A delve into Google Inc. Does Google have a monopoly position and is the company properly valued?

Jan Berggren 880104-9753
Andreas Bråth 861225-6217

Bachelor thesis – Economics
Supervisor: Karl-Markus Modén
Karlstad 120530
Table of Contents

1. Introduction...........................................................................................................5
   1.1 Introduction.......................................................................................................5
   1.2 Problem formulation.........................................................................................7
   1.3 Purpose............................................................................................................7
   1.4 Method............................................................................................................8
   1.5 Disposition......................................................................................................8

2. History...................................................................................................................10

3. Theory and analysis.............................................................................................12
   3.1 Porter’s five forces model...............................................................................12
   3.2 Business model...............................................................................................15
   3.3 Google and monopoly.....................................................................................18
   3.4 Antitrust...........................................................................................................20
   3.5 Lock in............................................................................................................23
      3.5.1 Google and Lock in..................................................................................26
   3.6 Microsoft monopoly lawsuit.........................................................................28
   3.7 Growth............................................................................................................30
      3.7.1 Assumptions around growth...................................................................30
      3.7.2 How to estimate growth.........................................................................33
   3.8 Valuation of Google.......................................................................................34
      3.8.1 Choosing a valuation model.................................................................34
3.8.2 Return on capital vs. return on equity.........................................................36
3.8.3 Cost of equity.................................................................................................37
3.8.4 Calculation the value of the firm’s equity.......................................................39

4. Conclusion........................................................................................................41

5. Bibliography......................................................................................................43

6. Attachments......................................................................................................45
  6.1 Attachment 1................................................................................................45
  6.2 Attachment 2................................................................................................46
Abstract

Does Google have a monopoly position? This thesis will attempt to answer that question by looking at monopoly related subjects pertaining to Google such as lock in and antitrust. The thesis will also contain a valuation of Google and look closer at their business model to try and evaluate if Google is properly valued. Our findings have shown us that Google has monopolistic power and uses it to promote their other products. Our valuation values Google at $263.89 billion, a 36.84% increase from their current value of $192.84 billion (29th of May, 2012).

Abstrakt

1. Introduction

1.1 Introduction

Google Inc. is a company that has been on a rollercoaster of success right from the start in 1996. Two students Larry Page and Sergey Brin began in 1996 experimenting on a search engine that had a genuine algorithm that helped you find the most relevant web pages according to what you were searching for. Their simple design and great speed resulted in an immediate success. More and more internet users took Google to their heart and the company quickly expanded into the biggest and most popular search engine in the world. In 2009 the company reached a market share of 65.6 % of the U.S. market while their biggest rivals Yahoo only had a 17.5 % share of the market. Outside the United States their lead was even greater. In some countries their market share reached even as high as 90 %.¹

Google does not only have the most successful search engine on the market, but also owns a large portfolio of products and services that enjoy great success. Google is always striving to expand in all ways possible to be the best on different platforms and different internet services. The employees are allowed to use 20% of their work day to develop different new programs or services to bring the firm forward. This has resulted in a flurry of new products such as: Gmail, Google Maps, Google Finance, Google Books, Google Scholar, Google Calendar, Google Docs and Google Checkout.²

How could it be that two unknown students came up with the best search engine program in the world and how could it grow so large and profitable? What is it about their product and business model that has built the company from scratch to one of the biggest companies in the world in only a few years?

“With great power comes great responsibility-” the saying goes. Google has market shares in many areas that make it fair to characterize them as a monopoly. What impacts will it have on

society if they continue to grow and become increasingly dominant in areas such as Internet search and particular services such as Google Maps? The motto of the company is “don’t be evil”, but are there signs that they in some matters act just like one could expect someone with such market power would act to reduce competition and increase their profit? There are different ways to acquire new customers or keep old ones. One of the most annoying and costly strategies for customers that businesses use is lock-in, where the customers are forced to remain with the product in order to use your different products, or pay a switching cost.

The growth of the company and the way they operate has some clear similarities with Microsoft in the 90s, when they were involved in antitrust lawsuits for trying to squeeze the web browser Netscape out of the market so that their web browser, Internet Explorer, could gain a higher market share. There is no coincidence that Google has also been put under antitrust surveillance for how they favor their own sites in their search engine. With the power they now possess thanks to their search engine, they can create almost anything and it turns into an immediate success. Is it because their products are superior, or are they using their superior search engine lead to gain leverage into new markets?

All these assumptions ultimately affect an analyst when he is trying to determine the value of the firm. The valuation process of Google is one of the tougher to conduct because they are so controversial and full of potential. If Google can manage to gain further market shares at the same time as they manage to lock in their consumers their possibilities can be endless, and the current market price of the firm totally undervalued.

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1.2 Problem formulation

- What is Google’s business model?

- How does Google make their money?

- Can we see any signs that Google is using a lock-in strategy for their products, so that users have to stay true to their products and will have difficulties to use rival products together with Google’s?

- Does Google have a monopolistic position?

- How do you evaluate a company such as Google Inc?

1.3 Purpose

The purpose of this bachelor thesis is to see how Google could grow so fast and become so large and profitable. What kind of business model has Google used to be so successful? How does the company earn their money? Does Google possess a monopolistic position? If so is the case, is it good reasons to suspect that they misuse their leading position to get a further leading position and get into new markets? Are they trying to lock their products so that users have problems to use single services that may be better than Google’s?
1.4 Method

In this thesis we will gather information from different articles, books and websites about Google and internet companies in general and also search for information about the company’s behavior. We will also be looking through annual reports to try to help us do a business valuation of Google.

1.5 Disposition

The outline of this bachelor’s thesis is as follows:

Section 2.0 will go through the background into how Google was formed and the company history. This is to give some basic information concerning how Google grew into what they are now and just some general information about some of Google’s big milestones.

3.0 is the theory section, and the first part of this section will present Porter’s five forces model. We have chosen to focus the model on Google’s search engine and this model gives us more information about Google’s position in the market. It shows the threat of a new entry into the market, the threat of a substitute, Google’s power in the market, the search engine user’s power and how things look between Google’s rivals.4

Section 3.2 discusses Google’s business model. Here we go through how Google’s business model has looked from when the company was started up until now. How they developed their ads from just regular paid listings, to a more complicated feature. Also what other things that set Google apart from other companies.

Monopoly is a big issue in this thesis and will be discussed in section 3.3. We go through what constitutes a monopoly, discussing the key aspects and also looking into kind of barriers might prevent other companies from entering the market. Antitrust is a very interesting thing when it

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4 Porter M. How competitive forces shape strategy. Harvard Business Review. 1979
comes to monopoly because a company that is deemed as having a monopoly has the follow
much more strict restrictions when it comes to antitrust issues. Google’s possible antitrust will be
covered in section 3.4. Lock-in is another important issue when it comes to controlling the market
because it is a way that a company can exert their power and deter their customers from
switching to a rival, which will be looked closer at in section 3.5.

Section 3.6 will look closer at Microsoft. Microsoft is a company that has been accused of
misusing its monopoly power for years. They have been filed for antitrust a several times and
even been convicted in a court of law for it. The Microsoft vs. Netscape lawsuit is interesting to
look at because there are some clear parallels between the two companies, as Microsoft in the
90’s and Google in the 2000s are both innovational, young and controversial firms. We try to
determine if Google has a monopoly, and having a company we can try to draw parallels to might
aid us in that.

Section 4.0 comes next. Here we go through the parts needed to do a proper valuation. Growth
is an important aspect of a valuation and we go through some theory on growth before estimating
the growth for Google in 4.1. The valuation is the last part of the thesis before our conclusion in
4.2. Here we attempt to value Google by first choosing how we are going to valuate Google and
then doing the actual valuation.

Finally in section 5.0 we will conclude the analyses and discussion undertaken, and make a final
conclusion on how Google is valued and if it looks like they exercise monopoly power or not.
2. History

It was not until the mid to late -90s that the internet became mainstream. Several free services started emerging such as search engines, e-mail programs and auction sites. The very first search engine tool was Archie which was created in 1990. It would download directory listings of files located on file transfer protocol sites and create a searchable database. But it wasn’t until 1994-1995 that the big hitters came; Yahoo, Alta Vista, Lycos and Magellan.

The two founders of Google, Larry Page and Sergey Brin, met at Stanford.\(^5\) In 1996 both were in the Master’s program for computer science when they started working together on a search engine named Backrub. They eventually decided to change the name and picked Google, a play on words of the math term googol. Only two years later Google was awarded the best search engine by PC Magazine for its ability to show extremely well the most relevant articles people are searching for extremely well. The product pretty much spoke for itself and more and more people started using Google as their standard search engine because of the fast rate it shows the most important and relevant articles that are being searched for.\(^6\)

It didn’t take long time before Google became hugely profitable and in March 1999 the founders moved their offices to Silicon Valley, California. As proof of their success, only four years later in 2003 Google moved into their current headquarters, the building complex known as the Googleplex.\(^7\)

Five years after their $25 million funding, Google’s initial public offering (IPO) took place on August 19, 2004. 19,605,052 shares were sold at $85 a share, for a total of $1.67 billion. With a total of 271 million shares the majority stayed within the company however. This resulted in a market cap of more than $23 billion.

Google also started buying up and adding different companies into their portfolio. Since the beginning and up until now the company has bought over 100 companies. Among them are huge companies such as YouTube, Double Click, Android and recently Motorola. Many of the companies that have been bought have either been to diversify their portfolio or to directly

\(^5\) Google homepage, history section. http://www.google.com/about/company/history/
\(^6\) Google homepage, history section. http://www.google.com/about/company/history/
\(^7\) Google homepage, history section. http://www.google.com/about/company/history/
improve Google or their other products. The telephone operating system Android was for example bought to use on own developed smart phones, and with the buying of Motorola they acquired as many as 24 500 patents.\(^8\) Android is together with the iPhone the most popular smartphone system on the market. The software is used by other big smartphone producers such as Sony Ericsson, HTC, Samsung and Nokia. It is currently the most used software system for smart phones.

3. Theory and analysis

3.1 Porter’s five forces model

The Porter’s five forces model was created by Michael Porter, a professor at Harvard Business School. In his paper *How competitive forces shape strategy* written in 1979 he states that there are five basic forces that control the state of competition in an industry.⁹ A company wants to position itself in a way that they can influence these five forces and also so they are protected against them. These forces ultimately determine the profitability of the industry. We have used Porter’s five forces model to understand Google, with a focus on its search engine. The five forces are:

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Threat of new entry – While entering into the search engine market might be relatively easy, there are already so many competitors that no one other than a person or company backed by a big corporation would try to enter. This because monetization will be very difficult to achieve without the search engine receiving significant exposure and use, something that takes time and money. Entering into the market is doable; it is breaking into the top and earning money that is difficult.

**Threat of substitution** – There is really no substitute for a search engine. As long as the internet stays as the most widespread media, search engines will stay important. The only thing that could replace current search engines are more technologically advanced versions of the search engines.

**Supplier power** – Taking the U.S. market as an example, between Google, Bing and Yahoo, almost 90% of all searches are covered by these three.\(^\text{11}\) Those three have some power in the market, but the majority of the power is not in their hands. Browser integration is one of the only places where the suppliers have a form of power.

**Buyer power** – The user is the one with the power. While Google might get better search results than its competitors\(^\text{12}\), a user can just as easily use any of the other search engines and receive adequate results. If a competitor designs a logarithm that is better than Google, there really is nothing keeping the user from switching and because search engines have always been free there are no costs for the users to switch between them.

**Competitive Rivalry** – Rivalry in the search engine market is fierce. Google does however have a dominant position as number one. The price bar is also set at 0, which means there is no way to get a competitive edge in that aspect. This is because the price to use a search engine has always been free, so consumers will not want to pay for a service that has always been free and has many producers who supply this service. If any of the competitors decided to raise the price, they would essentially be committing corporate suicide as the users could easily just switch over to any of the other search engines, and they would instantly. As long as Google keeps their product up to par and in the public eye then it should be able to keep the top position at least for the foreseeable future.

Google definitely has a strong position in the market, what looks to be the strongest. One thing that is hard for them to control however is the buyer power, this because of the industry they are in, search engines. The other four forces they seem to have quite good control over. The question is do they have too much control over the market?

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\(^{12}\) Search engine reviews. [http://www.consumersearch.com/search-engine-reviews](http://www.consumersearch.com/search-engine-reviews)
3.2 Business Model

Google’s business model has been a key component in Google’s success. An internet based service company is still considered to be in its prime years. This is because the internet has not been around in the public’s domain for more than 20-25 years. Also there is no predecessor of a company based on very current technology, unlike the computer that had the typewriter, which meant that a new business model has to be made.

At the start all of Google’s revenue came from licensing its search technology. This they did with several sites, including Yahoo! The major source of Google’s current revenue however didn’t appear until a few months later, ads.  

The first iteration was called paid listings which consisted of text ads that appeared next to or mixed in with search results under the name sponsored links. These were pioneered by a company called Overture which was acquired by Yahoo! a few years later. These ads were sold to advertisers on a “per-click” basis meaning that the advertisers didn’t pay anything when the ad came up, but instead paid when the ad was clicked on. Auctions were then held for the paid listings under the price “cost-per-click”, or CPC. The more paid the higher the position, meaning more exposure.

Google’s first paid listing entered the market in December 1999. This was based on cost-per-impression instead of cost-per-click, meaning that the advertiser was charged each time the ad came up regardless of whether the ad was clicked on or not. This model was used by Google until February 2002 when they started using a cost-per-click model similar to Overtures. Google’s cost-per-click model made use of CTR, click-through rate in which they made a ratio between actual CTR and expected CTR which Google themselves predicted. The ratio was then weighted with cost-per-click bids to maximize revenue. This meant that they could make sure that the ads with high CPC and CTR were given the best positions.

The company Applied Semantics was bought by Google for $102 million in 2003. They had developed AdSense which placed ads on primarily news and blog postings. These ads were tailored towards the actual subject of the postings\textsuperscript{16} so if for example someone wrote a blog entry about dogs then the ads would have something to do with dogs, be it dog food, dog toys or something else pertaining to dogs. This was automatically done thanks to Google’s index of web page content.

Another clever way of tailoring ads to each user was shown in 2005 when Google Maps was launched. Google Maps was an improved and faster version of the competitors and wasn’t launched with ads from the start. Ads were quickly added though and were adjusted depending on where on the map users were browsing. Since most people use a map site like that for places they are going, the ads shown are relevant to those areas making them more valuable than just a random ad.\textsuperscript{17}

In 2007 Google acquired DoubleClick for $3.1 billion. DoubleClick’s focus has been displaying so called banner advertisements, or display advertisements. With this acquisition Google added display advertisements to AdSense. This helped position Google as the dominant force in the market of ads.\textsuperscript{18}

An interesting aspect of Google is that they allow their employees to work on their own projects for 20% of the workday. They also work in small groups. These things help produce higher innovation and more free thinking. Google is also willing to take long shots, meaning they are willing to invest in an idea with a low chance of success and high risk that can generate a lot of money. The search engine giant is also famous for its laundry list of perks including free food at any of its cafeterias, a climbing wall and, well, free laundry. Last year, with revenue up more than 20%, Google sweetened this already rich pot of perks by giving every employee a 10% pay hike.\textsuperscript{19} Employees of Google can also award one another $175 peer spot bonuses – last year more than two-thirds of them did so.

\textsuperscript{17} Edelman B. and T.R. Eisenmann. 2011 Google Inc. Harvard Business School, Harvard University, Boston, Massachusetts.
One idea that spawned from employees working on their own projects is Gmail. Gmail was launched in 2004 and directly from the start offered 1GB of storage space which was many times more than the major competitors Hotmail and Yahoo! Mail which only offered a few MBs. It also offered a more advanced interface customization and featured ads. Google did receive criticism for their Gmail however, due to the ads. Here it was once again that the ads were tailored to the user, but this time the information that was needed to tailor the ads was taken from the users own emails.  

This isn’t the only time Google has received criticism. It has surfaced that Google saves search queries that people make. They say it is to keep improving their search logarithm and that they remove the information after 18 months. But what stops Google from selling personal information to the other companies? Their company motto “Don’t be evil” may be one thing, but they are still in control of a ridiculous amount of information.

Google purchased the popular video site YouTube in 2006 for $1.65 billion. But it wasn’t until a few years ago that YouTube actually started making money. Up until 2009 Google had lost close to half a billion dollars from YouTube, but then it turned. Google doesn’t release any figures regarding the finances of YouTube, but they have said that revenue more than doubled in 2010. This is most likely due to the fact that YouTube started showing commercials and ads before every video.

An important step for YouTube was when the partner program was introduced. This meant that people with popular YouTube channels could take part in ad revenue. The more their videos get watched the more money they receive. The details of the partner program are also hard to find because the contracts are under NDA, meaning they are confidential and the details cannot be discussed. What we do know is that it has to do with the amount of views on videos because this directly translates to more exposure for the ads. This gives incentive to people who have YouTube channels to try and get more views, which also increases YouTube’s revenue.

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23 Youtube partner information. http://www.youtube.com/yt/creators/partner.html
Androids business model is currently not public information, so the specifics will be very difficult to find and even if we could find it we would not be able to share it. One thing that can be mentioned however is that the major question regarding android is how to monetize it. This is what is speculated on throughout the internet and because no one knows the future plans for android, it will stay as just speculation.

3.3 Google and monopoly

What are the criteria that have to be fulfilled to be regarded as a company with a monopoly? Having a monopoly is regarded as being the only or the dominant producer of a product or service on the market and there exist barriers preventing other companies to enter a profitable market. Barriers that companies may face are: patents, network externalities, government licensing, the ownership or control of a key resource and large economies of scale in production.\(^2\)

- **Patent** is something that grants the inventor an exclusive right to sell his or her invention for a period of time. This kind of barrier is made to encourage innovation. If the innovators couldn’t get any kind of reward when they invented something new rivaling companies could just grab the same product and start producing it, and there wouldn’t be any point of investing millions of dollars in new and better medicines for example.

- **Network externalities** exist when there is a link between how many people are using a product and how high value the consumers put on the product. If you are dependent of having a large consumer base for selling your products it can be a problem to enter the market, since the consumers will not find any value in buying a product that it cannot take full advantage of. There is no point in investing in a fax-machine if everybody else prefers other ways to interact. As long as the company doesn’t have a huge network of people using their product they will neither gain any new consumers. Pirate Bay is a good

example of high network externalities. Pirate Bay is a highly popular site for seeding and downloading all kinds of films, games, software etc. The more people that seed and download the faster the download time will be, and more things will be available. The more people using the site the more attractive it will be.

- **Government licensing** is when the government chooses a single firm to deliver or sell a certain product or service. Examples of this are when the government gives licenses to particular companies to have radio and television channels or they can grant license to for example a single telecommunication vendor. Having good lobbyists can prove to be important in getting such deals and in some countries corruption is the main factor in getting these deals.

- A company that inhabits the **key resources** to produce a product can prevent other firms from entering the market by refusing to sell the resource.

- A **natural monopoly** occurs when there are large economies of scale in production so that there can only be one profitable producer in the market. If another company enters the market both will lose money, since the demand of the market isn’t sufficient to support both firms. It would for example not be efficient if another water supplier entered the market and installed new pipes to get a piece of the market, when the pipes that exist are fully functional. The high fixed cost involved in the installation of the pipes would not be socially economic efficient and both water suppliers would end up as losers.

There are often high fixed costs for a producer to enter an entire new market. If the market is ruled by one single producer the company is in a lucrative position that it can highly dictate the price, and put pressure on rivaling companies that want to enter the market. The leading company can dump their prices for a short while in order to make the market unprofitable for anyone who plans to be part of the competition. The company with monopoly will lose money on lowering their prices, but in the long run this can be the best strategy in keeping the whole market for them. The company with monopoly can withstand bleeding for a while in order to see their rivals vanish for good.
3.4 Antitrust

A company with monopoly has a number of obvious advantages compared to companies that are on a market with perfect competition. However, a company is faced with certain restrictions when they are officially declared of having monopoly power. When it is officially declared, they are monitored by antitrust divisions, whose jobs are to make certain that the monopolist is not misusing its monopoly power. The main purpose of the antitrust policy is to encourage competition among firms, so that consumers get better prices. If the antitrust division finds violations of antitrust laws it can result in fines or prison sentences for those who are involved.25

However, monopoly is not all about market share. A good example of a company that shared almost the exact same market share as Google is US Steel. In 2009 Google had a market share of 65.6% while US Steel had a market share of 67% when the government filed antitrust suits against them.26 Although US Steel didn’t have the whole market, the government still pursued them for antitrust. This is a similar scenario to what Google can be dragged into.

Google claims that nobody can buy better listings at their sites and that their search engine is designed to give the users the most relevant information they search for. However, what about their own sites? Do they favor any of their own sites compared to rival sites even though their rivals have a higher market share and a more popular product? It can seem so. When you for instance search for email the first email site that comes up is Hotmail followed by Gmail. The next site is mail.com, the term email on Wikipedia and then their biggest rival, Yahoo! Mail, is fifth. Here you can see the list of the most popular email services and how the market share is divided between the different companies.27

1. Outlook: 27.62%
2. iOS devices (iPhone, iPad and iPod touch): 16.01%
3. Hotmail: 12.14%
4. Apple Mail: 11.13%
5. Yahoo! Mail: 9.54%

According to CampaignMonitors site over the market share for the different email users, Gmail only inhabits a sixth place with their 7.02% market share of the most popular email services. Still, they list Gmail as the second most relevant email service when you type in email on their search engine. Yahoo! Mail has the spot before Gmail in market share, but three spots below Gmail in their search engine. According to CampaignMonitor Yahoo! Mail has lost 32.53% of their market share between 2009 and 2011, while Gmail has increased their market share with 22.29% during the same period. Could this trend have a direct link between Google favoring their own email services, while Yahoo! Mail comes further down the pecking order on their sites? With their immense market share within search engines it is highly plausible that there could be a link between Google’s listing on their site and the sudden downfall of Yahoo! Mail and Gmail’s vast increase. It seems possible that Google has taken large advantages in being the leading search engine to get great results getting a bigger share of the email market, whilst their biggest competitors, Yahoo!, seems to follow a negative trend.

It may not be a surprise that in 2011, Google chairman Erik Schmidt, had to testify before a U.S. Senate antitrust committee to see whether Google misuses their leading market share power to favor their own internet sites. With Google’s vast market share and increasing growth rate, they are clearly on the brink of having a monopoly in the search engine and internet market they operate in, which Erik Schmidt also came close to admitting in the hearing Google participated in.

The Senate antitrust panel asked Erik Schmidt the following question:

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“But you do recognize that in the words that are used and antitrust kind of oversight, your market share constitutes monopoly, dominant -- special power dominant for a monopoly firm. You recognize you’re in that area?”

Erik Schmidt answered:

“I would agree, sir, that we’re in that area….I’m not a lawyer, but my understanding of monopoly findings is this is a judicial process.”

Mr. Schmidt admits that Google is in such a good position that they can be seen as having monopoly power, but since the case is of such delicate and important matter, he wouldn’t consider Google having a monopoly before it has been concluded by any court of law. There is no law in the USA that says that it’s illegal to having any kind of monopoly, however if it was sentenced by a court of law that Google is in such a position, there are a lot of restrictions the company will have to follow. If they are officially declared of having monopoly, they would be subject to antitrust laws, which for instance means that they can’t use their monopoly power as leverage to get into new businesses.29

This would be a huge blow for a company of Google’s caliber, since the company is always striving to be best at what they are best (search engines) and at the same time grow and expand into other directions where it’s possible to invest money. With all their investment put into innovation and their almost imperialistic way of buying into other companies, being officially declared of being in possession of a monopoly will make things a lot more complicated for the company. They would be put under constant surveillance from an antitrust panel that may interfere in new lucrative projects, if they suspect Google were taking advantage of their monopoly power.

Right now even the European Commission has urged Google to present answers for their suspected abuse of their dominant market position. The abuse consists of how Google’s search engine is designed to work and the different deals they have on sponsored search results and software development. Google says that nobody can buy better listings on their site, but

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according to the European Commission they claim that Google receives money for sponsored hits, and even forces those that buy these better listings to sign deals exclusively with Google.\textsuperscript{30}

As the leading search engine they are clearly abusing the powers they possess. Since Google owns two thirds of the market, they seem to speculate to get the consumers for themselves, and this way leave a smaller share for their competitors. Google knows that they always will be the preferred option in this matter, and by doing this they ensure that their consumers stay true to them and at the same time their competitors have smaller chances of increasing their shares and revenue.

\textbf{3.5 Lock-in}

One of the main purposes of this thesis is to see if Google has an agenda to misuse their huge market share and power in the market to gain monopoly with their products. A company with a monopoly can charge whatever price it likes and people will still buy their product (as long as the price does not exceed their marginal propensity to consume). To have total monopoly is of course a dream of every firm. Price cuts of rivaling companies that want a bigger cut of the market share is always a recurring problem. An industry that earlier was very profitable can develop problems if there are too many competitors and all of them lower their prices to be competitive. This of course is beneficial for consumers, but can be a real hardship for the producers if there are too many competitors, which not only saturates the market but the price war will eventually lead many of the producers into demise.

There is however a way to gain more power and that is to use a lock-in. This means that your consumers will be forced to continue to use your products and services or pay the cost to switch their entire system. There are numerous examples of businesses that exploit this strategy to get a leading position in the market, where they have consumers that always have to return to them if they want an upgraded version or a complemented by-product to their current. Take for example Microsoft and Macintosh. Both have exploited this lock-in strategy for their products so that there

\textsuperscript{30} Avanza bank. https://www.avanza.se/aza/press/press_article.jsp?article=221007
will be a considerable cost to switch from a PC to a Mac. Should for example the US military conclude that they prefer the software of the Mac instead of Windows they can’t simply just switch software. The Mac software doesn’t work on PC’s, so they will have to get rid of all their former computers and invest heavily into brand new Mac-computers. This is of course a big investment and they will have to buy thousands of new Mac-computers in order to change software. You must also take into account the cost of transferring the information and learn how the new system works. The better you were at your former software program the higher cost of training it takes to reach that level in the new program.

Hal Varian and Carl Shapiro says that collective switching costs for all the consumers is just as important as a single high paying consumer. Collective switching costs can have a major impact in the creating of monopolies, as a mass lock-in can generate network externalities for the firm. The network externalities will here be similar as an economic of large scale looked from the consumers view point instead of the producers. Even if one consumer wants to change to another product he will stay true to his current product, since the network of people using the other product is not large enough. The result will be that you either continue to use your current product or that you and the rest of the consumers change at the same time. The typing machine is an example of this, as when the PC was introduced and became common in most homes, people instantly changed from the typing machine to use computers.

For a single consumer the cost wouldn’t be that big, but for the total market of all consumers the switching cost are not to be underestimated. In the book Information Rules by Hal Varian and Carl Shapiro they wrote the following text: “Even when switching costs appear low, they can be critical for strategy. A million customers, each of whom has switching costs of $100, are just as valuable, collectively, as a single customer whose switching costs are $100 million. The point is that you must compare any switching costs to revenues on a per-customer basis and add up these costs across your entire installed base to value that base.”

31 With firsthand experience of switching from a PC to a Mac I have discovered that the lock-ins you face can be severe. None of my former computer games work on the Mac so none of those can be used on the new computer. The Mac doesn’t come with any proper text program either, so an investment of “Office,” which is a must for every student, brings the switching cost even higher. Even though I have faced some notable costs of switching from a PC to a Mac (the Mac itself costs a lot, none of the former computer games works on it, no Office) the switching cost that I thought would be the worst issue has actually become a “switching income.” I felt that my skills in Windows
To be locked into a product or service can obviously be a real headache for the consumer. Anybody who signs a deal must take into account what this really means for them in the future and what the real costs will be for acquiring the product/service. If you get locked into a product, you can end up paying more than you think the deal is worth. This is a very common strategy that many firms take into account, and that gives them a lot of power and future income. The suppliers must also note that they could face lock-in costs in ways of service and repair. Many customers can also prove to be so demanding that they are not worth having as clients.  

Many of the lock-in strategies that companies take into use are based on customers that are highly irrational and uninformed. Take football shoes for example. If all the customers had been well aware of their rights, there would not be a market for this product. As a buyer you have according to the law of consumers in Sweden the right to have the shoe fixed or changed if it doesn’t last for at least a year. The thing about football shoes is that if you play regularly throughout a whole season none of them last.  

In theory you can buy a pair of shoes today and never buy another for the rest of your career. So how can the industry of football shoes be so massive and lucrative when it’s obvious that both Nike and Adidas have lost money having me as a consumer? The explanation of this is that most companies are playing on their customer’s ignorance. Most of the customers don`’t know their full rights and takes whatever the guy in the shop says for granted. Many of the workers in the store may not know your rights either, and some of them try to be tricky and come up with an excuse were in a decline. I hadn`t really developed any the last 10 years, so why not try something completely new? In the first days it was very unfamiliar and tasks that were really easy before, I had to put in a big effort to resolve. However, after just a couple of weeks my skills in the use of a Mac was at the same level as my PC level had been before I switched. My point is that sometimes things are just so much more users friendly and easier to understand on something completely new, that the switching cost of learning is actually becoming a benefit or “income.”


All of them will break within a season. All of my teammates have always thought I`ve been crazy spending so much money to have the newest pair of shoes. What I keep telling them is that I got them changed for free, since my old ones broke again. If they don`t have my model in the same size (this often happens since there are new arriving models all the time) I get a newer model of the shoes. In that way I always have the latest models for every season for free, while my teammates are ignorant and go back to the same store when their shoes break and buy a new pair, when they have the opportunity and right to have them changed for free. Since another year of warranty starts when you change the old ones, you have another season of fun playing your shoes to bits.
of why your warranty does not work in certain occasions. People who don`t know better or don`t bother to put up a fight with the staff of the store, just gives in and buy a new pair.

As you can see, there exist lock-in costs for the suppliers too. With the football shoe example you can see that the whole business within that segment wouldn`t be profitable if people were more aware of their rights. As a supplier of football-shoes you don`t want to have highly demanding customers, who clearly exploits a weakness in the system. Luckily for the football shoe business most of their customers doesn`t behave this way. When their shoe breaks, they simply buy a new pair.

3.5.1 Google and lock-in

Lock-in is obviously a powerful tool to get a harder grip on the market share. Many companies do not hide that they consciously use this strategy, but many of them can use lock-in highly disguised so that customers may not be aware of the switching costs they may face for changing brand. One of our main assignments in this thesis is to see if Google uses this kind of strategy to get a further holdfast on their products and market share.

A typical firm that uses lock-in is telephone companies. There are huge fixed costs for installing the telephone network so after you have chosen a company you are as good as stuck with the firm for life. Google on the other hand does not take any payment for their services and the switching costs are close to zero. Can there still be some kind of lock-in strategies that they are using? Their mail service, Gmail, has had a rather high market share increase the last few years. One of the reasons for this can be that to use many of their services you have to have a Gmail account. To download apps from Android and to have a Google+ account you need to be logged in to a Gmail account. Even to read books with your Android phone you are locked to use Google Chrome.

There is no doubt that this is a strategy from Google to get more people using their mail and other associated products. Even though all their services are free of cost, bundling their services together is a way of locking in their customers to use their whole portfolio of products. This strategy will apparently increase their market share of mail users and number of searches. Google
locking in their consumers into their different products may not seem like a big deal, since the switching costs of the consumers are pretty low considered that most of Google`s products, apart from the Android phone, are free. This lock-in strategy can however have huge impacts on the future value of the firm, competitors, consumers and society as whole. If Google with their current growth can manage to lock-in most of their consumers it is a high probability they will acquire a monopoly that will be difficult to compete with.

Other than a natural monopoly where the price is regulated by the government, a monopoly is never good for society as it causes inefficiency with generating less output than what a perfectly competitive market would have done. This leads to higher earnings for the producers and higher prices for the consumers. The switch to monopoly increases the price and decreases the quantity demanded since consumers obey the law of demand. An economic allocation arises as the producer gets a bigger slice of the economic pie and a deadweight loss will occur because of consumer surplus loss, since a monopoly produces less output than a perfectly competitive market.

In the case of Google output would not necessarily be any lower, since the marginal cost of produce another output is close to zero. One more output is just another person using their search engine, and with monopoly they will just have to increase their server capacities to supply more users. With monopoly their costs of ad`s might rise some, as they don`t have to be that competitive. This could lead to bigger costs for companies that pay for these ad`s, and the consumers buying the products on internet will ultimately pay for some or all of the increased ad costs. When evaluating the company later assumptions regarding monopoly and lock-in will have severe influence regarding the value of the company. If Google can gain monopoly at the same time as they manage to lock-in most of their consumers, the measuring of the terminal value and the firm`s growth in perpetuity will increase drastically.

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3.6 Microsoft monopoly lawsuit

For years Microsoft has been accused of having a monopoly on the operating systems for the personal computers market and they have been involved in several investigations. In 1991 and 1993 the Federal Trade Commission (the FTC) investigated Microsoft regarding antitrust allegations but both the investigations ended without any lawsuits. In 1994 the United States Department of Justice (the DOJ) started another antitrust investigation that ended in 1995 with a consent decree, which imposed several restrictions on Microsoft. 36

In 1997 congressional hearings were held in regards to Microsoft by Senator Orin Hatch. He stated that if the current antitrust laws could not deal with the anti-competitive strategies that Microsoft used then Congress should change the laws. Oracle, Novell, Netscape, IMB and Sun Microsystems, several of which had their CEO’s present at the hearings, lobbied for actions to be taken against Microsoft. On October 20, 1997 the DOJ accused Microsoft of violating one of the decrees set by the 1995 investigation. The allegation was that the decree was broken by Microsoft when they bundled Internet Explorer with their Windows operating systems. This however was ruled not to be a breach of the decree. 37

Following the DOJs failed attempt at a lawsuit against Microsoft they filed another antitrust suit against Microsoft in 1998. In this lawsuit the DOJ argued that Microsoft’s decision to bundle Internet Explorer (IE) with Windows was an attempt to eliminate one of their competitors, Netscape, from the internet browser market. Because Netscape can be run on several operating systems it could be seen as a potential threat to Microsoft’s operating system monopoly. This lawsuit ended strongly in the plaintiff’s favor which meant that Microsoft would have to split into two companies and also imposing severe restrictions on Microsoft’s business conduct. The company split would leave Microsoft’s operating system division separate from the rest of the company. This also meant that the Microsoft’s shareholders could not hold ownership or executive positions in both of the companies. The restrictions were: 38

• Microsoft cannot design Windows in a way that affects their competitor’s products negatively and Windows technical information should be shared and not just kept within Microsoft. Also original equipment manufacturers (OEMs) are now allowed to alter Windows.
• Microsoft cannot strong arm their manufacturers to not do business with Microsoft’s competitors. Also Microsoft are not allowed to have exclusive contracts that deny the company they have the contract with from using competitors’ products.
• Microsoft has to create a pricing scheme that is used for everyone instead of the current pricing scheme that changes depending on the company’s sales of Microsoft’s other products.

These restrictions turned out more favorable for the plaintiffs then if the previous lawsuit had gone through. The company split did not take place however. After the ruling the DOJ announced that a breakup of Microsoft would not be pursued.39 Some things did end up in Microsoft’s favor. There was no restriction regarding bundling or any restrictions to continuing to build and add to Windows. Also the sharing of technical information regarding Windows does not include source code just interface information. Forcing Microsoft to share Windows source code would have been a very extreme measure because it would basically mean that Microsoft would have to share the inner workings of Windows, which as their intellectual property that kind of information should be kept for themselves. It would be similar to if Coca-Cola were to reveal the exact recipe of the soft drink.

One very important thing that Economides discussed in his article regarding Microsoft is their monopoly position regarding price.40 When a company has monopoly power it can increase the price of its products and it can also exclude its competitors. At first glance it might seem that because of Microsoft’s huge market share in the operating systems market and the difficulty of new companies entering that market might warrant the monopoly stamp. But if you look at how Microsoft prices Windows then maybe the monopoly stamp is not justified. Windows is priced around $40-60. If Microsoft really does have a monopoly why don’t they charge hundreds of

dollars for Windows, or even thousands? According to the calculation made in *The Microsoft Antitrust Case*, because every PC needs an OS, Microsoft could price Windows at the same price as the average PC, which is $1800.41

In the book Economics Principles, Applications, and Tools there is an example regarding the case of the pricing of Windows. Since Windows is operating on about 90 percent of the world’s personal computers one might think that Microsoft has monopoly on their software products. According to the economist Richard Schmalensee, Microsoft’s profit-maximizing monopoly price is between $900 and $2000. This is what Microsoft would charge if they acted as a secure monopolist. But since Microsoft only charges $40-$60 for their Windows one might assume that they are an insecure monopolist. Choosing to only take between $40 and $60 for their product is to discourage entry for other software producers. If Microsoft had charged up to $2000 for Windows there would be a greater change that other software producers might develop competing operating systems. This could lead to problems preserving their monopoly.42

### 3.7 Growth

#### 3.7.1 Assumptions around growth

Valuating a firm like Google is not an easy task, and there are a lot of qualified assumptions to be made to come up with a reasonable value for the firm. Google is one of the stars among the IT-sector and has had an unreal growth the last 15 years. There are not many companies that have such a significant growth every year, and even fewer to have it year after year. Sooner or later the immense growth rate has to decrease and go into normal growth rate. No company can grow forever at such a high growth rate. It is not a matter of if but when the company goes from a high growth to a steady state growth and grows at the same speed as the market.43

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41 See Attachment 1 for equation in Economides article.
The most critical assumption in the valuation of the firm is to estimate growth. Google has had a very high growth rate every year, but sooner or later they will come to a point where their growth goes from high to normal or even decreases. But what year can one assume that this will happen? If the company continues to grow at this rate it will not take long before they have total monopoly and if that should occur the company can only grow at the same rate as the market. In the case of Google it can be hard to estimate what normal growth can be, since it is a company that operates in a market with high growth. From 2008 to 2009 number of internet searches increased with 46 %. This is a formidable growth, but one might assume that during a period of ten years this will stabilize at a much lower rate, as neither the market have a high growth forever.

Google’s main priority is their search engine, but a lot of the company’s growth has to do with all the other projects circulating around the company. Buying Android and getting a foot into the smartphone market appears to be a master stroke. Android is now the most used operating system on smartphones with a market share of 50.9 percent, while iPhone that uses their own system, iOS, has a 23.8 percent market share. Samsung’s Galaxy phone that uses Android, has now even surpassed the iPhone when it comes to sold units. Since Google operates on so many platforms it’s an even more difficult task to estimate when the company will reach a stable growth.

Even producing their own telephone using the Android system, it is almost impossible to determine the future possibilities and the future growth of Google Inc. The Chinese market for smartphones for example is growing rapidly and is about to explode, as more and more people in the country are gaining purchasing power. The company that can win this lucrative and growing market will make enormous revenues. By all means, Google can gain the same position that Apple possesses and end up as the world’s most valuable firm, or they can stagnate within a few years and maybe even lose some of their position.

46 Some months ago people even claimed that a high school student with no kind of formal educational background in computer engineering came up with a search engine superior to Google’s. The company could just be a teenage genius away from facing a major rival. It seems however unlikely, as Google’s position is too strong and they could
There are a lot of scenarios that may or may not take place, but based on Google’s current return on equity on 21 percent, the company has certainly a whole lot of things working out for them. The company has a magnitude of projects on their agenda circulating within the firm, at the same time as the company has a high willingness to invest in other prospects. Their genuine business model where the employees are allowed to use 20 percent of their time at work on different projects leads to daily innovation on their current and new products.

The zero dividend policy is an important factor of how the company could grow this significant. Even though this is all well and good looked from a company perspective, the growth will ultimately stagnate as the magnitude of the company will become a barrier for further growth.47 As the company grows bigger it can be difficult to keep track on all the costly routines, so instead of economics of scale benefits the firm may end up like a bureaucratic little county. This could be a likely scenario for Google, taken into account that the employees use one fifth of their time with other projects. The day they stop produce anything of value the costs will get out of control. Having 30 000⁴⁸ employees fooling around 20 percent of their time will not be cheap for the company. As most of the employees have a master’s exam their hourly rate is not disposed of lightly. Saab is a brilliant example of how wrong it can go when you have too many and unproductive engineers.

A technology based company like Google is for obvious reasons more difficult to valuate than for example a grocery company, where there rarely are any shifts of innovational paradigm. If Google on the other hand doesn’t keep up with the innovational progress that takes place, they will fall behind and join the likes of Nokia and IBM, that went from world-beaters to companies struggling to survive in just a few years. Based on their staff, human capital and their investment in innovation, it’s considered unlikely that Google will face the same innovational problems as the likes of Nokia and IBM. One are however to tread cautiously when one make such statements, as they are not the first company that has had this status for later to be liquidated.

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3.7.2 How to estimate growth

There are three basic ways to estimate the growth of a firm. The first is to look at the firm’s earlier growth in earnings. To look at the historical growth of the company can be a useful tool, but there are clearly dangers and limitations associated with using this estimation when it comes to firms with high growth. If it’s a newly started company it’s for obvious reasons impossible to use this estimate, but even if you can, the estimate of historical growth is not to be relied on.

The second option to find growth is to trust the estimate that an equity research analyst that follows the firm comes up with the right growth for the company, and then use that growth in your valuation of the firm.

The third way to estimate growth is from a firm’s fundamentals. The growth of a firm is determined by how much is reinvested into new assets and the quality of these investments. These investments are the likes of acquisitions, building distribution channels, or even expanding marketing capabilities. By estimating these inputs you are basically estimating the firm’s fundamental growth rate.\(^49\)

With both historical and analysts estimates, growth is an exogenous variable that affects value but does not take into account the operating details of the firm. The best way to incorporate growth into value is to make it endogenous. This way you get a clearer function of how much a company reinvests for future growth and the quality of these investments.\(^50\)

Considering these options, a growth based on a firm’s fundamentals is the best way to estimate growth in this valuation. This will reflect the most reasonable and unbiased value of the growth.

3.8 Valuation of Google

3.8.1 Choosing a valuation model

There are a huge number of different valuation models that can be used to derive the value of a firm. The problem is not the lack of models to pick from but the large portfolio of models you have at your disposal. The choosing of which valuation model to use is an important decision, because each model is often tailored to fit different kinds of firms. Each model is based around how the capital structure and expected growth for the company is. Many of the models are very similar, but they differ in which key numbers or inputs that participate in the model.

There are two common ways to estimate the value of a firm. One is either to valuate it’s equity, where you can use the dividend discount model or the free cash flow to equity model (FCFE). The other approach is to evaluate the entire firm, by either discounting the cumulated cash flows to all the claim holders in the firm by the weighted average cost of capital or the adjusted present value, where you add the marginal impact of debt on value to the unlevered firm value.

To measure the value of the entire firm you need to derive the free cash flow to the firm (FCFF), which is the sum of the cash flows to all claim holders in the firm, including stockholders, bondholders, and preferred stockholders. To get this you simply take the earnings before interest and taxes multiplied with the tax rate plus depreciation minus capital expenditure minus change in working capital:

\[ FCFF = EBIT \times (1 - \text{Tax rate}) + \text{Depreciation} - \text{Capital expenditure} - \Delta \text{Working capital} \]

Because the model looks at how leverage may or may not affect firm value the FCFF approach is best suited to evaluate firms with high leverage. The value of equity is also a small part of the total value of the firm, and is therefore more sensitive to assumptions about growth and risk. The optimal financing mix for a firm is the one that gives the best value of the firm. In the case of Google however, that has a history of almost no debt, the value of equity will serve to give a good picture for the firm’s value. To find the FCFE the following formula can be used:

---

Free Cash Flow to Equity = net income – (capital expenditure – depreciation) – change in non-cash working capital + (new debt issued – debt repayments)

FCFE = $9,737,000,000 – ($3,438,000,000 – $1,396,000,000) – $381,000,000 + ($2,986,000,000 – $2,247,000,000) = $8,053,000,000

When you have decided whether you want to evaluate the FCFE or the FCFF it is important that you pick the right growth model for each respective measurement. The growth rate will namely not be the same, since the equity cash flow is based on net income or earnings per share, while the firm cash flow is based on operating income (income before debt payments). Normally you would expect that growth in operating income to be lower than growth in net income, since financial leverage can affect the growth in net income. There are two formulas to derive each estimate:

Expected growth in net income = Equity reinvestment rate x Return on equity

Expected growth in operating income = Reinvestment rate x Return on capital

Since the FCFF will be used in this evaluation the expected growth in operating income will be the most appropriate growth model to use.

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3.8.2 Return on capital vs. return on equity

Return on capital relates the operating income to the capital invested in the firm, where capital is defined as the sum of the book value of debt and equity. This model offers a good measure of true return earned on capital employed in the business, when a substantial portion of the liabilities is either current (such as accounts payable) or non-interest-bearing.\(^{55}\)

The return on capital estimates the profitability of the overall firm, while the return on equity examines profitability from the equity investor`s perspective. This way you relate the equity investor`s profits (net profit after taxes and interest expenses) to the book value of the equity investment.\(^{56}\)

The return on equity will be the important measure in this valuation because the expected growth in net income is the right growth model for FCFE. To estimate the return on equity for a given year, you can take the net income for the year you want to estimate and divide it with the book value of equity for the previous year.\(^{57}\) When you know the return on equity you can find the expected growth by multiplying the return on equity with the expected reinvestment rate. The expected reinvestment rate is easy to derive in the case of Google, since they have never in their history given out any dividends and it says in their annual report that they don`t plan do it in the foreseeable future.\(^{58}\)

\[\text{Return on equity}_{2011} = \frac{\text{Net income}_{2011}}{\text{Shareholder`s Equity}_{2010}}\]

In this case the return on equity will be:

Return on equity = $9,737,000,000/$46,241,000,000 = 0.2106

Equity reinvested = Net Income – dividends

Equity reinvested = $9,737,000,000 – 0 = $9,737,000,000

Equity reinvestment rate = Equity reinvested/Net income


Equity reinvestment rate = $9,737,000,000 /$9,737,000,000 = 1

Expected growth in net income = $b \times \text{ROE}$

Expected growth in net income = $1 \times 0.2106 = 0.2106$

The company’s expected growth is 21.06 percent. This is a rather high number that might be achievable next year, but given the existing magnitude of the company and the barriers of growth because of that, an expected growth of 21.06 percent can most likely not be achieved past next year (even that may be a bit optimistic). The company will most likely face a transition period over the next ten years where their growth ultimately stabilizes close to the growth of the market or below.

In the valuation of Google the expected growth of 21.06 percent will be used as a guideline for future growth the first year. The expected growth of 21.06 percent will then decrease in linear increments until it reaches stable growth in year ten. To foresee what future growth rate the search engine and smartphone market will have is impossible to estimate, but a growth rate of five percent per year might be a reasonably number to use. If we predict that most of their competitors still operate within the market in ten years, Google might have a reasonably chance to grow at a two percent rate in stable growth.

### 3.8.3 Cost of equity

When a company wants to make an investment they raise the funds from equity investors and lenders. Both groups make the investment while expecting to make a return. The cost of equity is the rate of return equity investors require from an equity investment in a firm. Using the capital asset pricing model (CAPM) you can find what return equity investors require to make an investment in the firm. If the expected return is below CAPM no investors will want to invest in the company. When you valuing a firm’s future cash flow, the cost of equity is essential to measure how much the present value of equity invested is worth.
To derive CAPM you use the riskless rate and the beta, which tells you the firm’s exposure to market risk, and the risk premium, that is expected return on market portfolio minus riskless rate.\(^{59}\)

\[
\text{CAPM} = \text{Risk free rate} + \text{Beta} \times (\text{Risk premium})
\]

\[
\text{CAPM} = R_f + \text{Beta} \times (R_m - R_f)
\]

- The risk free rate is the expected return that the investor knows for sure he will acquire when he makes the investment. According to Damodaran only governments can guarantee a risk free rate because they can always print more money to pay their debts. Some countries however may not be able to offer a risk free rate because of instability or in cases like Greece where they simply have too much debt. To get a risk free rate you can simply buy Treasure bills or bonds.\(^{60}\) On May 24\(^{th}\), 2012, a ten year bond obligation gave you a yearly return of 1.77%. This will be used as the risk free rate.\(^{61}\)

- The risk premium is the premium demanded by investors for investing in the market portfolio, which includes all risky assets in the market, instead of investing in a risk free asset. The average demand on stocks over the last nine years has been used to get this value. Average return on stocks for the last nine years is 7.92%.\(^{62}\)

- The beta is the covariance of the asset divided by the market portfolio and it measures the risk added by an investment to the market portfolio.\(^{63}\) The current beta value for Google is 1.18.\(^{64}\)

The result of CAPM gives the following value:

\[
\text{Cost of equity} = 0.0177 + 1.18 \times (0.0792 - 0.0177) = 9.03\%
\]

---


3.8.4 Calculating the value of the firm’s equity

When all the key numbers have been measured you can calculate the firm’s value. The FCFE from 2011 will increase with the expected growth for each year and will then be discounted with the cost of equity to give the present value. When the present value of FCFE for each year has been derived you take the sum of that, which in this case is over $106 billion, and add that to the terminal value to find the value of the firm’s equity. The terminal value is measured upon the assumption that the firm will continue to exist and have future growth of 2% forever. The terminal value of equity in Google will be as follows:

Terminal value of equity in Google = \text{FCFE}_{11}/ (\text{Stable period cost of equity} – \text{Stable growth rate})

= $24,095,905,374/ (0.0854 – 0.02) = $368 billions

To derive the present value of Google’s equity you take the sum of their present value of FCFE and add that to the present value of their terminal value, which you derive by discounting the terminal value with the cost of equity for each year (year one to ten).

Google’s value of equity today = $106.50 billion + $157.39 billion = $263.89 billion

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Sum of present value of FCFE = 1,064,95E+11

Linear increments in growth per year = -0,021174523
Linear increments in cost of equity per year = -0,000984356

Estimating terminal value
Expected FCFE in year 11 = 240,959,053,74
Value of equity in Google = 3,685,83E+11

Value of equity today = 2,638,87E+11

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Google’s market value today is $192.84 billion (29th of May, 2012). According to this valuation the company is undervalued, and the stock should increase by 36.84% if the market price reflects the true value of Google.

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4. Conclusion

Google is one of the world’s most exciting firms. Their unique business model has made Google one of the most attractive companies a young engineer can work for. The workers have lots of freedom and work in an environment that encourages free thinking and innovation. The company makes the majority of their money from their ads. They even make profit on companies that want to buy better listings on their search engine, even though they claim that this is not possible and would neglect their trustworthiness on behalf of their consumers. In addition to this they even force those who pay for better sponsor space on their site to exclusively use their site.\(^67\) By doing this they make sure that Google gets a bigger share of the market for themselves, while their competitors have smaller chances of increasing their revenues.

The way Google behaves has made a lot of companies complain that they are misusing their monopolistic powers and that they are a company that is increasingly difficult to compete with.\(^68\) They have good reasons for accusing them of this as Google is very biased when it comes to favoring their own products in their search engine. With their search engine’s high market share they clearly possess monopolistic power. There is nothing wrong in possessing monopolistic power, but in the case of Google they are clearly misusing the strengths of their search engine to get leverage into new markets. When Google launches new products they clearly have advantages compared to other companies as there is a higher chance that Google’s products reach the eyes of potential consumers using their search engine.

In addition to having an advantage with their search engine, the company has also taken advantage of a lock-in strategy to get higher market shares for all their products. This lock-in strategy ensures that their consumers will continue to use their products and also use more of them.

In the valuation of Google their equity was evaluated to be worth $263.89 billion. Today’s market value of Google is $192.84 billion (29\(^{th}\) of May, 2012)\(^69\). According to the valuation, the stock should increase by 36.84% if the market value represents the company’s true value. There

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\(^68\) Avanza bank. https://www.avanza.se/aza/press/press_article.jsp?article=221007
is however a lot of uncertainties related to the stock, as The European Commission has urged Google very recently to present answers for their suspected abuse of their dominant market position.\footnote{Avanza bank, article. https://www.avanza.se/aza/press/press_article.jsp?article=221007} The company has to do something about the way they act if they want to avoid an antitrust lawsuit. There is a high possibility that they have to change their current policy so that the market will adjust and become more competitive, and Google will become less dominant.
5. Bibliography

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http://www.mindtools.com/pages/article/newTMC_08.htm


SiliconValleyWatcher blog.  

Youtube partner information. http://www.youtube.com/yt/creators/partner.html


Federal Reserve, annual return on stocks.  
http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histret.html

Comscore,  

6. Attachments

6.1 Attachment 1


"The derivation of the monopoly price for Windows follows. Let pH be the price of the PC hardware (everything except Windows) and let pW be the price of Windows. Assume that Windows is installed on all PCs. Since hardware and software are combined in a ratio of 1:1, the demand of a PC with Windows is D(pH + pW). Profits of Microsoft from Windows sales are:

\[ \Pi_W = pW D(pH + pW) - FW \]

where FW is the fixed cost of developing Windows, and the marginal cost is negligible. Maximizing \( \Pi_W \) implies marginal revenue equals marginal cost, i.e.,

\[ D(pH + pW) + pW \frac{dD}{dpW} = 0 \iff 1 + \left[ \frac{pW}{(pH + pW)} \right] \left[ \frac{(pH + pW)}{D} \right] \frac{dD}{dpW} = 0 \iff \frac{pW}{(pH + pW)} = \frac{1}{|\varepsilon|}, \]

or equivalently, the monopoly price of Windows is

\[ pW = pH/(|\varepsilon| - 1), \]

where \( |\varepsilon| = -\frac{(pH + pW)}{D/\left[ \frac{dD}{dpW} \right]} \) is the market elasticity of demand for PCs with Windows. If one assumes that the average price of PC hardware is $1,800 and \( |\varepsilon| = 2 \), the monopoly price of Windows is \( pW = $1,800 \). Even if one assumes a much higher elasticity, \( |\varepsilon| = 3 \), and a much lower average price of PC hardware at $1,200, the monopoly price is $600, which is ten to twelve times the price charged by Microsoft to OEMs.”
6.2 Attachment 2

EBIT = $12.326 billion\textsuperscript{71}

\[ \frac{9,737,000,000}{12,326,000,000} = 0.789956 \]

Tax rate = 1 – 0.789956 = 0.21

Depreciation = $1.396 billion

Capital Expenditure = $3.438 billion

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<td>Change in noncash working capital</td>
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\textsuperscript{71} Yahoo Finance, Google income statement.
http://finance.yahoo.com/q/is?s=GOOG+Income+Statement&annual
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<th>Year</th>
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<td>2009</td>
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**CAPM in high growth**

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<td>Beta (β)</td>
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**CAPM in stable growth**

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