Data Visualization and Data-Driven Decision Making

# 2020 Spring

# BSDVDDM1KU

# Exam Visualizations

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## Project Description and Reasoning Behind Decisions

I have decided to focus on BitCoin in my project as I became interested in the technology last Spring. I would never consider myself an expert in the subject, I am just fascinated by its core concept and I feel the currency becomes more and more relevant as the economies of the world seem to be hit by the current crisis.

Initially I read about BitCoin from a technological point-of-view, therefore now I needed to do some reading from the financial side. My intent was to put what I learn on the visuals to make them tell stories that I discovered myself. I imagined myself giving a presentation or a talk on the subject matter, therefore the visuals are not necessarily independent from each other, they all contribute to the story of BitCoin to some degree.

The first area chart (History of BitCoin and Covid-19) is a historic overview of how the closing price of BitCoin changed over time. It is supposed to give context, to explain when did the cryptocurrency become relevant, when did the price peak and get lower. At the end of the area chart we can observe the dynamic grow of number of (recorded) people who got infected by Covid-19. In a presentation I would probably zoom into that area for further explanation. However, it is observable from this distance too that at first the price of BitCoin dropped to half then it bounced back quickly since.

I have removed most of the additional lines from the chart, but I felt the area chart is aesthetically more pleasing then just keeping it as a line. The choice of color is purposeful as it is one of the main colors of BitCoin, I use it later in the visuals as well for consistency. The Covid line is red as it is intended to grab the attention and evoke a negative feeling (I might overestimate the power of the color). At first, I filled the chart with more descriptive labels, but it become a bit crowded, so I have decided to keep only the current ones.

My second visual is a more filled one, it is to compare BitCoin to other store-of-values. In the middle I have included a heatmap or correlation matrix of the time-series of the different investment options. I was looking for a long-time relations, so I started the period not long after the point where the latest one (Ethereum) appeared: 2016 January 4. I have included two strong tech stocks, Alphabet (Google) and Apple, one other prominent crypto besides BitCoin (Ethereum) and Tesla as it is not that old as Apple and seems to be more effected by the current crisis.

On the left and right side of the visual I have plotted the trends of how the store-of-values perform as of recent. I have plotted the closing price trends on a weekly basis and the Volume traded on a monthly bases from January to the end of April. For sum of traded stocks I have included the change as the label for the values as I felt they are more representative than the actual values. Nevertheless, these minimalist line charts are on the visual to enable the users to spot the similarities in the trends. I have used the logos of the stock’s and store-of-values to represent them unambiguously and I have also applied their colors to the line chart. I felt that the 5 colors are enough for the visual that is why I landed with black-and-white for the heatmap.

The goal of the third visual is to bring some insight into how the number of businesses that accept BitCoin evolved over the years. I have found an API that returned all 17 000+ venues logged in their system. The first part of the visual compares the numbers by continents and years. As shapes are easy to interpret for our eyes they symbolize the differences between the previous years, and the shades of blue get darker as the number of businesses grow. I wanted to focus on development, therefore the actual number takes a backseat to the differences.

A similar approach was taken for the lollipop chart, larger numbers by month are emphasized by color and size of the circle whereas the difference from the previous month are represented by distance from the X axis. I believe with the help of these graphs it is easy to spot the most important periods in development. For me the chart is interesting since in March we had one of the most significant increase in number of added businesses since 2014 mostly out of nowhere.

Using the visuals, I would present the story as follows:

* The brief history of BitCoin and how it has been effected by the emergence of Covid19
* how the coin behaves compared to other stocks and currencies
* you can use BitCoin as it is present in increasing number of businesses if based on previous visuals you would wish to invest in it

I hope that my creation is something you find insightful.

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