A glimpse of the development of IT companies

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1 Introduction

Google, Apple, Yahoo, IBM, Facebook, Twitter, AT&T... this list can go longer and longer. Yes, they are all IT companies and they represent new trends, science and technology. Some of them are new, else are old. Some of them are developing and some seem "expired". And a lot of them were once on top of the tides. So let us take a look at the stock prices of all those companies and make comparison among them and try to summarize some conclusions.

2 Questions of Interest

1. How do the stock prices reflect the development of the company?

2. How do the stock prices reflect the development of the whole market through those representative companies?

3. What happened to those "expired" companies?

4. Any historical moments corresponding to big changes in the stock prices?

3 Data

There are many resources containing historical prices and volume of stocks, like google finance and yahoo finance. Inside R, there is also a package called "quantmod" which people use to do quantitative finance. They are almost the same with some differences.

When we use getSymbols to get the data from websites, like google and yahoo, we would like to get the data from the very beginning. But we would like to set a general "early" start date for every stock. This way works for yahoo websites but have problems for google website. It might has something to do with how those websites store their data. Another way is just go and download csv files from websites and read csv files into R. Further, we can write our own program functions similar to getSymbol to read the data form the website. In this project, we use the package "quantmod". And we pick IBM, Intel, Apple, Microsoft, Yahoo, Amazon, Google, Facebook and Twitter as representatives.

3 Explorations

First let us take a very general look at the historical prices of those companies' stocks.

3.1 BIG Blue: IBM

From the Figure, we can see apparently that there are two big drops around the year 1980 and 2000. It seems that 1992 is also an important year. IBM goes through a lot of years and is the oldest IT company among the list.
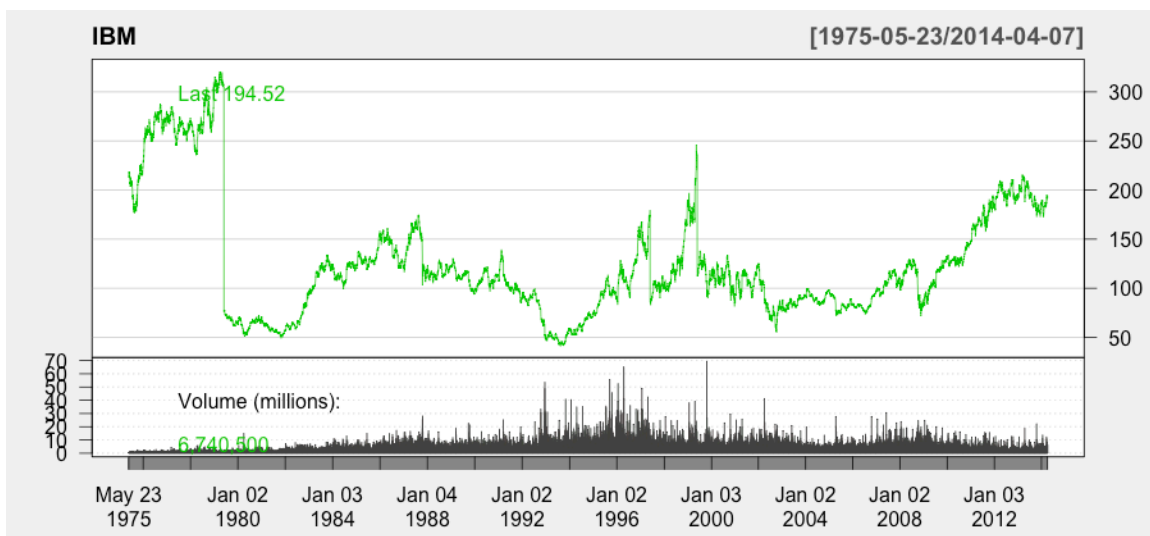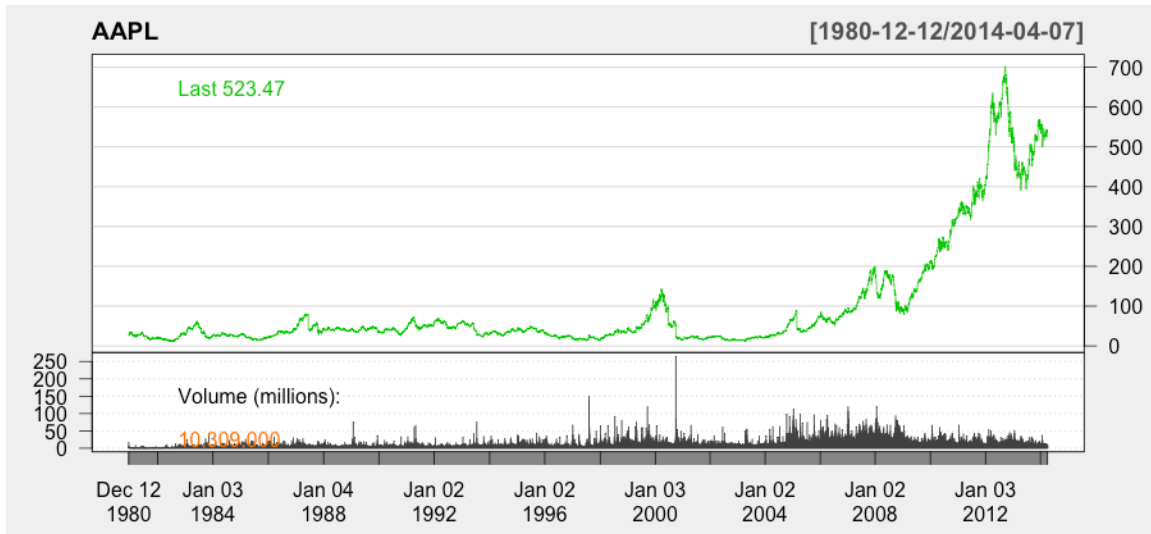
3.2 Leap ahead: Intel

From the Figure, we can see that Intel went high and low several times. After 2000, the development of Intel seems "peaceful".
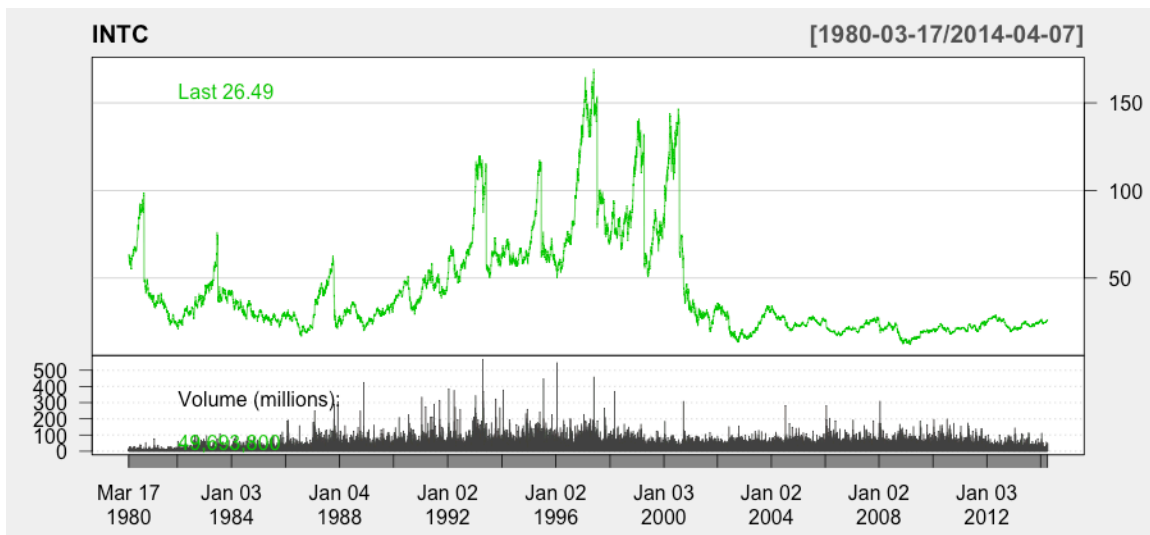
3.3 Think different: Apple

From the figure, we can see that Apple seems to have a steady development. There are three drops around 2000, 2008 and 2012.
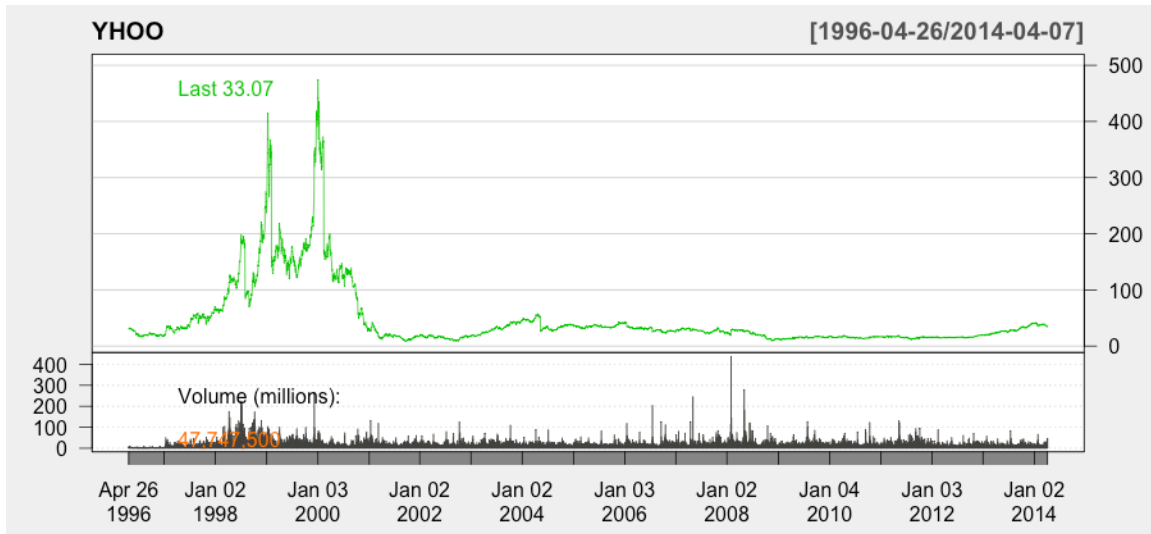
3.4 Roman Empire: Microsoft

From the figure, we can see that Microsoft seems to have a "excited" development before 2004. Then it goes a "flat" way.

3.5 Do you: Yahoo!

From the figure, we can see that Yahoo has two peaks. One is around 1999and another is around 2000. Later it seems "expired".

3.6 …and You're Done: Amazon

From the figure, we can see that Amazon has one peak around 1999. Later it went through almost 10 years flat area and now it is peaking up again.

3.7 Don't be evil: Google

From the figure, we can see that Amazon has one peak around 1999. Later it went through almost 10 years flat area and now it is peaking up again.
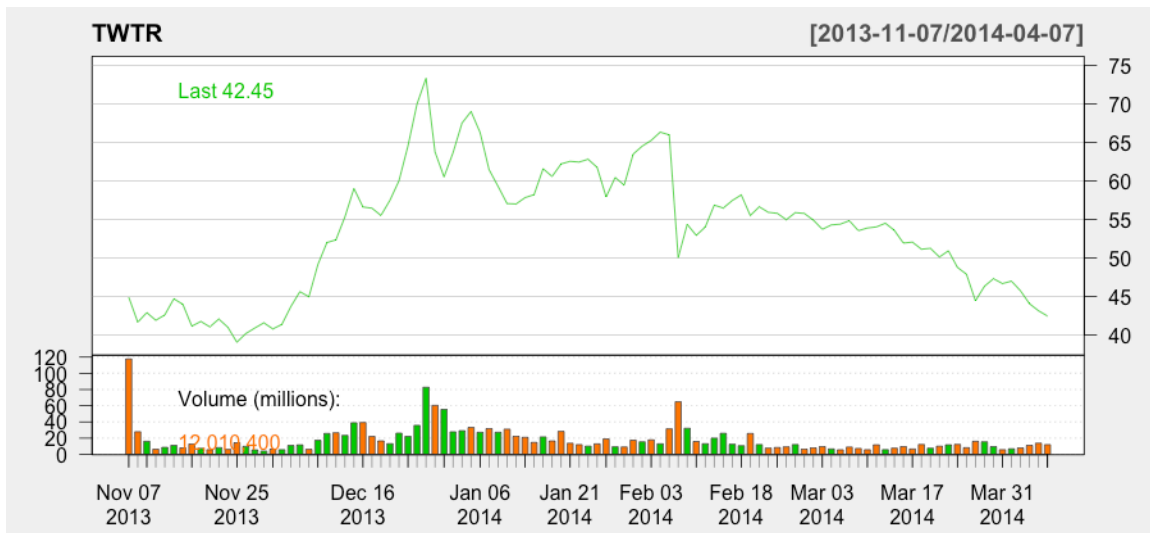
3.8 Be connected: Facebook

From the figure, we can see that Facebook had a hard beginning but later a good development.

3.9 Yours to discover: Twitter

From the figure, we can see that Twitter already went through a roller coaster within a short time.

History

Within our data range, we can see that 2000 is a year we should take a look at. Let us go back to the history a little bit.

1987/10/19 Black Monday, when stock markets around the world crashed, shedding a huge value in a very short time. The crash began in Hong Kong and spread west to Europe, hitting the United States after other markets had already declined by a significant margin. The Dow Jones Industrial Average (DJIA) dropped by 508 points to 1738.74 (22.61%).