

Creating a Population Pyramid with Excel

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It is easy to create a population pyramid with Microsoft Excel. I will show you how, step by step.

Step 1: Data Input

Prepare a table of population data in a spreadsheet. You need a column of age cohorts as well as those of male and female population. Note that you need to have male population data in negative numbers. Two different tables are displayed below. To the left is the one in absolute numbers, and the other in percentages. The percentages are calculated independently for male and female by dividing the number of people belonging to each age cohort by the total number of corresponding sex. In order to calculate the percentages, you may find it convenient to use absolute references — that is, in order to calculate percentage of male population of ages 0 to 4 (i.e., cell F4), type in

`=-B4/B24*100`

This way, you can prevent Excel's funny behavior when copying the formula over the column. For more detail on the Excel syntax, search absolute reference in Excel help.

	A	B	C	D	E	F	G	H
1	Midyear Population, by Age and Sex: 2000							
2	(Population in thousands)							
3	AGE	MALE	FEMALE	BOTH	AGE	MALE	FEMALE	BOTH
4	00-04	-9,639	9,227	18,866	00-04	-3.50	3.35	6.85
5	05-09	-10,122	9,659	19,781	05-09	-3.67	3.51	7.18
6	10-14	-10,196	9,712	19,908	10-14	-3.70	3.52	7.22
7	15-19	-10,237	9,672	19,909	15-19	-3.71	3.51	7.22
8	20-24	-9,502	9,098	18,600	20-24	-3.45	3.30	6.75
9	25-29	-8,926	8,993	17,919	25-29	-3.24	3.26	6.50
10	30-34	-9,721	9,904	19,625	30-34	-3.53	3.59	7.12
11	35-39	-11,105	11,209	22,314	35-39	-4.03	4.07	8.10
12	40-44	-11,231	11,402	22,633	40-44	-4.08	4.14	8.21
13	45-49	-9,780	10,126	19,906	45-49	-3.55	3.67	7.22
14	50-54	-8,399	8,867	17,266	50-54	-3.05	3.22	6.27
15	55-59	-6,398	6,927	13,325	55-59	-2.32	2.51	4.84
16	60-64	-5,046	5,631	10,677	60-64	-1.83	2.04	3.87
17	65-69	-4,334	5,102	9,436	65-69	-1.57	1.85	3.42
18	70-74	-3,876	4,877	8,753	70-74	-1.41	1.77	3.18
19	75-79	-3,103	4,319	7,422	75-79	-1.13	1.57	2.69
20	80-84	-1,866	3,047	4,913	80-84	-0.68	1.11	1.78
21	85-89	-883	1,821	2,704	85-89	-0.32	0.66	0.98
22	90-94	-319	861	1,180	90-94	-0.12	0.31	0.43
23	95+	-82	336	428	95+	-0.03	0.12	0.16
24	Total	-134,775	140,790	275,565	Total	-48.91	51.09	100.00
25	Source: US Census Bureau, International Data Base.							

Step 2: Selecting the data

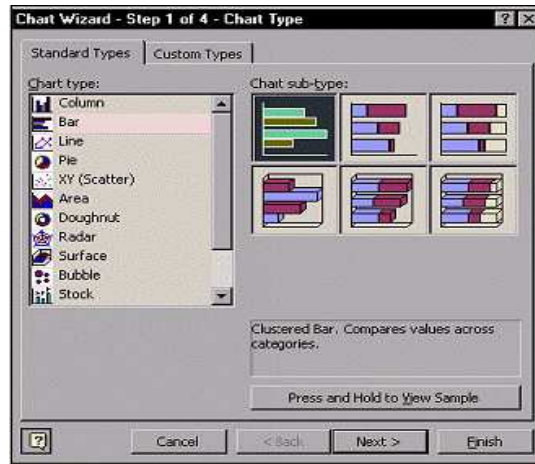
Select the data field, including the column titles. Don't forget to include data labels! E.g., male, female, etc. I will use the table in percentages.

	E	F	G	H
AGE	MALE	FEMALE	BOTH	
00-04	-3.50	3.35	6.85	
05-09	-3.67	3.51	7.18	
10-14	-3.70	3.52	7.22	
15-19	-3.71	3.51	7.22	
20-24	-3.45	3.30	6.75	
25-29	-3.24	3.26	6.50	
30-34	-3.53	3.59	7.12	
35-39	-4.03	4.07	8.10	
40-44	-4.08	4.14	8.21	
45-49	-3.55	3.67	7.22	
50-54	-3.05	3.22	6.27	
55-59	-2.32	2.51	4.84	
60-64	-1.83	2.04	3.87	
65-69	-1.57	1.85	3.42	
70-74	-1.41	1.77	3.18	
75-79	-1.13	1.57	2.69	
80-84	-0.68	1.11	1.78	
85-89	-0.32	0.66	0.98	
90-94	-0.12	0.31	0.43	
95+	-0.03	0.12	0.16	
Total	-48.91	51.09	100.00	

Step 3: Insert Chart ...

From the draw-down menu **Insert**, choose the option **Chart...** A chart wizard will appear. You need to do the following:

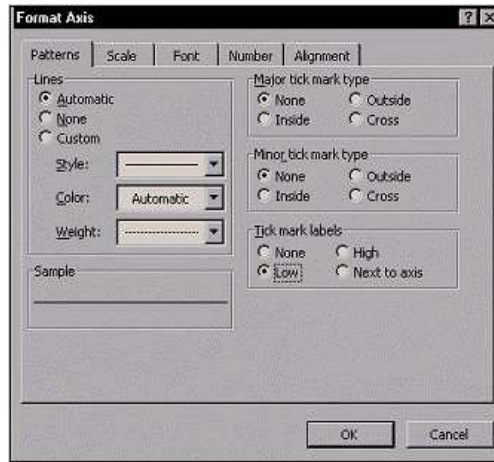
1. Standard Types \Rightarrow Bar
2. Chart sub-type \Rightarrow Clustered Bar
3. Left-click
4. Go through the subsequent steps until you finish the chart wizard. You can customize your chart if you feel appropriate, of course.



Step 4: Arrange the vertical axis.

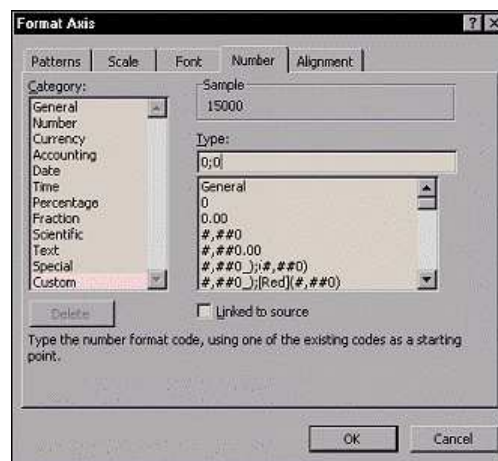
Once you are done with the chart wizard, you will find a crude population pyramid.

1. Move the cursor over the vertical axis.
2. Right-click and choose **Format Axis...** from the pop-up menu. You will find a dialog box titled Format Axis.
3. Left-click on the **Patterns** tab and do the following.
 - Major tick mark type ⇒ Select **None**.
 - Minor tick mark type ⇒ Select **None**.
 - Tick mark labels ⇒ Select **Low**.
4. Left-click **OK** to exit.



Step5: Adjusting the horizontal axis

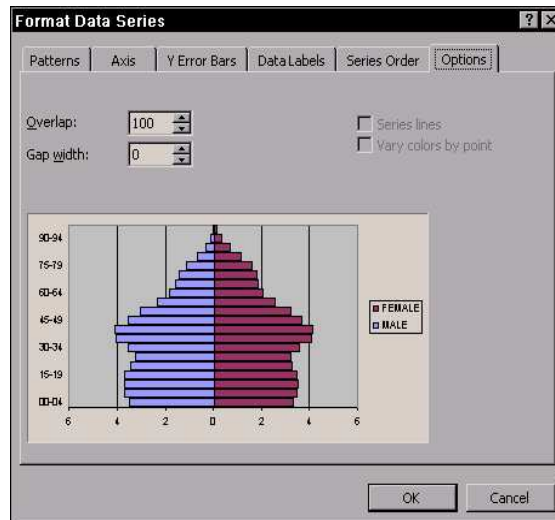
1. Move the cursor over the horizontal axis.
2. Right-click on it, and select **Format Axis...** from the pop-up menu. You will find a dialog box titled Format Axis.
3. Left-click on the **Number** tab and do the following:
 - Category: ⇒ Select the **Custom** option.
 - Type: ⇒ Type in **0;0** in the appropriate text box. (This will take care of the negative numbers on the male-side axis.)
4. Left-click OK to exit.



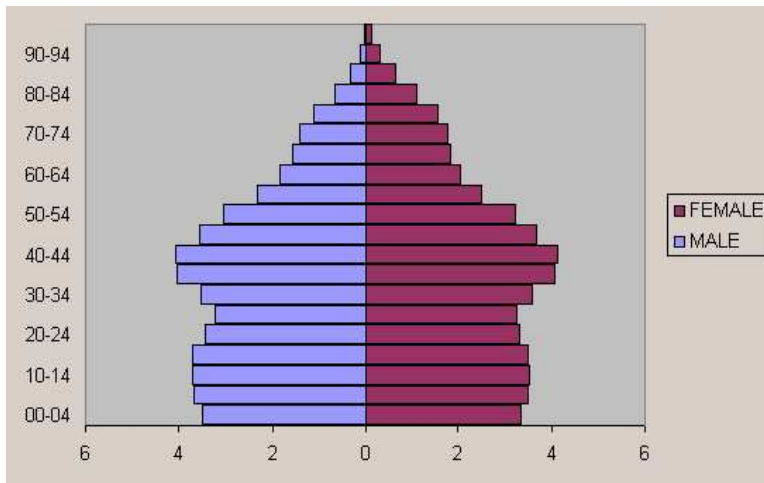
Step 6: Adjusting the bars

Your chart may not appear quite right. Let's adjust the horizontal bars.

1. Move the cursor over to the bars (i.e., data series).
2. Right-click and select **Format Data Series...** from the pop-up menu. Either male or female data series will do. A dialogue box will appear that is titled Format Data Series.
3. Left-click on the **Options** tab and make the following adjustments.
 - Overlap: ⇒ Type **100** in the appropriate text box.
 - Gap width ⇒ Type **0** in the appropriate text box.
4. Left-click **OK** to exit.



You will now find something like the one shown below. I have eliminated the grid while I was on the chart wizard. However, that was not necessary, as you can do all the tweaking after creating a chart.



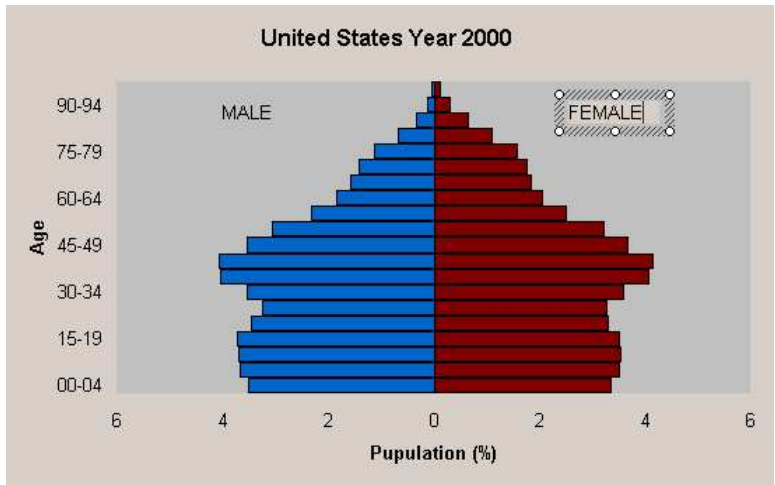
Step 7: Dressing up

You can modify the chart to eliminate grid, change color, change the legend, and do anything until you feel it's right. In addition to suppressing the legends, I will add text boxes now. In order to add a textbox, select Text Box on the drawing toolbar.

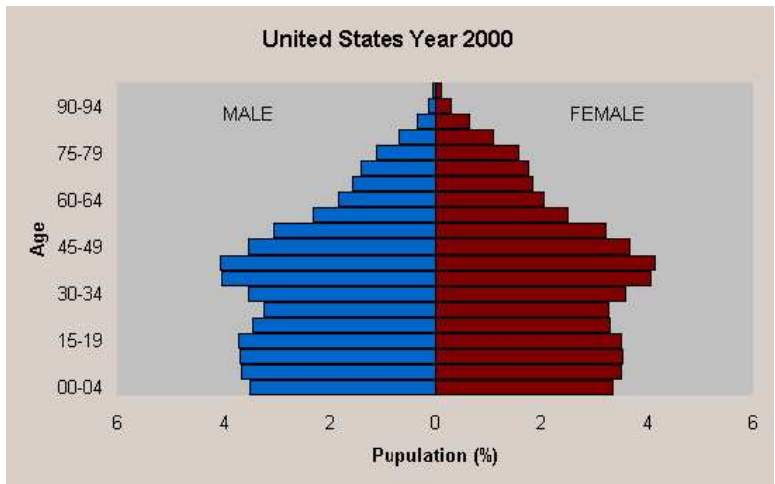


If you don't find the drawing toolbar, you need to enable it (Tool ⇒ Customize... ⇒ tick the box for Drawing).

Once you click on the text box icon and move the cursor over the chart, you will find the cursor has a different look. Place the cursor where you want to make a text box, hold the mouse key, drag the cursor, and release the mouse key to make a text box of your preferred size. Now enter the text in the box.



Personally I feel the following chart will do.



See? It's easy, isn't it? Now it's your turn to create your pyramid. Enjoy!
 (Data Source: U.S. Census Bureau, International Data Base.)