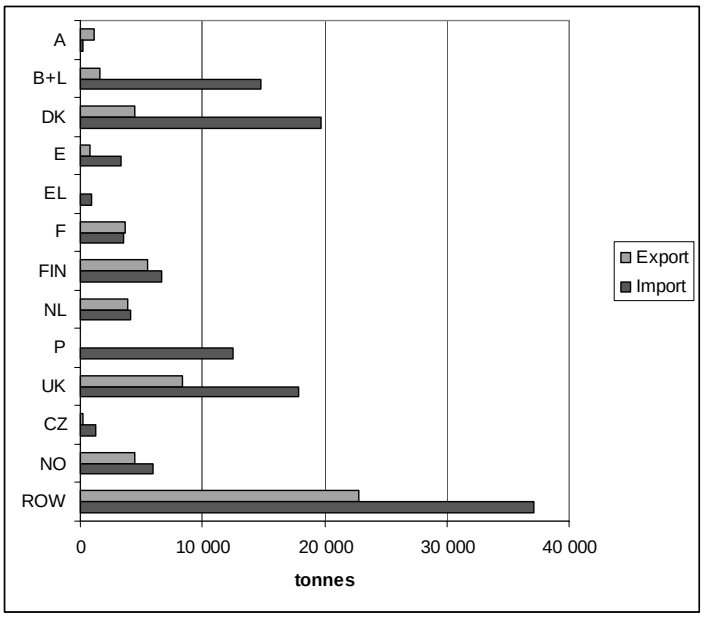
As can be seen in ***figure 4.7*** the import emissions of CO_2 from all countries are larger than Sweden's export emissions. ***Table 2*** in the appendix has a list of country codes. ROW has the largest amounts of emissions; it accounts for 32% of the import emissions and 30% of the value of import (this is because USA, Japan and other large trading partners are included in ROW). Our large trading partners, Germany, Denmark, Finland, UK and Norway also have quite large amounts of export and import emissions. Germany has 19% of the import value and only 11% of the import emissions. It is notable that Belgium and Luxembourg (B+L) correspond to 10% of the import emissions but only 4% of the import value.

Figure 4.7 Emissions of CO_2 per country 1995, 1 000 tonnes



The import emissions of SO_2 are larger than the export emissions for all countries except Austria and France, see ***figure 4.8***. Rest of the world, Denmark, UK, Belgium + Luxembourg and Portugal have large amounts of import emissions. Portugal accounts for 10% of the import emissions, but only 1% of the import value. 90% of the import emissions in Portugal comes from the mining and quarrying industries (NACE 10-14). This industry has a very high emissions coefficient (SO_2 emissions / gross output) in Portugal.

Figure 4.8 Emissions of SO_2 per country 1995, tonnes

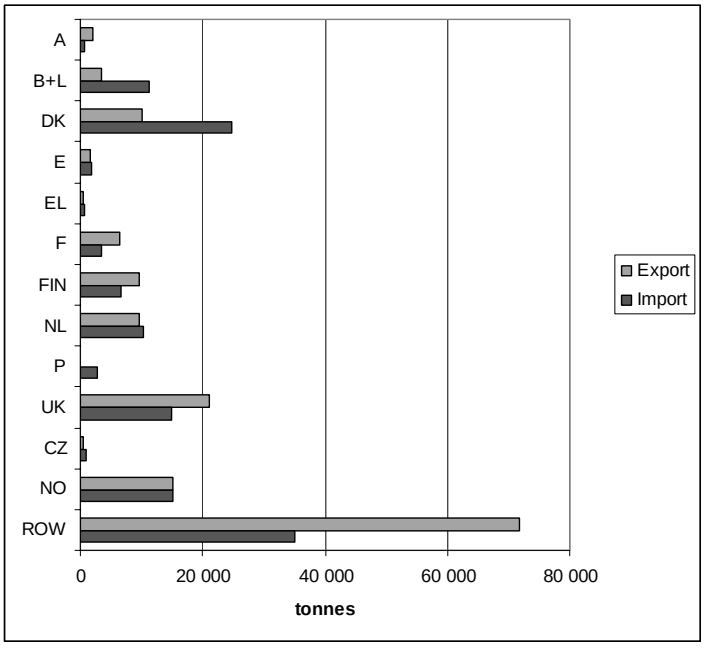


Denmark accounts for 15% of the import emissions and 9% of the import value. More than half of the import emissions for Denmark are caused by the transport

industries (NACE 60-64) and 30% by the electricity and gas industries (NACE 40). The significant emissions from international shipping in Denmark, which are included in the environmental accounts, can explain the large emissions to a certain degree. The UK also has a high proportion of the import emissions. Almost 30% of the import emissions are caused by the coke and petroleum products industries (NACE 23) and the electricity and gas industries (NACE 40), respectively. One explanation for the high emissions of SO_2 in Denmark and UK is a large proportion of electricity production from coal thermal power plants.

The import emissions of NO_x are larger than the export emissions for Belgium + Luxembourg, Denmark, Spain, Greece (EL), Netherlands, Portugal and the Czech Republic (CZ), see ***figure 4.9***. Denmark accounts for 19% of the import emissions of NO_x and 9% of the import value. Almost two thirds of the NO_x emissions in Denmark are caused by the transport industries and 20% by the electricity and gas industries. One explanation is, as for SO_2 emissions, the significant emissions from international shipping in Denmark.

Figure 4.9 Emissions of NO_x per country 1995, tonnes



The rest of the world has 27% of the import emissions of NO_x and 38% of the import value. The emissions are lower than the proportion of the import value. More than half of these import emissions is caused by the transport industries and 15% is caused by agriculture and forestry (NACE 01-02). Almost half of the export emissions are due to exports to the rest of the world. Two-thirds of the export emissions are caused by the transport industries (NACE 60-64) and 8% by the pulp, paper and publishing industries (NACE 21-22).

5 Conclusions

In an international perspective, Sweden has low emissions of SO_2 in particular, but also CO_2, in spite of a large proportion of primary industry. Sweden has been successful in reducing its SO_2 emissions through improved treatment and better choice of fuels. A lot of the electricity in Sweden is produced from hydropower and nuclear power, which only causes low emissions. Sweden uses a rather large proportion of bio energy for heating purposes, which gives no net surplus of CO_2 emissions. In most cases the imported products and services are much more emissions intensive than the exported. More than three-fourths of the SO_2 emissions due to Swedish final use occur in other countries. The net trade emissions of SO_2 are negative by 52 thousand tonnes. This means that the Swedish final use causes more emissions than can be seen in the traditional environmental accounts, which implies that the system ought to be adjusted upwards by this amount. The trade-adjusted environmental accounts have 148 thousand tonnes SO_2 emissions, which is an increase of 55%! Concerning CO_2 emissions the environmental accounts are adjusted upwards by 6 million tonnes to 72 million tonnes in total, which is a 10% increase.

Sweden has not been as successful with the reduction of NO_x emissions. Exported products and services are in total more emissions intensive than imported. The emissions of NO_x have been much harder to reduce. The reduction of NO_x emissions by cars and trucks, through catalytic converters, has been negated by the expansion of traffic. It is difficult to reduce the emissions from water transport due to bunkering and exceptions for these industries. Another possible explanation is that the methods to estimate NO_x emissions differ between the countries. One-third of the NO_x emissions caused by the Swedish final use occurs in other countries. The net trade emissions of NO_x are positive by 42 thousand tonnes, which implies that the Swedish final use causes lower emissions than can be seen in the environmental accounts. The trade-adjusted accounts are 310 thousand tonnes, which is a decrease of 12%.

Obviously the impact a country's consumption has on the environment is not directly related to the emissions within the country. In order to obtain information on the environmental pressure related to a nation's total consumption of goods and services, a trade adjusted environmental accounting system is of vital importance.

6 Future work

It is undoubtedly important to try to integrate the international allocation of emissions from trade into the environmental accounts. In this study, we have shown some of the possible methods for doing this, from a simple substitution method to more elaborate methods using data from trading partners.

As the results show, NAMEA data as compiled by Eurostat are essential to do the more elaborate (and more reasonable) calculations by trading partner. Apart from continuing the compilations, if possible on a more disaggregated level by industry, it would also be of great use to expand the compilations by including calculated emission intensities for Final Demand. In essence this is what we used for our own comparison between method 3 and method 4 for imports from Denmark.

Emissions intensities in Final Demand are useful for many other purposes as well, not least for the Integrated Product Policy of the EU.

With emission intensities for Final Demand added to the NAMEA compilations, it is fairly straightforward for those interested to calculate the amounts of emissions caused in other member states. This can either be done directly using available trade data or by using IO-calculated imports for special types of analysis. It would of course also be desirable to include at least rough estimates of the corresponding data for the rest of the world.

Another important field is the use of energy. Sweden is considered to have quite large energy consumption in an international perspective, even though the emissions are low. A future study of the use of energy among imported and exported products and services could be very interesting.

7 Literature and sources

EEA, Europe's Environment: Statistical Compendium for the Second Assessment, 1998

Eurostat, Environmental pressure indicators for the EU 1985-98

Eurostat, NAMEAs for air emissions – Results of pilot studies, Theme 2: Economy and finance, 2001 edition, Luxembourg, 2001

Eurostat, New Cronos (database)

IMF, International Financial Statistics Yearbook, vol. LIII, 2000

Ministry of industry, employment and communications, Ds 2001:63 (in Swedish), Svensk basindustri – konkurrenskraft och hållbar utveckling

OECD, Environmental Data, Compendium, 1999

Statistics Sweden, SSD Swedish Statistical Database

Statistics Sweden, Internt PM 1997-06-26 (in Swedish), Ska uppgift om ursprungsland införas i intrastatstatistiken över införseln från EU?

Statistics Sweden, Rapport 2000:5 (in Swedish), Miljöpåverkan av svensk handel – resultat från en pilotstudie

Statistics Sweden, The Mirror Statistics Exercise between the Nordic Countries 1995.

Appendix

Table 1 - NACE rev. 1 based industry classification

NACE		Description
A	01-02	Agriculture, hunting and forestry
B	05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing
C	10-14	Mining and quarrying
	10-11	Mining of coal and lignite; extraction of peat; extraction of crude petroleum and natural gas; services avtivities
	12-14	Mining of uranium and thorium ores; mining of metal ores and other mining and quarrying
D	15-37	Manufacturing
	15-16	Manufacture of food products, beverages and tobacco products
	17-18	Manufacture of textiles and wearing apparel; dressing and dyeing of fur
	19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
	21-22	Manufacture of pulp, paper and paper products; publishing, printing and reproduction of recorded media
	23	Manufacture of coke, refined petroleum products and nuclear fuel
	24	Manufacture of chemicals and chemical products
	25	Manufacture of rubber and plastic products
	26	Manufacture of other non-metallic mineral products
	27-28	Manufacture of basic metals; fabricated metal products, except machinery and equipment
	29-30	Manufacture of machinery and equipment n.e.c.; office machinery and computers
	31-33	Manufacture of electrical machinery n.e.c.; radio, television and communication equipment; manufacture of medical, precision and optical instruments, watches and clocks
	34-35	Manufacture of motor vehicles, trailers, semi-trailers and other transport equipment
	36-37	Manufacture of furniture; manufacturing n.e.c. and recycling
E	40-41	Electricity, gas and water supply
F	45	Construction
G	50-52	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
H	55	Hotels and restaurants
I	60-64	Transport, storage and communication
J	65-67	Financial intermediation
K	70-74	Real estate, renting and business activities
L	75	Public administration and defence; compulsory social security
M	80	Education
N	85	Health and social work
O	90-93	Other community, social and personal service activities
P	95	Private households with employed persons
Q	99	Extra-territorial organizations and bodies

Table 2 Country codes

A	Austria
B	Belgium
D	Germany
DK	Denmark
E	Spain
EL	Greece
F	France
FIN	Finland
I	Italy
IRL	Ireland
L	Luxembourg
NL	Netherlands
P	Portugal
S	Sweden
UK	United Kungdom
CZ	Czech Republic
JP	Japan
NO	Norway
US	USA

Table 3 Average exchange rates from national currency to ECU

Currency	1995	1996	1997	1998
blf Belgian/Luxembourg Franc	38.552	39.299	40.533	40.621
dkk Danish Krone	7.328	7.359	7.484	7.499
dem German Mark	1.874	1.91	1.964	1.969
grd Greek Drachma	302.989	305.546	309.355	330.731
esp Spanish Peseta	163	160.748	165.887	167.184
frf French Franc	6.525	6.493	6.613	6.601
iep Irish Pound	0.816	0.793	0.748	0.786
itl Italian Lira	2130.14	1958.96	1929.3	1943.65
nlg Dutch Guilder	2.099	2.14	2.211	2.22
ats Austrian Schilling	13.182	13.435	13.824	13.855
pte Portuguese Escudo	196.105	195.761	198.589	201.695
fim Finnish Markka	5.709	5.828	5.881	5.983
sek Swedish Krona	9.332	8.515	8.651	8.916
gbp Pound Sterling	0.829	0.814	0.692	0.676
nok Norwegian Krone	8.286	8.197	8.019	8.466
chf Swiss Franc	1.546	1.568	1.644	1.622
czk Czech Koruna	34.696	34.457	35.93	36.32
jpy Yen (Japan)	123.012	138.084	137.077	146.415
usd United States Dollar	1.308	1.27	1.134	1.121

Table 4.1 Emissions coefficients for CO_2 1995 (method 2)

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[3]**
Source	EEA	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	1 000 tonnes / mio ECU	SEK million		
EU-countries						
Austria	61 900	180 180	0,34	5 280	1,4%	0,005
Be-lux econ. union	122 200	224 827	0,54	17 136	4,4%	0,024
Denmark	59 000	137 799	0,43	32 694	8,5%	0,036
Finland	56 000	98 899	0,57	27 176	7,1%	0,040
France	385 900	1 188 096	0,32	24 284	6,3%	0,020
Germany	895 000	1 880 187	0,48	90 495	23,5%	0,112
Greece	89 900	89 888	1,00	732	0,2%	0,002
Ireland	33 800	50 309	0,67	6 103	1,6%	0,011
Italy	436 500	839 053	0,52	14 164	3,7%	0,019
Netherlands	182 600	304 777	0,60	33 219	8,6%	0,052
Portugal[1]	46 900	80 579	0,58	3 517	0,9%	0,005
Spain[1]	231 400	428 098	0,54	5 167	1,3%	0,007
United Kingdom	543 000	859 748	0,63	43 290	11,2%	0,071
Other countries						
Czech Republic	129 100	39 718	3,25	1 161	0,3%	0,010
Japan[2]	1 232 141	3 928 235	0,31	13 318	3,5%	0,011
Norway	37 900	112 090	0,34	32 859	8,5%	0,029
Switzerland	44 200	235 033	0,19	9 777	2,5%	0,005
USA[2]	5 263 463	5 657 831	0,93	25 033	6,5%	0,060
Total	**9 850 904**	**16 335 348**	**0,60**	**385 404**	**100%**	**0,52**
Sweden	64 000	183 598	**0,35**			

Source: EEA, Europe's Environment: Statistical Compedium for the Second Assessment, 1998
1) The emissions concerns 1994
2) Sorce is OECD Environmental Data, Compendium 1999
3) Adjusted coefficient = Emissions coefficient x share of import

Table 4.2 Emissions coefficients for SO_2 1995 (method 2)

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[2]**
Source	OECD	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	tonnes / mio ECU	SEK million		
EU-countries						
Austria	52	180 180	0,29	5 280	1,29%	0,004
Be-lux econ. union	254	224 827	1,13	17 136	4,18%	0,047
Denmark	150	137 799	1,09	32 694	7,97%	0,087
Finland	96	98 899	0,97	27 176	6,62%	0,064
France	959	1 188 096	0,81	24 284	5,92%	0,048
Germany	2 118	1 880 187	1,13	90 495	22,05%	0,248
Greece	553	89 888	6,15	732	0,18%	0,011
Ireland	161	50 309	3,20	6 103	1,49%	0,048
Italy	1 322	839 053	1,58	14 164	3,45%	0,054
Netherlands	145	304 777	0,48	33 219	8,10%	0,039
Portugal	359	80 579	4,46	3 517	0,86%	0,038
Spain	1 927	428 098	4,50	5 167	1,26%	0,057
United Kingdom	2 351	859 748	2,73	43 290	10,55%	0,288
Other countries						
Czech Republic	1 091	39 718	27,47	1 161	0,28%	0,078
Japan[1]	903	3 928 235	0,23	13 318	3,25%	0,007
Norway	34	112 090	0,30	32 859	8,01%	0,024
Switzerland	34	235 033	0,14	9 777	2,38%	0,003
USA	17 408	5 657 831	3,08	25 033	6,10%	0,188
Total	**29 917**	**16 335 348**	**1,83**	**385 404**	**100%**	**1,334**
Sweden	94	183 598	**0,51**			

Source: OECD Environmental Data, Compendium 1999

1) The emissions concerns 1992

2) Adjusted coefficient = Emissions coefficient x share of import

Table 4.3 Emissions of NOx 1995

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[2]**
Source	OECD	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	tonnes / mio ECU	SEK million		
EU-countries						
Austria	170	180 180	0,94	5 280	1,29%	0,012
Be-lux econ. union	361	224 827	1,61	17 136	4,18%	0,067
Denmark	252	137 799	1,83	32 694	7,97%	0,146
Finland	258	98 899	2,61	27 176	6,62%	0,173
France	1 729	1 188 096	1,46	24 284	5,92%	0,086
Germany	2 007	1 880 187	1,07	90 495	22,05%	0,235
Greece	358	89 888	3,98	732	0,18%	0,007
Ireland	115	50 309	2,29	6 103	1,49%	0,034
Italy	1 768	839 053	2,11	14 164	3,45%	0,073
Netherlands	498	304 777	1,63	33 219	8,10%	0,132
Portugal	373	80 579	4,63	3 517	0,86%	0,040
Spain	1 243	428 098	2,90	5 167	1,26%	0,037
United Kingdom	2 145	859 748	2,49	43 290	10,55%	0,263
Other countries						
Czech Republic	412	39 718	10,37	1 161	0,28%	0,029
Japan[1]	1 409	3 928 235	0,36	13 318	3,25%	0,012
Norway	212	112 090	1,89	32 859	8,01%	0,151
Switzerland	136	235 033	0,58	9 777	2,38%	0,014
USA	21 561	5 657 831	3,81	25 033	6,10%	0,232
Total	**35 007**	**16 335 348**	**2,14**	**385 404**	**100%**	**1,74**
Sweden	354	183 598	**1,93**			

Source: OECD Environmental Data, Compendium 1999
1) The emissions concerns 1992
2) Adjusted coefficient = Emissions coefficient x share of import

Table 4.4 Emissions of CO_2 1998

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[3]**
Source	Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	tonnes / mio ECU	SEK million		
EU-countries						
Austria	66 218	188 452	0,35	7 490	1,7%	0,006
Be-lux econ. union	127 476	240 116	0,53	20 433	4,6%	0,024
Denmark	60 361	155 188	0,39	33 336	7,5%	0,029
Finland	63 827	114 791	0,56	26 799	6,0%	0,034
France	411 089	1 293 103	0,32	31 942	7,2%	0,023
Germany	886 220	1 921 762	0,46	96 714	21,8%	0,100
Greece	99 854	108 579	0,92	806	0,2%	0,002
Ireland	39 895	75 850	0,53	8 157	1,8%	0,010
Italy	460 507	1 058 678	0,43	17 313	3,9%	0,017
Netherlands	181 589	338 158	0,54	41 213	9,3%	0,050
Portugal	53 769	95 421	0,56	3 337	0,8%	0,004
Spain	271 501	494 365	0,55	8 918	2,0%	0,011
United Kingdom	543 624	1 252 391	0,43	52 141	11,7%	0,051
Other countries						
Czech Republic[1]	124 736	49 513	2,52	2 806	0,6%	0,016
Japan[2]	1 128 000	3 404 699	0,33	13 267	3,0%	0,010
Norway	41 525	130 024	0,32	38 804	8,7%	0,028
Switzerland[1]	44 810	234 274	0,19	8 674	2,0%	0,004
USA[2]	5 410 000	7 813 735	0,69	31 836	7,2%	0,050
Total	**10 015 001**	**18 969 103**	**0,53**	**443 987**	**100%**	**0,47**
Sweden	56 625	212 003	**0,27**			

Source: Eurostat, environmental pressure indicators for the EU, 1985-98

1) The source is New Cronos Database

2) The source is UNFCCC

3) Adjusted coefficient = Emissions coefficient x share of import

Table 4.5 Emissions of SO_2 1998

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[4]**
Source	Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	tonnes / mio ECU	SEK million		
EU-countries						
Austria	48	188 452	0,25	7 490	1,7%	0,004
Be-lux econ. union	207	240 116	0,86	20 433	4,6%	0,040
Denmark	79	155 188	0,51	33 336	7,5%	0,038
Finland	88	114 791	0,77	26 799	6,0%	0,046
France	822	1 293 103	0,64	31 942	7,2%	0,046
Germany	1 313	1 921 762	0,68	96 714	21,8%	0,149
Greece	536	108 579	4,94	806	0,2%	0,009
Ireland	177	75 850	2,33	8 157	1,8%	0,043
Italy	1 036	1 058 678	0,98	17 313	3,9%	0,038
Netherlands	110	338 158	0,33	41 213	9,3%	0,030
Portugal	339	95 421	3,55	3 337	0,8%	0,027
Spain	1 495	494 365	3,02	8 918	2,0%	0,061
United Kingdom	1 595	1 252 391	1,27	52 141	11,7%	0,150
Other countries						
Czech Republic[1]	443	49 513	8,95	2 806	0,6%	0,057
Japan[2]	903	3 404 699	0,27	13 267	3,0%	0,008
Norway	31	130 024	0,24	38 804	8,7%	0,021
Switzerland[1]	28	234 274	0,12	8 674	2,0%	0,002
USA[3]	18 481	7 813 735	2,37	31 836	7,2%	0,170
Total	**27 731**	**18 969 103**	**1,46**	**443 987**	**100%**	**0,94**
Sweden	53	212 003	**0,25**			

Källa: Eurostat, environmental pressure indicators for the EU, 1985-98
1) The source is New Cronos
2) The emissions concerns 1992
3) The source is OECD and the emissions concerns 1997
4) Adjusted coefficient = Emissions coefficient x share of import

Table 4.6 Emissions of NOx 1998

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[4]**
Source	Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	tonnes / mio ECU	SEK million		
EU-countries						
Austria	170	188 452	0,90	7 490	1,7%	0,015
Be-lux econ. union	313	240 116	1,30	20 433	4,6%	0,060
Denmark	233	155 188	1,50	33 336	7,5%	0,113
Finland	252	114 791	2,20	26 799	6,0%	0,133
France	1 644	1 293 103	1,27	31 942	7,2%	0,091
Germany	1 805	1 921 762	0,94	96 714	21,8%	0,205
Greece	378	108 579	3,48	806	0,2%	0,006
Ireland	122	75 850	1,61	8 157	1,8%	0,030
Italy	1 669	1 058 678	1,58	17 313	3,9%	0,061
Netherlands	454	338 158	1,34	41 213	9,3%	0,125
Portugal	378	95 421	3,96	3 337	0,8%	0,030
Spain	1 180	494 365	2,39	8 918	2,0%	0,048
United Kingdom	1 773	1 252 391	1,42	52 141	11,7%	0,166
Other countries						
Czech Republic[1]	413	49 513	8,34	2 806	0,6%	0,053
Japan[2]	1 409	3 404 699	0,41	13 267	3,0%	0,012
Norway	225	130 024	1,73	38 804	8,7%	0,151
Switzerland[1]	105	234 274	0,45	8 674	2,0%	0,009
USA[3]	21 394	7 813 735	2,74	31 836	7,2%	0,196
Total	**33 917**	**18 969 103**	**1,79**	**443 987**	**100%**	**1,50**
Sweden	257	212 003	**1,21**			

Källa: Eurostat, environmental pressure indicators for the EU, 1985-98
1) The source is New Cronos
2) The emissions concerns 1992
3) The source is OECD and the emissions concerns 1997
4) Adjusted coefficient = Emissions coefficient x share of import

Table 5.1 Emissions coefficients for CO_2 1995 and 1998 (method 3)

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[4]**
Source	EEA / Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	1 000 tonnes / mio ECU	SEK million		
CO_2 emissions 1995						
Ireland	33 800	50 309	0,67	6 103	8,9%	0,060
Italy	436 500	839 053	0,52	14 164	20,7%	0,108
Japan[1]	1 232 141	3 928 235	0,31	13 318	19,5%	0,061
Switzerland	44 200	235 033	0,19	9 777	14,3%	0,027
USA[1]	5 263 463	5 657 831	0,93	25 033	36,6%	0,340
Total	**7 010 104**	**10 710 461**	**0,65**	**68 395**	**100%**	**0,596**
Sweden	64 000	183 598	**0,35**			
CO_2 emissions 1998						
Austria	66 218	188 452	0,35	7 490	2,6%	0,009
Be-lux econ. union	127 476	240 116	0,53	20 433	7,2%	0,038
Finland	63 827	114 791	0,56	26 799	9,4%	0,052
Germany	886 220	1 921 762	0,46	96 714	33,9%	0,156
Greece	99 854	108 579	0,92	806	0,3%	0,003
Ireland	39 895	75 850	0,53	8 157	2,9%	0,015
Italy	460 507	1 058 678	0,43	17 313	6,1%	0,026
Portugal	53 769	95 421	0,56	3 337	1,2%	0,007
Spain	271 501	494 365	0,55	8 918	3,1%	0,017
Czech Republic[2]	124 736	49 513	2,52	2 806	1,0%	0,025
Japan[3]	1 128 000	3 404 699	0,33	13 267	4,6%	0,015
Norway	41 525	130 024	0,32	38 804	13,6%	0,043
Switzerland[2]	44 810	234 274	0,19	8 674	3,0%	0,006
USA[3]	5 410 000	7 813 735	0,69	31 836	11,2%	0,077
Total	**8 818 338**	**15 930 263**	**0,55**	**285 354**	**100%**	**0,490**
Sweden	56 625	212 003	**0,27**			

Source: 1995: EEA, Europe's Environment: Statistical Compedium for the Second Assessment, 1998
1998: Eurostat, environmental pressure indicators for the EU, 1985-98

1) Sorce is OECD Environmental Data, Compendium 1999

2) Source is New Cronos Database

3) Source is UNFCCC

4) Adjusted coefficient = Emissions coefficient x share of import

Table 5.2 Emissions coefficients for SO_2 1995 and 1998 (method 3)

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[5]**
Source	OECD / Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	1 000 tonnes / mio ECU	SEK million		
SO_2 emissions 1995						
Germany	2118	1 880 187	1,13	90 495	57,0%	0,642
Ireland	161	50 309	3,20	6 103	3,8%	0,123
Italy	1 322	839 053	1,58	14 164	8,9%	0,140
Japan[1]	903	3 928 235	0,23	13 318	8,4%	0,019
Switzerland	34	235 033	0,14	9 777	6,2%	0,009
USA[1]	17 408	5 657 831	3,08	25 033	15,8%	0,485
Total	**21 946**	**12 590 647**	**1,74**	**158 890**	**100%**	**1,418**
Sweden	94	183 598	**0,51**			
SO_2 emissions 1998						
Austria	48	188 452	0,25	7 490	2,6%	0,007
Be-lux econ. union	207	240 116	0,86	20 433	7,2%	0,062
Finland	88	114 791	0,77	26 799	9,4%	0,072
Germany	1 313	1 921 762	0,68	96 714	33,9%	0,232
Greece	536	108 579	4,94	806	0,3%	0,014
Ireland	177	75 850	2,33	8 157	2,9%	0,067
Italy	1 036	1 058 678	0,98	17 313	6,1%	0,059
Portugal	339	95 421	3,55	3 337	1,2%	0,042
Spain	1 495	494 365	3,02	8 918	3,1%	0,095
Czech Republic[2]	443	49 513	8,95	2 806	1,0%	0,088
Japan[3]	903	3 404 699	0,27	13 267	4,6%	0,012
Norway	31	130 024	0,24	38 804	13,6%	0,032
Switzerland[2]	28	234 274	0,12	8 674	3,0%	0,004
USA[4]	18 481	7 813 735	2,37	31 836	11,2%	0,264
Total	**25 125**	**15 930 263**	**1,58**	**285 354**	**100%**	**1,048**
Sweden	53	212 003	**0,25**			

Source 1995: OECD Environmental Data, Compendium 1999
1998 Eurostat, environmental pressure indicators for the EU, 1985-98

1) The emissions concerns 1992
2) The source is New Cronos
3) The emissions concerns 1992
4) The source is OECD and the emissions concerns 1997
5) Adjusted coefficient = Emissions coefficient x share of import

Table 5.3 Emissions coefficients for NOx 1995 and 1998 (method 3)

	Total emissions	**GDP**	**Emission coefficient**	**Import**	**Share of import**	**Adjusted coefficient[5]**
Source	OECD / Eurostat	IMF		Statistics Sweden		
	1 000 tonnes	mio ECU	1 000 tonnes / mio ECU	SEK million		
NO_x emissions 1995						
Germany	2007	1 880 187	1,07	90 495	57,0%	0,608
Ireland	115	50 309	2,29	6 103	3,8%	0,088
Italy	1 768	839 053	2,11	14 164	8,9%	0,188
Japan[1]	1 409	3 928 235	0,36	13 318	8,4%	0,030
Switzerland	136	235 033	0,58	9 777	6,2%	0,036
USA	21 561	5 657 831	3,81	25 033	15,8%	0,600
Total	**26 996**	**12 590 647**	**2,14**	**158 890**	**100%**	**1,550**
Sweden	354	183 598	**1,93**			
NO_x emissions 1998						
Austria	170	188 452	0,90	7 490	2,6%	0,024
Be-lux econ. union	313	240 116	1,30	20 433	7,2%	0,093
Finland	252	114 791	2,20	26 799	9,4%	0,206
Germany	1 805	1 921 762	0,94	96 714	33,9%	0,318
Greece	378	108 579	3,48	806	0,3%	0,010
Ireland	122	75 850	1,61	8 157	2,9%	0,046
Italy	1 669	1 058 678	1,58	17 313	6,1%	0,096
Portugal	378	95 421	3,96	3 337	1,2%	0,046
Spain	1 180	494 365	2,39	8 918	3,1%	0,075
Czech Republic[2]	413	49 513	8,34	2 806	1,0%	0,082
Japan[3]	1 409	3 404 699	0,41	13 267	4,6%	0,019
Norway	225	130 024	1,73	38 804	13,6%	0,235
Switzerland[2]	105	234 274	0,45	8 674	3,0%	0,014
USA[4]	21 394	7 813 735	2,74	31 836	11,2%	0,305
Total	**29 813**	**15 930 263**	**1,87**	**285 354**	**100%**	**1,570**
Sweden	257	212 003	**1,21**			

Source 1995: OECD Environmental Data, Compendium 1999
1998 Eurostat, environmental pressure indicators for the EU, 1985-98

1) The emissions concerns 1992
2) The source is New Cronos
3) The emissions concerns 1992
4) The source is OECD and the emissions concerns 1997
5) Adjusted coefficient = Emissions coefficient x share of import

Table 6.1 Emissions coefficients by industries 1995 (CO_2 / Gross Output), tonnes / million SEK

NACE	A	B	D	DK	E	EL	F	FIN	L	NL	P	S	UK	CZ	NO
01-02	33,7	60,7	24,3	31,5	28,5	35,5	94,5	62,5	35,0	53,7	27,0	29,6	24,4	28,4	21,7
05		0,0	25,7	119,5	195,0	38,6	115,3	21,5		763,6	110,9	176,6	50,9	26,0	70,5
10-14	138,8	51,7	60,1	99,8	21,0	19,4	48,4	37,2	5,5	20,4	513,9	49,8	85,4	194,5	62,4
15-37	**27,9**	**35,8**	**19,9**	**14,7**	**36,7**	**71,5**	**21,5**	**50,1**	**68,2**	**34,4**	**37,7**	**23,4**	**30,1**	**96,1**	**30,8**
15-16	7,2	9,7	10,9	13,7	8,2	3,3	12,8	11,2	10,0	12,2	10,1	10,5	14,8	32,1	5,6
17-18	8,4	1,5	5,2	6,5	11,0	4,1	8,3	8,7	13,7	9,2	6,7	9,4	13,1	41,8	4,8
19	3,2	0,6	3,3	3,4	5,5	4,2	8,6	4,4		9,3	3,1	15,6	6,8	18,4	7,0
20	11,4	14,1	6,6	31,6	14,2	6,8	21,9	39,3	5,4	7,8	1,4	62,7	18,7	36,4	4,5
21-22	42,9	17,1	12,8	5,4	14,2	9,8	25,9	118,7	4,9	13,9	117,1	30,9	13,5	116,9	10,4
23	104,1	96,3	115,7	134,1	172,4	138,3	130,1	144,5		140,7	0,0	155,9	176,7	41,6	118,9
24	23,9	49,9	25,7	10,0	48,1	101,7	21,5	38,4	7,4	90,0	47,1	7,4	36,1	251,2	81,1
25	13,9	2,3	4,5	5,2	6,3	98,2	8,3	5,9	8,9	6,5	16,5	8,4	26,9	20,2	3,7
26	73,0	195,8	98,3	98,0	243,4	644,5	123,2	118,5	270,1	66,1	341,7	179,5	136,4	306,6	154,9
27-28	84,5	89,0	48,7	7,4	61,0	101,2	40,8	61,7	102,4	48,3	1,7	43,3	77,4	199,4	86,0
29-30	3,3	0,3	3,5	3,5	7,1	94,6	0,0	1,4	4,7	3,6	0,2	2,3	4,8	19,8	1,8
31-33	2,5	0,3	3,5	1,7	3,8	96,5	0,0	0,4	4,9	3,5	0,8	0,7	2,5	19,9	1,9
34-35	3,7	3,1	4,6	4,5	3,1	92,2	0,0	3,6	0,0	3,5	0,5	2,8	6,9	21,3	1,8
36-37	0,1	0,1	7,4	7,4	12,3	94,4	16,8	3,6	4,5	10,0	4,3	4,2	16,1	17,2	3,0
40-41	115,2	256,5	532,0	798,0	374,0	1 706,6	76,1	574,7	241,8	295,6	328,6	186,5	349,0	1 029,2	7,6
45	2,5	0,0	4,7	6,4	3,8	2,7	4,9	3,4	2,3	5,7	7,5	10,0	4,4	4,4	5,3
50-52	3,1	0,7	9,6	4,9	5,6	8,0	4,9	2,3	6,2	4,4	6,5	5,4	6,9	5,6	7,2
55	5,6	1,4	6,5	3,2	2,0	3,4	5,0	2,0	18,2	26,8	2,2	1,5	5,1	4,5	1,4
60-64	13,9	45,5	24,6	88,0	31,8	67,1	26,4	71,8	24,8	63,5	85,2	48,9	52,3	103,1	76,9
65-67	0,6	0,5	1,5	0,5	0,8	4,3	5,2	0,0	5,8	3,8	0,2	0,6	3,6	1,0	0,8
70-74	0,5	0,2	1,3	1,1	0,6	0,6	5,1	3,0	2,7	3,7	0,6	2,5	4,0	46,5	0,4
75	0,0	2,5	7,7	3,6	1,6	6,9	5,2	3,3	13,5	7,2	23,1	0,0	13,8	26,5	5,1
80	3,4	5,8	4,0	1,7	2,1	2,9	4,7	3,3	12,1	5,3	1,0	0,2	11,3	13,4	1,8
85	2,0	4,5	5,2	1,3	2,3	2,9	5,0	1,5	14,3	6,9	0,4	0,2	5,6	24,6	2,1
90-93	3,8	17,0	3,7	3,1	5,5	2,1	4,5	1,0	29,5	25,9	14,8	2,7	7,0	8,6	5,1
95	0,0	0,0	0,0	0,0	0,0	1,8	0,0	1,3	0,0	0,0	15,5	0,0	0,0		0,0
99															
N a															
Total	**15,3**	**22,8**	**22,9**	**31,5**	**26,5**	**61,2**	**16,2**	**40,5**	**25,0**	**29,3**	**34,5**	**18,4**	**28,8**	**115,9**	**25,4**

Table 6.2 Emissions coefficients by industries 1995 (SO_2 / Gross Output), kg / million SEK

NACE	A	B	DK	E	EL	F	FIN	L	NL	P	S	UK	CZ	NO
01-02	21,9	75,8	58,9	53,9	29,9	29,9	32,2	30,4	9,5	48,2	10,8	53,3	100,7	8,4
05		0,0	153,4	408,1	22,8	160,2	7,0		12 836,3	226,3	745,9	310,8	93,0	36,0
10-14	353,4	195,8	134,2	36,8	628,8	469,9	127,8	3,5	7,9	10 013,0	92,6	87,7	758,2	5,7
15-37	**29,3**	**87,7**	**43,0**	**220,2**	**328,9**	**80,4**	**79,1**	**117,0**	**58,7**	**219,4**	**42,1**	**121,7**	**470,0**	**67,4**
15-16	10,2	26,0	39,5	7,7	2,0	62,6	37,0	11,5	3,7	76,3	10,0	51,8	202,2	6,6
17-18	10,1	6,5	5,8	70,9	3,7	29,7	14,9	18,3	0,7	88,8	11,9	59,4	361,2	7,2
19	5,8	3,2	9,4	37,0	3,7	30,9	9,3		0,8	43,3	5,8	25,9	144,2	3,3
20	11,7	3,9	25,7	50,4	0,0	6,2	29,1	5,4	2,1	25,5	29,4	8,1	382,2	11,8
21-22	65,5	36,8	7,8	91,1	16,7	76,7	115,4	6,2	1,2	839,9	97,2	59,0	620,7	43,2
23	141,0	949,9	394,5	2 387,7	803,6	964,2	310,8		773,6	0,0	218,3	1 315,4	319,6	128,3
24	96,1	91,2	34,9	397,7	802,4	77,4	340,4	9,0	44,4	140,2	64,4	149,2	3 171,7	277,0
25	29,3	0,1	3,3	49,2	774,7	19,3	51,0	11,8	1,8	349,9	6,5	114,0	176,9	4,3
26	24,5	368,4	475,1	685,6	980,7	257,3	85,5	206,2	107,8	1 550,5	389,5	350,0	465,3	184,2
27-28	55,6	138,7	4,6	328,0	726,4	78,9	89,7	226,8	77,9	8,4	51,1	217,7	491,7	168,2
29-30	2,1	0,1	2,8	40,4	685,4	0,0	3,3	6,1	2,1	1,1	1,5	8,6	115,7	0,8
31-33	1,5	0,0	0,8	18,6	698,9	0,0	0,6	6,3	2,1	3,9	0,5	9,8	116,7	52,2
34-35	2,2	0,6	3,7	21,3	668,1	0,0	11,8	7,3	0,4	2,3	2,8	19,7	127,0	1,1
36-37	0,0	0,0	4,1	37,3	683,4	24,1	7,6	4,5	1,3	17,0	5,7	48,5	170,2	1,3
40-41	41,2	863,5	2 479,6	5 586,1	14 844,2	468,7	1 050,8	30,9	109,5	3 399,5	256,2	3 390,8	13 650,5	21,0
45	2,1	0,0	4,4	4,2	1,8	5,1	1,0	1,4	5,2	16,6	2,8	4,1	16,1	2,0
50-52	2,1	0,6	2,1	14,3	11,9	6,0	11,3	4,8	3,2	14,4	0,9	3,1	49,5	2,0
55	7,4	0,9	1,4	9,1	2,1	6,1	1,6	15,2	1,5	4,9	0,4	0,8	0,0	0,7
60-64	7,7	47,4	1 280,7	81,6	353,5	30,4	19,4	21,4	162,0	175,4	85,2	115,6	138,4	321,7
65-67	0,4	0,4	0,2	5,0	2,3	6,3	0,0	4,9	1,8	0,4	0,2	1,2	1,0	0,1
70-74	0,3	0,2	0,4	3,1	0,7	6,1	1,0	2,2	1,8	1,2	0,9	1,7	74,0	0,1
75	0,0	2,1	2,1	10,9	3,4	6,3	4,5	11,1	21,3	8,6	0,0	29,6	136,4	1,3
80	2,8	4,3	1,0	12,6	2,2	5,7	2,9	10,1	0,1	2,3	0,0	11,3	47,8	0,8
85	1,4	3,4	0,7	13,5	2,1	6,1	4,1	11,8	0,6	1,0	0,0	23,6	94,6	0,8
90-93	1,9	16,3	1,4	21,1	0,0	5,5	0,8	22,7	8,1	6,4	0,5	13,3	36,2	1,7
95	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	6,8	0,0	0,0		0,0
99														
n a														
Total	**13,1**	**53,5**	**179,6**	**224,3**	**410,3**	**43,4**	**57,3**	**31,7**	**45,1**	**241,5**	**28,3**	**154,4**	**1 023,1**	**57,2**

Table 6.3 Emissions coefficients by industries 1995 (NOx / Gross Output), kg / million SEK

NACE	A	B	DK	E	EL	F	FIN	L	NL	P	S	UK	CZ	NO
01-02	390,5	21,6	326,2	442,2	475,9	429,1	251,4	231,2	173,1	424,2	577,1	163,7	735,6	200,7
05		0,0	2 119,1	3 467,3	273,6	1 881,1	377,4		15 138,6	1 993,3	3 176,7	920,1	674,9	1 553,0
10-14	336,1	126,0	411,4	246,3	235,8	233,2	99,6	42,9	52,6	1 419,9	264,9	316,3	203,8	296,8
15-37	**51,4**	**63,6**	**31,2**	**113,0**	**240,8**	**38,6**	**36,1**	**160,4**	**56,8**	**70,6**	**45,9**	**71,2**	**153,8**	**56,8**
15-16	16,9	16,2	32,1	78,8	22,1	20,6	19,7	20,6	25,8	27,9	19,3	48,3	63,0	18,2
17-18	12,0	3,4	17,0	50,7	29,3	12,5	71,9	23,7	14,4	16,7	11,5	30,0	87,2	15,3
19	10,2	1,0	8,3	20,8	29,9	13,0	44,0		14,7	10,7	11,1	22,0	32,2	26,4
20	63,2	65,5	48,6	113,1	42,5	42,0	31,2	24,1	23,7	3,5	75,2	112,0	164,2	30,6
21-22	100,2	27,7	12,8	52,8	67,0	26,9	11,4	11,2	24,7	233,8	135,2	29,7	152,1	31,8
23	160,0	221,1	216,2	412,1	506,8	194,6	10,4		217,6	0,0	165,3	422,0	111,0	179,1
24	120,8	105,0	21,7	121,6	268,7	39,6	245,1	20,1	114,3	122,4	29,5	77,5	414,4	135,2
25	29,7	3,5	13,0	16,9	259,4	11,2	34,7	15,5	20,4	55,4	10,9	58,0	35,5	9,9
26	150,1	478,3	212,5	628,8	2 560,0	360,2	77,6	1 032,5	240,8	509,2	254,8	570,4	700,5	441,3
27-28	83,7	95,8	18,5	134,8	242,1	58,6	67,9	171,3	75,1	9,5	54,4	92,2	230,2	110,1
29-30	8,2	0,2	8,9	34,2	214,9	0,0	11,3	9,7	10,7	1,3	3,7	13,2	36,2	6,4
31-33	7,1	0,2	5,0	36,1	219,1	0,0	2,3	9,8	10,6	4,4	1,1	7,5	36,5	5,0
34-35	10,8	2,4	9,8	10,9	209,4	0,0	10,8	12,9	10,1	2,6	3,1	15,2	40,3	5,0
36-37	0,0	0,1	15,9	111,8	214,2	58,1	14,1	24,1	15,1	6,3	6,2	57,0	46,8	9,1
40-41	73,9	603,1	2 011,1	1 428,2	3 006,8	207,5	1 037,7	78,9	369,5	1 482,7	225,3	1 068,4	1 828,8	40,5
45	12,8	0,1	69,6	40,6	17,2	81,7	62,0	17,6	55,1	26,5	31,1	39,4	15,5	54,9
50-52	13,1	0,5	32,2	41,5	32,8	15,4	2,4	18,1	25,0	23,0	21,4	49,6	10,4	49,0
55	26,0	1,1	12,2	6,7	24,5	15,6	2,2	16,0	32,6	7,9	5,8	14,5	0,0	2,9
60-64	84,0	381,4	1 906,1	316,8	768,6	259,8	456,7	230,9	675,5	1 779,9	480,4	484,9	2 275,4	1 315,9
65-67	1,3	0,4	1,8	0,6	32,4	16,2	0,0	4,8	22,3	0,7	2,9	14,1	1,1	4,5
70-74	1,7	0,2	5,9	0,8	3,9	15,8	3,2	6,6	22,2	2,0	49,5	18,7	22,2	2,9
75	0,0	1,9	37,6	1,9	33,2	16,1	3,6	19,5	49,2	13,8	2,3	64,3	82,1	33,0
80	5,2	4,4	7,2	1,7	21,5	14,8	3,6	10,7	8,8	3,6	1,7	20,3	16,9	3,1
85	2,3	3,4	5,4	1,9	21,3	15,7	1,7	15,9	8,4	1,7	5,3	8,9	38,5	4,4
90-93	9,1	37,9	19,6	27,2	12,9	14,1	3,2	46,9	44,6	10,2	8,6	37,5	15,6	10,5
95					11,7		3,8			10,8				
99														
n a														
Total	**36,7**	**64,7**	**252,0**	**130,4**	**216,4**	**61,5**	**86,5**	**62,9**	**109,0**	**201,4**	**86,4**	**116,2**	**363,4**	**233,8**

Table 6.4 Emissions coefficients by industries 1998 (CO_2 / Gross Output), tonnes / million SEK

NACE	DK	F	L	NL	UK
01-02	34,82	93,22	36,88	50,87	22,24
05	127,97	117,22	0,00	739,27	41,82
10-14	114,10	51,04	4,19	29,18	85,91
15-37	**13,38**	**20,99**	**38,30**	**34,48**	**23,81**
15-16	13,64	13,37	8,18	12,61	12,21
17-18	6,29	9,01	10,29	11,41	9,67
19	3,36	9,00	0,00	11,24	5,23
20	31,65	38,51	7,60	4,24	14,67
21-22	5,26	22,11	4,34	14,80	7,72
23	100,41	136,00	0,00	143,78	182,94
24	8,62	21,87	7,40	92,01	29,94
25	5,81	7,26	9,16	5,84	13,23
26	95,27	125,87	295,73	60,27	126,09
27-28	7,16	40,26	33,09	54,03	63,47
29-30	3,51	0,00	3,92	5,69	4,00
31-33	1,87	0,00	3,70	5,73	1,66
34-35	4,40	0,00	0,00	2,25	4,35
36-37	7,11	18,41	6,76	8,81	28,90
40-41	740,22	112,05	21,25	311,43	257,06
45	6,52	5,81	1,53	4,75	3,09
50-52	4,71	4,76	5,16	4,31	4,97
55	2,74	4,68	20,68	22,76	3,59
60-64	100,13	26,16	20,29	61,09	39,09
65-67	0,45	4,57	5,39	3,79	2,50
70-74	1,09	4,74	2,82	3,81	2,48
75	3,04	4,58	14,61	9,17	9,83
80	2,09	4,42	13,60	6,20	7,91
85	1,36	4,80	16,23	6,20	3,78
90-93	3,74	4,76	29,00	34,48	3,73
95					
99					
N a					
Total	**32,04**	**16,58**	**14,06**	**28,88**	**20,27**

Table 6.5 Emissions coefficients by industries 1998 (SO_2 / Gross Output), kg / million SEK

NACE	DK	F	L	NL	UK
01-02	56,0	25,7	32,6	9,9	33,1
05	166,4	128,8		12 470,6	255,0
10-14	79,0	316,7	2,3	7,1	73,2
15-37	**35,6**	**66,2**	**31,4**	**43,1**	**71,9**
15-16	36,0	46,4	7,0	2,0	21,0
17-18	4,8	20,7	10,6	0,3	18,7
19	1,3	20,7		0,3	4,5
20	30,1	9,3	6,7	0,5	6,4
21-22	2,4	55,4	4,3	0,7	11,8
23	250,9	874,1		606,4	1 351,4
24	24,7	72,3	7,1	33,2	77,5
25	3,1	6,7	9,5	0,4	27,8
26	445,1	245,9	211,9	69,4	196,6
27-28	3,5	65,6	31,1	49,8	147,8
29-30	2,5	0,0	3,9	1,1	3,7
31-33	0,8	0,0	3,7	1,1	3,8
34-35	2,0	0,0	4,5	0,4	4,8
36-37	3,1	14,7	5,4	0,5	24,6
40-41	1 185,6	585,5	10,3	75,8	1 817,2
45	4,2	3,6	0,8	2,9	2,1
50-52	1,7	4,8	3,4	0,6	0,9
55	0,8	4,7	14,2	0,5	0,2
60-64	1 597,4	9,8	12,9	132,4	81,1
65-67	0,2	4,6	3,7	2,9	0,4
70-74	0,4	4,8	1,9	0,0	0,5
75	1,7	4,6	9,9	37,0	16,1
80	1,3	4,5	9,3	0,1	6,3
85	0,7	4,9	11,1	0,9	9,1
90-93	2,0	4,8	19,7	5,2	2,8
95					
99					
Na					
Total	**191,6**	**38,6**	**10,4**	**36,2**	**78,0**

Table 6.6 Emissions coefficients by industries 1998 (NOx / Gross Output), kg / million SEK

NACE	DK	F	L	NL	UK
01-02	378,0	428,2	232,8	175,8	158,5
05	2 273,9	1 872,9		14 556,6	753,6
10-14	474,9	190,8	15,0	64,5	306,4
15-37	**27,9**	**35,9**	**123,9**	**42,9**	**52,2**
15-16	30,5	20,8	15,3	18,0	32,6
17-18	15,6	12,7	20,9	11,1	20,3
19	7,4	12,7		11,0	13,2
20	48,8	69,2	20,0	14,1	89,7
21-22	11,6	26,1	9,3	19,9	16,0
23	172,2	190,3		152,1	469,2
24	17,3	39,6	16,7	98,6	57,5
25	12,9	8,8	18,6	8,5	27,2
26	200,0	350,2	1 125,9	191,2	466,8
27-28	17,8	53,3	88,1	59,3	73,2
29-30	8,5	0,0	8,1	8,4	8,9
31-33	4,6	0,0	8,0	8,5	4,0
34-35	8,8	0,0	9,6	4,2	8,8
36-37	14,8	49,1	18,9	10,2	54,6
40-41	1 456,5	305,8	35,7	275,5	628,6
45	67,2	113,7	5,5	47,0	24,7
50-52	26,8	13,2	7,5	21,2	24,8
55	8,7	13,0	17,0	32,5	8,2
60-64	2 259,2	210,3	112,5	592,6	307,5
65-67	1,4	12,7	4,3	17,0	7,4
70-74	5,1	13,1	3,5	17,0	8,8
75	29,3	12,7	14,2	68,8	43,6
80	7,9	12,2	11,2	9,3	12,3
85	4,8	13,3	14,4	7,3	5,1
90-93	19,9	13,2	40,0	37,2	17,3
95					
99					
N a					
Total	**288,9**	**60,0**	**38,2**	**95,0**	**72,2**

Table 7.1 Export of goods and services 1995, million SEK

NACE	A	B+L	CZ	D	DK	E	EL	F	FIN	NL	NO	P	UK	ROW	Total	% of tot
01	3	9	3	163	141	34	2	7	177	45	133	0	13	345	1 076	0,2
02	3	7	3	64	35	0	2	12	9	3	491	0	30	39	697	0,1
05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
10-12	1	1	0	4	7	0	0	1	16	8	25	1	1	37	104	0,0
13-14	5	754	0	1 782	160	4	3	199	774	313	266	0	136	1 289	5 686	0,9
15-16	66	180	79	991	1 243	87	41	689	1 495	336	1 364	37	368	4 308	11 282	1,9
17-18	77	305	42	801	664	74	18	212	758	546	1 431	121	544	2 265	7 858	1,3
19	16	11	3	91	109	3	0	25	110	18	255	3	24	370	1 038	0,2
20	384	319	43	5 705	3 026	884	370	915	233	1 775	2 455	34	4 601	4 947	25 692	4,3
21	1 428	2 301	314	15 130	4 304	1 534	315	5 465	1 568	5 261	3 836	644	10 467	16 365	68 933	11,4
22	23	38	13	211	401	22	5	90	277	132	790	7	172	741	2 921	0,5
23	7	157	5	2 069	1 747	69	1	489	610	230	1 318	3	2 027	2 009	10 741	1,8
24 övr	271	769	136	3 710	2 702	431	123	1 629	2 692	2 018	3 378	166	2 828	8 624	29 478	4,9
24.4	101	511	67	2 219	692	641	167	1 226	558	670	1 314	132	2 673	7 529	18 500	3,1
25	283	424	38	2 309	1 459	213	41	901	1 223	828	2 064	63	1 266	3 614	14 726	2,4
26	30	302	21	865	859	45	39	244	400	199	862	13	330	1 633	5 842	1,0
27	693	1 017	236	8 590	4 039	1 113	69	2 469	2 613	1 553	2 918	125	4 928	14 015	44 379	7,4
28	210	391	85	1 787	1 635	211	36	708	1 215	2 452	2 312	73	1 057	5 786	17 958	3,0
29-30	1 573	3 169	586	10 204	4 256	2 145	220	4 918	4 722	4 145	6 463	509	5 183	40 203	88 296	14,7
31-33	966	1 038	269	8 575	4 470	2 508	968	2 895	4 281	2 630	4 490	596	6 147	47 446	87 280	14,5
34	569	11 371	78	4 341	2 117	1 260	199	4 513	2 629	6 788	4 234	315	6 940	33 911	79 265	13,2
35	67	40	23	1 283	349	73	11	1 079	658	518	709	40	3 252	7 565	15 666	2,6
36	99	634	60	1 548	1 157	74	18	301	600	537	2 191	20	724	2 952	10 915	1,8
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
40	0	0	0	384	221	0	0	0	579	0	38	0	0	0	1 222	0,2
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
45	7	27	9	222	203	26	2	58	87	42	194	1	85	985	1 950	0,3
50-52	16	78	5	413	234	8	0	103	289	257	172	10	962	3 530	6 077	1,0
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
60.1	8	7	0	18	6	0	0	6	7	11	29	0	2	49	143	0,0
60.2	22	319	9	301	123	25	8	55	255	311	159	9	221	1 118	2 934	0,5
60.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
61	0	108	0	249	204	0	3	100	354	496	464	0	1 391	4 261	7 631	1,3
62	7	21	0	116	220	12	2	40	61	117	325	0	128	666	1 715	0,3
63	118	76	0	1 244	706	249	55	227	751	564	1 294	28	544	4 648	10 506	1,7
64	12	26	1	47	146	13	6	18	85	204	70	2	238	447	1 317	0,2
65-67	15	401	8	219	125	166	5	869	122	338	114	5	343	2 818	5 548	0,9
70-74	109	412	30	818	679	226	20	529	500	1 452	597	23	933	7 142	13 470	2,2
75	0	0	0	0	0	0	0	0	0	0	0	0	0	155	155	0,0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
90-93	2	7	0	57	37	11	0	9	38	10	89	0	100	216	576	0,1
95	26	54	2	22	5	9	2	31	5	20	3	13	7	574	774	0,1
Tot	**7 221**	**25 283**	**2 168**	**76 551**	**38 480**	**12 170**	**2 754**	**31 032**	**30 752**	**34 826**	**46 851**	**2 993**	**58 667**	**232 602**	**602 351**	**100**

Table 7.2 Import of goods and services 1995, million SEK

NACE	A	B+L	CZ	D	DK	E	EL	F	FIN	NL	NO	P	UK	ROW	Total	% of tot
01	31	190	6	1 002	747	511	31	176	73	2 395	46	4	114	4 364	9 690	2,0
02	0	1	0	459	155	0	0	5	160	9	210	0	2	2 271	3 272	0,7
05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
10-12	0	8	0	40	1 664	0	0	15	56	46	7 769	0	111	7 529	17 238	3,5
13-14	17	191	3	297	188	26	44	24	42	295	296	1	388	1 289	3 101	0,6
15-16	249	645	29	2 513	4 234	689	75	988	946	2 826	1 943	105	1 302	4 604	21 147	4,3
17-18	192	542	159	1 331	2 063	137	312	475	624	573	849	1 564	1 803	11 349	21 975	4,5
19	21	49	64	154	225	125	0	119	212	85	109	546	172	2 173	4 055	0,8
20	49	60	43	338	431	29	4	121	781	61	520	51	61	1 401	3 951	0,8
21	60	280	80	1 930	929	156	0	242	1 962	652	1 432	83	441	698	8 946	1,8
22	39	111	11	631	502	28	11	112	537	471	315	5	596	2 016	5 386	1,1
23	0	174	0	1 211	1 661	231	35	440	1 951	548	1 112	1	1 418	2 420	11 203	2,3
24 övr	206	2 876	94	8 947	1 884	293	1	5 115	2 340	4 030	2 868	87	5 113	5 473	39 326	8,1
24.4	142	630	3	937	1 405	9	2	715	206	839	256	18	1 224	2 300	8 688	1,8
25	211	783	35	3 177	1 490	313	20	1 276	1 158	684	910	66	1 827	3 156	15 107	3,1
26	171	424	77	1 561	549	125	2	479	432	244	551	144	634	1 334	6 726	1,4
27	680	1 487	133	6 977	1 465	306	143	2 551	4 057	1 622	3 386	8	4 716	6 084	33 613	6,9
28	260	283	33	4 041	1 093	129	10	905	731	843	952	107	1 088	3 498	13 972	2,9
29-30	908	1 861	201	19 817	4 986	511	7	3 635	4 277	9 058	2 414	88	7 880	21 467	77 110	15,8
31-33	1 502	1 799	45	16 198	3 845	774	21	3 709	4 213	4 470	2 433	566	7 837	23 501	70 914	14,5
34	390	4 536	31	17 312	1 029	325	8	2 708	1 399	2 800	1 378	31	3 358	4 667	39 972	8,2
35	71	31	9	531	602	366	1	208	452	296	567	3	2 547	5 175	10 858	2,2
36	81	170	104	1 080	1 299	84	3	278	507	363	593	37	650	4 541	9 789	2,0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
40	0	0	0	2	131	0	0	0	30	0	958	0	0	0	1 121	0,2
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
45	1	13	4	83	130	2	0	20	72	45	64	2	79	609	1 122	0,2
50-52	4	24	18	102	45	3	2	56	54	152	69	1	204	1 178	1 913	0,4
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
60.1	1	18	0	10	32	0	0	2	1	7	1	0	0	37	111	0,0
60.2	3	57	0	85	34	3	13	20	30	226	46	8	108	369	1 002	0,2
60.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
61	0	104	0	567	218	21	21	85	138	425	320	0	653	3 337	5 890	1,2
62	13	178	0	145	265	33	2	95	26	154	141	3	693	732	2 479	0,5
63	137	441	0	1 364	1 153	278	181	880	1 172	207	927	57	1 108	8 185	16 092	3,3
64	4	89	5	71	234	5	4	93	83	173	235	3	152	747	1 897	0,4
65-67	2	172	2	184	92	1	0	82	79	373	149	1	473	2 255	3 865	0,8
70-74	52	378	42	741	595	24	28	485	420	1 151	709	5	2 360	8 905	15 894	3,3
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
90-93	0	11	0	13	20	1	0	59	38	11	27	0	86	158	424	0,1
95	3	34	1	7	2	1	0	12	2	4	2	2	3	194	265	0,1
Tot	**5 499**	**18 653**	**1 230**	**93 854**	**35 399**	**5 538**	**984**	**26 187**	**29 258**	**36 135**	**34 558**	**3 599**	**49 201**	**148 018**	**488 113**	**100**

Table 7.3 Export of goods and services 1998, million SEK

NACE	A	B	CH	CZ	D	DK	E	EL	F	FIN	I	IRL	JP	L	NL	NO	P	UK	US	ROW
01	4	31	20	0	107	397	145	13	8	343	91	4	23	0	48	171	3	28	441	455
02	12	0	2	0	23	43	1	5	2	8	15	0	0	0	0	468	2	19	0	20
05	1	88	1	0	99	334	55	4	388	66	79	5	0	2	100	16	12	139	0	6
10-12	1	0	4	0	3	11	1	0	1	4	25	0	0	2	9	44	2	5	4	20
13-14	3	528	1	2	2 089	181	1	0	322	800	21	1	33	0	378	317	2	106	119	1 257
15-16	78	217	153	103	1 081	1 708	204	239	866	2 139	652	22	230	2	266	1 636	67	665	2 046	2 468
17-18	111	271	83	115	975	1 129	184	26	255	1 796	110	40	116	9	502	1 741	105	528	194	2 383
19	19	31	12	3	67	131	7	0	24	161	49	1	3	0	27	262	1	25	49	225
20	226	327	271	104	4 619	3 104	977	287	775	436	575	451	917	7	1 777	3 123	59	4 622	707	2 971
21	1 210	1 151	1 165	289	14 101	3 537	1 906	341	4 511	1 488	3 764	807	410	26	6 084	3 701	484	10 306	1 149	9 153
22	13	34	43	8	192	366	36	8	68	347	43	31	41	3	108	881	10	295	144	627
23	6	293	72	3	2 059	1 904	59	0	246	526	68	71	24	0	477	1 513	24	886	398	1 351
24 other	286	867	325	195	3 522	3 026	497	115	1 291	2 897	1 350	320	708	16	1 620	3 579	156	2 289	1 667	4 707
24.4	272	1 301	433	95	3 963	1 144	1 407	329	2 648	952	1 479	39	1 059	1	1 125	1 689	160	2 640	3 191	4 797
25	155	452	214	145	1 955	1 858	272	38	815	1 768	366	76	191	1	773	2 637	61	1 201	969	2 438
26	27	377	63	18	641	851	62	17	291	681	126	59	63	13	194	1 176	15	338	534	904
27	842	808	1 029	317	7 209	3 511	1 221	68	2 632	2 770	2 823	207	634	30	1 495	3 031	159	7 259	3 374	6 030
28	111	767	150	121	1 544	1 687	210	30	539	1 306	286	40	389	3	2 667	3 183	91	994	1 889	4 049
29-30	1 451	4 900	1 502	566	9 560	4 046	2 745	238	5 615	5 824	3 677	512	2 383	18	3 949	9 275	708	5 684	12 310	24 227
31-33	1 475	1 712	1 917	613	11 943	5 666	5 371	2 237	4 371	6 114	5 820	1 610	4 669	75	3 967	6 234	1 530	11 806	7 512	53 522
34	553	14 898	761	64	5 088	2 591	1 961	143	5 948	3 053	2 090	247	1 479	1	12 333	5 083	435	9 009	15 480	14 038
35	43	68	2 791	51	753	487	115	9	1 399	367	287	293	584	0	350	2 771	108	2 256	4 528	1 945
36	112	1 055	540	82	1 799	1 417	228	22	360	930	71	34	190	2	340	3 218	28	868	997	1 766
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	373	171	0	0	0	168	0	0	0	0	0	1 776	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	17	98	106	26	762	928	97	14	196	327	134	17	72	8	53	1 089	4	336	168	1 566
50-52	41	289	1 075	13	1 419	1 067	30	3	348	1 082	366	481	286	18	324	963	35	3 777	1 122	4 063
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60.1	21	27	24	0	60	27	1	0	20	27	22	1	0	0	13	163	0	7	13	42
60.2	57	1 231	442	25	1 034	560	91	50	188	952	161	53	92	19	391	891	33	866	462	1 130
60.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	423	594	0	856	931	0	21	339	1 325	178	102	1 496	0	624	2 603	0	5 460	3 822	2 729
62	19	82	145	0	398	1 002	43	10	137	230	101	0	176	0	147	1 824	0	502	671	300
63	302	299	909	0	4 272	3 223	916	328	768	2 809	604	59	259	0	709	7 254	102	2 136	3 161	4 743
64	31	41	74	4	161	665	48	35	62	319	30	13	13	63	257	394	9	936	372	433
65-67	39	246	257	23	752	571	612	32	2 945	455	266	31	668	1 328	425	638	17	1 345	1 753	2 926
70-74	278	1 352	1 371	89	2 633	3 070	825	118	1 787	1 868	800	352	533	263	1 823	3 334	82	3 660	3 444	8 372
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	324
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90-93	1	13	37	1	178	99	41	0	27	128	12	1	12	4	13	197	1	198	106	123
95	67	199	74	7	75	22	33	13	103	19	26	13	35	13	25	18	49	28	356	699
Tot	**7 883**	**34 472**	**16 659**	**3 081**	**86 364**	**51 466**	**20 402**	**4 794**	**40 295**	**44 484**	**26 562**	**5 992**	**17 788**	**1 926**	**43 394**	**76 895**	**4 555**	**81 221**	**73 154**	**166 811**

Table 7.4 Import of goods and services 1998, million SEK

NACE	A	B	CH	CZ	D	DK	E	EL	F	FIN	I	IRL	JP	L	NL	NO	P	UK	US	ROW
01	22	266	9	7	745	774	737	45	370	107	480	2	1	0	2 805	50	4	153	509	3 964
02	0	1	0	0	232	107	3	0	2	118	9	0	0	0	10	200	1	3	1	2 835
05	0	1	0	4	1	119	0	0	1	6	0	16	1	0	20	1 440	0	6	13	78
10-12	0	9	4	0	814	1 529	0	0	52	43	0	0	0	0	61	7 543	1	755	401	6 146
13-14	13	130	1	4	305	164	25	33	41	50	63	0	10	2	208	308	1	400	423	717
15-16	269	965	220	26	2 946	5 415	1 041	96	1 489	947	1 188	849	21	0	3 853	2 753	142	1 688	751	2 629
17-18	152	896	162	169	1 669	2 255	207	384	519	573	1 543	71	86	22	632	761	1 514	1 526	292	11 347
19	17	214	26	49	224	275	195	0	90	206	708	4	3	0	108	65	426	310	60	1 606
20	41	115	3	28	380	489	22	1	66	822	52	13	2	0	49	467	64	40	224	1 703
21	87	238	61	37	1 649	775	97	0	342	1 870	91	4	13	0	606	1 491	339	457	209	240
22	128	141	64	4	784	414	34	0	116	448	181	770	35	2	435	369	4	1 026	529	389
23	1	185	13	1	1 129	834	475	0	574	2 487	12	0	2	0	433	908	0	1 104	475	1 444
24 other	235	2 853	741	103	9 409	1 890	321	2	7 309	1 961	569	400	857	154	3 756	3 397	47	4 809	1 530	1 889
24.4	91	683	1 302	1	1 662	1 069	247	4	972	145	783	634	34	10	556	380	54	1 156	880	148
25	178	667	239	88	3 406	1 452	392	8	1 521	1 260	929	169	420	202	831	1 002	34	1 870	499	1 359
26	187	412	34	104	1 485	551	128	3	526	304	360	15	117	13	224	614	142	619	228	808
27	959	1 211	359	184	6 277	1 366	493	125	2 566	4 010	998	51	423	218	1 339	3 969	20	6 194	748	3 261
28	258	377	472	59	3 750	1 165	794	30	578	783	642	59	316	24	934	948	104	1 120	552	1 999
29-30	886	2 292	2 142	340	20 099	5 029	605	7	4 560	4 383	4 618	3 755	2 711	27	11 280	3 639	114	10 458	6 123	5 421
31-33	3 302	2 166	2 379	124	16 431	4 812	1 518	12	5 693	4 239	2 089	1 297	4 497	49	7 739	3 108	159	12 225	9 729	11 194
34	428	5 651	93	1 335	21 572	1 102	1 223	40	4 141	1 375	973	47	3 083	1	5 883	1 372	103	4 650	2 095	1 654
35	64	41	163	41	592	355	224	2	274	182	93	20	333	0	245	759	29	2 123	4 932	1 283
36	182	208	189	97	1 379	1 552	193	10	284	477	1 064	29	303	3	407	875	35	1 160	660	3 925
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	41	138	0	0	0	31	0	0	0	0	0	2 394	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	14	30	63	10	370	696	56	1	68	308	17	5	7	3	122	248	13	295	98	1 323
50-52	42	55	510	49	456	244	75	23	191	233	141	21	52	6	414	268	11	764	1 068	1 136
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60.1	12	45	38	0	43	174	0	1	7	6	0	0	1	1	20	5	0	2	3	50
60.2	27	121	228	1	382	182	60	186	69	128	33	24	17	23	618	178	68	405	283	333
60.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	267	306	0	2 539	1 171	477	300	289	594	245	77	837	0	1 162	1 237	0	2 444	915	5 914
62	131	441	314	0	648	1 426	742	22	323	110	59	144	96	14	421	545	23	2 592	388	819
63	1 408	1 126	1 323	0	6 110	6 196	6 280	2 524	2 982	5 037	2 330	322	0	0	566	3 583	498	4 147	5 593	10 775
64	41	75	152	13	317	1 257	117	51	315	358	81	18	11	151	472	910	26	570	505	1 089
65-67	17	152	894	4	825	494	15	5	278	339	55	243	329	288	1 019	575	9	1 770	3 665	420
70-74	530	876	1 874	118	3 285	3 098	520	391	1 643	1 800	639	881	1 115	86	3 145	2 679	44	8 820	10 325	7 258
75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90-93	2	23	21	0	49	85	10	1	199	28	6	1	2	0	26	90	1	310	200	135
95	27	81	32	3	31	9	14	5	40	7	11	5	14	5	10	7	18	12	145	275
Tot	**9 751**	**23 016**	**14 431**	**3 002**	**112 036**	**48 663**	**17 342**	**4 313**	**38 489**	**35 774**	**21 059**	**9 946**	**15 749**	**1 305**	**50 410**	**49 136**	**4 049**	**75 983**	**55 051**	**95 567**

Table 8 Swedish environmental accounts (method 3), emissions of CO_2, SO_2 and NOx 1995, tonnes

	CO_2 emissions			SO_2 emissions			NO_x emissions		
NACE	Traditional Accounts	Net trade emissions	Adjusted Accounts	Traditional Accounts	Net trade emissions	Adjusted Accounts	Traditional Accounts	Net trade emissions	Adjusted Accounts
01-02	1 839 736	-424 778	2 264 514	679	-565	1 244	36 102	5 799	30 303
05	196 111	11 209	184 903	828	170	658	3 528	53	3 475
10-11	33 223	-2 607 503	2 640 726	34	-19 975	20 009	74	-8 073	8 147
12-14	592 975	131 455	461 520	1 132	323	809	3 259	1 598	1 660
15-16	1 181 020	-366 785	1 547 805	1 134	-1 166	2 300	2 179	-795	2 974
17-18	110 391	-184 630	295 021	139	-676	815	134	-249	384
19	18 714	-43 977	62 692	9	-84	92	16	-42	59
20	262 167	-17 454	279 621	1 487	492	995	3 799	2 171	1 628
21-22	2 375 311	519 980	1 855 331	15 763	8 064	7 698	21 920	17 178	4 743
23	3 695 825	-1 671 075	5 366 900	5 176	-11 729	16 905	3 920	-1 976	5 896
24	537 865	-965 147	1 503 012	4 714	-2 116	6 830	2 160	-1 330	3 490
25	104 219	-45 322	149 541	170	-382	551	283	-102	385
26	3 571 827	-387 805	3 959 632	7 754	-2 535	10 288	5 068	-1 070	6 138
27-28	6 305 816	743 759	5 562 057	7 447	-3 316	10 763	7 921	1 564	6 357
29-30	260 871	-94 238	355 109	172	-261	433	426	-277	703
31-33	95 396	-98 691	194 087	69	-420	489	145	-225	371
34-35	425 496	-39 656	465 152	439	-279	718	480	-171	651
36-37	130 721	-67 437	198 158	190	-225	416	211	-174	385
40-41	8 739 756	-2 770 160	11 509 916	18 084	-12 582	30 666	15 905	-5 212	21 117
45	1 392 532	-196 369	1 588 900	395	-130	525	4 271	-752	5 023
50-52	1 378 591	71 110	1 307 482	218	-132	350	5 356	583	4 773
55	77 373	-42 072	119 445	22	-16	38	290	-45	335
60-64	12 759 373	2 489 368	10 270 006	22 229	-4 627	26 856	124 753	29 815	94 939
65-67	64 328	-10 120	74 448	22	-9	31	296	-31	326
70-75	1 248 735	-114 190	1 362 925	452	-290	742	25 703	4 158	21 545
80	21 003	-4 367	25 370	3	-3	6	182	-3	185
85	38 829	-8 222	47 052	7	-13	20	1 264	-30	1 294
90-93	260 102	-46 276	306 378	48	-52	99	818	-67	885
95-99	588	7 735	-7 147	0	433	-433	0	37	-37
Public	1 923 348		1 923 348	802		802	6 353		6 353
Private	16 154 984		16 154 984	6 457		6 457	75 191		75 191
Total	**65 797 227**	**-6 231 662**	**72 028 889**	**96 074**	**-52 099**	**148 173**	**352 260**	**42 330**	**309 930**

Table 9.1 Export emissions of CO_2 (emissions in Sweden from production of exported goods and services) with method 3 1995, 1 000 tonnes

NACE	A	B+L	D	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	3	8	76	56	12	3	10	49	19	1	28	2	202	138	606	2,4
05	2	1	2	23	3	0	2	2	2	0	13	1	5	80	136	0,5
10-11	0	0	1	1	0	0	0	2	1	0	0	0	3	5	14	0,1
12-14	0	53	153	11	0	0	14	51	30	0	8	0	14	118	453	1,8
15-16	1	4	71	26	2	1	11	34	11	1	7	2	24	106	301	1,2
17-18	1	3	8	6	1	0	2	7	6	2	7	0	13	35	91	0,4
19	0	0	1	1	0	0	0	1	0	0	0	0	3	5	14	0,1
20	2	2	35	29	5	2	6	4	13	0	33	1	21	37	190	0,8
21-22	49	62	455	103	43	9	169	43	153	17	286	9	93	470	1 961	7,9
23	2	33	431	363	15	0	102	129	48	1	421	1	275	424	2 245	9,1
24	4	12	57	35	7	2	25	35	29	3	45	2	45	136	438	1,8
25	1	2	12	8	1	0	5	6	4	0	7	0	11	20	78	0,3
26	4	26	171	105	4	3	21	56	18	1	59	2	183	367	1 021	4,1
27-28	86	135	1 015	505	123	9	295	293	174	13	590	16	324	1 696	5 273	21,3
29-30	3	8	22	9	5	0	10	10	9	1	12	1	13	84	187	0,8
31-33	1	1	7	5	2	0	3	5	2	0	5	0	7	33	73	0,3
34-35	2	42	20	9	4	1	22	11	23	1	36	0	18	140	331	1,3
36-37	1	7	10	8	1	0	4	5	4	0	6	0	13	22	81	0,3
40-41	0	1	602	350	1	0	1	904	1	0	2	0	63	24	1 950	7,9
45	0	1	10	10	1	0	3	4	2	0	4	0	9	47	93	0,4
50-52	4	7	43	22	4	1	13	25	19	2	58	1	22	269	490	2,0
55	0	0	1	1	0	0	0	1	1	0	2	0	1	8	15	0,1
60-64	19	125	341	338	20	7	142	376	522	5	1 326	4	549	4 613	8 386	33,9
65-67	0	0	0	1	0	0	1	0	0	0	1	0	0	7	11	0,0
70-75	2	4	21	24	4	0	6	6	13	0	18	1	10	133	245	1,0
80	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0,0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0,0
90-93	0	1	9	4	7	0	2	9	3	0	3	0	4	14	56	0,2
95-99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0,0
Total	**190**	**539**	**3 576**	**2 051**	**265**	**39**	**871**	**2 070**	**1 110**	**48**	**2 977**	**48**	**1 925**	**9 034**	**24 743**	**100**

Table 9.2 Export emissions of SO_2 (emissions in Sweden from production of exported goods and services) wtith method 3 1995, tonnes

NACE	A	B+L	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	1	3	23	5	1	3	22	8	0	9	1	66	60	203	0,4
05	8	5	96	13	1	11	10	9	0	55	4	21	342	574	1,0
10-11	0	0	1	0	0	0	2	1	0	1	0	3	6	15	0,0
12-14	0	171	13	0	0	41	142	120	0	15	0	14	451	967	1,7
15-16	1	4	31	2	1	12	38	11	1	8	2	29	168	308	0,5
17-18	1	3	9	1	0	2	9	9	3	10	1	18	54	119	0,2
19	0	0	1	0	0	0	1	0	0	0	0	2	3	7	0,0
20	13	19	193	43	21	48	16	99	2	261	6	131	273	1 126	2,0
21-22	974	630	430	353	82	2 348	395	1 572	73	2 052	125	713	4 372	14 118	24,7
23	3	57	629	25	0	177	224	84	1	730	2	477	734	3 144	5,5
24	38	132	358	65	22	285	332	361	28	494	20	418	1 348	3 902	6,8
25	3	4	15	2	0	9	12	8	1	13	0	21	37	125	0,2
26	7	33	203	7	2	27	120	24	2	132	4	449	909	1 920	3,4
27-28	98	175	784	214	11	365	472	279	19	922	23	612	2 385	6 360	11,1
29-30	3	6	6	3	0	8	8	6	1	8	1	10	61	121	0,2
31-33	1	1	5	1	0	2	5	2	0	4	0	6	28	55	0,1
34-35	3	45	10	6	1	20	12	25	1	34	0	20	157	333	0,6
36-37	1	9	13	1	0	6	9	7	0	9	1	20	36	114	0,2
40-41	0	1	1 053	1	0	3	2 732	3	0	4	0	189	48	4 036	7,1
45	0	0	3	0	0	1	1	1	0	1	0	3	15	26	0,0
50-52	1	1	4	1	0	2	4	3	0	10	0	4	47	77	0,1
55	0	0	0	0	0	0	0	0	0	1	0	0	2	4	0,0
60-64	4	285	559	4	10	270	931	1 301	1	3 623	1	1 231	11 206	19 425	34,0
65-67	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0,0
70-75	1	1	9	1	0	2	2	4	0	6	0	3	41	69	0,1
80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
90-93	0	0	1	1	0	0	2	1	0	1	0	1	3	11	0,0
95-99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
Total	**1 163**	**1 587**	**4 449**	**751**	**155**	**3 642**	**5 501**	**3 938**	**134**	**8 404**	**192**	**4 462**	**22 789**	**57 166**	**100**

Table 9.3 Export emissions of NO_x (emissions in Sweden from production of exported goods and services) wtith method 3 1995, tonnes

NACE	A	B+L	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	82	190	1 350	256	80	282	954	456	10	905	48	6 291	2 963	13 868	9,1
05	33	22	410	56	4	45	42	37	0	233	15	89	1 458	2 444	1,6
10-11	0	0	3	0	0	1	5	2	0	1	0	6	13	32	0,0
12-14	1	475	41	1	1	114	385	355	0	37	0	27	1 329	2 766	1,8
15-16	2	10	49	4	3	18	60	19	2	14	3	39	310	534	0,4
17-18	1	4	8	1	0	3	9	8	3	10	1	17	46	110	0,1
19	0	0	1	0	0	0	1	0	0	0	0	3	5	12	0,0
20	36	49	476	118	56	129	33	264	4	692	11	329	708	2 904	1,9
21-22	1 432	883	528	482	113	3 375	556	2 201	86	2 741	179	1 007	6 072	19 655	13,0
23	2	43	477	19	0	134	169	64	1	553	2	361	556	2 381	1,6
24	18	59	164	30	10	128	155	160	13	221	9	196	619	1 784	1,2
25	5	6	25	3	1	15	20	13	1	22	1	35	60	206	0,1
26	5	33	155	5	3	26	86	24	2	93	3	303	611	1 351	0,9
27-28	134	212	784	185	14	461	447	266	19	903	24	490	2 622	6 562	4,3
29-30	6	13	15	8	1	19	17	17	2	22	2	24	164	310	0,2
31-33	2	2	8	3	1	6	7	4	1	8	1	9	60	111	0,1
34-35	3	51	11	6	1	22	13	26	1	35	0	22	165	356	0,2
36-37	1	12	14	1	0	7	9	9	0	10	1	24	38	127	0,1
40-41	0	1	925	1	0	3	2 399	3	0	4	0	167	48	3 551	2,3
45	1	4	33	4	0	9	14	7	0	14	1	32	162	284	0,2
50-52	17	30	92	17	3	56	104	82	7	245	6	92	1 136	1 887	1,2
55	0	1	3	0	0	1	3	2	0	10	0	5	32	58	0,0
60-64	204	1 261	3 396	254	82	1 448	4 017	5 374	47	13 641	52	5 370	48 326	83 472	55,0
65-67	0	2	3	1	0	4	1	2	0	3	0	1	26	46	0,0
70-75	85	73	1 010	142	11	143	141	187	2	620	37	266	4 024	6 741	4,4
80	0	0	1	0	0	0	0	1	0	1	0	1	8	13	0,0
85	0	1	4	1	0	1	1	2	0	4	0	2	28	45	0,0
90-93	1	2	16	18	0	5	23	8	0	14	0	14	68	170	0,1
95-99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,0
Total	**2 075**	**3 441**	**10 003**	**1 620**	**385**	**6 454**	**9 672**	**9 590**	**202**	**21 056**	**399**	**15 223**	**71 659**	**151 778**	**100,00**

Table 9.4 Import emissions of CO_2 (emissions in other countries from production of imported goods and services) with method 3 1995, 1 000 tonnes

NACE	A	B+L	D	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	5	29	65	94	17	3	70	79	161	4	21	2	44	438	1 031	3,3
05	0	0	0	9	0	0	0	0	10	0	0	0	81	23	125	0,4
10-11	0	2 175	1	10	0	0	1	0	0	384	2	0	26	23	2 622	8,5
12-14	5	0	70	24	1	1	4	10	62	1	19	0	32	93	321	1,0
15-16	4	15	67	123	13	1	32	27	75	4	50	3	22	231	668	2,2
17-18	2	1	7	14	1	1	4	6	6	11	24	6	4	189	276	0,9
19	0	0	1	1	1	0	1	1	1	2	1	1	1	48	58	0,2
20	1	5	11	44	1	0	12	60	4	0	14	4	7	45	208	0,7
21-22	21	26	108	24	7	1	47	688	52	32	58	24	46	309	1 441	4,7
23	2	41	307	439	78	10	125	542	170	0	509	0	280	1 413	3 916	12,6
24	10	134	192	39	12	2	85	80	336	6	190	18	195	104	1 403	4,5
25	3	2	14	8	1	2	8	7	5	1	43	1	3	25	123	0,4
26	8	62	124	84	28	7	51	70	24	30	89	13	128	691	1 409	4,5
27-28	98	269	824	35	42	16	193	389	212	0	636	52	466	1 296	4 529	14,6
29-30	4	1	78	20	4	2	0	7	31	0	38	5	6	85	281	0,9
31-33	5	1	61	9	3	2	0	3	19	0	25	1	6	36	172	0,6
34-35	4	29	138	11	3	2	0	14	16	0	55	2	6	91	371	1,2
36-37	0	0	19	16	2	3	10	3	7	1	21	3	3	60	148	0,5
40-41	12	103	995	1 350	44	35	42	565	237	24	381	36	44	851	4 720	15,2
45	0	0	12	18	0	0	3	6	8	0	9	0	9	223	289	0,9
50-52	2	2	98	19	3	1	12	8	19	1	36	1	21	197	419	1,4
55	0	1	7	2	0	0	2	1	16	0	5	0	1	21	57	0,2
60-64	8	129	253	550	21	16	81	289	414	25	524	14	372	3 201	5 897	19,0
65-67	0	1	2	0	0	0	2	0	3	0	6	0	1	5	21	0,1
70-75	0	3	33	12	1	0	21	12	33	3	70	8	10	152	359	1,2
80	0	0	0	0	0	0	0	0	1	0	2	0	0	2	6	0,0
85	0	0	1	0	0	0	1	0	2	0	2	0	0	4	11	0,0
90-93	0	6	5	2	0	0	3	1	18	1	10	0	3	53	102	0,3
95-99	0	0	0	0	0	0	0	0	0	0	0	-7	0	0	-7	0,0
Total	**195**	**3 036**	**3 495**	**2 958**	**284**	**102**	**808**	**2 869**	**1 943**	**530**	**2 842**	**189**	**1 819**	**9 905**	**30 975**	**100**

Table 9.5 Import emissions of SO_2 (emissions in other countries from production of imported goods and services) with method 3 1995, tonnes

NACE	A	B+L	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	4	42	202	35	2	26	47	32	7	54	8	19	290	768	0,7
05	0	0	12	0	0	1	0	183	0	2	0	41	164	404	0,4
10-11	1	10 266	4	0	1	20	0	0	9 655	2	1	1	38	19 990	18,3
12-14	11	0	137	1	1	11	46	13	8	20	3	64	328	643	0,6
15-16	6	46	406	14	0	183	104	26	33	203	22	29	401	1 474	1,3
17-18	2	4	13	10	1	15	11	0	149	117	56	7	410	795	0,7
19	0	0	3	5	0	4	2	0	24	5	9	0	37	90	0,1
20	1	2	41	6	0	4	51	1	2	7	43	21	455	634	0,6
21-22	40	73	42	54	1	174	836	6	259	304	146	230	3 889	6 054	5,5
23	4	469	1 454	1 219	63	1 059	1 312	1 063	0	4 281	3	338	3 611	14 874	13,6
24	47	302	162	124	14	380	894	204	20	966	288	829	1 788	6 018	5,5
25	8	2	6	14	19	24	73	2	37	229	7	5	81	507	0,5
26	3	147	472	94	12	134	59	49	168	283	25	174	2 836	4 455	4,1
27-28	87	618	29	295	147	486	728	448	2	2 325	165	1 152	3 193	9 676	8,9
29-30	3	1	23	36	17	0	23	22	0	91	40	4	122	382	0,4
31-33	4	0	6	17	21	0	4	14	2	122	9	224	53	475	0,4
34-35	3	10	13	29	18	0	72	3	0	225	21	5	211	612	0,6
36-37	0	0	11	6	24	17	9	1	3	76	29	2	162	339	0,3
40-41	6	455	4 638	794	348	325	1 228	106	282	4 461	575	126	3 274	16 618	15,2
45	0	0	14	1	0	4	2	8	1	10	1	4	112	156	0,1
50-52	2	2	10	9	1	18	48	16	3	20	14	7	60	209	0,2
55	1	1	1	1	0	3	1	1	0	1	0	0	11	20	0,0
60-64	6	166	9 094	63	90	112	93	1 208	58	1 309	23	1 770	10 060	24 052	22,0
65-67	0	1	0	0	0	3	0	2	0	2	0	0	3	13	0,0
70-75	0	3	7	4	0	31	9	65	1	115	20	3	100	359	0,3
80	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0,0
85	0	0	0	0	0	1	0	0	0	9	1	0	1	13	0,0
90-93	0	8	1	2	0	4	1	7	0	21	1	1	17	62	0,1
95-99	0	0	0	0	0	0	0	0	0	0	-433	0	0	-433	-0,4
Total	**239**	**12 619**	**16 797**	**2 834**	**782**	**3 037**	**5 654**	**3 480**	**10 718**	**15 261**	**1 078**	**5 057**	**31 708**	**109 265**	**100**

Table 9.6 Import emissions of NO_x (emissions in other countries from production of imported goods and services) with method 3 1995, tonnes

NACE	A	B+L	DK	E	EL	F	FIN	NL	P	UK	CZ	NO	ROW	Total	% of tot
01-02	63	17	1 118	290	38	374	370	584	64	164	57	456	4 473	8 069	7,4
05	0	0	166	4	0	8	1	216	1	6	0	1 786	203	2 391	2,2
10-11	0	6 607	49	1	0	2	0	0	1 291	7	0	123	25	8 105	7,4
12-14	18	0	58	9	6	42	34	165	2	237	1	320	274	1 167	1,1
15-16	10	29	330	145	4	60	55	183	12	189	7	79	224	1 329	1,2
17-18	2	3	39	7	10	6	52	10	28	59	13	15	115	359	0,3
19	0	0	2	3	0	2	10	1	6	4	2	3	21	55	0,0
20	8	29	77	13	1	27	55	15	0	98	18	55	338	733	0,7
21-22	61	55	69	31	4	61	82	113	72	153	36	169	1 570	2 478	2,3
23	4	109	797	210	40	214	44	299	0	1 373	1	472	794	4 357	4,0
24	59	348	100	38	5	194	644	526	18	501	38	405	238	3 114	2,8
25	8	5	24	5	6	14	50	22	6	117	1	11	39	308	0,3
26	21	214	211	86	30	187	53	108	55	461	37	417	538	2 421	2,2
27-28	130	434	114	121	49	361	551	432	2	985	77	754	986	4 998	4,6
29-30	14	2	73	30	5	0	81	113	0	140	13	29	88	588	0,5
31-33	19	1	35	33	7	0	17	73	2	93	3	22	32	336	0,3
34-35	17	40	34	15	6	0	66	76	0	174	7	24	67	527	0,5
36-37	0	0	41	19	8	41	16	12	1	89	8	12	52	300	0,3
40-41	10	319	3 762	203	71	144	1 213	358	123	1 406	77	243	836	8 763	8,0
45	2	1	217	6	0	64	116	82	2	93	1	102	351	1 036	0,9
50-52	10	3	150	26	3	46	10	130	5	317	3	173	428	1 304	1,2
55	3	1	8	1	0	7	1	23	0	17	0	2	40	103	0,1
60-64	63	1 349	13 534	245	196	958	2 183	5 037	590	5 491	379	7 240	16 394	53 657	49,0
65-67	0	1	1	0	0	9	0	22	0	25	0	4	13	76	0,1
70-75	1	4	115	1	2	79	16	246	2	379	8	76	1 654	2 583	2,4
80	0	0	1	0	0	1	0	1	0	4	0	0	9	16	0,0
85	0	0	1	0	0	2	0	2	0	4	0	1	65	75	0,1
90-93	1	17	16	2	0	10	2	36	1	59	0	7	84	237	0,2
95-99	0	0	0	0	0	0	0	0	0	0	-37	0	0	-37	0,0
Total	**524**	**9 590**	**21 143**	**1 544**	**491**	**2 912**	**5 725**	**8 886**	**2 286**	**12 644**	**751**	**13 001**	**29 950**	**109 449**	**100**

Table 10 Emissions of CO_2, SO_2 and NO_x 1995 in Denmark from imported goods and services, using Swedish IO data and Danish emissions data (method 3) compared with Danish data (method 4), tonnes

	Emissions in Denmark (method 3)			Emissions in Denmark (method 4)		
NACE	CO_2	SO_2	NO_x	CO_2	SO_2	NO_x
01-02	28 725	73	251	50 624	144	274
05	0	0	0	0	0	0
10-11	11 302	15	49	7 953	4	39
12-14	7 039	33	19	6 769	29	16
15-16	308 210	953	1 531	361 300	942	1 961
17-18	40 735	104	142	40 069	89	151
19	9 468	29	32	4 283	11	20
20	17 147	35	64	13 937	24	37
21-22	44 101	143	192	24 068	59	82
23	197 170	730	428	262 058	716	682
24	37 836	157	163	36 435	120	119
25	10 177	32	43	11 722	32	36
26	31 852	182	105	41 256	190	100
27-28	25 135	82	98	24 136	61	73
29-30	66 349	219	303	59 672	145	199
31-33	38 224	126	189	34 224	85	117
34-35	23 472	84	118	26 690	68	81
36-37	55 925	143	203	45 075	96	147
40-41	543 897	1 706	1 396	433 797	1 288	1 108
45	56 345	164	303	62 360	166	321
50-52	9 360	22	48	11 922	26	54
55	0	0	0	0	0	0
60-64	91 649	244	824	82 481	281	759
65-67	1 256	4	5	871	2	3
70-75	29 164	87	107	9 315	19	47
80	0	0	0	0	0	0
85	0	0	0	0	0	0
90-93	5 809	16	23	4 483	11	16
95-99	0	0	0	0	0	0
Total	**1 690 344**	**5 382**	**6 636**	**1 655 500**	**4 611**	**6 441**

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