

# Making a line chart

LATEST NUMBERS	
Consumer Price Index (CPI): +0.4% in Aug 2020	<input checked="" type="checkbox"/>
Unemployment Rate: 8.4% in Aug 2020	<input checked="" type="checkbox"/>
Payroll Employment: +1,371,000(p) in Aug 2020	<input checked="" type="checkbox"/>
Average Hourly Earnings: +\$0.11(p) in Aug 2020	<input checked="" type="checkbox"/>
Producer Price Index - Final Demand: +0.3%(p) in Aug 2020	<input checked="" type="checkbox"/>
Employment Cost Index (ECI): +0.5% in 2nd Qtr of 2020	<input checked="" type="checkbox"/>
Productivity: +10.1%(r) in 2nd Qtr of 2020	<input checked="" type="checkbox"/>
U.S. Import Price Index: +0.9% in Aug 2020	<input checked="" type="checkbox"/>
U.S. Export Price Index: +0.5% in Aug 2020	<input checked="" type="checkbox"/>

Historical Data  News Release  preliminary

## PREPARING THE DATA

1. To begin, go to the Bureau of Labor Statistics website ([www.bls.gov](http://www.bls.gov)) and download the unemployment rate data. You can find this on the home page, along the right side, then by clicking on the chart icon to get the 10-year historical data.

2. Once you arrive at the next page, you can change the date parameters of your search to include earlier years. We'll go back as far as we can on this site – to 1948. (That was the

year where the age of the employable population rose from 14 to 16.) You can download the 1948-present data table directly as an Excel file.

Note that this data is monthly ... reorganizing this into a single column in Excel would be quite time-consuming, so to get a broad picture of the historical rate, we will calculate the annual average rate.

3. Make a new column to the right of the December entry, and in the corresponding cell for the 1948 data, create this formula: **=SUM(B13:M13)/12**

(The colon operator means to add values from all the cells between B13 and M13, and we then divide this value by the number of months in a year.)

4. Pull down the sum so that applies to each year. We'll have to adjust the formula for the current year, since there are only eight months of data so far.

5. Finally, we'll prepare the year values so we can use them for the X axis (across the bottom of the line chart). Make another new column (in Column O) for the years we will be bringing into Illustrator. Because our data stretches back more than seven decades, we will use every five years in the axis ... or else our chart will have to very wide to accommodate all of those years!

6. Firstly, we'll add a quote mark (") somewhere in the Excel document, then use that value to add the quote marks around each year using the Concatenate function. In this example, I have added the quote mark to Cell G1, then added the following formula for the new "Year" column next to my first marker, 1950:

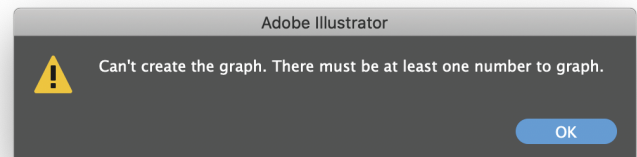
**=CONCATENATE(G\$1,A15,G\$1)**

7. We don't want to have every year in this column, only every five ... so we'll do a little sleight of hand. Highlight the cell that now says "1950" and the four immediately after it (which will be blank). Grab the small green square in the lower right of this selection and pull down to the bottom of the data. You should now have every five years listed, surrounded by quote marks.

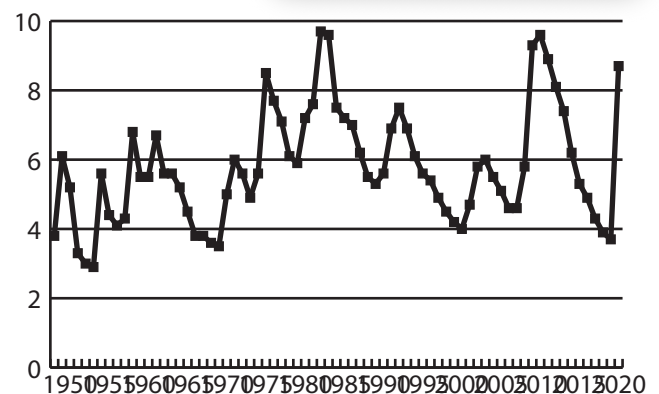
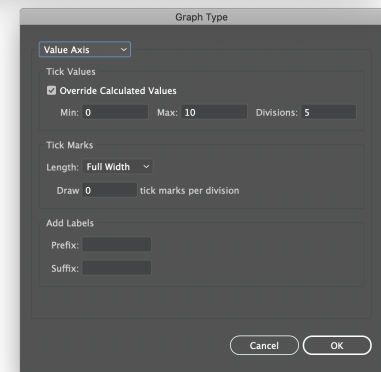
## MAKING THE CHART

1. Copy all the YEARS COLUMN data (Command-C) from Excel and paste it into a new Illustrator document, in the pasteboard area. Be sure to include the blank cells for the year 1948 and 1949, as we will be charting those values, too. Option-Shift-drag your column of years to the right to make a copy, and return to Excel to copy the unemployment rate data. Paste it over the second column of years.

2. Select the Line Chart tool and draw a box on the page (about three columns or so). Copy and paste the years in the first column – be sure you have a value in the second column so that a chart can be drawn – and then add the data into the second.



3. Illustrator draws a chart, with a Y axis based on the data. You can adjust these values by right-clicking and pulling down to "Type," then changing the Value Axis amounts. We'll do that now so that we present the rate with a zero base – and to make "full width" ticks.



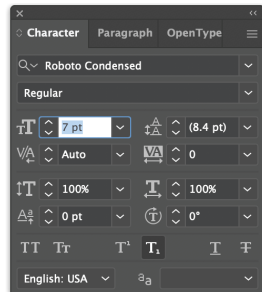
We're now ready to apply some styling to our line chart.

# Making a line chart

## STYLING THE CHART

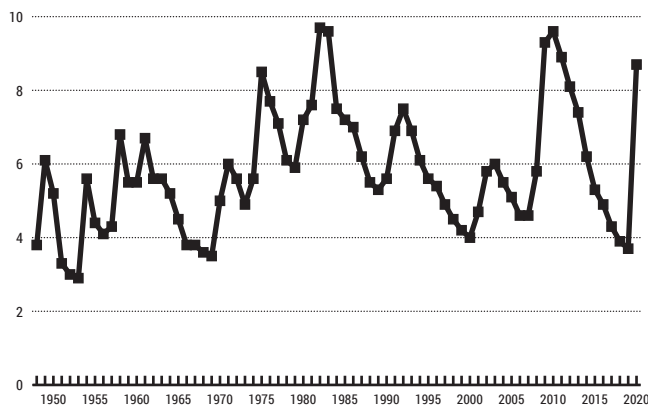
We can ungroup the chart, which generally makes it easier to add styles, but when we do so, we lose the ability to edit the data. And with a line chart, there are a number of changes we can make that are much *harder* to do if we ungroup.

1. We'll start by making adjusting the type style for the axes. Generally the only difference between the type styles should be that the Y axis is right-aligned, and the X axis is centered. (This is the default anyway, so no need to change them.) Click the chart with the black arrow tool, and change the Type variables to an appropriate typeface and size. I have chosen 7-point Roboto Condensed.

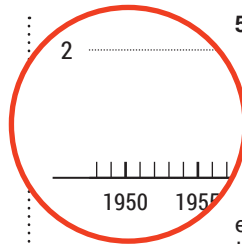
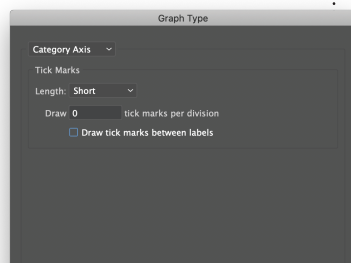


2. You'll have to adjust the placement of the text elements slightly to align with the chart. Use the white arrow tool for this, holding down option so you can "nest select" or group select, first, the Y axis values (move them up) and then the X axis values (move them up too).

3. We can alter the look of the horizontal lines by using the white arrow tool to "sub-select" them, even when the chart is still a single group. Choose the white arrow tool, and hold down the option key — this gives you temporary access to the Group Selection tool. Click on one of the horizontal lines. Click again, still holding down option, and you will have selected the sub-group of all those lines. You can now change color or makes the lines dotted or dashed — whatever you like.



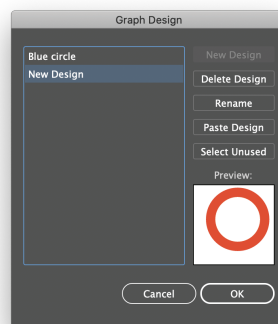
4. We can also customize the vertical (X axis) tick marks. Select the chart, and right-click, pulling down to "Type" again. This time, pull down to "Category axis." We will adjust the default by unchecking the box that draws these marks between the labels.



5. Like the value axis ticks, the category ones are, by default, one point strokes. Use the white-arrow-option-key technique to style these as half-points instead.

6. A little fine-tuning: add one-point ticks for the years that appear on the chart, make the bottom base line a one-point line and extend it to the left edge of the chart, and make the fill for the bottom number on the Y axis invisible (i.e., "none").

7. By default, Illustrator marks your data points — if you have that option checked — with small squares. But you can change these markers to be something else. Draw a circle, and give it a white fill and a color stroke (your choice of color). With the circle selected, pull down the Object menu at the top of the screen to Graph, and over to Design.



8. Select "New Design" — your circle will appear in the small preview window. You can rename this design, too, in this panel. Click OK when you're done.

9. Select your chart, and right-click. Choose "marker." Click on the name of your new marker, and the chart will update.

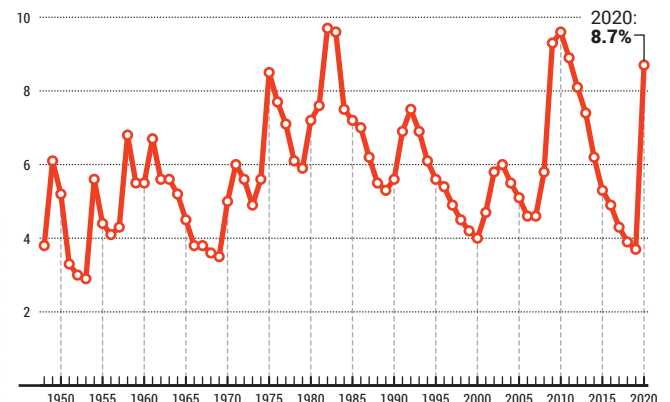
10. To change the chart's line, use the white-arrow-option method to select the line, then apply a different weight and color. (Note that the line is actually made up of line segments, drawn from data point to data point, with rounded caps.)

## Unemployment headline

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### U.S. UNEMPLOYMENT RATE

Annual averages, seasonally adjusted



SOURCE: Bureau of Labor Statistics

J464 / Ernie Pyle