Part 1:

1st diapo: question

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3rd diapo: Present cryptocurrencies / What are cryptocurrencies

4th diapo: How important they are

* There are more than 5000 cryptocurrencies that are traded on platforms online
* There are more than 20 000 different possible exchanges available
* Every day the volume traded is around 125 billion dollars, and the total value of all cryptocurrencies is around 250 billion USD.

5th diapo: How to trade:

* Buy cryptos on a platform that accepts normal currencies, send the cryptos to an exchange platform. Both steps involve fees: conversion fees and exit fees
* To make sure your investment doesn’t lose its value while you’re not looking you have to convert it back to a normal currency, however it implies doing the above steps again.
* Each step isn’t immediate and by this time the amount you have my lose some of its value

6th diapo: What is the Tether ?

The Tether is a cryptocurrency created by Bitfinex, one of the biggest

cryptocurrency trading platform, that (supposedly) has every unit of tether backed by it’s

original currency (for the USDT, the original currency is the US Dollar), and guarantees a

fixed rate of 1 USDT = 1 USD.  
It solves most of the problems we saw in the previous diapo because people can secure their investment almost immediately, with almost no fee

7th diapo: What does it change ?

People can now secure their investment just in a few seconds just by purchasing a fixed rate currency. And the opposite is possible: to switch from the Tether to any currency in just a few seconds with negligible transaction fees.

8th, 9th 10th diapos:

8: Can we predict Tether’s market cap evolution using other cryptocurrencies’s demand ?

9: What does it mean ?

* As we know, the Tether is a safe haven for anyone who would like to secure or “freeze” the value of its assets in a currency fearing it might go down. Given the volume traded and the market cap we know if the demand of Tether goes up or down. Can we predict from this the demand of the Tether ?
* We can assume that if the demand in Tether goes up, people expect cryptocurrencies to go down (they want to secure their investment, they think the market is going down), if the demand of Tether goes down, people are selling Tether to buy riskier assets, so expect them to go up.
* We would like to analyze the data to determine if we can predict the evolution of Tether’s market cap: if we can predict Tether’s market cap given other cryptocurrencies’s trend we will know whether the markets will be bearish or bullish, and from this we will know whether we should buy or sell.

11th diapo: For this project we used coinmarketcap’s data. Coinmarketcap is the biggest provider of data on cryptocurrencies with information on more than 5000 currencies and 300 platforms  
We can find charts, prices, api, volume etc.…

12th diapo: We used around 30 different currencies for this project. As you can see the more you go down the list the faster the market cap gets smaller, but with 30 currencies we consider the sample large enough with diversified enough currencies

13th diapo: You can here you can see how the historical data looks on the site. We built a scraper in java to get the data, and a parser in python to make it usable in a CSV, you can see the result on the right, the code is available on GitHub.

14th diapo: Even though many cryptocurrencies are clones of the bitcoin and their demand comes from their properties: no third parties for transactions, offers relative anonymity, very speculative assets, can be sent to anyone, accepted as payment on certain sites, some are created with an objective:

* The Stellar is used for cross border transactions for real world currencies, is notably used by IBM and Deloitte for its Digital Bank in South-East Asia
* The Neo is a regulator-friendly cryptocurrency created in China to help deploy smart-contract applications and manage digitized assets
* The Ripple is a centralized asset used to facilitate financial settlement and money transfer but unlike no other crypto has no emission limit.
* The Ethereum is a more developed version of Bitcoin with faster transactions, different system of encryption and the ability to run scripts executing smart contracts

Despite being very different by nature, we can observe, mostly thanks to the log scale on the plots very similar trends at the same periods. Even the DogeCoin who who was initially a joke, eventually weighing 2billion dollars has trends similar to the Bitcoin

15th diapo: We don’t learn much things from these covariance matrices of the volume traded and market cap because the results were obvious given the graphs we just saw; they are both extremely correlated. The covariance matrix of the volume traded is positive for the 144 observations.

16th diapo: Running a simple multilinear regression gives us ridiculously optimistic results with an adjusted R² of 0.8897, however we know that every single variable automatically increases the R².  
With the covariance matrix we already know that all market caps are positively correlated, but by comparing one to one the correlation of the market cap and the volume traded we get very high results for most cryptos, meaning that the results of the regression are not trustworthy at all.

This is why we need a better model and we are going to compare a few ones in the next part

17th diapo: In this part we will show you which machine learning models we are using and how do they work