Statistics Sweden

Statistiska centralbyrån

PC-Axis 2003

Users Manual

PC-Axis 2003 huvudmodul inklusive funktion för att skapa egna indelningar

News in PC-Axis 2003

The most important news in PC-Axis 2003:
- The table cells can get a thousand delimiter
- Optional menu for long texts in variable values
- A link between PC-Axis and Excel is automatically established when installing PC-Axis
- New function to produce HTML list of contenst for a PC-Axis database

List of contents

Some information on PC-Axis and its helpfunctions

There a few things good to know before you start using PC-Axis for the first time.
If you let the mouse stay over a toolkey in the toolbar a small yellow frame will tell the purpose of that very toolkey.
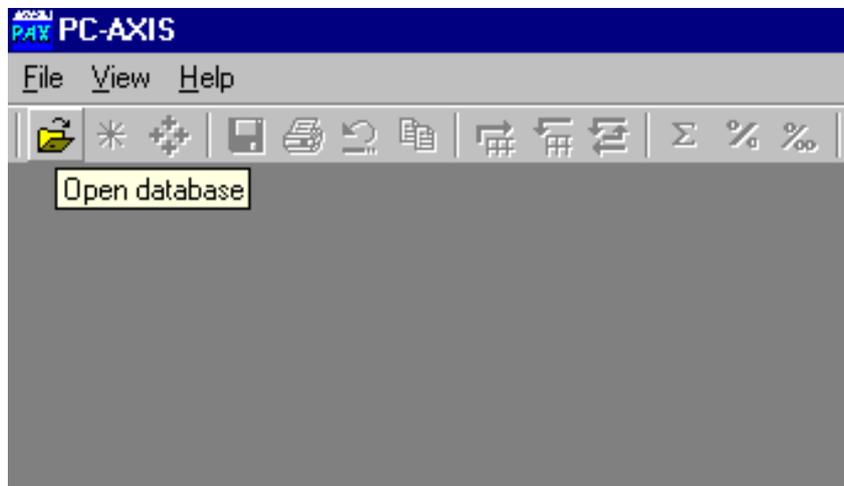
If you need more help, please use the toolkey that opens the help function. It is on the farest right position in the toolbar. This key is the way to get help for menus, commands and how to work with PC-Axis. Press the F1 keyboardkey to get context related help where ever you are in PC-Axis.
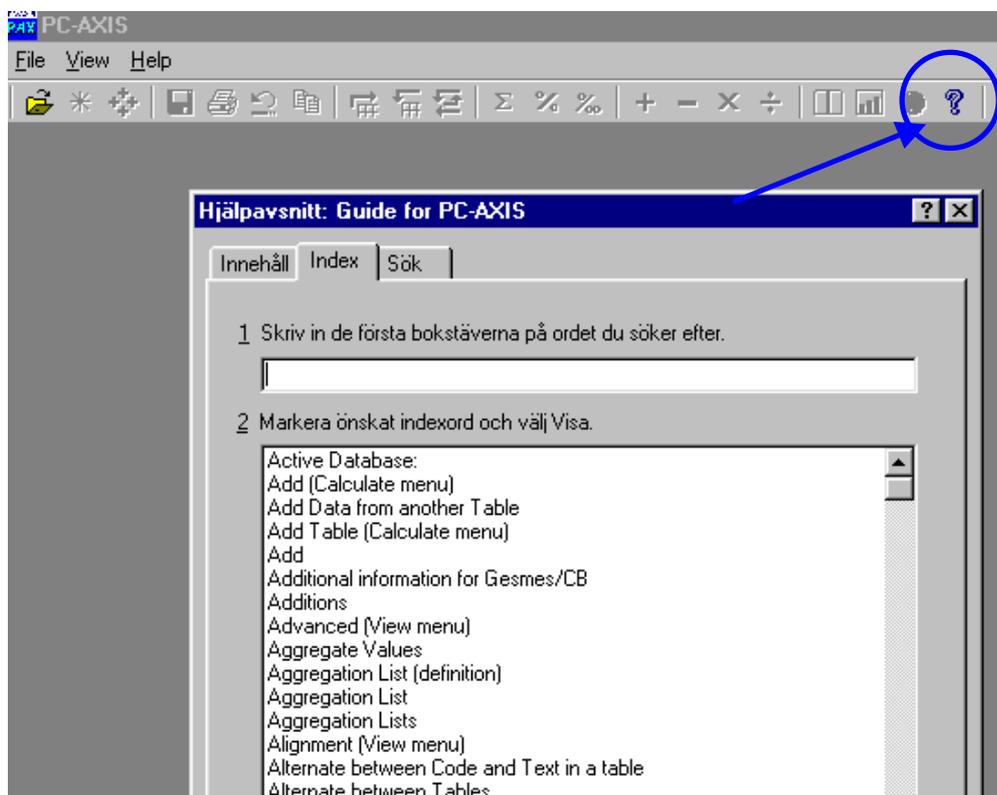
A walk through of the toolbar

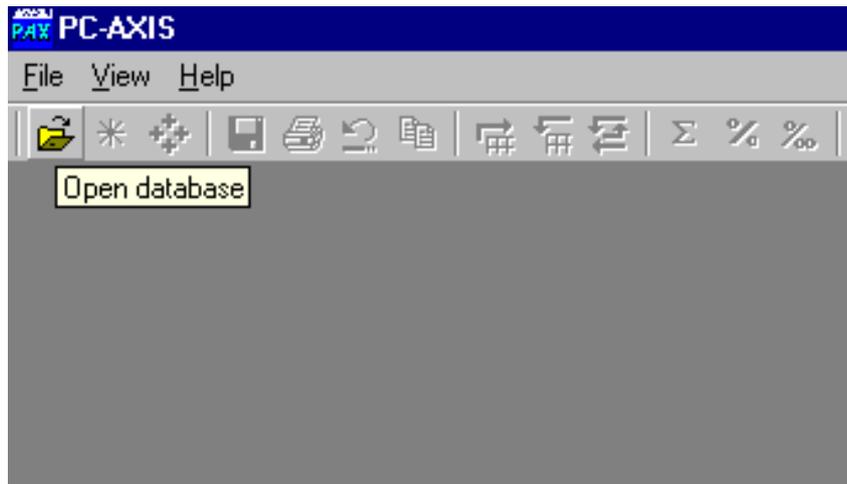|	
	Öpen a database
	Footnote
	Select new values
	Save
	Print out
	Undo
	Copy
	Pivot (clockwise)
	Pivot (anti-clockwise)
	Pivot any option
	Sum
	Percent
	Per mille
	Add
	Subtract
	Multiply
	Divide
	More information
	Graphs
	Maps
	Search help

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Open a database in PC-Axis.

Picture 1.

When you are opening a table in PC-Axis, there are optional ways of doing it. If the program is running, you just press File – Open Database or you can click on the button

 and you will find the catalogue which contains the current database or table. On this picture you can see the PC-Axis files all having the extension PX.
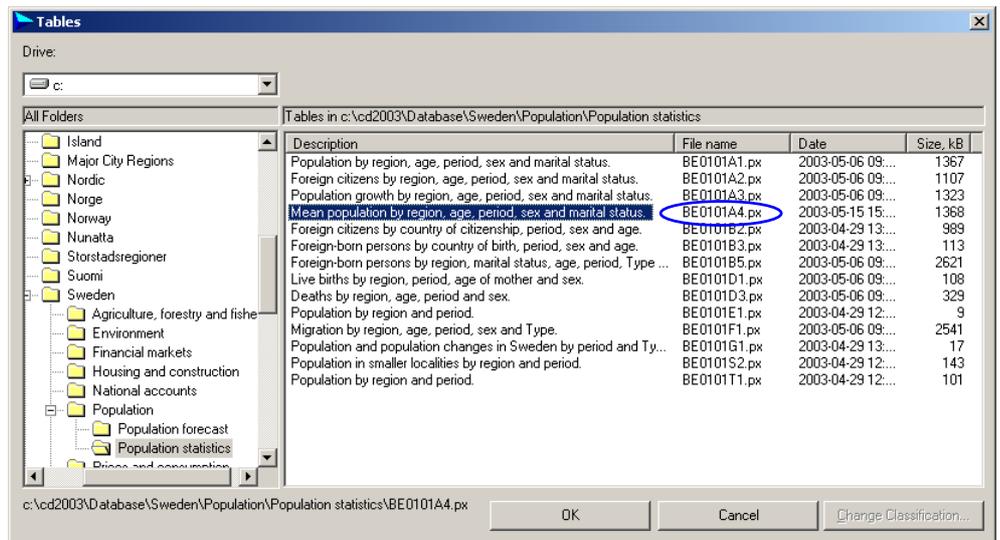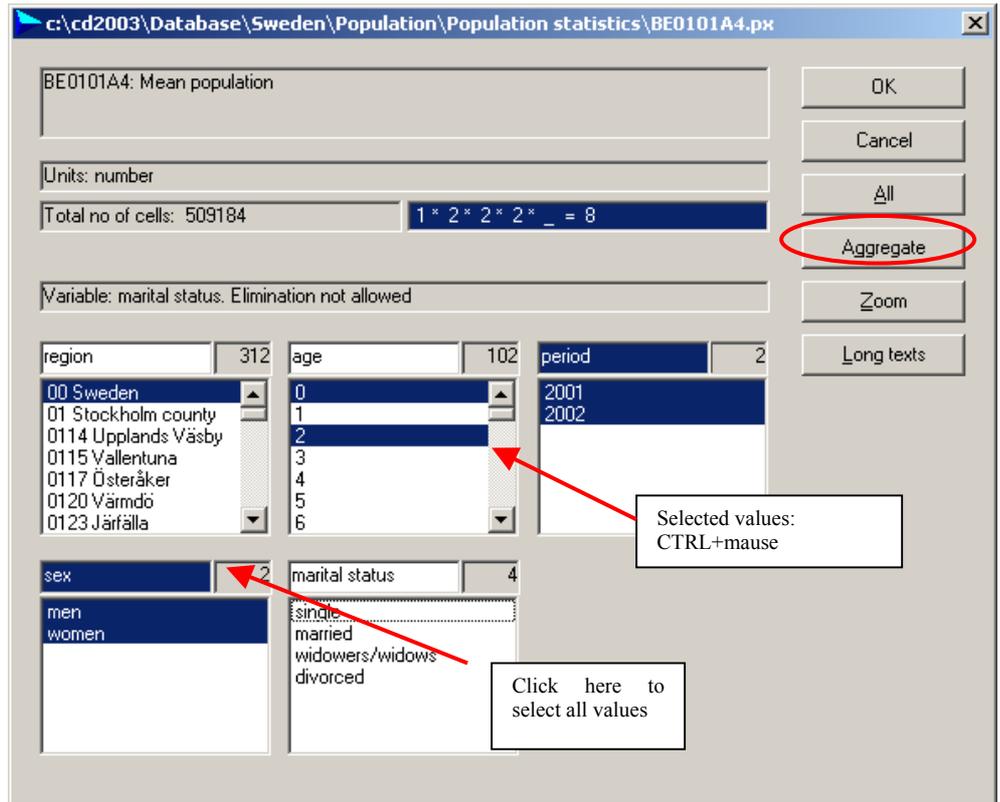

Picture 2

To be able to use the Classification function (see below) you must set the right catalogue for the classifications belonging to the current database. It can be changed using the button Change Classification.. on Picture 2.

When you are going to select a new table you either can click on it, or mark it using the mouse and then press the ENTER key.

Let us say that you are interested in Population statistics – press the subject "Population", select the subcatalogue "Population statistics" and then select the table named Mean population by region, age, period and sex. See Picture 3.

Make a table in PC-Axis

Now it is time to select values for the variables – decide what the table shall contain.

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Picture 3

Select values to the table If you desire all values in a variable you can click on the namebar for the very variable selection box. As in sample on Picture 3, where all, two, values will be selectged by clicking on the word sex.
If you only want some of the values, just press the CTRL-button at the same time as you click the left mousebutton on the desired values. Then only those selected will be put into the table.

How to select all If you wish to get all the variables and all their variable values, just click on the button All.

About classification of values All variables can be grouped into a classification if desired. It shall be done before you select all variables with the "All" button. See Pictureers 4 and 5.

You can use the classifications if you have a table which is more detailed than you want it to be. For example one-year classes or municipalities. You can create your own age classifications or make your own areas based on the municipalities.

If you want to classify on variable age – in the selected table it is in one year classes, and you would prefer it to be five year classes.
On the picture where you select the variables there is a button named Aggregate. Press it and it looks like Picture 4. You will find what is avialable for classification for this very table, in this case the variables age and region. We select age.

Picture 4

5
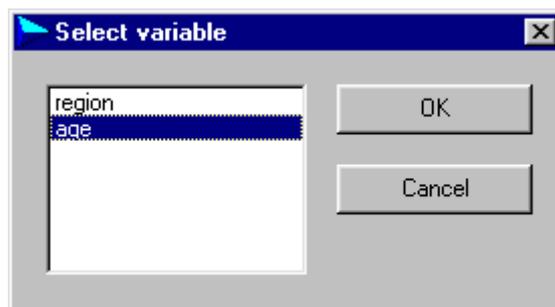
Press OK. In next window you will find a list showing the different classifications available.
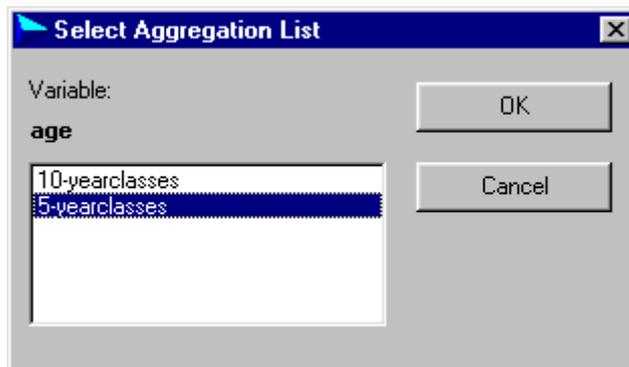
Picture 5

Select the 5-yearclasses and press on the OK button.
Then you will come back to Picture 3, but the list of ages has been changed to 5-yearclasses:
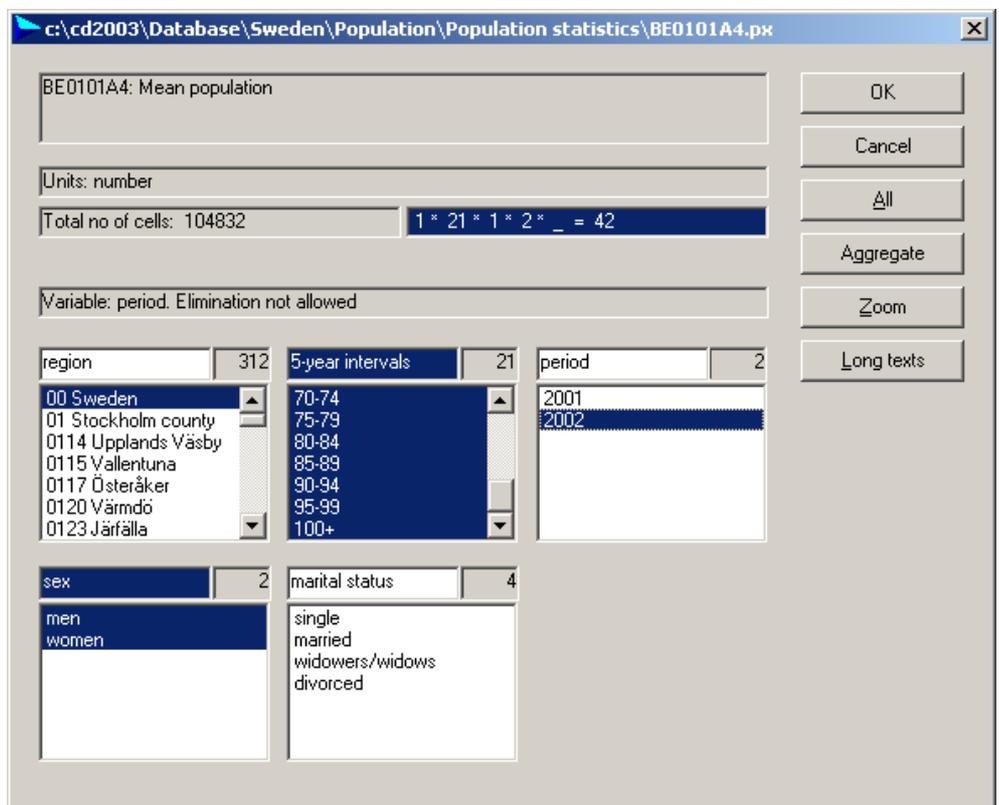
Picture 6 a

When all selections are finnished, click OK and the table appears on the screen.

If there are very long texts on the variable values there is an option in the new version 2003 of PC-Axis to get an alternative menu. Just press
Om det är mycket långa texter för variabelvärden finns från och med version 2003 av PC-Axis en möjlighet att få en annan layout genom att trycka på knappen Långa texter. Då får man denna bild istället:

6
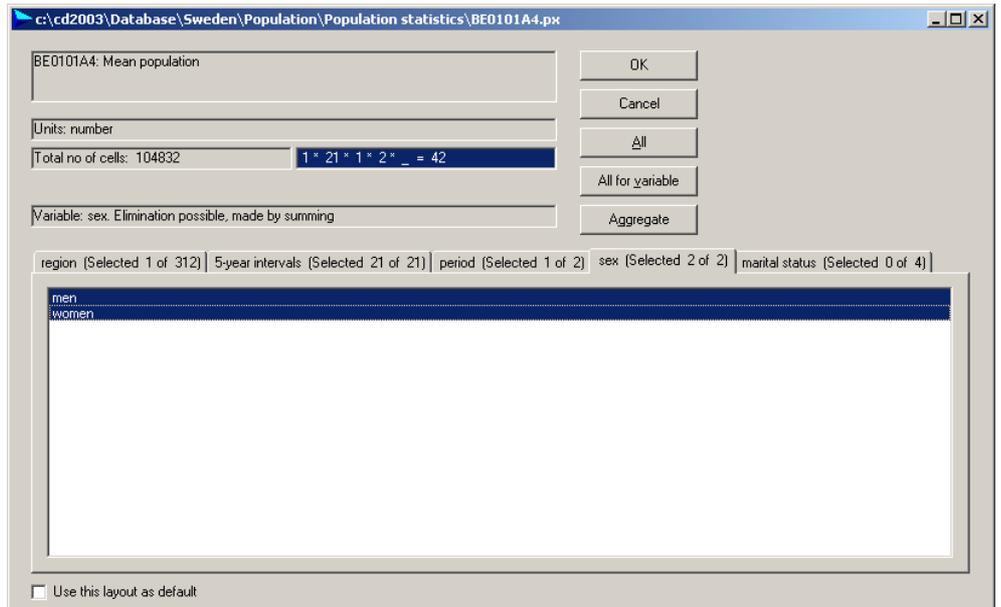
Figure 6 b. If you tick the option "Use this layout as default", the only way to alter back to the original layout can be done in the menu View, Advanced, the tag "Information" where you can tick the box "Show value selection in layout with small listboxes".

The table will appear similar in both cases.

Picture 7

Now you can click on the tool key with the icon of a star which gives the footnote information for this very table. In this case latest up date, source, contact persons etc.
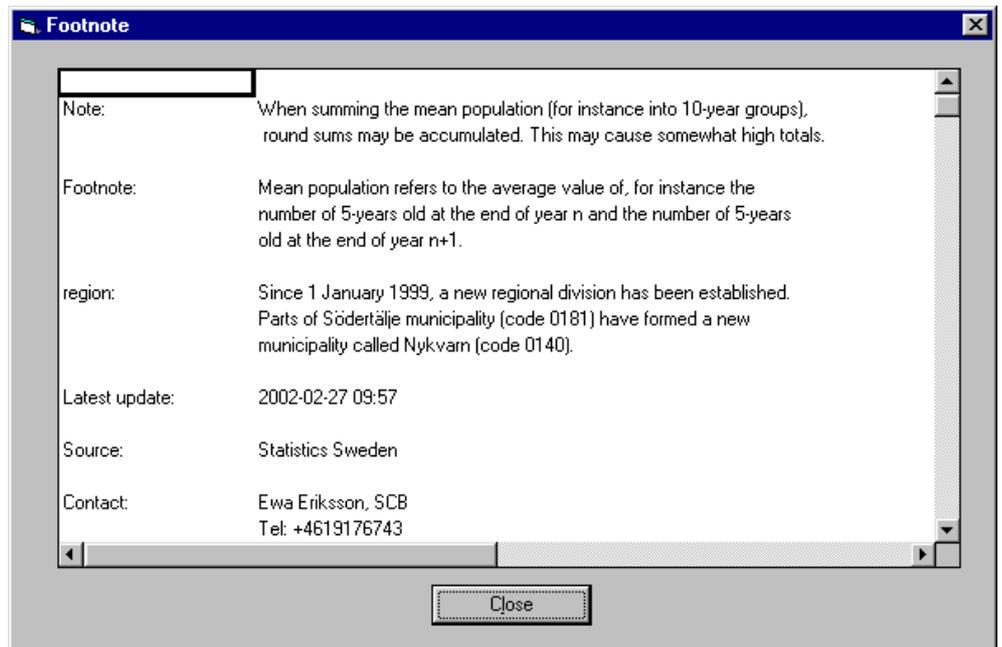
If there are additional information available the icon showing a little book in the toolbar will be activated. Press it and the book will lead you to additional documents concerning this very material. It will be opened according what type of textfile it is written.

To save a table

When you are satisfied with the layout of the table you can save it on your hard disc or a server. Use the pulldown menu "File, Save as.. "
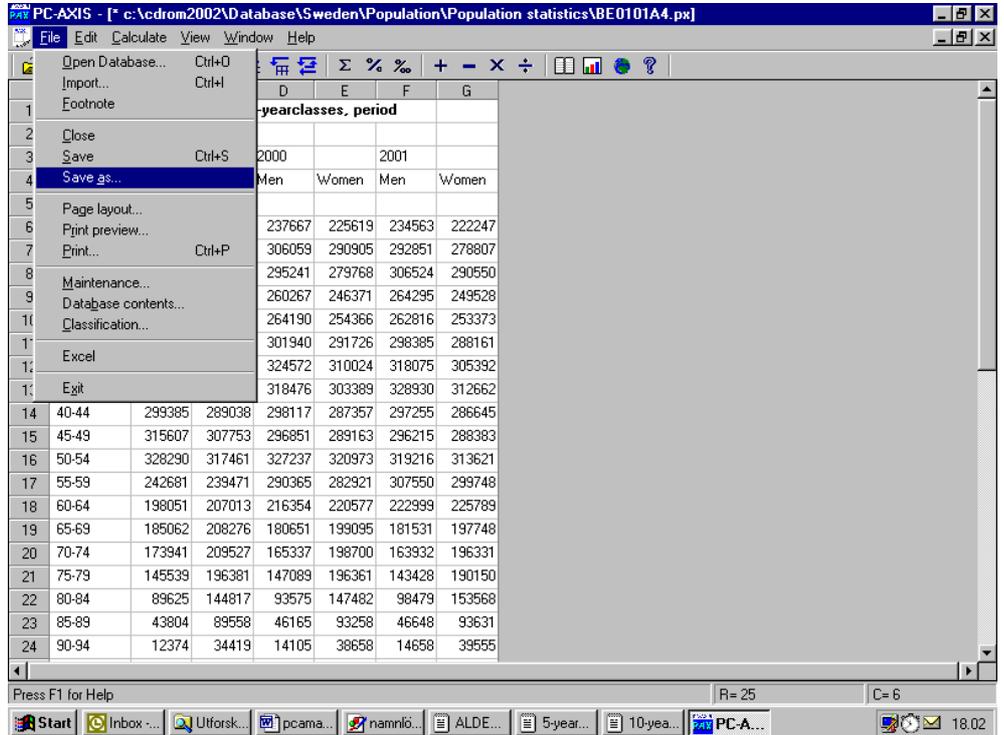
Picture 8

Then a windows turns up where you can enter where to save the file and name the file.
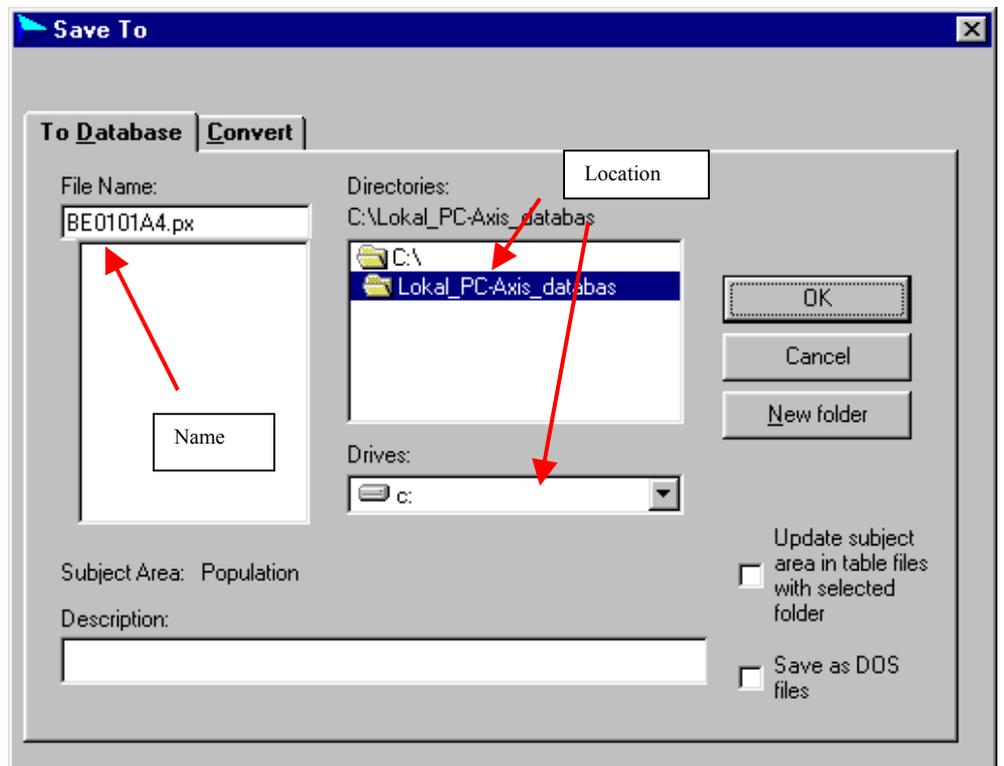
Picture 9

If you would like to save the table in another file format you just select the tag "Convert" as in Picture 10.

PC-AXIS 2003
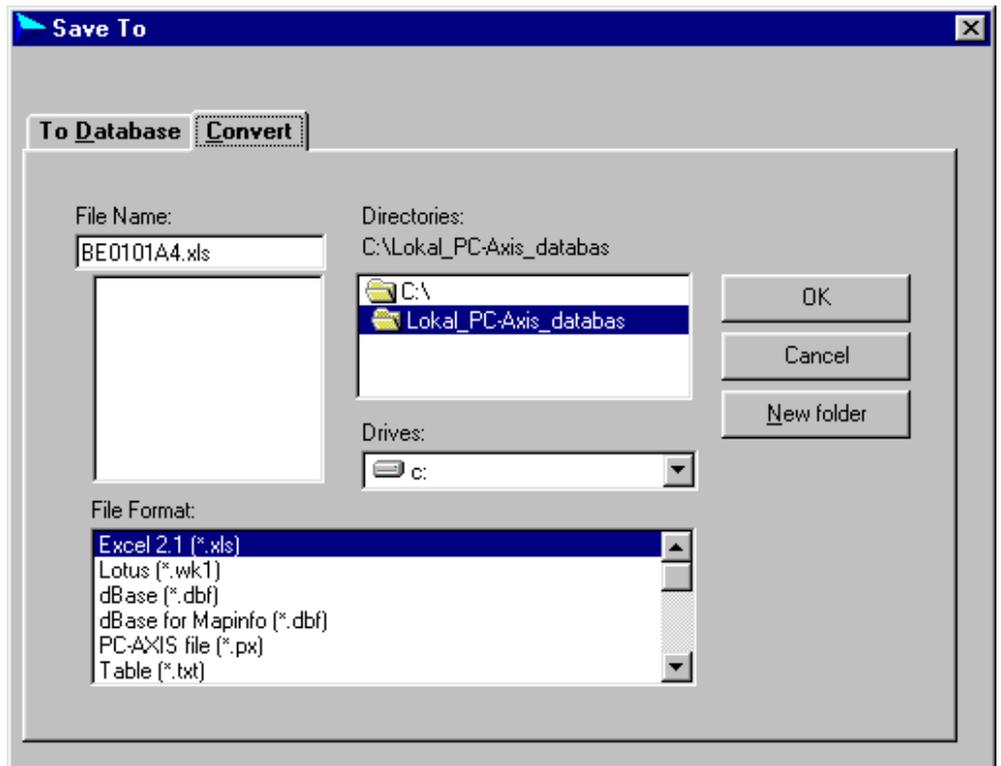
Picture 10

In the listbox File Format you can save the table in any of the optional file formats.

To edit a table in PC-Axis

If you are not satisfied with the layout of the table there are some different things to be done to change it.

The Pivot function can be used to let the variables change places in the table. Stub and heading can be switched according to your own needs. Press this button , which give you total freedom to move around with the variables. You are using a drag and drop technique as showed on Picture 11:
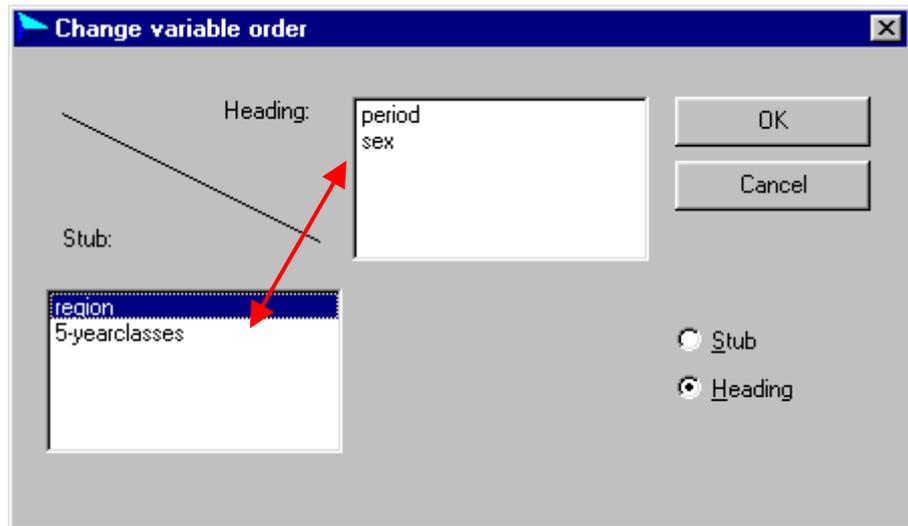
Picture 11

When you are satisfied just press OK and the new table turns up. This can be repeated so you will realy be satisfied with your table.

PC-AXIS 2003

To do simple calculations using PC-Axis

There are some simple tasks able to carry out with the PC-Axis calculation toolbox. Let us study some samples.
Click on the pull down menu Calculate as showed on Picture 12 and you will find the different options.

PC-AXIS - [c:\cdrom2002\Database\Sweden\Population\Population statistics\BE0101A4.px]

File Edit Calculate View Window Help

Calculate menu
Sum...
Per cent...
Per 1000...
Add...
Subtract...
Multiply...
Divide...
Add table...
Subtract table...
Multiply table...
Divide table...

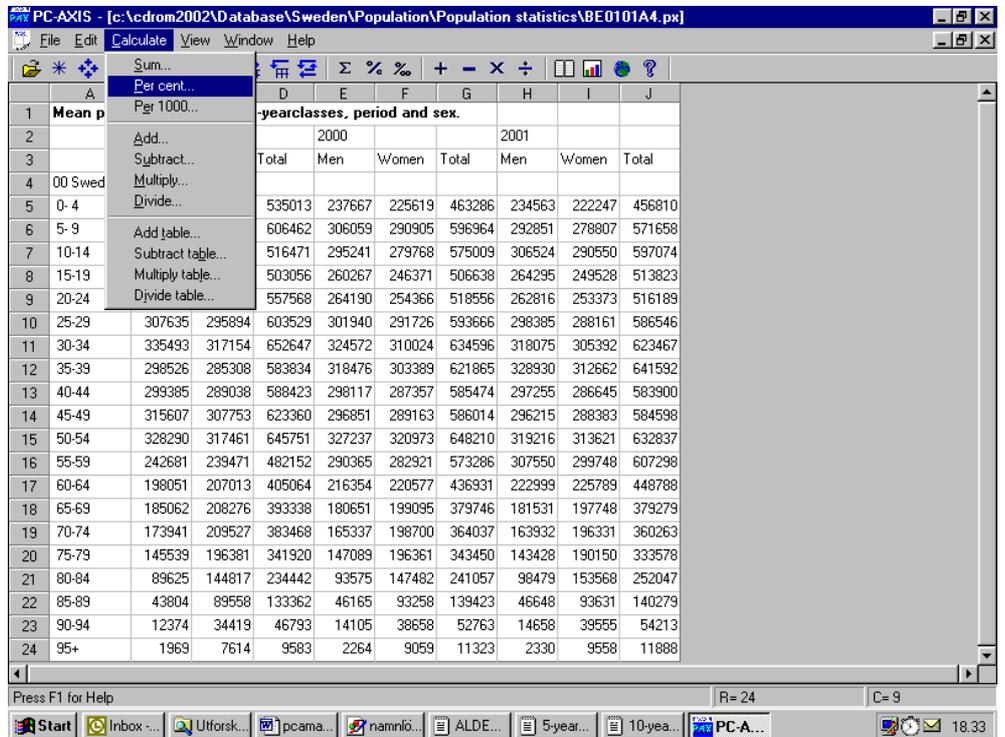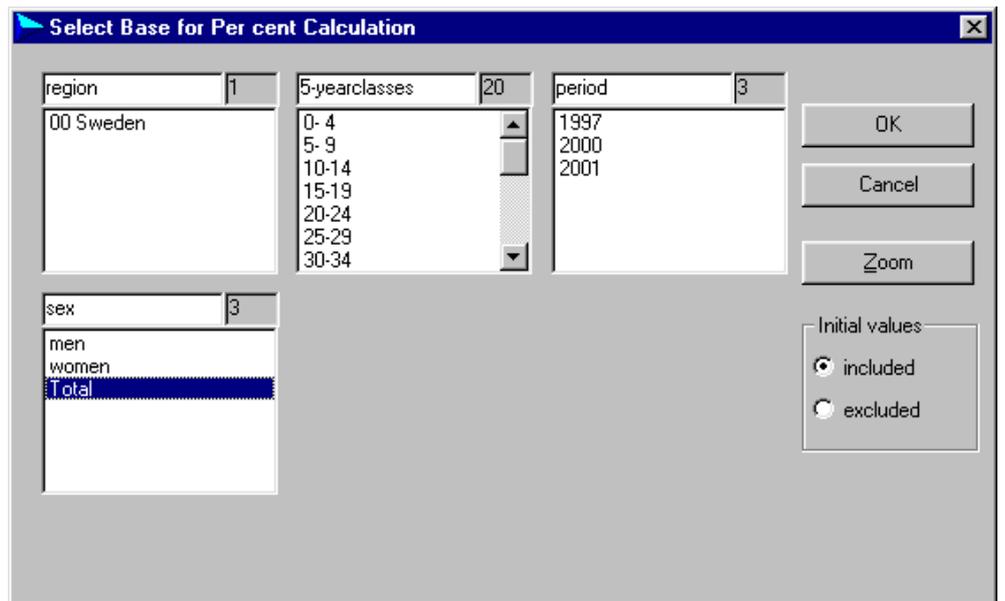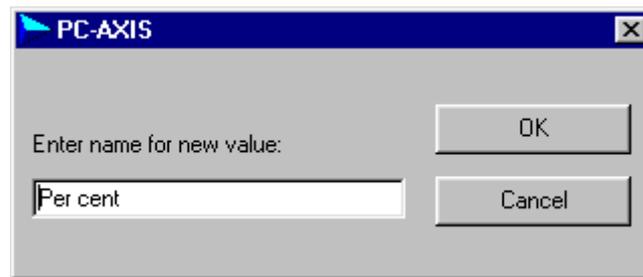|	A			D	E	F	G	H	I	J
1	Mean p			-yearclasses, period and sex.						
2					2000			2001		
3				Total	Men	Women	Total	Men	Women	Total
4	00 Swed									
5	0- 4			535013	237667	225619	463286	234563	222247	456810
6	5- 9			606462	306059	290905	596964	292851	278807	571658
7	10-14			516471	295241	279768	575009	306524	290550	597074
8	15-19			503056	260267	246371	506638	264295	249528	513823
9	20-24			557568	264190	254366	518556	262816	253373	516189
10	25-29	307635	295894	603529	301940	291726	593666	298385	288161	586546
11	30-34	335493	317154	652647	324572	310024	634596	318075	305392	623467
12	35-39	298526	285308	583834	318476	303389	621865	328930	312662	641592
13	40-44	299385	289038	588423	298117	287357	585474	297255	286645	583900
14	45-49	315607	307753	623360	296851	289163	586014	296215	288383	584598
15	50-54	328290	317461	645751	327237	320973	648210	319216	313621	632837
16	55-59	242681	239471	482152	290365	282921	573286	307550	299748	607298
17	60-64	198051	207013	405064	216354	220577	436931	222999	225789	448788
18	65-69	185062	208276	393338	180651	199095	379746	181531	197748	379279
19	70-74	173941	209527	383468	165337	198700	364037	163932	196331	360263
20	75-79	145539	196381	341920	147089	196361	343450	143428	190150	333578
21	80-84	89625	144817	234442	93575	147482	241057	98479	153568	252047
22	85-89	43804	89558	133362	46165	93258	139423	46648	93631	140279
23	90-94	12374	34419	46793	14105	38658	52763	14658	39555	54213
24	95+	1969	7614	9583	2264	9059	11323	2330	9558	11888

Press F1 for Help   R= 24   C= 9

Start | Inbox -... | Utforsk... | pcama... | namnlö... | ALDE... | 5-year... | 10-yea... | PC-A...   18.33

Picture 12

Let us try the percent calculation as is marked in the picture 12 above. Then the following window pops up:

Select Base for Per cent Calculation

region	1	5-yearclasses	20	period	3
00 Sweden		0- 4		1997	
		5- 9		2000	
		10-14		2001	
		15-19			
		20-24			
		25-29			
		30-34			

sex	3
men	
women	
Total	

OK

Cancel

Zoom

Initial values
○ included
○ excluded

Picture 13.

If we wish to calculate the ratio female and male compared to the total we select the total for the variable sex as the base for the operation. Then you will be prompted a name of the new established value.

Picture 14

PC-Axis will automatically suggest the name "Per cent", you can change it if you wish and then click OK.

Now all the figures will turn up on the screen. If you did not wish to have the initial values left in the table there is a possibility on the base selection window to tick according to your wishes. See picture 15.
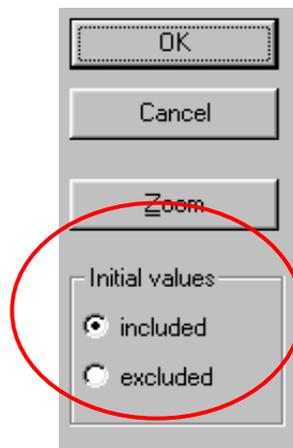
Picture 15

Change texts in the table   It is also possible to change the texts in the column headings and the stub. Use Edit Cha<u>ng</u>e texts... Here you mark the variables you want to modify, the variable name and also variable values are possible to change.


13
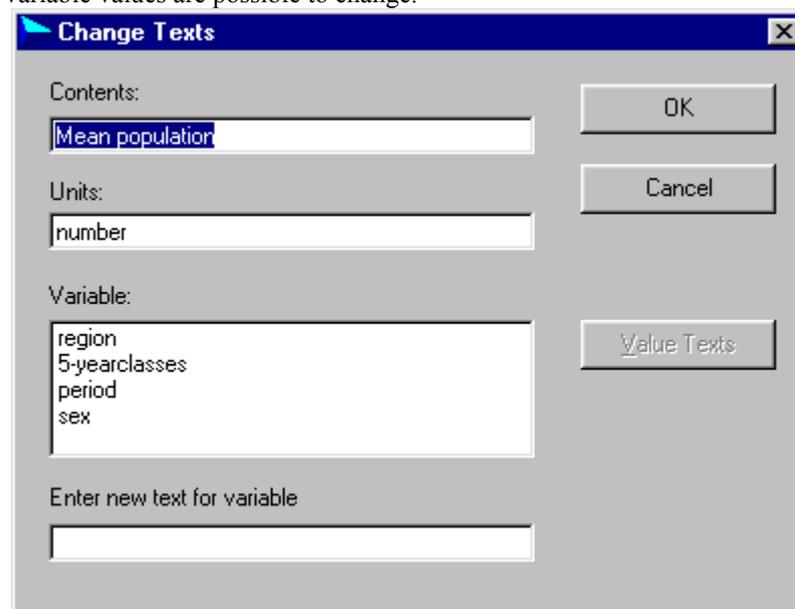
Updating tables

If you have a table that contains the population in sixteen municipalities, distributed on age, sex and time (1995-2000), and the figures for 2001 has become published it is possible to update with the new figures instead of download the whole table again from Sweden's statistical databases on Internet.
You just link a table to another table (adding new values).
It is also possible to overlay a table with another table (adding a new variable), for example if imigration and emigration are retrieved from two separate tables they can be put together in a very large table using this function.

Please notice when using these two functions the tables have to be very similar. So if something is changed in one of the tables the other has to be changed in exactly the same manner to fit in together.
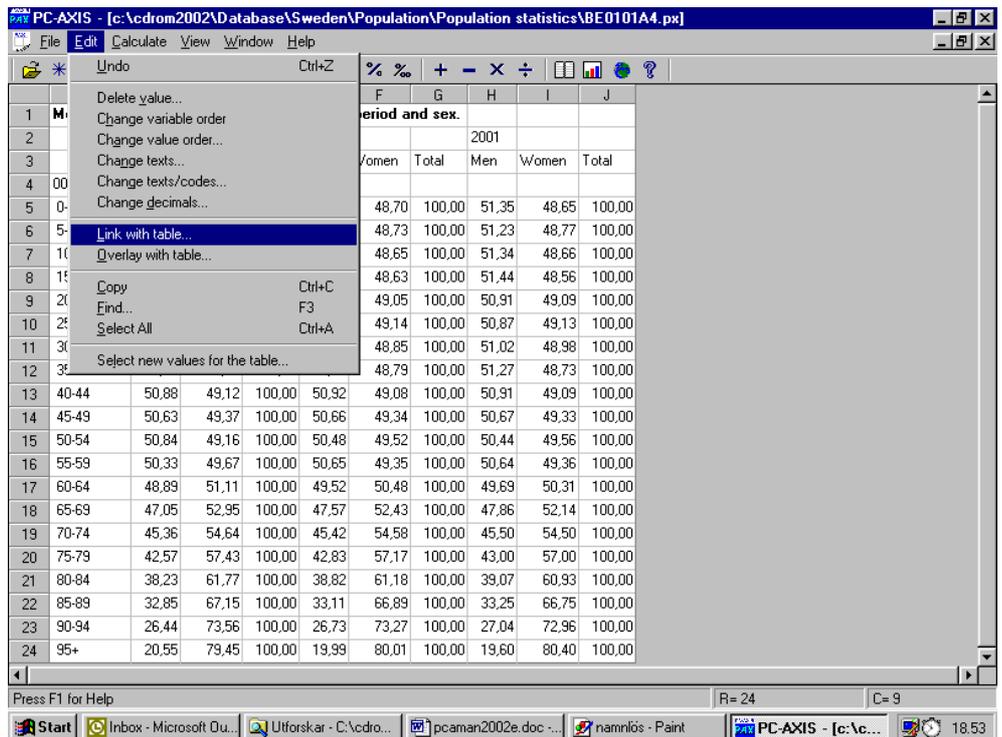
Picture 16

To use these functions, click Edit and then Link with table../Overlay with table. See Picture 16.

You will then be prompted what catalogue to pick up the second table from. Be aware that you are only offered the tables that are possible to put together. Select the table you want to have and click OK. Then your table on the screen have got new values or variable.

If you are using Link with table it is a matter of adding a new time period.

When using Overlay with table it is because you have to similar tables possible to put together.

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To make graphs in PC-Axis

When you have a table in PC-Axis it is possible to make a graph out from it. It is possible to make different types of graphs, like charts, line diagram and population pyramids. There is also possible to make thematic maps that will be showed later on.

If you want to make a graph, please click on this icon: [icon] and the picture below will turn up where you can select from different types of graphs.
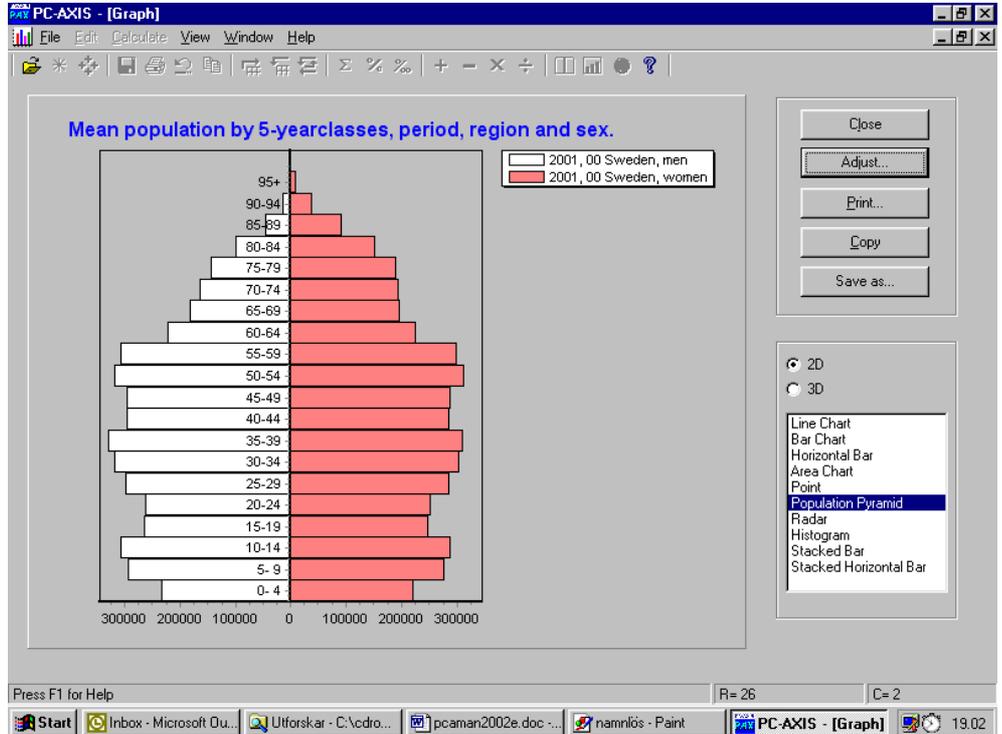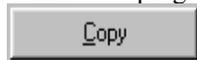

Picture 17

If you press the button "Adjust.." you will get some options to change in the graph.

Picture 18

PC-AXIS 2003
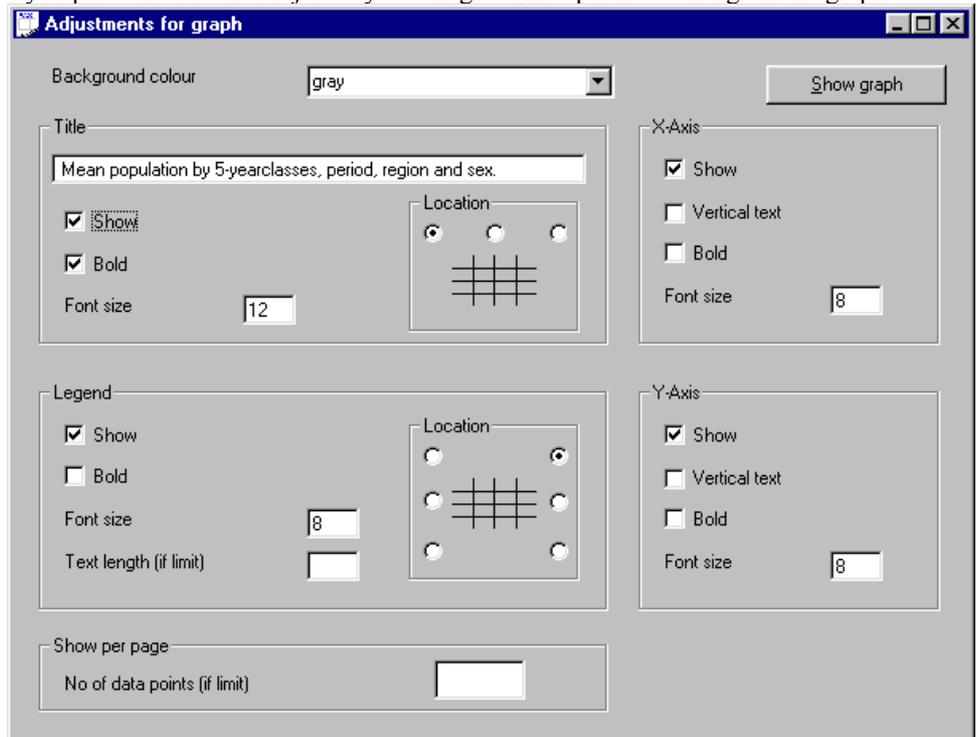
To coopy a graph You can use the option copy in the graph window and insert the graph into another Windows program like MS-Word and MS-Excel. Just click on this button

```
    Copy
```
.

When arriving to the other program where the graph is supposed to be inserted use the "paste special" option using "bitmap" format. If not using this, a table will apear instead of the graph in the windows program.

Notice Notice that some of the graph options need a certain structure of the table. For example a population pyramid desires that the age variable is in the stub alone and the sex variable is as column heads. If you are violating these rules PC-Axis will tell you what is wrong for a certain type of graph.

When you have moved a diagram to Excel you must notice that it is just a picture which is not possible to adjust in Excel.
If you on the other hand transfer a table it is of course possible to continue to work on this table in Excel.

PX-Map – presents the statistics as a thematic map

Using the PX-Map makes it possible to transfer your table information into a thematic map. If you are using the CD-ROM Statistics Across the Borders and want a regional distributed table to be a map, just click the globe icon in the toolbar - [globe icon]. All tables can not be presented as maps. If it is not possible the icon is non collored.

This is how a thematic map in PX-Map looks like:
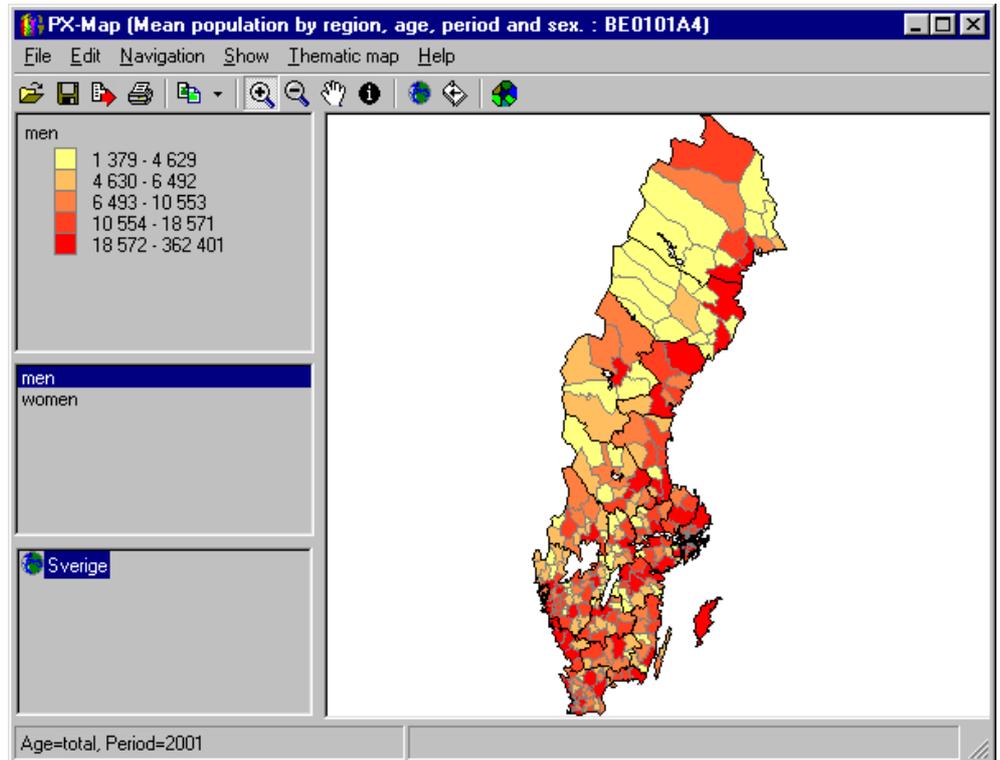
If you retrieve a table from the Sweden's Statistical databases there is not yet made any link to Maps.

To make a Map link   If you insists to make a map from a table retreived from Sweden's Statisitcal Database on the Internet, download the table in PC-Axis file format to your computer and save it. Then you open the file in a text editor like MS-Word. Search for a section looking like this:

```
TITLE="Mean population by region, age, period and sex.";
CONTENTS="Mean population";
UNITS="number";
STUB="region","age";
HEADING="period","sex";
MAP("region")="Sweden_municipality";
```

Insert the line:

```
MAP("region")="Sweden_municipality";
```

You have to insert this line after STUB and HEADING which is in the beginning of the file.
When you save the file again (be aware of that MS-Word tries to change the extension of the file when saving in another file format than doc. Save in txt format and change the extension to PX) it is possible to find the file from PC-Axis and make a map in PX-Map. A more detailed description of PX-Map is in a separate Users Manual available on the CD-ROM Statisitcs Across borders.

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About advanced functions in PC-Axis

The presentation of figures in the table cells can optionally hold thousand delimiters. Use the menu View, Advanced
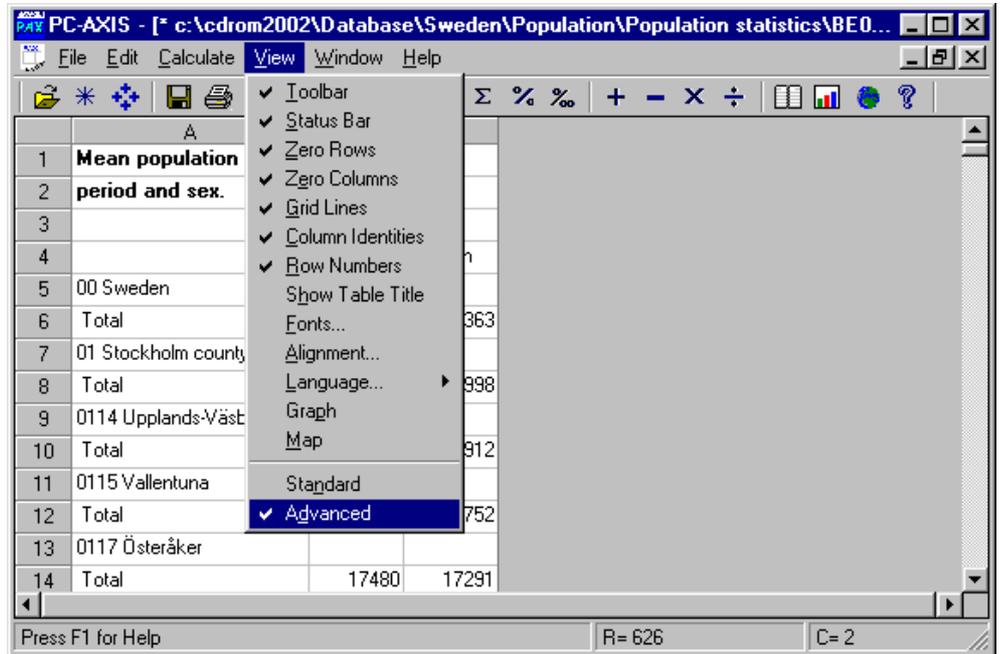
Picture 19

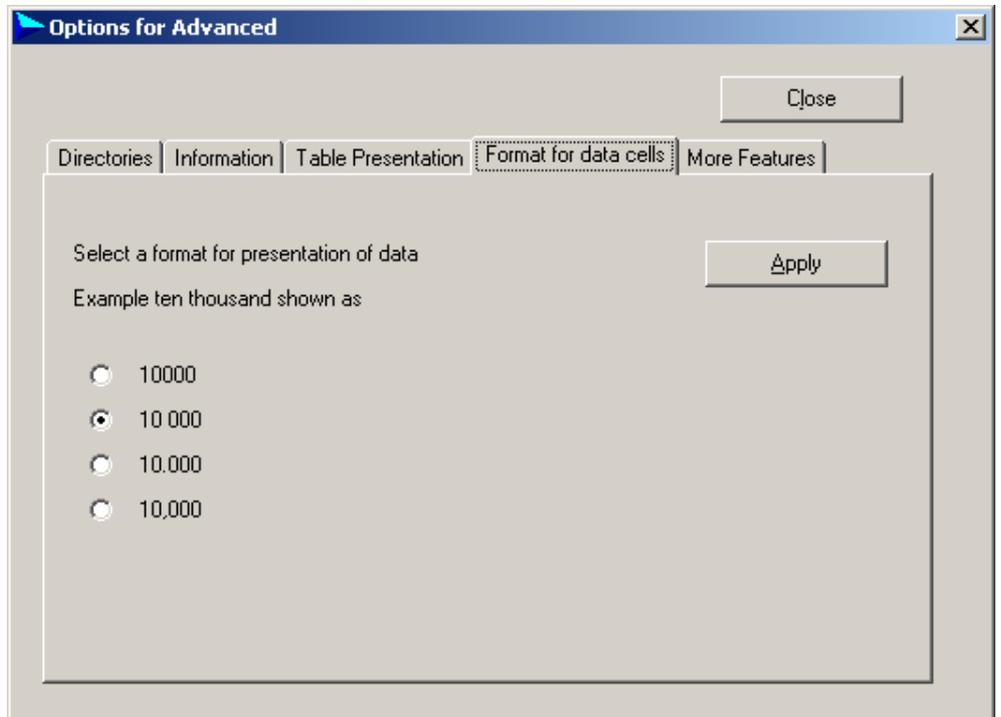Where you select the tag "Format for data cells":

Figure 20.

Then mark the type of thousand delimiter you want to use in the tables. The selected option will work from the next table opened in PC-Axis.

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PC-Axis optionally can be linked to another software. Then it is possible to launge the other program from PC-Axis moving the present table into that very program. To make such a link use the menu View, Advanced. The installation program will automatically establish such a link to MS-Excel if it is available on the computer.

In the new window select a folder named More Features and then click on Additions. Now use the folder Other programs andthe button [Change...]. And you will find this window:
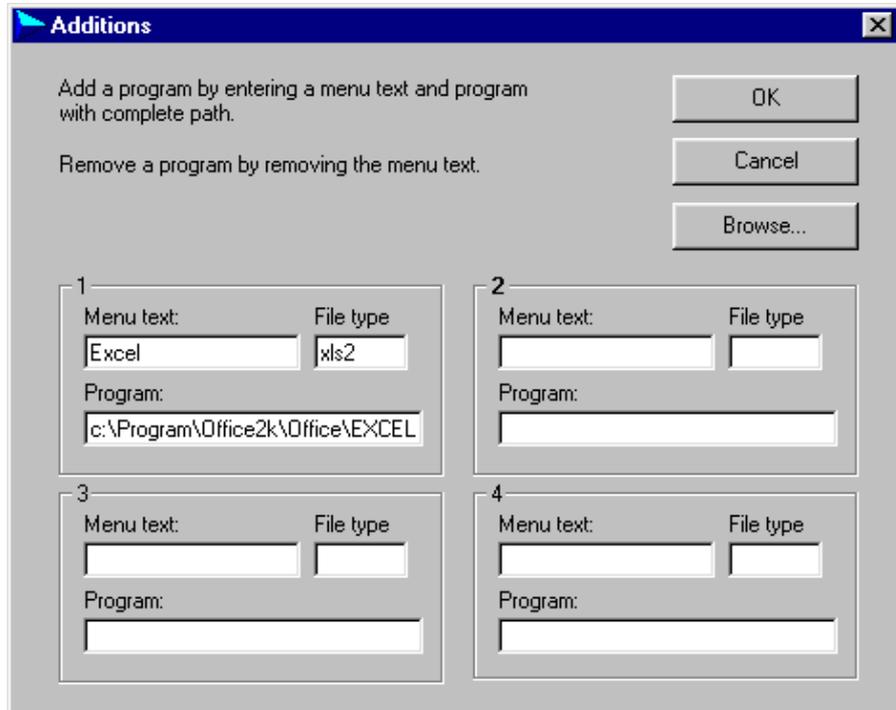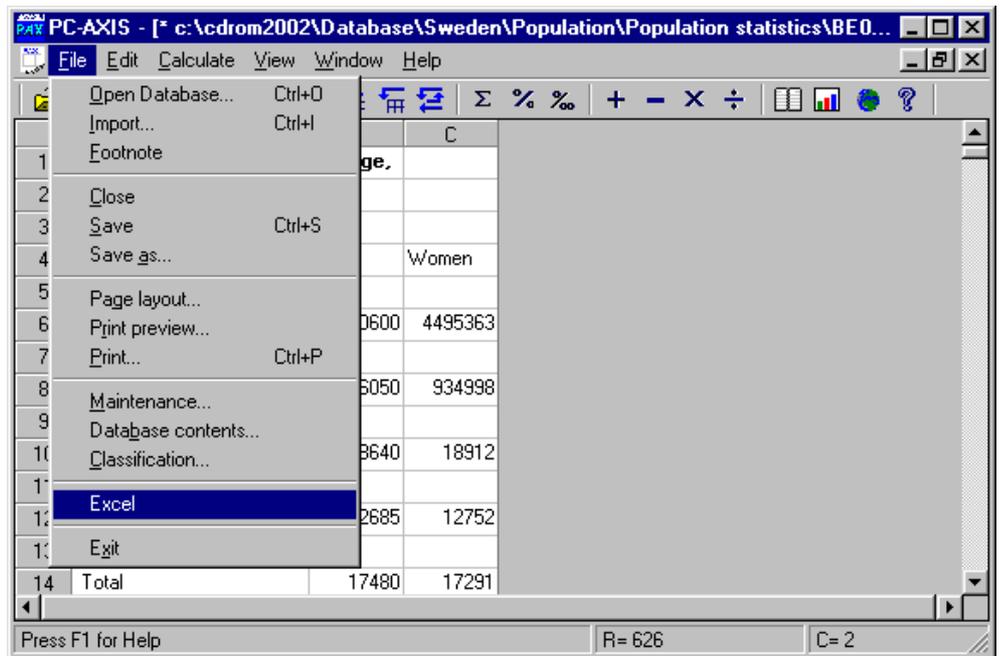

Picture 21

In the dialog box there are options to create links to four other programs. To create such a link PC-Axis needs the following informations:

- The name of the program is entered in the Menu text field. If a & sign is entered before a letter in the name this gives a key shortcut for that letter. The program name will appear as a line in the File menu in PC-Axis.
- The file type for the program is entered in the field File type.
- In the field Program the path and the name of the exe-file has to be entered using Browse support. If you can not find the program search for it using the File explorer search function.

When you getting back to PC-Axis you will find a line in the File menu named Excel.
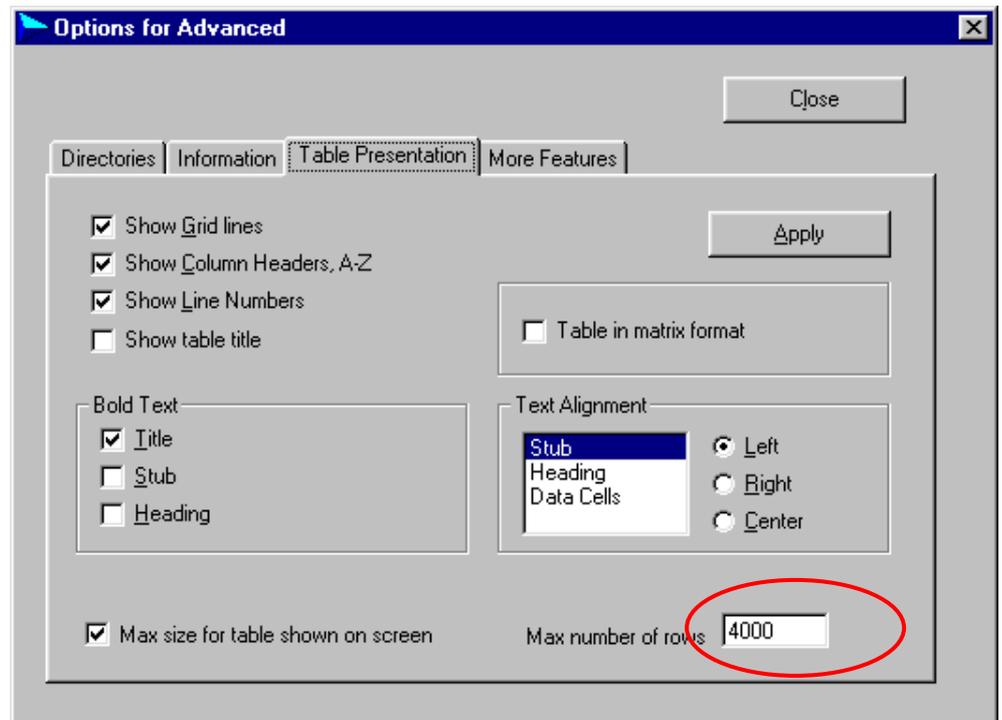
Picture 22

When you click on the Excel line PC-Axis automatically will pass the table on into Excel. In Excel the table will be put in a new sheet and footnotes will appear below the table in Excel.

Table size

Another thing to be happy about concerning PC-Axis is the capacity to handle tables consisting of millions of table cells.
One more thing that make you glad is that you do not have to watch all these table cells on the screen. The more table cells you show on the screen the longer it will take to make operations on the table. Furthermore it uses more RAM. So it is possible to reduce the number of table lines to be exposed on the screen.
Click on View, Advanced and select a tag called Table Presentation.

Picture 23

Here you can set the number of lines you as a maximum want the table to use on the screen. Remember that even if you cannot see the table on the screen you can work with the whole table. Everything you do will effect the whole table.

To change the table layout   It is easy to change the table layout. If you do not want to have line numbers, gridframes just enter the View menu omit or insert the different properties.

PC-AXIS 2003
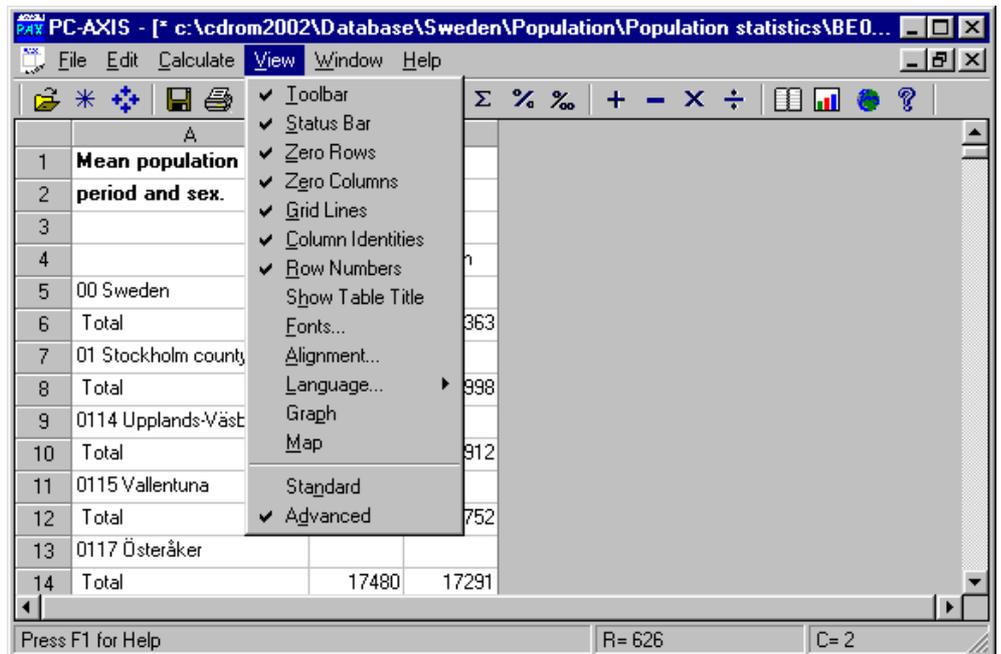
Picture 24

Within the program it is possible to copy, move or delete tables and subject matter areas. When you are doing it in PC-Axis you are sure that all references are deleted at the same time.

Click on File, Maintenance...
Copy, move or delete a table within a subject matter area. Select Copy/Move or Delete in the dialog box Maintenance. Select a subject area as "Population" and delete, copy or move the tables.

Classifications…

Former mentioned classification will be elaborated and explained and you will see how useful the classifications can be.

The principle is that from a value set define a classification register that contains the desired summings. The classification register then can be used on all files where the very variable classified is used. One usefull area is on the variable age where several different classifications can be established. Another is on region where municipalities can be put together in larger areas forming special divisions of the country.

It is not a must to make classification registers, it is possible use the sum function in PC-Axis. The advantage is the possibility to reuse the classifications. It is obviously possible to make your own classification if the ones delivered from the statistical office on CD-ROM or on Internet is not exactly the one you want to use.

To make a classification list takes some time, but you gain from it every time you use it in the future.

To create a classification based on an existing value set.
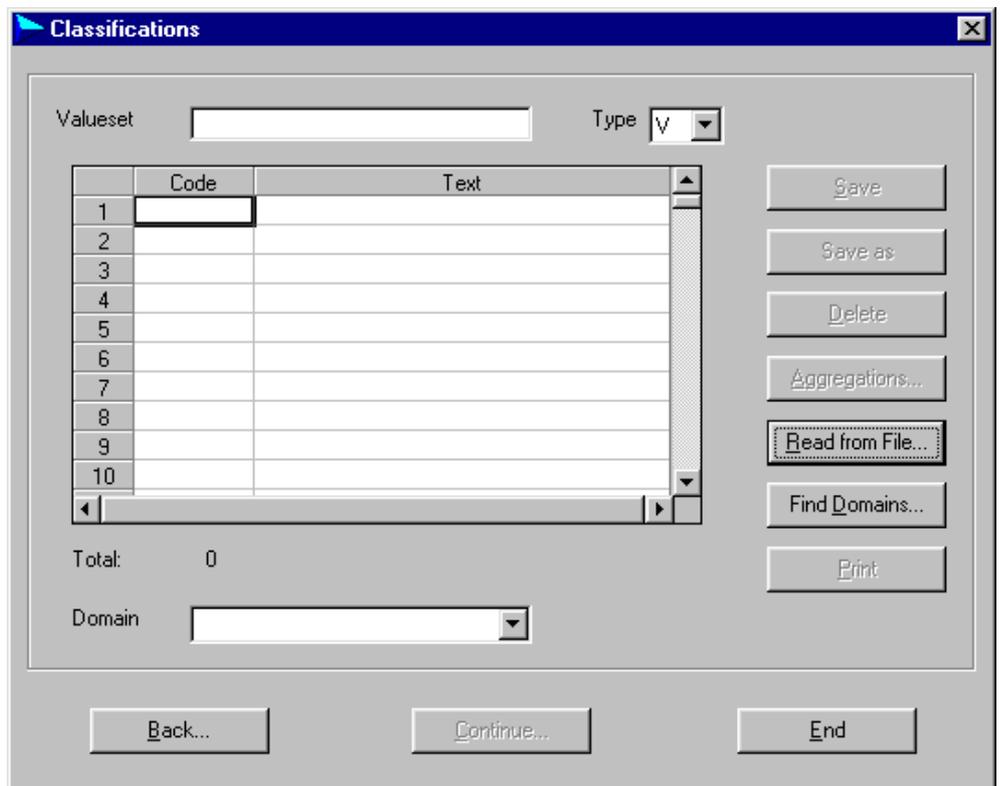
Open File, Classification...
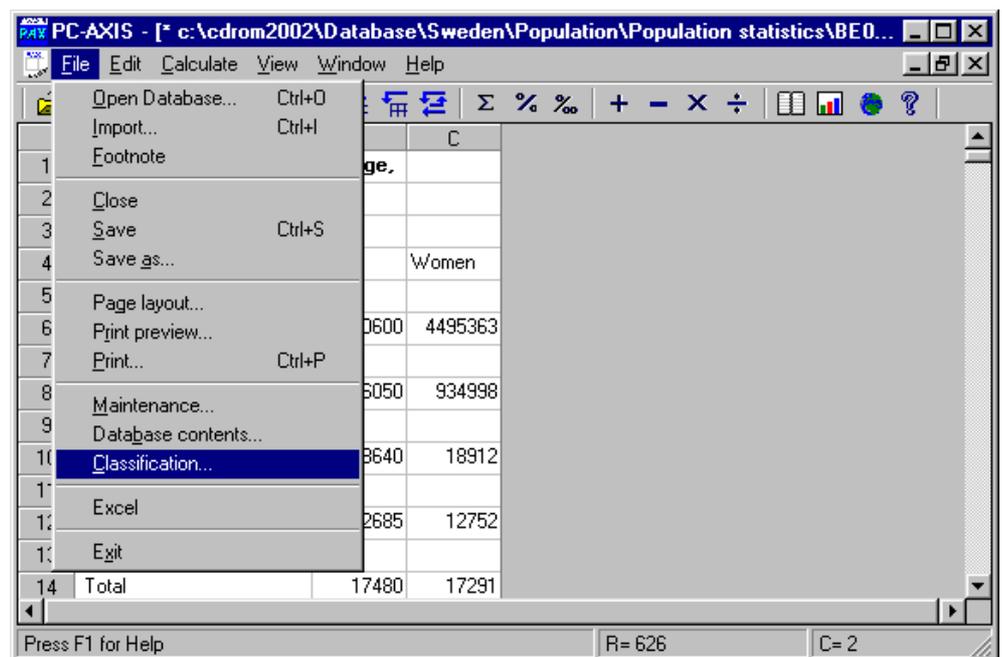
Picture 25

Select among the valuesets available in the listbox. For example ALDER1, or use Browse if you want to change to another classification catalogue. (If the value set is on a read only medium, as a CD-ROM, you have to copy it into your hard disc or a server and change property to not read only status.)
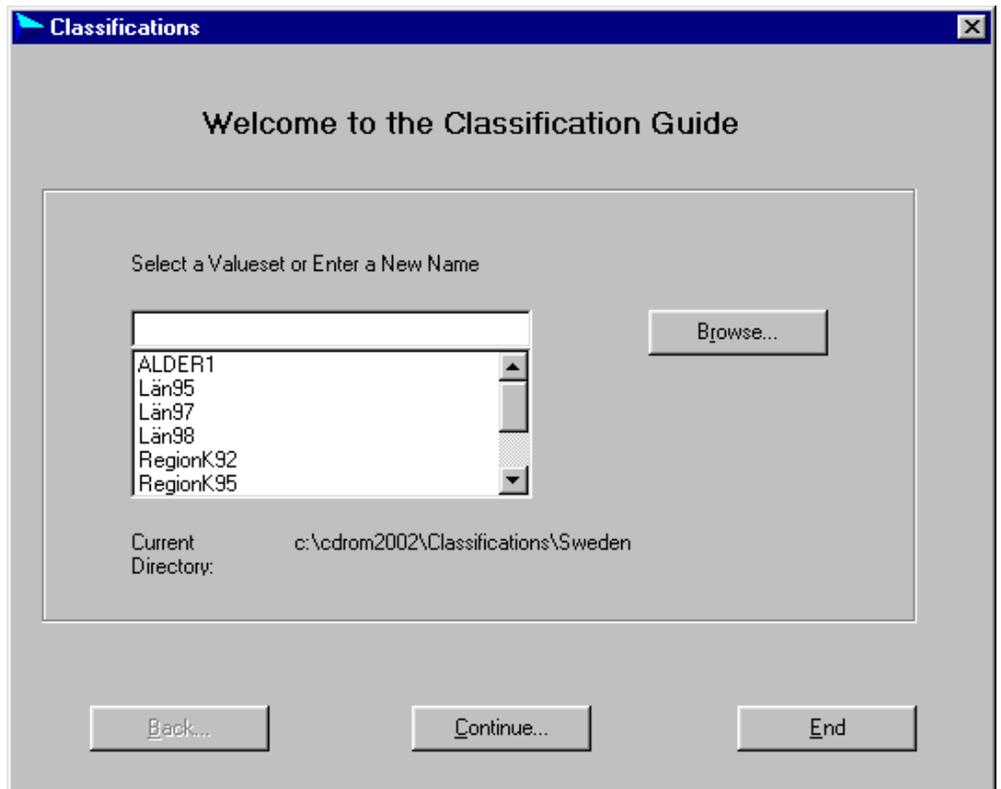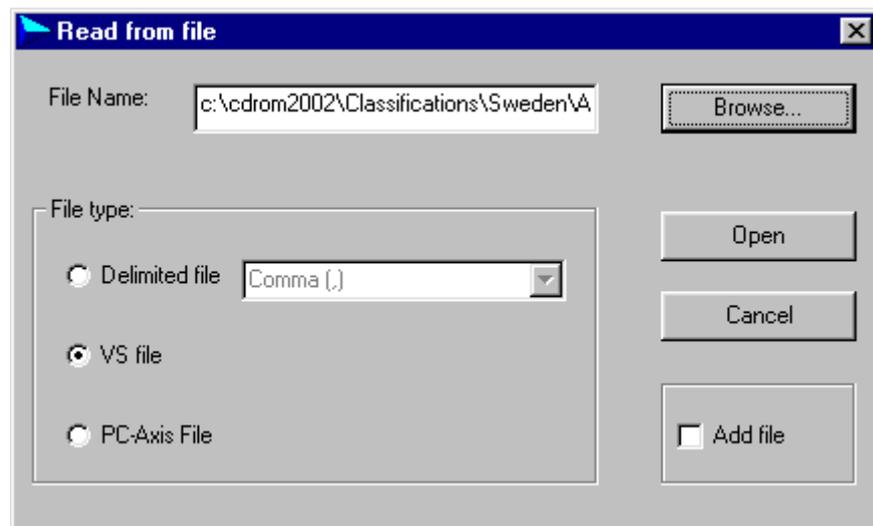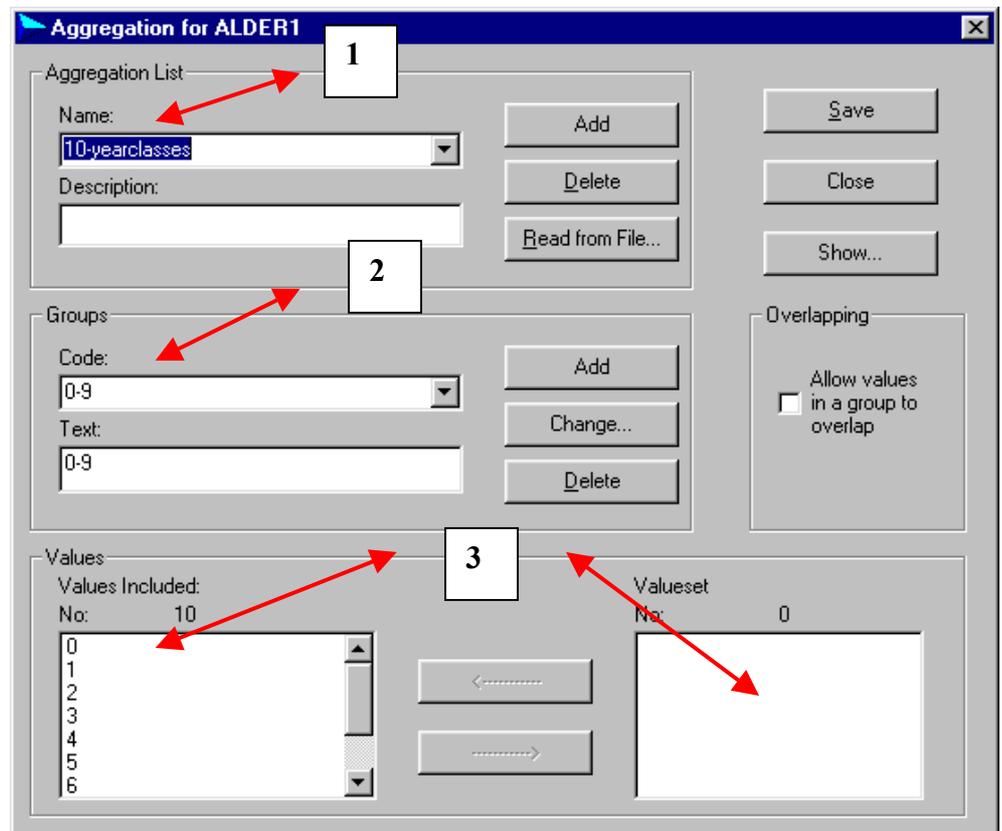
Picture 26

Press Continue..

Picture 27

To avoid manual data entry you can use the option Read from file... and you will find a window with allready existing value sets.

Picture 28

Now the page will be filled with values from the selected value set (text and codes) for example ALDER1, the name of the domain and the type of value set (V=Value set of normal structure, H= Hierarcical value set, N=sub areas). Press on the button named Aggregations.

Picture 29

1. In the upper field the name of the aggregation list is entered, for example 10-yearclasses. This name will be used in the table heading when this aggregation list is used.
2. In the next field every single group is named (Code and text), for example 0-9 in both fields in this case. Before every new group you press the button Add.
3. In the bottom field you select the values that shall be included into the group for example 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. They will be found in the right hand side list and then transfered to the left using the arrow key on the screen.

If it is not ticked on "Allow values in a group to overlap" the values will dissapear from the right hand box when clicked to the left. This is the most common way of using classification.

If you make groupes that contains for example 0-4 years and also one 0-9 years it is necessary to tick the "Allow values in a group to overlap" button. This because 0-4 is a subset of 0-9.

Use the Show button to check the result.
Then save.

To create a classifictaion based on a new value set.

To be able to create aggregations based on values not available in a classification register, you first have to import that values. The value set is a file containing codes and texts for the values to be aggregated from. For example "0" with the corresponding text "0 year". The code "1" with the corresponding text "1 year" and so on. Value sets can be read into PC-Axis from a commaseparated file which could look like this:
0,0 year
1,1 year
2,2 year
It is also possible to import an existing value set (a file with the extension VS) to optionally correct it. At most cases it is a PC-Axis file one want to make aggregations for and then the PC-Axis file can be used as input to get the value set.
To be able to use the aggregations one shall secure the consistency between the PC-Axis files and the aggregations lists.

Domain is a keyword that can occur for any variable. It refers to a class of values. A list with all names of existing domains can be seen from the Classification program if the right current database is linked. The name can also be found with the Domain keyword in the PX-file. This name is to be used when establishing a new value set.

When using the aggregation lists you shall secure the right classification catalogue is linked to PC-Axis.

What is wrong?

If you after having created a classification register do not access to it when opening a table the reasons can be the following:

- The Current Classification catalogue does not contain the created classification register. Shift classification catalogue. Do it at the same places as where you shift database. It is also possible to set a default catalogue in "View, Advanced..". Select "Classification Directory" and set the desired catalogue.
- DOMAIN is not corresponding between the PX-file and the value set. Open the PX-file in Notepad and check if the name corresponds to the value set.
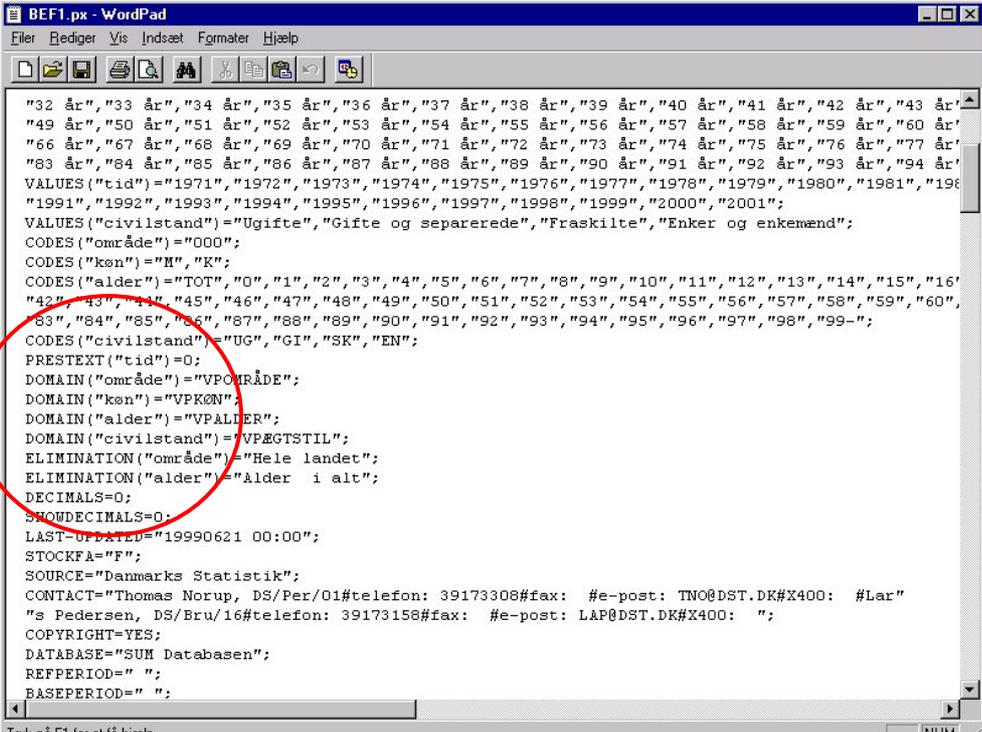
```
BEF1.px - WordPad
Filer  Rediger  Vis  Indsæt  Formater  Hjælp

"32 år","33 år","34 år","35 år","36 år","37 år","38 år","39 år","40 år","41 år","42 år","43 år'
"49 år","50 år","51 år","52 år","53 år","54 år","55 år","56 år","57 år","58 år","59 år","60 år'
"66 år","67 år","68 år","69 år","70 år","71 år","72 år","73 år","74 år","75 år","76 år","77 år'
"83 år","84 år","85 år","86 år","87 år","88 år","89 år","90 år","91 år","92 år","93 år","94 år'
VALUES("tid")="1971","1972","1973","1974","1975","1976","1977","1978","1979","1980","1981","198
"1991","1992","1993","1994","1995","1996","1997","1998","1999","2000","2001";
VALUES("civilstand")="Ugifte","Gifte og separerede","Fraskilte","Enker og enkemænd";
CODES("område")="000";
CODES("køn")="M","K";
CODES("alder")="TOT","0","1","2","3","4","5","6","7","8","9","10","11","12","13","14","15","16'
"42","43","44","45","46","47","48","49","50","51","52","53","54","55","56","57","58","59","60",
"83","84","85","86","87","88","89","90","91","92","93","94","95","96","97","98","99-";
CODES("civilstand")="UG","GI","SK","EN";
PRESTEXT("tid")=0;
DOMAIN("område")="VPOMRÅDE";
DOMAIN("køn")="VPKØN";
DOMAIN("alder")="VPALDER";
DOMAIN("civilstand")="VPÆGTSTIL";
ELIMINATION("område")="Hele landet";
ELIMINATION("alder")="Alder  i alt";
DECIMALS=0;
SHOWDECIMALS=0;
LAST-UPDATED="19990621 00:00";
STOCKFA="F";
SOURCE="Danmarks Statistik";
CONTACT="Thomas Norup, DS/Per/01#telefon: 39173308#fax:  #e-post: TNO@DST.DK#X400:  #Lar"
"s Pedersen, DS/Bru/16#telefon: 39173158#fax:  #e-post: LAP@DST.DK#X400:  ";
COPYRIGHT=YES;
DATABASE="SUM Databasen";
REFPERIOD=" ";
BASEPERIOD=" ";

Tryk på F1 for at få hjælp                                                    NUM
```

Picture30

History

PC-Axis was developed for the 1990 Population Census inn Sweden. The software has been further developed in the framework of the International PC-Axis Reference Group.
For instance a Windows version 1995 that has become a help application to the Sweden's Statistical Databases on Internet. An Internet version of PC-Axis named PX-Web is available and in use since 2000. In Statistics Denmark a software to create PC-Axis files, named PX-Make, has been developed. Statistics Norway has made a map-software named PX-Map.

PC-Axis for dissemination of Statistics from other organisations

The PC-Axis family products are used for dissemination of statistics from statistical agencies in the following countries: Algeria, Basque country, Bolivia, Brazil, Denmark, Estonia, The Philippines, Finland, Faeroe Islands, Greenland, Ireland, Iceland, Croatia, Kuwait, Lithuania, Latvia, Norway, Slovenia, Spain, South Africa and Uganda. Furthermore PC-Axis is used by UN/ECE, East Africa Commission (Kenya, Tanzania, Uganda). In Sweden PC-Axis is used outside Statistics Sweden by Integrationsverket, Sverige Folkhälsoinstitut, Falköpings kommun, Halmstads kommun, Linköpings kommun, Täby kommun, Västra Götalandsregionen, Örebro kommun

Overview of the PC-Axis family software
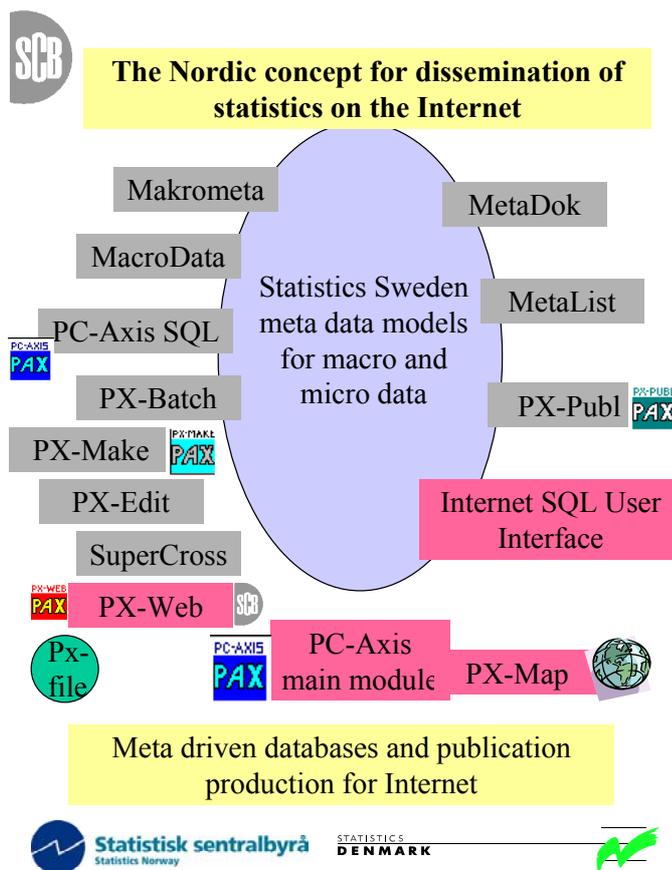
The PC-Axis family software is leaning on the thesis of Professor Bo Sundgren on Output databases using many dimensional matrices, also called cubicles or boxes. These thoughts are implemented into the data model used in the Sweden's Statistical Data-bases and also in use in the databanks of Denmark and Norway. In the figure to the left are the programs that touches the ellipse related to the SQL-database, while those not touching the ellipse is only using the PC-Axis file format.

PC-Axis files can be produced by PC-Axis SQL, PX-Batch, PX-Make, PX-Edit (From Finland) and SuperCross. PX-Publ can produce tables direct into a MS-Word- or MS-Excel documents. Makrometa and Metalist are used for the maintenance of the metadata. Metadok is software for entering metadata on registers for micro data.

Contact person

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