WallStreetBets – What should I lose money on? By David Márquez

Which e-commerce stock should I buy?

Alibaba Group 阿里巴巴集团

amazon.com

shopify

Introduction

The task of investing can seem daunting. With so much information and so many factors that affect the price of a stock, It's difficult to know where to start. Thankfully data science and analytics can help us organize the information that we can find in the earnings reports and balance sheets of any publicly listed company. We need to narrow down the stocks that we will be utilizing, however, and for that I have picked three e-commerce stocks listed in the US stock exchange. Amazon (AMZN), Alibaba (BABA), and Shopify (SHOP). Using the available data, I hope to find any possible correlations between the balance sheets and the stock price in order to determine what to focus on when analyzing not just these stocks but any stocks, as well as identifying trends, and good points of entry and exit at the time of investing. The hope is that with a little bit of data organization, a few assumptions, and with the help of some python code, we may be able to make discoveries that others have not and determine which stock is the best to buy.

The Data Used

Amazon stock price history
Alibaba stock price history
Shopify stock price history
(All prices from May 20th 2015 to December 11th 2018

Amazon Earnings Reports and Balance Sheets
Alibaba Earnings Reports and Balance Sheets
Shopify Earnings Reports and Balance Sheets
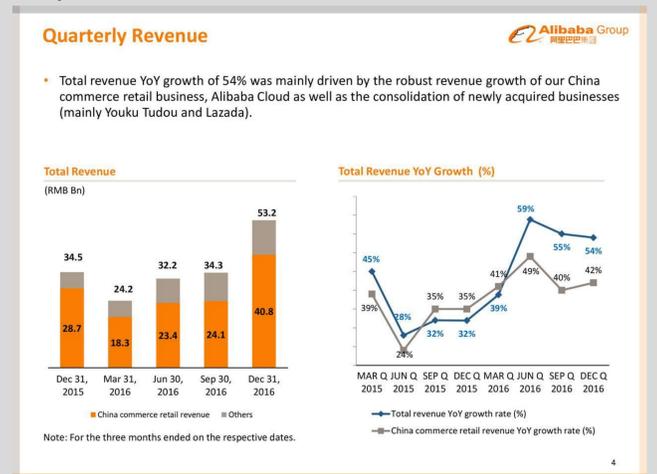All reports span from Q2 2015 to Q3 2018

United States, China and Germany GDP growth data from Q2 2015 to Q3 2018
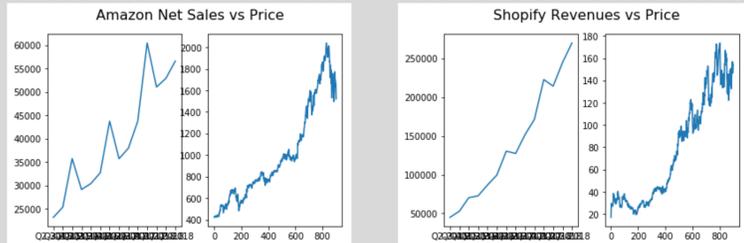
How related are these

And these?

Quarterly Revenue

- Total revenue YoY growth of 54% was mainly driven by the robust revenue growth of our China commerce retail business, Alibaba Cloud as well as the consolidation of newly acquired businesses (mainly Youku Tudou and Lazada).

(in millions) Segment	Quarter Ended 6/16	Quarter Ended 3/17	Quarter Ended 6/17	Annual Growth
North America				
Revenues	$17,674	$20,992	$22,370	26.6%
Operating Income	$702	$396	$436	
International				
Revenues	$9,844	$11,061	$11,485	16.7%
Operating Income	-$135	-$482	-$724	
Amazon Web Services				
Revenues	$2,886	$3,661	$4,100	42.1%
Operating Income	$718	$890	$916	
Total Revenues	$30,404	$35,714	$37,955	24.8%
Total Op. Income	$1,285	$1,004	$628	
Taxes & Non-Op	$428	$280	$431	
Net Income	$857	$724	$197	-77.0%

Note: For the three months ended on the respective dates.

Related: Sales and Revenues

Unrelated: Macroeconomics

What to buy?

If I had to recommend one stock to buy it would be Amazon. Right now seems like a good time to buy, since the fourth quarter usually leads to increased profits after earnings are announced, and Amazon has the highest market share of the e-commerce market. That being said, all these stocks may be overvalued, so if an investor is looking for a cheap stock, it may be best to wait until the price falls more to purchase at a bargain price.
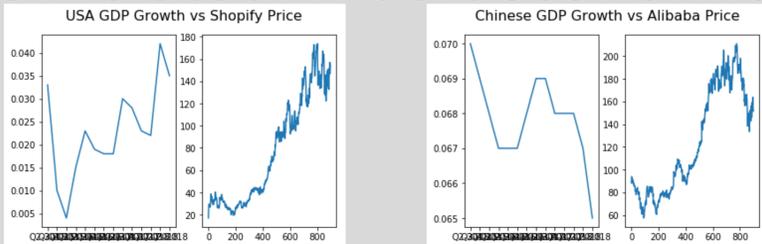
Results & Conclusions

The results were actually incredibly surprising. The surprising thing being that there are barely any strong linear correlations between the stock prices and different aspects of the balance sheets and quarterly reports. This does not mean, however, that certain aspects of the balance sheet are not related. For example it is clear that sales and revenues are related, at least vaguely, to the stock price, however they are not closely related enough to assume that increased revenues will lead to increased stock price, for example (and this case can be seen in a big part of 2018, where despite increasing revenues, prices have fallen or stagnated).

Macroeconomics (GDP and GDP growth) also turned out to have little to no relationship to stock prices. I even took the liberty to shift the GDP backwards by six months, giving it time to catch up and assuming that the effects of the changes would have taken place by then, however this shift did not provide any significant change in correlation values, leading us to discard macroeconomic trends as something to look at, which can save us time in future data analysis.

Another interesting factor to look at was comparing correlations when we reduced the dataset. Instead of being from May 2015 to December 2018 we reduced the upper limit to December 2017. In 2017 the stock market was at historically high prices, and people were starting to wonder if the stock market was overvalued and stocks were actually worth less than those high prices. While this project cannot talk about the "true" value of stocks, we can say that there was a clear change between correlations from one year to the next. Stocks were less related to the balance sheets and earnings at the end of 2017, and are usually more related to the business fundamentals now that the prices are lower. This means that if you believe that the stock market reflects business fundamentals, then stocks were definitely too expensive by the end of 2017, and could still be too expensive now. Sadly, many of these companies are too young to do this kind of comparison again.

Another interesting trend to notice is the clear increase in both revenues/sales and stock price after the fourth quarter of every year. This makes sense, given that customers shop online for Christmas in this quarter. This implies that buying before fourth quarter earnings are reported can lead to great profits.

References:
1. https://www.alibabagroup.com/en/ir/earnings
2. https://ir.aboutamazon.com/quarterly-results
3. https://investors.shopify.com/financial-reports/default.aspx

Wanna run the code I used? You can get it at
https://github.com/DavidM-Champ/BABAvAmazon
or scan the QR code on the right to get the link