

# Chapter 1 - Introduction to the World of Stocks (Equities)

written for Economics 104 Financial Economics by Prof. Gary Evans  
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Welcome to the world of stocks.

This is an introductory chapter designed to introduce students to equities (stocks) in the first module of my **Economics 104 Financial Economics** class at Harvey Mudd College.

I assume that the reader knows next to nothing about stocks and the stock market, but even if you understand these markets it still might be a good idea to review this chapter. There is likely to be some new material in here somewhere.

Here is what I intend to cover:

1. What are stocks and what are you buying when you buy them?
2. How does one buy and sell stocks and what role is played by brokers?
3. What are market indexes, like the DOW and the S&P500, and what do they measure?
4. What are mutual funds and ETFs?
5. What are stock listings and initial public offerings (IPOs)?
6. How are foreign stocks listed on U.S. markets (ADRs)?
7. What are stock splits and reverse splits?
8. A discussion of stocks with limited rights.

Please remember that this is an introductory essay just to get us started. Most of these subject above will receive only a superficial review. Much greater detail will be given later in semester in other chapters and lectures.<sup>1</sup>

## 1. What are Stocks?

Shares of stock represent some degree of ownership by the stockholder of the corporation that has issued the stock. In other words, if you buy 100 shares of stock in The Walt Disney Company, the giant entertainment company, which you could have done for \$140.40 per share (or \$14,040 plus fees) the moment this portion of the chapter was written (in June 2019), you technically own a little piece of The Walt Disney Company. You wouldn't own very much, because Disney (as it is more typically called) has 1.8 billion shares outstanding.

Owning this stock gives you the right to earn *dividends*<sup>2</sup> if dividends are paid by this stock. A dividend is a small cash payment made by the company to shareholders, typically quarterly. Disney was paying an annual dividend of \$1.76 per share in quarterly payments equal to one-fourth of the annual amount. Many stocks, especially for smaller companies, don't pay dividends.

All stocks that are eligible for public trading have *trading symbols* and Disney's is **DIS**.

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<sup>1</sup> There are two free excellent sources of information about individual stocks and the markets in which they trade, *finance.yahoo.com* and *finance.google.com*. The reader might look up one of these and have it running in the background or at least accessible, in order to supplement the material that follows.

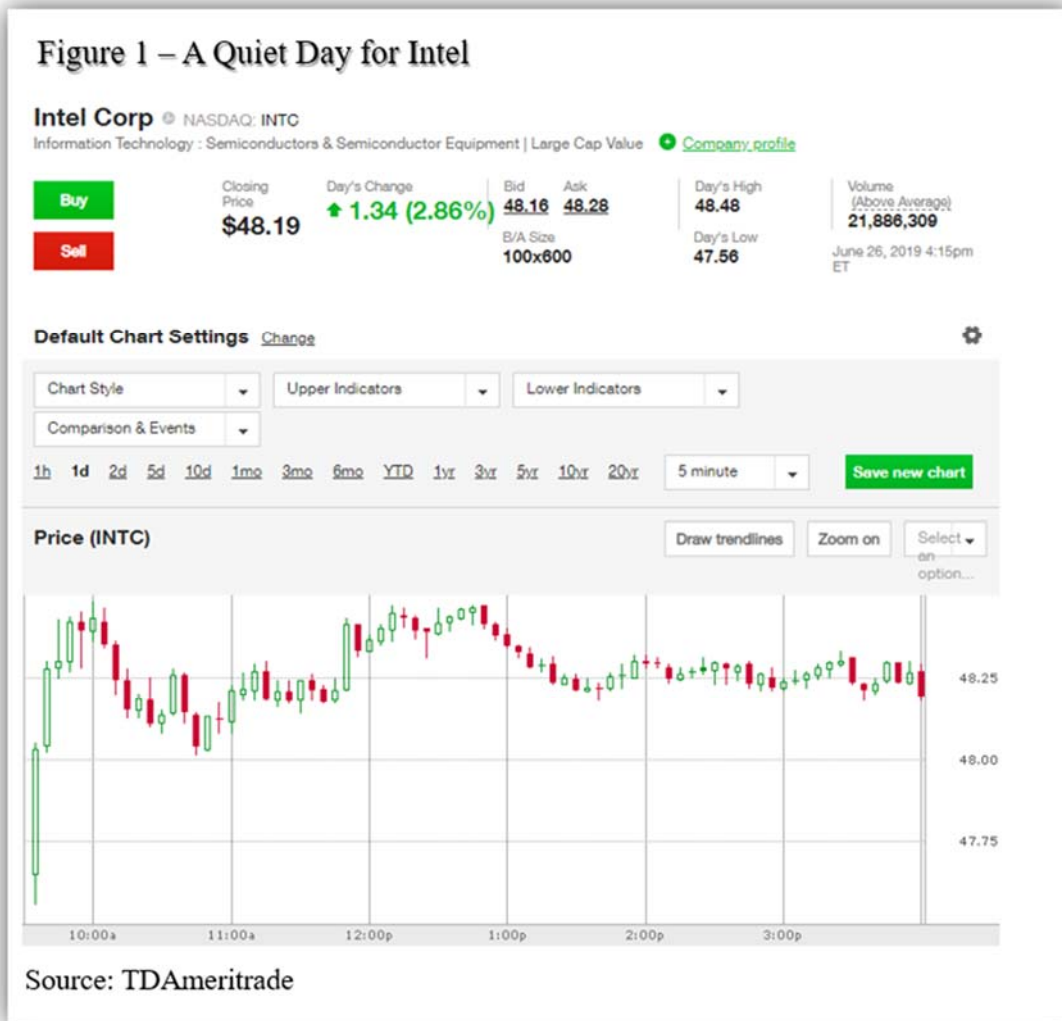
<sup>2</sup> If you are enrolled in Economics 104 and are reading this material for that class, *terms identified in red letters* are terms that I will expect you to know on the exam that covers this material. They may be represented with matching or multiple choice questions.

Owning the stock typically confers other rights too, such as the right to vote in corporate elections.

Dividends are important, but investments in stock also return *capital gains*, which are defined to be a rise in a stock's market value during the period that you own it. For example, consider the stock for the iRobot Corporation, which trades under the symbol **IRBT**. This company pays no dividend, so why would we buy it?

In August 2015, when I used **IRBT** as an example for the first time in this chapter, it sold for only \$29.30 per share. Had an enthusiastic Mudd sophomore bought it then she would have seen that four years later, on June 26, 2019, the same stock was selling for \$90.21 a share. Since the day of purchase the stock has experienced a net capital gain of \$60.91 per share, a gain of more than 200%. If sold on this day a block of 100 shares would have yielded a profit of \$6,091, minus transactions fees, which would have been just a few dollars.<sup>3</sup>

Of course such dramatic gains don't always happen. Stocks can decline in value. Had we sold for a loss, which happens a lot, we would call that a *capital loss*.



<sup>3</sup> But there is always a little risk involved. At \$90.21, IRBT was down sharply from a peak of \$132.30, seen on April 22, 2019. Had the Mudd sophomore bought the stock then, she would be pondering a \$42 loss per share.

Investing for capital gains essentially defines the strategy of most investors. No matter what the duration of your investment strategy, which could range from daily (day-trading speculators) to covering decades (conservative investment portfolio managers) you are mostly hoping to buy low and sell high. It really is as simple as that.

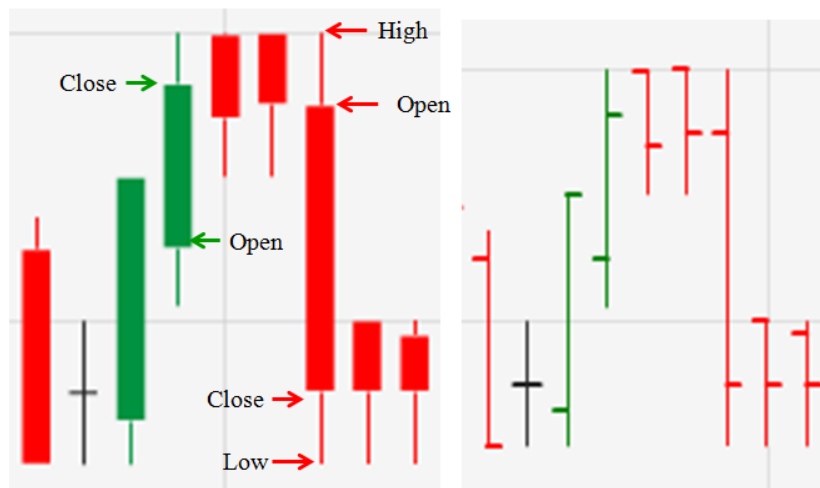
Although the objective, achieving capital gains, is simple, execution is not, especially in the troubled markets that we sometimes see in the United States and overseas for the last few decades.

Take a look at **Figure 1 A Quiet Day for Intel**. Intel Corporation's trading symbol is **INTC**. The market opened for trade at 9:30AM New York time at an opening price of \$47.65 per share. Shares rose for about two hours, then drifted sideways most of the day and closed at the end of the trading day (4:30 PM) 54 cents higher than the open and \$1.34 above the close on the previous trading day. The stock continued to trade after the market had closed (referred to as *after hours*) on very low volume and was largely unchanged.<sup>4</sup> A stock's value will change overnight when the market is closed so the morning open can be at a price very different than the close on the previous day.

I had bought **INTC** a few years back during a market decline and paid right around \$15 per share for it so this one-day move was of no concern to me. Far more important to me was that **INTC** also paid an annual dividend of 90 cents per share at the time, which at the price I paid for it, gave a *dividend yield* of above 6%. (The dividend yield equals the dividend per share divided by the price per share. With a dividend of \$1.26 per share the dividend yield at the current price in June 2019 is about 2.7%).

**Figure 1** is an example of a *candlestick chart*. Candlestick charts divide any trading period, such as day or a week, into smaller intervals. **Figure 1** divides the trading day into 5-minute intervals, so each bar represents a 5-minute interval.

Figure 2 – Reading a Candlestick or Bar Stock Chart



To understand the candlestick itself refer to **Figure 2 - Reading a Candlestick or Bar Stock Chart** which shows a data similar to **Figure 1**, except that the candlesticks in **Figure 2**, which are on the left side of the figure, are divided into one-minute segments. Another type of chart, the bar chart, is shown on the right and represents exactly the same information as is represented in the candlestick segment. For the candlestick, generally red implies that the stock price fell over the interval and green represents a rising price. Look at any red-labeled candlestick as an example. The top of the *candlestick wick* represents the highest priced reached during the interval and the bottom of the wick represents the lowest, and this is true

whether the candlestick is red or green. But on a red candlestick the top of the bar represents the opening price at the start of the interval and the bottom of the bar represents the closing price, which of course is lower. The open and close price relationship is reversed on a green bar, as is shown on the labeled green bar to the left.

Compare these to the equivalent one-minute bars on the bar chart on the right side of **Figure 2**, where the convention is to have the open indicator point left and the close indicator point right.

<sup>4</sup> The hours listed are the normal market trading hours (New York time) for stocks in the United States. The huge majority of trades are made during these hours. Nonetheless an after-hours market exists and is even available to small traders under certain conditions. But the after-hours market is not very liquid and it is generally harder to buy or sell in that market.

In the United States alone there are more than 15,000 stocks to choose from for trade, although only about 5,000 are listed in the major exchanges (explained in the next chapter) and fewer than 1,000 get the lion's share of trading activity. There are many thousands more overseas traded on global markets and these markets are becoming very accessible to U.S. traders through some of the larger online trading sites. (This chapter concentrates on trading in the U.S. only)<sup>5</sup>.

## 2. How do Individuals Buy and Sell Stocks?

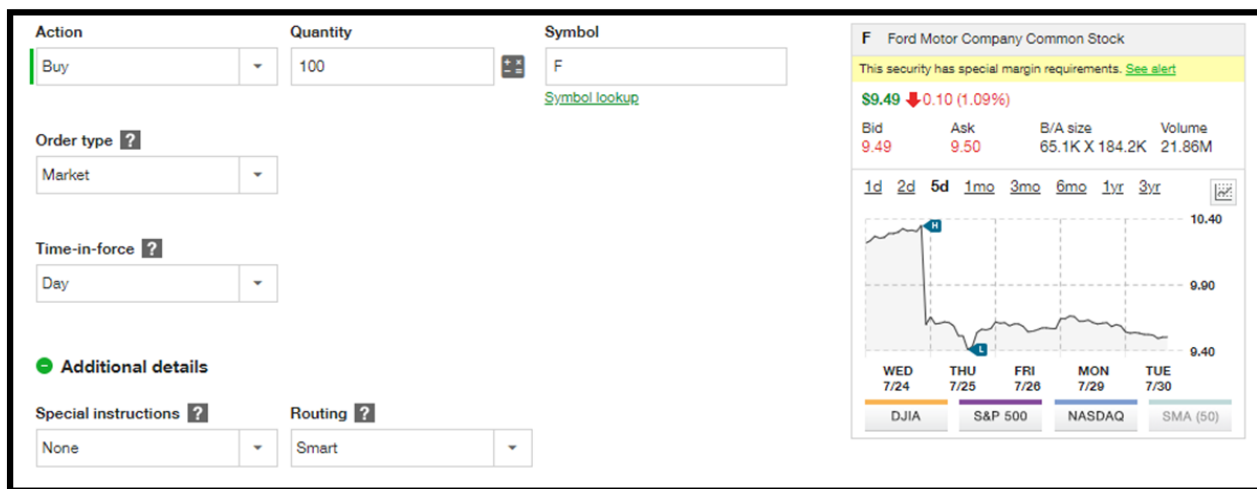
When I was a kid back in the 1950s I had a newspaper route that paid me about \$50 per month, so I saved up my cash and started buying and selling stocks when I was around 12 years old. My parents had to cosign for a custodial account.

I made my trades through the venerable Merrill, Lynch, Pierce, Fenner and Smith (later Merrill Lynch and then later destroyed by the mortgage meltdown and absorbed by Bank of America) brokerage office in Fresno, California and my stockbroker was a polite and helpful young gentleman named Marvin Arnold.

Back in those days, trades were done in person or by telephone through your local broker, who in turn consulted a streaming stock "ticker" for the price and, on your behalf, would make a telephone transaction (typically) to get you the "best" price.

Stocks then were quoted in "eighths" rather than decimals (like 5 5/8 instead of 5.63) and the practice remained until 2001. Although the convention then and now was to buy stock in 100-share blocks, called an *even lot*, it was possible then and now to buy blocks of less than 100 shares, called an *odd lot*. Fees were a little higher for odd lots and the brokers consolidated the odd lot orders before executing them. I recall that I owned 50 shares of Ford.

**Figure 3 – TDAmeritrade Trading Ticket for Buying 100 Shares of Ford**



It was fun to visit the trading office. It was like a Starbucks for stocks. Heavy traders and people with little else to do would hang around the office during market hours and watch the electronic radio ticker, showing streaming stock symbols and prices displayed with large red pixels. I remember a lot of chatting about the next hot stock.

<sup>5</sup> At this point the reader should stop and access either [finance.yahoo.com](http://finance.yahoo.com) or [finance.google.com](http://finance.google.com) and peruse the homepage, then type in the symbol for Intel (INTC), Disney (DIS), iRobot Corporation (IRBT), or Yelp Corporation (Yelp) to see what kind of information is offered. Look at the charts and peruse some of the material offered in the left-side links. Look at the price history over the last five years. Don't worry yet about understanding it all, just see that it is there. Before departing, use the *symbol lookup* feature to find the trading symbol for the stock of a company that you recognize, like Cisco. Do you understand the significance of capital gains and capital losses?

**Transactions fees**, the cost of buying and selling shares, were very high then compared to now.

These days you can trade stocks for a decade without ever once speaking to anyone at your brokerage, in person or by telephone, because you are likely to be using an **online trading site** like TD Ameritrade, E\*TRADE, Robin Hood, or Interactive Brokers, to name a few of the more popular sites. Generally, such sites offer low-latency access to price quotes and other trading information, they provide easy-to-use interfaces for buying and selling, offer detailed research services and training sessions for free or a nominal charge, and do all of this at transactions fees that are a fraction of what they were in the days prior to automation. Some require only a small amount, like \$500, to open an account. Online sites often charge far less than \$10 to buy or sell a block of stock<sup>6</sup>.

**Figure 3 TD Ameritrade Trading Ticket for Buying 100 Shares of Ford** shows a typical web-based interface for buying and selling shares of stock. In this case, the order shown gives instructions to buy 100 shares of Ford (F). Because of the type of order shown (Market) this order would be executed, probably at \$9.50 per share (the value quoted as the ASK - explained in Chapter 2). The user would get immediate confirmation of the order status. All of this would transpire in less than a second on a fast internet connection<sup>7</sup>.

Selling the stock once owned, whether five minutes later or five months later, is done the same way, except the **Action** pull-down option on the left would indicate *Sell* rather than *Buy*.

That you would normally use an online trading site these days doesn't mean that you don't have the right to talk in person to a broker. Some of the popular sites listed above have walk-in brokerage offices (although may not have one near where you live) that you can visit, and of course other brokerages offer direct personal service for trading exclusively the old-fashioned way, although typically at much higher fees.

In summary, brokers in general provide the consumer interface to stock market exchanges, where the trades are actually made. The role of these exchanges are discussed in a later chapter.

More about the order type and how you might price the purchase or sale of your stock is discussed in the next chapter.

With some restrictions, most brokerages allow their customers to trade with **margin accounts**, which gives you the right to borrow half of the value of your stock purchase rather than use only your own cash in the account. For example, if you have \$12,000 in cash in your brokerage account, if you have been granted permission to have a margin account, then you can buy up to \$24,000 worth of stock. An interest fee is charged (typically a reasonable rate) for the amount of the loan balance. By law, margin loans are restricted to 50% of the value of the stocks held in the account. If your stocks plunge in value after purchase and there is no spare cash in the account, if the value of the margin loans exceeds more than 50% of the current value of the stocks in the account, the broker must issue a **margin call** which requires you to quickly post more cash or sell stocks, and if you do neither, the broker will sell stocks on your behalf.

Margin calls are rare but during a very bad declining market they can cause a real problem, forcing sales at the worst possible time, possibly even making the declining market worse.

### 3. Market Indexes

One quickly notices that the homepages of these trading sites and the homepages of the two large and free online financial sites, **finance.yahoo** and **finance.google**, feature a whole block of stock market indexes, including typically the Dow Jones

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<sup>6</sup> Rather than describe at length what services the brokerages provide, at this point the reader would benefit by going to the homepage of any of the brokers listed above to see what services they provide.

<sup>7</sup> This sample was actually taken when the market was closed, so this market order would not have executed. The meaning of such terms as *Bid*, *Ask*, *Order Type* and so forth will be explained in a later chapter. The point demonstrated here is the ease of execution.

Industrial Average, the S&P 500, and the NASDAQ Composite. Also, listening to the radio or televised news one often hears comments like "The Dow was up 106 points today."

These stock market indexes represent portfolios of individual stocks combined in a weighted sum and are meant to provide a measure of how the general stock market is doing rather than an individual stock. When the news reports that "the S&P 500 was up today," that generally means that stocks in general rose.

The oldest (since 1896) and probably most cited index is the venerable *Dow*, which is short for *Dow Jones Industrial Average* or *DJIA* (there are many other Dow Jones Indexes). The Dow consists of only 30 enormous recognizable companies, shown in **Figure 4 - The 30 Components of the Dow Jones Industrial Average**, ranging from Apple Inc. (AAPL) to Exxon Mobile Corporation (XOM)<sup>8</sup>.

**Figure 4 - The 30 Components of the Dow Jones Industrial Average**

<b>AAPL</b>	Apple	<b>IBM</b>	IBM	<b>PFE</b>	Pfizer
<b>AXP</b>	American Express	<b>INTC</b>	Intel	<b>PG</b>	Procter Gamble
<b>BA</b>	Boeing	<b>JNJ</b>	Johnson & Johnson	<b>TRV</b>	The Travelers Cos.
<b>CAT</b>	Caterpillar	<b>JPM</b>	JP Morgan Chase	<b>UNH</b>	UnitedHealth Group
<b>CSCO</b>	Cisco	<b>KO</b>	Coca Cola	<b>UTX</b>	United Technologies
<b>CVX</b>	Chevron Corporation	<b>MCD</b>	McDonalds	<b>V</b>	Visa
<b>DOW</b>	Dow Inc.	<b>MMM</b>	3M	<b>VZ</b>	Verizon
<b>DIS</b>	Disney	<b>MRK</b>	Merck	<b>WBA</b>	Walgreens Boots AI
<b>GS</b>	Goldman Sachs	<b>MSFT</b>	Microsoft	<b>WMT</b>	Wal Mart
<b>HD</b>	Home Depot	<b>NKE</b>	Nike	<b>XOM</b>	Exxon Mobile

This list of companies changes slowly over time. For example, the stock **WBA**, which represents Walgreens Boots Alliance, Inc. (Walgreens drug stores) replaced venerable General Electric Company (**GE**) on June 25, 2018. This was a shock to the markets because **GE** was the only surviving original member of the **DJIA**. But the company had fallen from glory, with share prices falling more than 50% in the year preceding the switch.

Because of the huge size of the Dow companies and the list being so short, the Dow is not a very good measure of overall stock market strength. Instead that role typically goes to the *Standard & Poor's 500*, or the *S&P 500* as it is now called. The S&P 500 is a weighted index made up of 500 large companies across many sectors. Because it includes only large companies in the index, the S&P 500 really only shows how large companies are doing in the stock market, although it is a very good indicator for at least that<sup>9</sup>.

The third popular index, the *NASDAQ Composite*, sometimes referred to by the media as just the NASDAQ, is a weighted index of all of the stocks, more than 3,000, that are listed as NASDAQ stocks<sup>10</sup>. Even though the NASDAQ Composite is more inclusive than the other two indexes, the S&P 500 is nonetheless probably a better indicator of overall market performance. The NASDAQ Composite has a disproportionately high percentage of technology companies in the index and

<sup>8</sup> The 30 stocks that make up the Dow Jones Industrial Average are listed under the "Components" link after you click on **DOW** on the home page of *finance.yahoo.com*. An interesting history of the Dow and the many, many companies that have been part of this elite 30 (because of course the list changes frequently) can be found at the parent site of the Dow Jones Indexes at <https://us.spindices.com/indices/equity/dow-jones-industrial-average/>

<sup>9</sup> For a more detailed explanation of the S&P 500, including some of its history, visit <https://us.spindices.com/indices/equity/sp-500>

<sup>10</sup> The meaning of this is explained in a later section. NASDAQ is an acronym for National Association of Securities Dealers Active Quotation, an obsolete reference to NASDAQ's origins.

many of these technology companies are small and much more volatile and prone to failure than other companies in the other indexes. Therefore, it over-represents the technology sector and at times is more volatile than the other two indexes. There is also a NASDAQ 100 that is commonly quoted.

In both the S&P 500 and NASDAQ Composite, the stocks are weighted by *market capitalization*, also called *market cap*, which requires some explanation.

Market cap is a measure of the relative size of a corporation as measured by the market value of all of the outstanding shares of its stock. In other words, the market cap of a company at any moment will be equal to the number of shares outstanding times price per share. For example, the world's largest company by market cap, Apple Inc. (**AAPL**) on July 30, 2019 had 4.6 billion shares outstanding at a price of \$209.68 per share, giving it a market cap of approximately \$965 billion. In contrast, on the same day iRobot Corporation (**IRBT**) had only 28.05 million shares outstanding priced at \$74.62 per share, giving it a market cap of slightly more than \$2 billion, tiny in comparison to Apple.

It should be obvious from this example that the market cap of a company changes every day because the stock price changes every day.

Companies as large as Apple are classified as *large cap* companies. A company as small as iRobot Corporation would be classified as either a *mid cap* or a *small cap* company and companies that are even smaller are sometimes classified as *micro cap* companies.

Because these terms are used loosely by the financial media and by mutual funds that use the terms to describe their portfolios in their marketing, there is no common agreement on where the lines are drawn for these distinctions. For our purposes we will use the following classification:

- Large cap - above \$10 billion.
- Mid cap - \$2 billion to \$10 billion
- Small cap - \$300 million to \$2 billion
- Micro cap - below \$300 million

So, finally, when we say that the S&P 500 and the NASDAQ Composite are weighted by market cap, that means the higher the market cap of a company the higher the weight of that company in the index.<sup>11</sup>

Therefore, even the inclusive S&P 500 is not a good measure of the overall strength of the stock market because it includes only large cap stocks. Because this is true, it is worthwhile to mention two more indexes that are less quoted by the media than the three above - the *Russell 2000 Index* and the *Russell Midcap Index*. The Russell 2000 Index is a small-cap index (of the smallest 2,000 companies among the largest 3,000, which, believe it or not are relatively small companies). The Russell Midcap Index is a market-cap weighted index of the smallest 800 companies of the largest 1,000.

Whether biased or not, an index offers an overview of how well a market has been doing over any period of time. Look at **Figure 5 - 20 Years of the S&P 500 Stock Index**, which shows the performance of this popular index from January 4, 1999 to July 29, 2019.

Given that most investors' objective are to realize capital gains on stocks, **Figure 5** makes it obvious that the first years covered by this chart had been tough sledding. This market took 13 years to return to the value 1524.56 reached on March 24, 2000. In fact, what is seen there between that date and the trough on October 9, 2002, is the infamous *dot.com crash*,

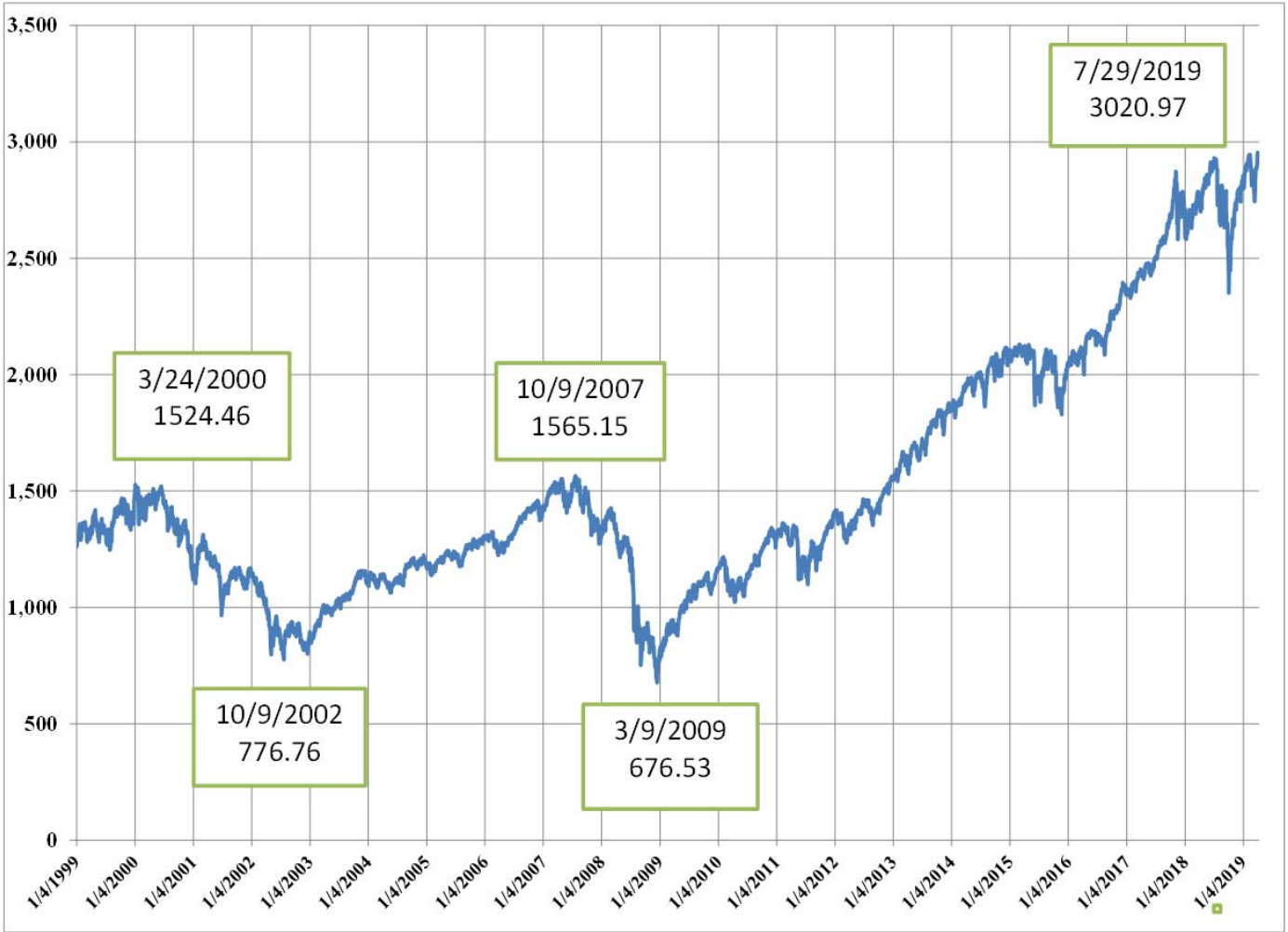
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<sup>11</sup> The practice of weighting by market cap introduces a bias into the indexes that use this convention because it throws a squaring term into the index - the price is represented as the primary variable in the index and then again in the weight. This tends to swing the indexes a little more on volatile days than would be the case with a constant weighting method.

when technology shares in companies that had been bid up wildly by speculators came crashing down, some of them plunging to zero and disappearing forever.

The market had a five-year rally (literally to the day!) after that crash and moved (barely) to a new high of 1565.15 in October 2007.

**Figure 5 – 20 Years of the S&P 500 Stock Index**



That rally however was destroyed by the horrific mortgage meltdown crisis which ushered the economy and many markets, including equities, into chaos. As can be seen, the terrifying plunge this second time around was more severe and happened more quickly.

In March 2009 a rally began that continued with interruptions (note 2011, 2014, and 2018). The *S&P 500* finally broke the 2000 (point) barrier on August 26, 2014. After breaking that barrier, the market stalled for more than a year, then resumed its upward march well into 2017. Then again in 2018, the market began moving sideways with no clear trend. After a severe dip in October, 2018, the market resumed its rise and finally penetrated 3,000 on July 12, 2019.



We won't compare indexes (the NASDAQ Composite performed much worse than the S&P 500 in the dot.com crash for example) or tell the story of these dangerous cycles in this introductory essay. That comes later. Here the objective is to understand what these indexes represent.<sup>12</sup>

Before concluding this section, it is worth mentioning that there are many, many more indexes than the five discussed in this section. Every market segment and specialty sector that one might imagine is represented by at least one index, and there are, of course, indexes for every overseas stock market and their various segments in the world.

#### 4. Mutual Funds and Exchange Traded Products (ETFs and ETNs).

No discussion of stocks can be concluded without at least mentioning *mutual funds* and related assets called *exchange traded products*. The discussion here is merely introductory and superficial. Mutual funds are discussed in detail in **Chapter 5** and exchange traded products are treated separately in **Chapter 6**.

Mutual funds are huge portfolios made up of various combined financial assets including, but not limited to, stocks. Equity mutual funds are a class of mutual funds that are made up of stocks exclusively. These mutual funds are typically offered by large mutual fund companies like Vanguard or Fidelity, who pool contributions by investors to purchase a large portfolio of stocks. By so doing they offer investors diversity in investments (or at least a lot more diversity than would be realized if invested in only three or four stocks) at a reasonable fee (typically, not always).

Most tax-deferred employee investment plans offered by companies (typically 401-K plans, as they are called) are invested in mutual funds rather than stocks.

An equity mutual fund will always have a stated investment objective (sometimes met and sometimes not) that will determine the composition of the portfolio. Among the most common equity mutual funds are those that promise to match the performance of an index like the S&P 500 index. The fund accomplishes this by buying the stocks that are in the index in proportion to the weights of the index, so as goes the index, so goes the mutual fund<sup>13</sup>. In effect, when you invest in an S&P 500 Index fund, you are investing in 500 stocks at once.

Other mutual funds might be dedicated to mid-cap or small-cap stocks only, technology stocks only, chip stocks or pharmaceutical stocks only, stocks that pay dividends and so forth. Various examples will be explored in later chapters.

It is important to note that from an investor's perspective, mutual funds do not trade like stocks. Investing in mutual funds is more like depositing or withdrawing money from a bank than like buying stock. Although the investor buys or sells "shares" in the fund at a special price called the Net Asset Value, or NAV, the transaction is made at the end of the day after the market is closed and the share price, the NAV, is determined by the closing value of the stocks in the portfolio at the end of the day.

Likewise, there are restrictions to trading mutual fund shares. With an individual stock like Microsoft (**MSFT**), the investor can buy it in the morning and sell it later the same day. The typical mutual fund family restricts transaction reversals (such as first buying, then selling) for extended periods of time, often as long as 90 days. In other words, once you buy into an equity mutual fund, you may not be able to sell out of it for three months. This is partly because the mutual fund managers do not want to make huge portfolio shifts if a large group of investors all try to do the same thing at once.

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<sup>12</sup> At this point the reader might find it useful to go to either of the financial websites and click on the charts for some of the indexes discussed above and compare their performance.

<sup>13</sup> This would of course mean that an investor in an S&P 500 index fund invested in 1999 would have performed modestly up until 2013, because **Figure 5** more or less shows you how that fund would have performed. Dividend payouts to the fund from those stocks in the S&P 500 that pay dividends would have raised the return some, about 1.5% annually, from what is suggested by **Figure 5**.

Exchange Traded Products (ETPs) generally consist of either Exchange Traded Funds (ETFs) and Exchange Traded Notes (ETNs)<sup>14</sup> and are like a cross or a hybrid between a mutual fund and a stock. Because the distinction between an ETF and ETN is legal, that distinction will be ignored in this chapter.<sup>15</sup>

ETPs trade exactly like stocks and investors buy and sell them in the same way that they buy and sell stocks. The price changes throughout the day and the quotations and charts look about the same. You can buy them and sell them at any time with no restrictions.

But ETPs are not shares of stock in a company. Like mutual funds, they represent an invested portfolio of something, sometimes stocks and sometimes something else. And like mutual funds they are investment pools, although the means for pooling the money is very complicated compared to mutual funds (and not discussed here).

It is best to explain ETPs by example.

All of the major indexes both in the United States and globally are represented by ETPs. For example, the S&P 500 is represented by (showing symbols only in these examples) **SPY**, the Dow by **DIA**, the NASDAQ 100 (a subset of the NASDAQ Composite) by **QQQ**. All of these index tracking stocks follow their index very closely (which is not to say that all ETPs of all categories track well).

Global index ETPs also track their respective markets, for example, **EWJ** for Japan, **EWY** for South Korea, and entire regions like Latin America (**LBJ**). Some ETPs track commodities rather than stocks, like the heavily traded **GLD** for gold, bonds (**TLT**), every stock sector imaginable, like the energy sector (**XLE**) and even ETPs that allow you to bet that the market will go down, like **DOG**, which goes up when the Dow goes down.

There are thousands of ETPs offered now and they play an important growing role in the markets of the 21st century. They are not stocks in the traditional sense of that word (although they may represent stock portfolios or indexes as stated above) but they trade like stocks and are increasingly part of the investment strategy of even the smallest investors.

We will return to ETPs in **Chapter 6**.

## 5. Stock Listing and Initial Public Offerings (IPOs)

In the United States and most countries, when a business organization forms as a corporation, it is required to represent the ownership structure of that corporation with the initial disbursement of shares of stock (among the founders) and later sale of shares to private parties. Once these shares exist, however, it is illegal to sell these shares to the general public (some very restricted trading is allowed, discussed later) until the corporation is *publicly listed*.

Companies do not automatically have the right to have their stocks listed for trading. And you, as a trader, do not have the right to buy and sell stocks in every company that is out there.

Generally, companies that want to have their stocks traded on a large scale must choose between two *listing agencies* in the United States, **NYSE** (the acronym originally stood for the New York Stock Exchange) and **NASDAQ**.

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<sup>14</sup> The distinction between these two, which is very technical, will not be discussed here. Hereafter the acronym ETP will be used to refer to either of them.

<sup>15</sup> The financial media often refer to all ETPs as ETFs when they are not identical and some ETPs commonly referred to by the media are instead ETNs, and the distinction is important. It will be deferred to a later chapter.

Further, these two listing agencies offer different types of listing services for different size companies and allowing overseas listings (through NYSE Euronext and NASDAQ OMX)<sup>16</sup>.

In the past NYSE used to list the large caps and NASDAQ listed technology companies (because the listing requirements were so lenient, especially on profitability, compared to NYSE) and mid-caps and small-caps, but now that distinction has largely disappeared.

In both cases now, given the listing niche desired. candidate companies have to submit detailed applications to show that they meet listing metrics, which is typically some combination of minimum thresholds for revenues and/or earnings, number of shares outstanding, anticipated market cap, number of private shareholders, length of time in business, and so forth. The multiple listing options allow companies with different configurations or weakness in one area and strength in another to list under different criteria. Many companies are now listed on both exchanges.



For example, a small-cap technology company with no profits but two years of operating history might apply to be listed under either the NASDAQ Capital Market or the NASDAQ Global Market and the later might apply to be listed on the more prestigious NASDAQ Global Select Market.<sup>17</sup>

It should be noted that the potential investor might never know this distinction and would not care about it. All that matters to the typical investor is that it is listed somewhere.

Once the listing has been approved the company and its sponsors (brokerage houses like Goldman Sachs) begin the elaborate process of preparing for the first day of making stock available to the public, the process that is called the **initial public offering**, or **IPO**. Shares sold during an IPO are mostly newly-issued shares intended for the event. From the company's point of view, the primary purpose of the IPO is to raise new cash through the sale of new shares. From the investor's point of view, the purpose of the IPO is to allow trading in the company's stock.

<sup>16</sup> The types of listings available and the listing requirements are too complicated and detailed to cover in this introduction and they change often. This will be discussed in more detail in a later presentation. The reader who is curious now is advised to consult, for NASDAQ listings <https://listingcenter.nasdaq.com/assets/initialguide.pdf>, and for NYSE listings, [https://www.nyse.com/publicdocs/nyse/listing/NYSE\\_Initial\\_Listing\\_Standards\\_Summary.pdf](https://www.nyse.com/publicdocs/nyse/listing/NYSE_Initial_Listing_Standards_Summary.pdf).

<sup>17</sup> See *NASDAQ Initial Listing Guide*, January 2019, <https://listingcenter.nasdaq.com/assets/initialguide.pdf>

If the company is well known or highly publicized, the IPO can be a much-anticipated spectacle.

Older investors can still remember the glory days when back in the 1990s a technology stock might IPO (it is used as a verb too) and triple on its first day and then increase ten-fold in the year that followed! For example, when America Online (originally Quantum Computer Services and now a subsidiary of Verizon Communications (**VZ**)) IPOed on March 19, 1992, the company's market cap stood at \$61.8 million. Share prices went stratospheric in the speculative fever that followed, and by July 30, 1999, America Online had a market cap of a staggering \$105 billion! A \$100 investment made on the day of the IPO would have been worth more than \$28,000 by 1999<sup>18</sup>.

Of course this all collapsed with the dot.com crash and those days are gone, probably for good.

## 5.1 The Uber and Lyft IPOs

More typical these days are the 2019 IPOs of tech competitors Lyft Incorporated (**LYFT**) and Uber Technologies Incorporated (**UBER**). **LYFT** traded for the first day on March 29, 2019, and **UBER** started trading about six weeks later. As can be seen in **Figure 6**, both have been disappointing since the first day, although **LYFT** more so than **UBER**.

**LYFT** successfully sold 32.5 million shares despite running a loss of \$911 million in 2018. The much larger and more aggressive **UBER** raised about \$8 billion selling 180 million shares. The performance of both stocks since the IPO can be seen in **Figure 6**.

The opening transaction for **LYFT** was at 87.33, but stock plunged on the very first day, closing at 78.29. On the day of its second earnings report, August 7, 2019, **LYFT** offered a positive earnings report, narrowing its losses from the previous quarter and reporting more customers, but the stock was still trading below 63.

**UBER's** IPO was generally seen as disappointing. Prior to the IPO the company had promoted the notion that their market cap (the value of all stock owned based upon the IPO price) would possibly exceed \$120 billion! In the days following the IPO, it became clear that the market valuation was closer to \$80 billion.<sup>19</sup> Although **UBER** has sold 180 million shares in the IPO, that amount represented a small amount of the total stock outstanding and owned by someone. After the IPO, more than 1.65 billion shares were outstanding, so the amount owned by the investing public after the IPO was a small fraction of the total.<sup>20</sup>

It is possible that both companies had simply waited too long to launch their IPOs (**LYFT**, for example, was incorporated in 2007). Stock investors want to see rapid growth in newly-listed technology companies. Both of these companies had experienced torrid growth since their inception, but by some standards were already mature companies by the time they were listed. Both were regarded with great excitement as perfect examples of the disruptive nature (or perhaps destructive nature) of technology companies when they first appeared, offering convenient and cheap transportation alternatives (essentially as outsourced taxi services), but by 2019 both companies were mired in controversy. They had flouted transportation regulations, were facing drivers strikes and a political movement to convert the status of their drivers from self-employed to employees, and were hemorrhaging cash.

Only time will tell if these two companies will sort out their problems and reward their IPO investors.

<sup>18</sup> **WIRED magazine**, Issue 7.10, October 1999.

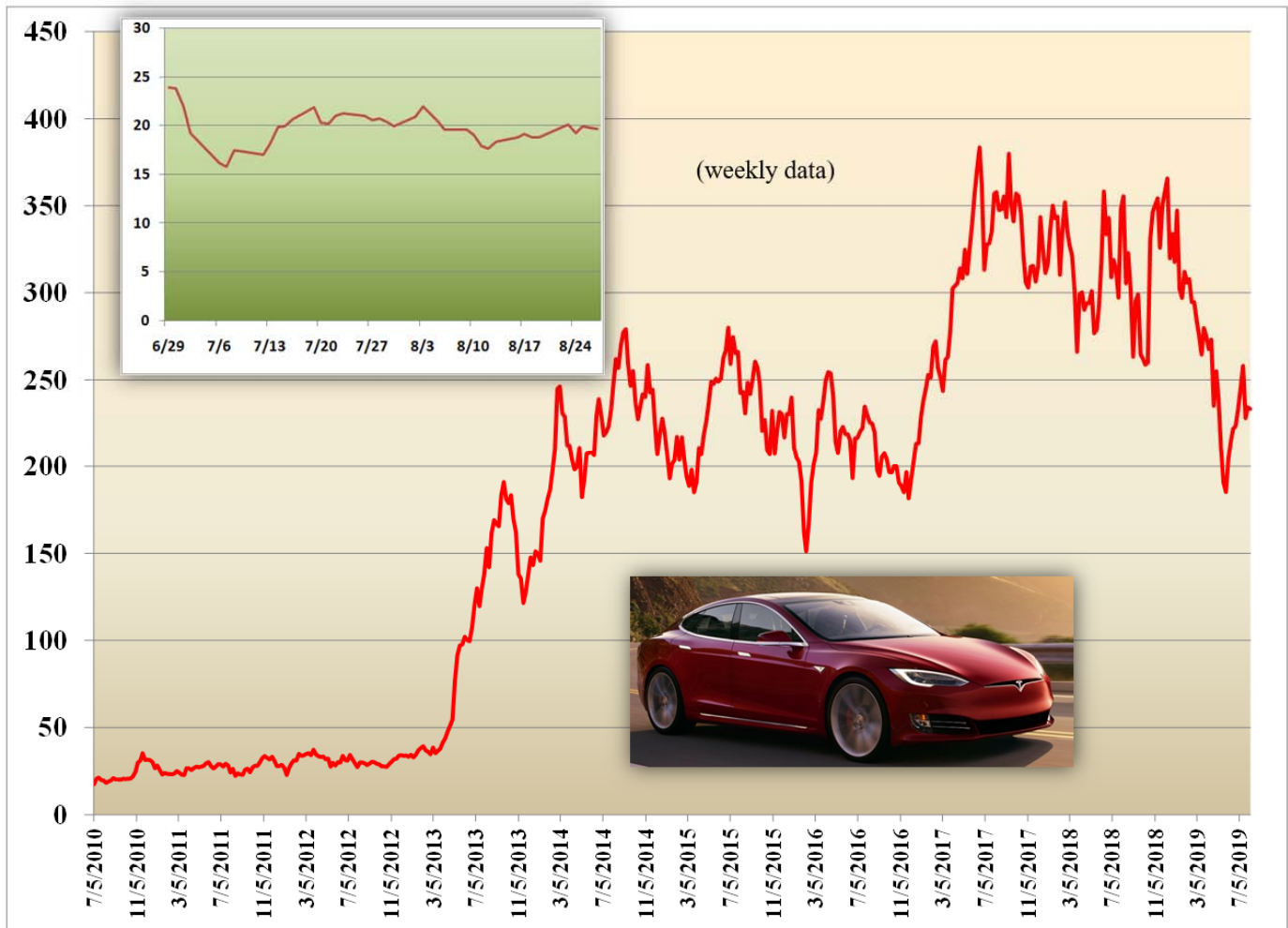
<sup>19</sup> See Mike Isaac, Michael J. de la Merced and Andrew Ross Sorkin "How the Promise of a \$120 billion Uber I.P.O. Evaporated," **The New York Times**, May 15, 2019.

<sup>20</sup> See Emily Bary, "Uber IPO: 5 things you need to know about the biggest IPO in years," **MarketWatch**, May 13, 2019, <https://www.marketwatch.com/story/uber-ipo-5-things-you-need-to-know-about-potentially-the-biggest-ipo-in-years-2019-04-12>

## 5.2 The Tesla IPO

The Tesla Motors (TSLA) IPO, debuted on June 28, 2010, and raised \$266 million for the company (and is a NASDAQ listing). Founded by the famous engineer-entrepreneur Elon Musk, Tesla Motors started with the all-electric high-performance roadster.

**Figure 7 – Tesla Motors (TSLA) Price History Since the IPO**



TSLA opened at around \$19 per share (the first few weeks are shown in the inset or **Figure 7**), fell during the day, but by the next day was trading for above \$23 per share. But in the tepid stock market of 2010 the price fell back to the IPO price and the stock was lackluster.<sup>21</sup> However Musk took the investor capital raised by the IPO, converted an old GM and Toyota plant in Fremont, California, introduced a new Model S Tesla, then the Model X and Model 3 (shown in the inset in **Figure 7**), and although the product relied upon energy rebates to turn a profit, turn a profit it did, and by 2013 the Tesla Motors IPO was vindicated and early investors were rewarded - the stock was trading for the unbelievable price of more than \$165 per share. By the summer of 2014 the stock had cleared \$250 per share.<sup>22</sup> For two years after that the stock followed a volatile path without direction. Then in November 2016, Tesla merged with Solar City, another company originally founded

<sup>21</sup> Go to an online site to see what it is trading for presently. TSLA is a company that faces many downside risks. As a learning experience it might be worth keeping an eye on TSLA.

<sup>22</sup> If you are a student in Economics 104, if you mistakenly think your teacher is some kind of genius, here is a sobering thought - at no point did I believe that Tesla was a good investment. I was certain that Tesla would fail.

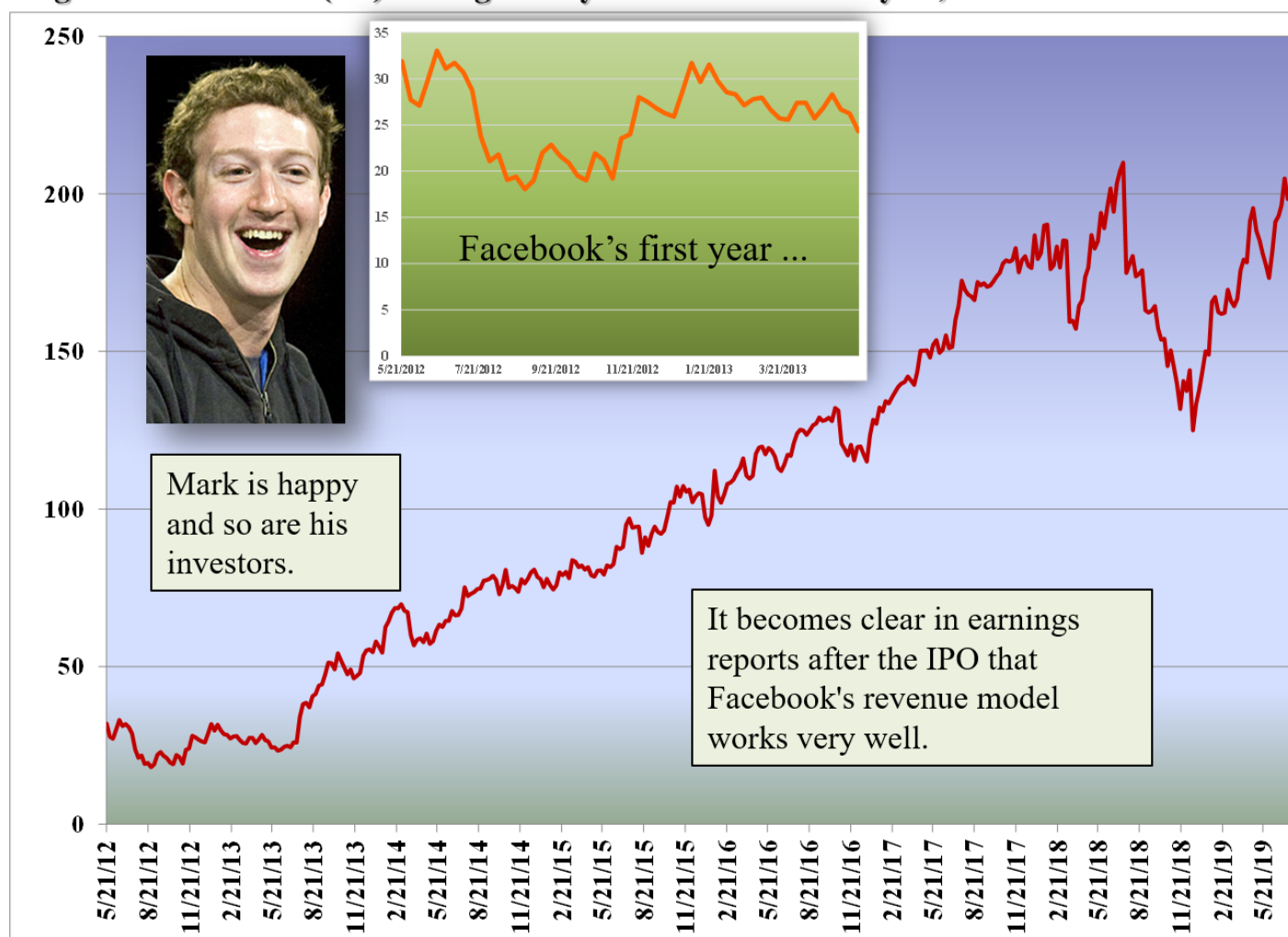
by Elon Musk, in 2016, and the stock took off on another spurt, spiking above \$350 per share. After that, production problems on the Fremont, California assembly line on the mass-volume Model 3 caused Tesla to miss production targets and burn through cash, again troubling investors and causing the stock to pull back from its 2017 high.

Although the Model 3 was selling very well in 2019 (even though a little below projections at the time), TSLA was beginning to experience cashflow problems (it is expensive to run an automobile company), so as can be seen in **Figure 7**, investors were unsure about the fate of Tesla. The stock would rally for a while like the good old days, then some bit of bad news would push it back down.

### 5.3 The Facebook IPO

In the summer of 2012 the markets anticipated one of the largest and most publicized IPOs ever - the public debut of Facebook Incorporated, the social media giant, founded and headed by prodigy Mark Zuckerberg.

**Figure 8 – Facebook (FB) closing weekly values since the May 18, 2012 IPO**



The Facebook (FB) IPO on Friday, May 18, 2012, captured the attention and buzz of traders weary of the poor market performance of 2012 (world markets were beset with concern about Europe and specifically Greece, which appeared to unraveling at the time). As the big day emerged, the enormous IPO reminded older traders of the heady days before the 2000 market crash, when billions of dollars were to be made, at least by insiders and private investors, when a company went public.

Facebook's IPO pricing was ambitious, announced at \$38 per share in the day before the IPO, which valued the company at \$104 billion, making that the highest IPO valuation in history and 23rd in capitalization ranking for all U.S. companies, as large as Amazon, which at the time had a market cap of about \$100 billion and was an established high-growth technology leader with revenues of more than \$50 billion per year and \$631 in profits in 2011. Facebook's revenues for the previous year on the other hand were less than \$4.5 billion.

Specifically, Facebook offered 337,415,352 net shares of common stock to the investing public, worth slightly under \$13 billion at the projected IPO price of \$38. However more than 157 million of those shares were offered by company private investors who were merely cashing out some of their investment early, leaving less than \$7 billion in cash (after fees and expenses) for use by Facebook. Without doubt that is a lot of money, but the IPO pushed the value of stock owned by founder Mark Zuckerberg to more than \$20 billion.

Zuckerberg was not the only enriched beneficiary. The stock owned by co-founder Dustin Moskovitz would be worth more than \$5 billion, former President Sean Parker more than \$2.5 billion, and multiple private investors, typically venture capital firms, tens of billions of dollars.

Why were insiders so enriched? Because even though more than 337 million shares were being offered to the public, total common stock outstanding after the **IPO** equaled a staggering 2,138,085,037 shares! Therefore, the general public who invested in the IPO would own less than 16% of the total stock outstanding.

As it turns out, the actual Facebook IPO was a fiasco. NASDAQ OMX, the sponsoring exchange, never got their new software working on opening day, so trading, which was delayed by half an hour from the scheduled start time, was handled by smaller exchanges like the NYSE's Arca, BATS, The Edge, and regional exchanges like Philadelphia and Chicago. The first listed trade was at 45, but the stock price plunged throughout the day and the following trading days, closing below 30 on May 29th, \$8 below the projected IPO price.

In the week that followed the media reported multiple claims of traders who could either not get into or out of their trades (mostly because of the NASDAQ OMX failure) and a flurry of lawsuits were filed against Facebook, underwriters, and the NASDAQ OMX because of the glitches and because of allegations that some of the underwriters, like Morgan Stanley (lead underwriter), informed large private traders before the IPO, that Facebook's prospects for revenue growth were dimming, information that was not passed on to the general public.<sup>23</sup>

The inset in **Figure 8**, the first year of price performance, shows that Facebook stock continued to lose value through the summer of 2012, closing in late August below \$20 per share. But after this mediocre year has passed, in the summer of 2013 Facebook shares salvaged a nice rally once it became clear in a quarterly earnings report that **Facebook** was making huge inroads into the mobile media market with all of its promised revenues, so **FB** was off the hook and has continued to perform well into 2019, although with some volatility.

Not all IPOs issued around the time of Facebook have been so successful. There were some other troubled technology IPOs in 2012. Groupon (**GRPN**) and Zynga (**ZNGA**) have been poor performers since their IPOs, and so was Yelp (**YELP**) for a couple of years until they found earnings. In 2017, Snap Incorporated (**SNAP**) continued this tradition of dismal performance. **SNAP** opened at 24 on the day of its IPO, but gradually faded through an earnings report, losing about half of its value at the time this was written. Technology IPOs demonstrated that they still could pay, but it was not guaranteed.<sup>24</sup>

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<sup>23</sup> Most information about the IPO offering is from the SEC Amendment No. 6 to Form S-1 Registration Statement for Facebook Incorporated, filed on May 9, 2012, available at <http://goo.gl/i47pD>. Some information was also taken from various articles in *The Wall Street Journal* and *finance.yahoo* on the day of the IPO the days that followed. See also *The Wall Street Journal*, May 24, 2012 "Some Big Firms Got Facebook Warning."

<sup>24</sup> Take a break and look up current quotes for Groupon, Zynga, Yelp, and Snap to see what has become of these companies.

## 5.4 Shares Float Versus Shares Outstanding

At this point it is useful to introduce a statistic that will show up elsewhere in this book. As stated above, during an IPO a company will issue a large number of shares, and that will contribute to the total number of *shares outstanding*, which is the measure of all shares that have been issued by the company. Not all shares outstanding were issued during the IPO. Obviously many, probably most, were issued privately when the company was being formed and financed before the IPO. Such shares are in the hands of the founders, early investors, and in some cases employees.

At the time of the IPO, some of the early shares issued have restrictions placed upon them (typically with a time constraint that is eventually lifted) and are not available for the market. This class of stock is referred to as *restricted stock*, and the residual stock that remains to be traded openly on the markets is referred to as *float*.

For example, as of May 31, 2018, **TSLA** had 169.79 million shares outstanding, but float only equaled 126.72 million shares. The latter amount, not the former, is the amount in circulation having the potential to be bought and sold in the markets.

As we saw in the **UBER** data, although the company issued 180 million shares of stock, currently **UBER** has more than 1.7 **billion** shares outstanding! Nearly all of that was issued privately before the IPO. This implies that the public only owned about 12% of the company the day after the IPO. And yet it is the public's valuation of that 12% that sets the market cap for the entire float.

Of course, gradually much of the stock (but not *most* of the stock) is released to the public as the private investors (mostly institutional investors like venture capital funds, banks, and wealthy investors sell off their portfolios, typically with massive profits, because they invested in the stock at a fraction of the IPO price.

The sale of what were originally private shares after the IPO is usually restricted. According to the legal provisions of the IPO, a certain amount of time must pass before investors' shares can be sold to the public. The practice of restricting share sales is called a *lock-up agreement* and usually lasts about six months, although the time can vary. The timing of lock-up agreements can be critically important, because investors know that when the lock-up expires, original investors may flood the market with stock that is suddenly authorized to be sold.

## 5.5 Secondary Private Markets

In recent years a new type of internet-based company has emerged that has created a special kind of market for trading prominent unlisted private stocks like Facebook, Uber, and Lyft among wealthy traders before they go public. Three primary dedicated companies promoting these kinds of transactions were SharesPost (which sold Facebook shares), SecondMarket (acquired by NASDAQ in late 2015), and NYPPEX<sup>25</sup>. Since then they have been joined by others, including NASDAQ (**NPM**) and many others. These are currently being called *secondary private markets* and their legal status for selling shares of large unlisted companies seemed questionable when they first appeared, but they were never legally challenged by any regulators so they are now part of the landscape. The companies offering these services claim that so long as the total number of shareholders remain under 500 (the current limit by law for unlisted companies) and sales are registered in large blocks only to so-called *accredited investors* (those who have a net worth of more than \$1 million or income greater than \$200,000 per year for at least two years) then the sales are legal.

These secondary private markets went largely unnoticed until the spring of 2011 until Facebook's CEO Mark Zuckerberg decided that rather than sell Facebook to another company or do an early IPO, he would first offer large blocks of shares at high value through these secondary private markets. He consequently sold minority positions in Facebook to Goldman Sachs, Digital Sky Technologies, and investment fund GSV Capital for values that seemed to elevate Facebook's implied

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<sup>25</sup> Find the websites for SharesPost and NYPPEX to see what they claim to offer.



market cap to well about \$50 billion, a value probably triple what it had been a year before and questionable to many analysts. This was part of a chain of decisions that led to the final inflated Facebook IPO value above \$100 billion, as described above.<sup>26</sup>

Uber, the enormous crowd-sourcing taxi company had clearly taken advantage of the secondary private markets, raising an astonishing \$7.7 billion in early 2018, a full year before their IPO.<sup>27</sup> In the same way, Lyft had raised a smaller amount.

This is apparently one of the reasons why Uber and Lyft waited so long to do their IPO. With this thriving secondary market the funding and share pricing from the IPO wasn't really needed. Private investors (again, mostly investment firms, banks, and very wealthy individuals) were bidding up the share value of these firms while still privately held while providing ample funding for company growth. *Eventually* the IPO become necessary so these private investors can find a wider outlet for the sale of their stock.

All of this has changed the primary function of the IPO for at least the largest companies. The IPO is now far less important as a source of capital and far more important as a source of market liquidity for wealthy private investors.

It is not clear that all of this is in the best interest of small, retail private investors.

## 5.6 Over-the-Counter (OTC) markets

Before we depart this discussion of listings it should be mentioned that there is a much smaller free-wheeling listing market of companies that trade on the *Over the Counter* or *OTC* market. Listing standards are low (effectively none) for companies listed here and share prices are typically less than a dollar and sometimes only a few pennies per share. These cheaper stocks are often called *penny stocks* and are favored by young gamblers. The OTC traditionally has been more of a stock casino than stock market and investors generally don't wander across the tracks to dabble in OTC unless they have a real knack for gambling.<sup>28</sup> This remains true today if talking about penny stocks.

In recent years however, the OTC Markets Group has been trying to clean up their act and become more credible as a listing service for small companies that either aren't large enough to be listed by the major exchanges or are foreign ADRs (explained in the next section). To their credit they are encouraging and enabling companies (through their own services) to comply with relatively high standards for financial reporting. They are also marketing access to U.S. small-caps and micro-caps to overseas investors while encouraging overseas firms to list in the United States, a practice that they call "cross-trading." For example, Mexico's Wal-Mart, Wal-Mart De Mexico S.A.B. de C.V. became a listed company on one of the OTC markets, **OTCQX**. The OTC markets are currently a major source of IPO capital for very small banks. One of the more interesting of the latter stocks is the popular but probably rather risky bank stock Grayscale Bitcoin Trust (**GBTC**). Introduced on the **OTCQX** exchange in late Spring 2016, the stock stayed dormant around \$1 per share for the first year of its life, then exploded to, at one point, \$38 per share in late 2017, then gradually collapsed back to \$14 at the time of this writing. If you try to undertake the same sort of fundamental research on performance metrics that you would on a NASDAQ stock, although you will find a price quote on any typical financial site like *finance.yahoo*, you would be hard-pressed to find any useful data about **GBTC**.

Whether this push for credibility will improve the acceptance and popularity of these OTC stocks remains to be seen.

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<sup>26</sup> The interested reader might read *The Wall Street Journal*, March 27, 2015, "How Wall Street Middlemen Help Silicon Valley Employees Cash In Early," by Susan Pulliam and Telis Demos. It is also very instructive to read information about how to buy and sell private securities on the SharesPost site at <http://sharespost.com>.

<sup>27</sup> *Crunchbase.com*, "Secondary Market – Uber," December 28, 2017.

<sup>28</sup> See <http://www/otcmrket.com> for a sample of this market. When perusing stocks, select **Share Volume** as a criteria and review what pops up.

Increasingly, larger foreign corporations are also listing their stocks on the OTC markets in the United States. This new phenomenon is discussed below.

Many companies that were once proud to list on NASDAQ were delisted by NASDAQ and disgracefully bumped down to the OTC because they failed to conform to the criteria required for continuation of listing, typically because the share price of the stock fell below \$1 per share.

## 6. Trading Stocks from Other Markets and Economies

The emphasis in Economics 104 and this online book will be about trading in United States securities offered in domestic markets, if for no other reason than to considerably reduce the complexity of an already complicated topic. Therefore, most of the discussion about stocks will be restricted to stocks of American corporations traded in the huge U.S. market. But as a student, you probably already realize that investing is slowly becoming a truly global phenomenon because restrictions are easing on overseas investments and online access to global markets is rapidly expanding and at the same time becoming far less expensive. You may have heard your parents or friends talking about investing in “emerging markets” or something similar, so you know it is possible.

Well, although it is not quite as fluid as you might think – it is certainly easier for professional investors than it is for small retail consumers to access overseas markets – it is possible, using three potential channels:

### 6.1 Buying directly on foreign exchanges

First, it is possible to open an online brokerage account that has access to foreign markets and their listed securities and get permission to trade in these markets. Such trading typically requires that the trader also obtain permission to trade in foreign exchange currencies (you can't buy stocks in the Japanese market with Dollars – you have to use Yen) and therefore the trader must be willing to accept exchange rate risk. But if you have your heart set on buying 100 shares of Toshiba Corporation, you could have paid around ¥3,195.00 per share in early August, 2019, on the Tokyo Stock Exchange, so long as you had an Interactive Brokers account with international trading permission or an equivalent account at some other broker providing this service.<sup>29</sup> The Tokyo Stock Exchange uses numbers rather than letters for listing symbols, so Toshiba Corporation is listed as **6502.T**.

### 6.2 Investing in foreign markets through mutual funds and ETPs

Even the smallest investor can invest any amount from a pittance to 100% of your retirement funds (not advised!) in foreign markets through a full range of mutual funds and exchange traded products (ETPs) that offer selections from nearly every market and class of financial asset that exists. Investing through these channels is indirect, but you are still investing in foreign companies and foreign markets. Investing overseas through mutual funds is discussed in **Chapter 5** and doing the same through exchange traded products is discussed in **Chapter 6**.

### 6.3 Buying ADRs

You probably know that Sony Corporation is a Japanese company headquartered in Tokyo. Sony stock is also listed on the Tokyo Stock Exchange, which means you can also buy it with an Interactive Brokers account. It is an important company in the Japanese economy and therefore is one of the companies included in the Nikkei 225 index, the Japanese equivalent of the S&P 500 index. But if you have a brokerage account in the United States, you can also look up a quote in Dollars for Sony under symbol **SNE** and you may be pleasantly surprised to discover that Sony is listed by the New York Stock

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<sup>29</sup> The exchange rate at the time was about 105 Yen per Dollar. Your teacher's primary broker, Interactive Brokers, essentially provides access to every stock exchange in the world and the OTC markets and Pink markets. These services have not really taken off, possibly because just about the time they were being heavily promoted to retail investors global markets collapsed, and the fear factor has since then kept small investors away.

Exchange and is just as easy to buy and sell as Ford. This is because Sony and thousands of other foreign companies have been given permission to trade on U.S. markets in U.S. Dollars because they have established *American Depositary Receipts (ADR)*.<sup>30</sup>

Generally, a given amount of shares denominated in the home currency are deposited in a financial institution and an identical amount of shares are then issued to the U.S. markets denominated in Dollars. For example, if a million shares of Yen-denominated Sony stock are deposited as an ADR, then a million shares of Sony stock can be issued through the New York Stock Exchange to be sold in Dollars. Thereafter these are traded just like stocks that had IPOed in the U.S. market, with no restrictions. Some of these stocks, such as oil giant BP plc (which used to stand for British Petroleum) often pay dividends both at home and in Dollars in the United States.

These ADRs are *cross-listed*, which means that they are listed and traded on both exchanges (such as Sony on the New York Stock Exchange in Dollars and the Tokyo Exchange in Yen). In case you are wondering about hidden opportunities for profits from pricing inefficiencies (which are certainly theoretically possible), trader arbitrage more or less keeps the two quotes in alignment given fluctuating exchange rates.<sup>31</sup> For example on June 6, 2019, the closing price for *Sony* was 50.18 per share, whereas the quoted Yen price of Sony on the Tokyo market was ¥5,539 per share. Given that the Yen-to-Dollar exchange rate at the time was slightly above 110-to-1, the quotes were in alignment (the quotes will seldom match exactly because they are offered at slightly different times).

In summary, even though as a U.S. investor you might not be inclined to go to the trouble of opening an international trading account, if the overseas company in which you want to trade is very large and a recognizable name, there is a very good chance that it is offered in the U.S. markets through an ADR. To find out if it is, simply go to one of financial websites like *finance.yahoo* or *finance.google* and type the name into the company or symbol lookup box to see what appears.

#### 6.4 Cross-listing on the OTC Pink Sheet markets

An ever-growing number of foreign corporations are being listed on a specialized OTC market called the *Pink* markets, or sometimes the *Pink Sheets*. These typically are also ADRs and are listed on **OTCQX**. One can find Toshiba Corporation, for example, under the symbol **TOSBF** on the Pink market. Usually if a stock is listed on the Pink market your broker will allow you to buy it with no restrictions.

For example, on the day that Toshiba **6502.T** was listed on the Tokyo Exchange at ¥3,195.00 per share, and when the Yen was trading for 105.28 Yen to the Dollar, the Pink Market had **TOSBF** listed for 30.77. Clearly the Dollar price was more or less consistent with the Yen price.

The use of the OTC Pink markets is rapidly expanding the availability of foreign stocks, at valid prices, to investors in the United States.

### 7. Stock Splits and Reverse Stock Splits

A stock split is a simple process that keeps the stock price for any given stock trading in an attractive range. A typical stock split for a large company is a 2-for-1 stock split that increases the number of shares outstanding shares by exactly double while leaving it to the markets to cut the price exactly in half. 3-for-1 stock splits and other proportions are also common.

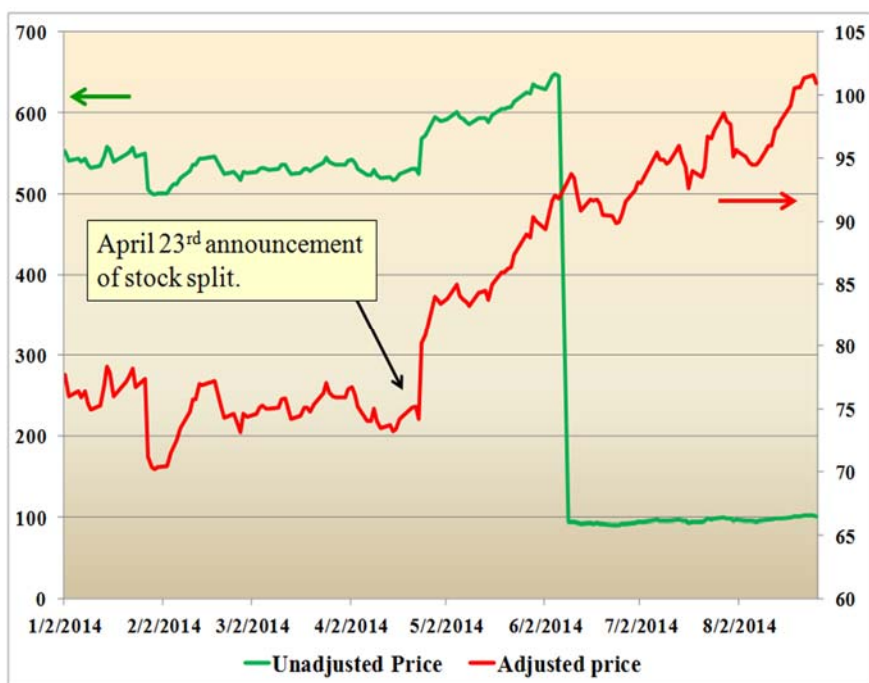
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<sup>30</sup> To be more specific, they have created either Level II or Level III ADRs which are at a permission level and disclosure level high enough to all the securities to be traded on exchanges regulated by the SEC.

<sup>31</sup> It is too early to explain trader arbitrage, which will be addressed in a lecture way on down the road, but an example might suffice. If the two stock prices become so misaligned that a profit can be made by, say, buying *Sony* in New York and immediately selling a matching block in Tokyo, this very activity among speculators will bring the prices back into alignment.

The stock split is initiated by the Board of Directors of a corporation, approved by the shareholders, then calendared with ample lead time. On the market open of the trading day that was calendared as the effective date, any registered owner of the stock will, in the case of a 2-for-1 split, be represented as owning twice as many shares as he owned the day before. For example, on April 23, 2019, First Financial Bankshares (**FFIN**), a holding company for a regional bank, announced a 2-for-1 stock split effective on May 15, 2019 (for owners of record as of this date - this is called the *x date*), to be distributed on June 3, 2019. That was a Monday, so any investor who went to sleep that Monday with 100 shares of **FFIN** owned twice as much **FFIN**, 200 shares, the next morning! Since stock prices are determined by pure supply and demand, it is up to the market to reduce the stock price, but that more or less always happens with great precision. In effect, the shareholder will discover that she owns twice as much stock *at about half the price*.

**Figure 9 – The 2014 Apple (AAPL) 7-1 stock split**



Typically, all other adjustments are proportionate to the split. Dividends are adjusted of course, and shareholder voting rights are typically unaltered.

A company will do this to keep a successful stock in an acceptable trading range, say below \$100 or below \$50, where it is thought that smaller investors might be more inclined to buy a stock without having to buy an odd lot (less than 100 shares). There is no requirement, however, that this be done. For many years the gigantic corporate holding company named **Berkshire Hathaway**, controlled by legendary investor Warren Buffett (Berkshire Hathaway was originally an obscure nearly-bankrupt textile firm that Buffett slowly took over in a series of stock trades) refused to split their stock despite the company's phenomenal success. On August

13, 2019 Berkshire Hathaway Class A (**BRK-A**) shares traded at the price of **\$299,510** per share (up \$1,995 for the day)! Berkshire Hathaway also had a listing of Class B shares (created in 1995 against Buffett's wishes), but even they were not split until split for the first time in 2010 in a 50-for-1 split. **BRK-B** was trading for \$198.83 per share on the same day.

As stated above, sometimes to stock splits are much higher than two for one. After market close on Wednesday, April 23rd, 2014, during a quarterly earnings report, Apple shocked the market by announcing a 7-1 stock split. Shareholders of record on June 2, 2014 would be reissued seven new shares for every old share on June 9, 2014. A split of that magnitude was rare for a large company.

The effect of the announcement and the stock split are shown in **Figure 9 - The 2014 Apple (AAPL) 7-1 stock split**. One axis shows the actual unadjusted quoted price per share of stock, which plunges over the weekend of the split from \$645 per share to \$94 per share. The other axis shows the price adjusted for the split, up until August 26, 2014. The price of **AAPL** on August 26, 2016 was 106.94 (not shown).

Just before the April 23rd announcement Apple stock had closed at \$524.75. When it was to open the next day, it opened up at a gain of more than \$43 per share, at \$586.46.

**Figure 10 – The effect upon the stock price of Citigroup (C) of the 1-for-10 reverse stock split of May 9, 2011. Prices shown are the actual market prices quoted.**



The likely market impact of the decision to split a stock, is controversial. Despite the example of the pop in Apple stock, which may have also been explained by a good earnings report plus the decision to use Apple's cash to buy back some of their outstanding stock, there is probably no long-term effect upon a stock's price by the decision to split. One older (2002) study claimed, however, that during the 1990s companies that had split their stock outperformed peers by about 9% in the year that followed.<sup>32</sup>

A **reverse stock split**, as the name implies, accomplishes the opposite of a stock split, by reversing the proportion of stock outstanding by some ratio, like 1-for-10, while effectively increasing the per-share value proportionately. The ratio is seldom a low ratio, like 1-for-2, but higher, like the example just given. Normally a reverse stock split is a sign of distress because it implies that, for whatever reason, the market price of the stock has been deemed by the company's Board of Directors to be too low. The listing services like NASDAQ will often threaten to delist a stock if its market price consistently drops below one Dollar per share, so during times of market distress many companies will engineer a reverse stock split to prevent their stock from being delisted. Since bumping the price effectively from around a Dollar per share to two Dollars per share may not do much good, a more radical solution, such as moving it to \$10 per share is a more likely outcome, which explains why a more extreme scale of adjustment is more common in reverse stock splits.

<sup>32</sup> Ikenberry, David and Ramnath, Sundaresh, "Underreaction to Self-Selected News Events: The Case of Stock Splits," *The Review of Financial Studies*, Vol. 15, Issue 2, Pp 489-526, 2002.

The 2009 Citigroup (C) reverse stock split provides a good historical example. Citigroup was one of the many huge financial services and banking corporations that were caught up in the huge market collapse triggered by the mortgage crisis beginning in 2007. Unlike many peer institutions like Lehman Brothers, Bear-Stearns, Washington Mutual, and Countrywide Bank, all destroyed by the scandal, Citigroup survived, but barely. The stock had traded in a range between \$40 and \$50 per share prior to 2007, but had plunged to only \$1 per share at one point in early 2009. C had then rallied to around \$4 per share later that year. At that time the stock was consistently the most heavily traded stock in the U.S., but for the wrong reason - it had become a speculator's stock, with day traders trying to catch minute price swings in the wild volatility, with the constant threat of delisting in the background.<sup>33</sup> On Monday, May 9, 2011 the problem was finally solved with a 1-for-10 reverse stock split, which effectively raised the price to around \$40 per share.<sup>34</sup>

**Figure 10** shows the effect upon the market price of C during the period in question. You should understand that when you look at the historical stock prices of a stock over time, the data shown are typically adjusted for splits and reverse splits. If you were to go back and look at a chart of prices for C for any period prior to 2008, it would show stock prices for C well above \$400 per share. But actual market prices never were that high - as seen in **Figure 9** they were around \$50 per share. But historical charts show the *adjusted close*, which for the sake of consistency have adjusted for the split or reverse split.

When all stocks, including over-the-counter stocks, are taken into consideration, stock splits and reverse splits are extremely common, with reverse splits outnumbering regular stock splits by about twenty to one. But that is because most of the action is undertaken by over-the-counter stocks. For example, in the month of June 2019, there were 29 reverse stock splits but only 1 split.<sup>35</sup>

## 8. Second Class Stock

Some companies like Alphabet Incorporated (formerly Google - **GOOG** and **GOOGL**) create different classes of stock when they split (or under other circumstances). Even before Google split their stock they already had two classes of common stock. The stock that was traded on the market after Google was publicly listed was designated as Google Class A stock and it traded under the symbol **GOOG** (and still does). But there was also a class of common stock owned by company founders and insiders designated as Class B stock, which did not and still does not trade in markets, and therefore has no symbol, but allowed **10** votes per share in contrast to a single vote per share for holders of Class A shares. Then when Google split their stock on April 3, 2014, each owner of a Class A share got a new Class C share that could be traded under symbol **GOOGL** but which had no voting rights!<sup>36</sup>

So even though a finance textbook might tell you that investors get certain rights, including voting rights, when shares are purchased, that may or may not be true.

Although it may seem that the denial of voting rights, whether through splits or by other means, is simply a sinister way to maintain control of a company in the hands of the founders, the actual motivation is a little more complicated. Historically many strong, growing and healthy companies have been ruined in the eyes of their founders by hostile takeovers coming from wealthy investment groups,<sup>37</sup> who can secure control of a company with only a plurality of shares if they can convince

<sup>33</sup> A delisted stock no longer trades on the national markets and slinks off to be traded in the murky over-the-counter market. which is essentially the death knell for any stock that was once publicly traded.

<sup>34</sup> A detailed account of this transaction is provided by Matt Phillips and Randall Smith for *The Wall Street Journal*, "Citigroup instantly becomes a \$40 stock," May 10, 2011. In that article they discuss studies that show that historically stocks that have been reverse split tend to underperform market indexes in general.

<sup>35</sup> See the **eoddata** website <http://eoddata.com/splits.aspx> for lists of stocks that have split. To see lists of NASDAQ upcoming splits, see <http://www.nasdaq.com/markets/upcoming-splits.aspx>.

<sup>36</sup> It's more complicated than this! The split made many shareholders of the **Class A** stock angry and so they sued and won a partial victory. That story is well explained in an article by Floyd Norris in *The New York Times*, "The Many Classes of Google Stock," April 2, 2014. Norris does a good job of explaining the motivation behind the split.

<sup>37</sup> Many of them are called *private equity firms*, although not all of these are *private equity firms*.

voting shareholders to vote for the acquisition. They can do that by promising a very high stock price often funded by heavy levels of debt to afford the purchase.

In the unlikely event that Alphabet is ever purchased by another company, it won't be done that way.

On the other hand, this practice has become more common and it obviously *does* consolidate permanent control in the hands of insiders. Giving that voting on important corporate matters, including selection of the Board of Directors, was once seen as nearly a sacred right of shareholders, it is very hard to argue that this new practice is clearly in the interest of investors.

The bar in this issue was raised considerably in 2017 with the IPO of Snap Inc. (**SNAP**), the Venice, California social media company that created Snapchat. This company decided to do away with the niceties of public ownership of stock altogether by issuing all common stock in the IPO that had no voting rights whatsoever.

This extreme maneuver generated something of a backlash among large investors. Irritated by the tendencies to restrict shareholder rights by companies like this, on July 31, 2017 the S&P Dow Jones Indices (the company that provides the S&P and Dow Jones indexes and other products) announced that The S&P Composite 1500 and its component indices (which includes the bellwether S&P 500) would no longer include companies with multiple share class structures including those with no shareholder voting.<sup>38</sup> Established companies who had violated this provision, like Alphabet, were grandfathered in (chaos would have resulted had Alphabet been kicked out of the S&P 500) so the action was clearly targeted at Snap.

A few days before, FTSE Russell made a similar decision included in their popular indices, which includes the Russell 2000. After September 2017, companies to be listed in their classification scheme would be required to "have greater than 5% of their voting rights ... in the hands of free-float shareholders as defined by FTSE Russell."<sup>39</sup>

Exclusion from an index can amount to a substantial penalty upon a stock. Index mutual funds and index ETFs (explained in later chapters) that target and track indices are required to buy these stocks for their portfolios, and as will be seen later, these index funds constitute a huge source of demand in modern markets. Excluding a stock from an index is equivalent to excluding a stock from a huge part of market demand.

As of the time of this writing, it remains to be seen if these actions will curb these secondary classes of stock.

## 9. What's next?

Now we have a general understanding of stocks and the indexes that represent them, we need to say more about how they are traded. The next chapter explains the fundamentals of actually buying and selling stocks, emphasizing online transactions and the role played by brokers and exchanges.

We are still not ready for explanations or theories about why stock prices rise and fall. That material is reserved for chapters 3 and 4 and some dedicated lectures.

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<sup>38</sup> "S&P Dow Jones Indices Announces Decision on Multi-Class Shares and Voting Rules," press release from S&P Dow Jones Indices, July 31, 2017.

<sup>39</sup> Mary Fjelstad, "Indexers take action on voting rights," FTSE Russell blog, August 23, 2017, <http://www.ftserussell.com/blog/indexers-take-action-voting-rights>