

## Reading too much into a visualization

Let's see another example. A while ago, I witnessed a debate in social media as to whether Obamacare, the Affordable Care Act, is good or bad for the economy.

For those of you who don't live in the United States, a little bit of context. The Affordable Care Act is a measure, a policy, a law, that was passed by President Obama during the Obama presidency to try to make health care, private health care, a little bit more affordable to the public, to citizens. All right. Let's not get into the details. You can just search for you. Then you can learn a little bit more about the Affordable Care Act.

Long story short, though, in the United States, there has been an ongoing debate as to whether this policy is good or bad for the job market. Conservatives, some people on the right, tend to criticize the Affordable Care Act, saying that the Affordable Care Act hinders the ability of companies to hire more workers. And people on the left, or people who align with the Democratic Party, liberals in general, tend to say that the Affordable Care Act is good for the economy – besides being good for people in general because people can buy health insurance.

I don't have a specific opinion about this. I'm not an economist, but I do have specific opinions about charts. And during this debate, I saw some people on the left hand side of the spectrum using this chart to argue that Obamacare is not bad for the job market. They were saying, well, take a look at these. All right. Take a look at this chart. This chart is showing the number of people in private jobs highered by companies. Right? Sort of the employment. Right? The number of employees in the private market in the United States.

That number went down during 2009, 2010, during the economic crisis. And then after 2009, 2010, more or less employment has started recovering. All right. You can see that the lines sort of follows a "U" shape. Right? Goes down during the economic crisis, and then it starts increasing, improving later on. And the line has continued increasing in the past few years.

And then they mark the point when Obamacare was approved, which was around March 2010, implying, well, take a look at this. Right? We're seeing that employment is improving, and take a look at what happens very close to where the curve changes direction. Sort of implying that there was some sort, of causal connection between the change of direction of the curve and the passing of Obamacare.

Well, we need to be careful with a couple of problems here. The first one is that we are all prone to projecting what we want to believe onto the information that we see every day. We call this the confirmation bias. If I want to believe that Obamacare, that the Affordable Care Act, is good for the job market, if I see this chart, my brain will immediately jump to the conclusion that there is a causal connection between the change of direction of the curve and the passing of Obamacare.

But that may not be true. Why? Because a very important law in becoming a good reader of charts. A chart shows only what it shows, and nothing else. All that this chart is showing is that there is a sort of a coincidence in time. A coincidence in time between the change of direction of the curve, the recovery of the job market, and the passing of Obamacare. But

that doesn't really mean that Obamacare has anything to do with the recovery, with the recovery of the job market.

That may be the case. I don't know. But the chart doesn't prove that. You need more information in order to make that argument.

Also, another thing that we need to get used to whenever we see charts is to think about counterfactuals, alternative scenarios. What would have happened if Obamacare wasn't ever passed, for example? How would this curve look like? Right.

So let's say each one of these elements separately. First of all, you could think about other possible explanations for this change of direction of the curve. For example, and this is just a guess, I'm not saying that this is true. Right? But this is sort of a guess that I made. Right. Perhaps the change of direction of the curve, the recovery of the job market, it may be related to the Affordable Care Act. It could be that perhaps for some reason companies are hiring faster because of Obamacare. I don't know. But it is I think, and it may be wrong, I think that it's more likely that the change of direction of the curve, the recovery in the job market, is a little bit more related to the fact that a few months before President Obama pass a stimulus package. The government, the U.S. government, injected billions of dollars in the economy to stimulate banks, to lend money to companies, so companies could start recovering, could start hiring more people later on.

So those two factors may have contributed to the recovery of the job market. Right? And then counterfactual or alternative scenarios. What would have happened if Obamacare was never passed? What about if Obamacare was never passed? What about, if for example, the Supreme Court killed Obamacare at some point during the discussions? How would the job market look like? Would it look the same either with or without Obamacare? That would mean that Obamacare has nothing to do with the job market. It doesn't affect the job market whatsoever, or would the curve look like this? Would the recovery have been much faster? Meaning that Obamacare is bad for the job market because it's actually hindering the ability of companies to hire more workers? Or would the curve look like this? Right. It would be less steep, meaning that Obamacare is actually good for the job market, right? Because without Obamacare, companies would hire at a much lower rate. Much, much lower rate.

We don't know. Why don't we know? Because our chart shows only what it shows, and nothing else. If we want to find out about all these factors, contributors to the recovery and so on and so forth, we will need to dig deeper into data in order to gain understanding. The chart itself, the original chart itself, all that it showed was that there was a coincidence in time between the recovery and the passing of Obamacare. But we should never jump to causal connections between elements, or between phenomena, based on a single chart alone, because we are all prone to the confirmation bias.

I'm actually going to disclose. I'm a fan of Obamacare. I come from Europe. I come from Spain. And in Spain, we have a publicly funded, tax-funded health care, and it works relatively well. It's relatively affordable through taxes and so on and so forth. And I like that system. So I happen to be a fan of Obamacare. I'm the kind of person who would make that argument based on this chart. If I didn't know better, I would jump to the conclusion, "Oh, Obamacare is great. Take a look at the job market, how we recovered after Obamacare."

We need to be extremely careful when reading charts. Because again, charts show only what they show and nothing else. Everything else that you see on a chart is not in the chart. It's happening in your brain. And we all need to become aware of this fact.