Restaurant Industry Financial Analysis

By

Jessica Frederick
Jonathan Lockmiller
Juan Jose Quintero
Lucinda Shaw
Mina Patel
Rodrigo Suarez
Stefano Bucciol

Table of Contents

Introduction 4

Company Overview 5

Corporate Governance Analysis 6

Chief Executive Officer 6

Table 1: CEO Compensation 7

Graph 1: CEOs Compensation 7

Board of Directors 8

Table 2: Board of Directors 8

Share Voting Structure 8

Table 3: Sharing Vote Structure 8

The Firm and Financial Market 9

Table 4: Analysts' Recommendation 9

Graph 2: Analysts' Recommendation Comparison 10

Corporate Social Responsibilities 10

Stockholder Analysis 12

Table 5: Majority Stockholders 12

Table 6: Institutional Holders Breakdown 13

Risk and Return 14

Table 7: Betas 15

Expected Return on an Equity Investment 15

Table 8: Cost of Equity 15

Default Risk and Cost of Debt 16

Table 8: Synthetic Rating Estimator 16

Table 9: Companies' Synthetic Ratings 17

Table 10: Cost of Debt 17

Weighted Average Cost of Capital 18

Table 11: Weighted Average Cost of Capital 18

Return on Projects 18

ROIC 18

Table 12: Return on Invested Capital (ROIC) 19

ROE 19

Table 13: Return on Equity 20

Table 14: Average ROE........20
Graph 3: Return on Equity vs Return on Invested Capital........20
Optimal Capital Structure........21
Table 15: Firms' Unlevered Values........21
Table 16: After-Tax Cost of Debt........22
Table 17: Expected Bankruptcy Costs........22
Table 18: Firms' Levered Values........23
Dividend Policy........23
Table 19: Firms' Dividend Policy Summary........23
Valuation........24
FCFE or FCFF?........24
Growth Model and Timing........25
Ratios Comparison........25
Table 20: Comparison of Firms' Financial Ratios........26
Graph 4: Firms' Financial Ratios Compared to Industry........27
Valuation through the FCFF Model........27
Table 21: Companies' Stocks and Values Summary........28
Graph 5: Long-Term Debt to Total Assets Ratio........30
Conclusion........31
Investment Decision........32
Financial Decision........33
Dividend Decision........34
References........36

Introduction

As an investor it is important to fully understand all of the aspects of a company before choosing to invest. An investor should look into a company's background and their standings with respect to the public, as well as analyze the company's past, current, and expected future performance. This project will analyze and compare seven popular restaurants in the quick-serve food industry: Panera, Starbucks, Papa John's, McDonald's, Burger King, Chipotle, and Wendy's. The main goal of the project is to be able to understand how mangers are maximizing the value of the firm (if they are), which will in fact increase returns to stockholders and bondholders, and will also allow the company to give back to society. At the same time, this analysis of firm value maximization will allow us to know which firm provides us with the best investment decision (where the assets of the firm earn a return higher than the minimum acceptable hurdle rate), which firm has the right mix of debt equity that makes the firm's value being maximized (financing decision), and which firms return cash back to owners and how they do it (dividend decision).

The project will look into several different areas that are important in order to make the investment, financing, and dividend decision. By looking at the corporate governance structure, an investor can better understand the relationship between the company, financial markets, and the public. Analyzing the stockholder policy and researching who the largest investors are on a firm can give insight into the company's perceived standing with those outside of the company. Who are the largest investors and how much they own from the firm is an important question that will be answered during this section that will help investors understand if the company is leaning towards a more public company or a more private one.

At the same time, we will be looking at a company's risk profile which will give an investor an understanding of how much risk and fluctuation to expect in a company's stock. During this section we will analyze how much risk investors are willing to take on each company by analyzing their default spreads compared to the risk-free rate. At the same time, we will understand each company's expected returns in order to better understand which of the seven companies offer the best return on investment. Finally, we will calculate the cost of debt (Kd), cost of equity (Ke), and weighted average cost of capital (Kwacc) which will give investors the ability to know both the rate that a company pays on its debt, and the average cost of financing that debt.

Assessing the optimal financial mix and the company's debt ratio let an investor know if a company is on track and utilizing its financing to the fullest. At this point is when investors will know what could be the maximum value of the firm by knowing the optimal debt ratio. Companies which debt ratio is too high would be a negative signal for investors because that would mean that the company cannot incur in much more debt before paying the current one. On the other hand, companies with lower debt ratio and a high firm value according to that ratio will be a positive signal because that would mean that those companies can still get more debt to finance projects and that they can still pay for it. Finally, an investor will also want to understand if the company pays dividends or not and how it does that. In this section we will calculate the dividend payout ratio in order to understand what percentage of earnings the company pays out in dividends. Also, we will estimate the dividend yield so investors can know what returns they should expect from the firm as a form of dividend.

The last section will be a valuation of the company which will let an investor know if the company is over or undervalued, helping them decide if the right time to invest is now or if they should sell their investments. In this section we will define the growth model that will be used, the length of time, and we will compare all the companies' ratios (cost of debt, debt ratio, ROC, reinvestment rate, etc.) in order to arrive to the predicted valuation. If a company is currently overvalued, our recommendation is to sell that company's assets because they are predicted to go down in the future and vice versa.

Company Overview

Starbucks: it is the largest coffeehouse company in the world. The company was founded in 1971 in Seattle, Washington. The first Starbucks was opened by three friends while they were pursuing their studies at University of San Francisco. This company operates in more than 23,000 locations across the world, including United States, Canada, China, United Kingdom, and Japan. Starbucks has a variety of the world's top 30 coffee beans and handcrafted espresso coffee. Their stores also have a variety of hot and cold drinks, fresh food, delicious pastries and a rich variety of coffee mugs. In 1980, Starbucks became successful due to their increase in sales of their specialty coffee. The main goal of the company is to inspire and nurture the human spirit "One person, one cup and one neighborhood at a time."

Panera Bread: is a fast food chain of bakery-café Company that started in 1987 in Kirkwood, MO. This company has more than 1,800 stores between United States and Canada. Panera is known as the first company in its industry to post nutritional information about its products. Their main goal since day one has been bringing consumers the freshest menus across all fast food restaurants in the U.S. They have gone from removing artificial Trans-fat, colors, preservatives, and sweeteners, to being the first restaurant in the country to display the number of calories on their menus. Their ultimate goal is to remove all artificial additives from their food by 2016.

Burger King: is the second largest fast food hamburger chain in the World. Burger King was founded in 1953 in Jacksonville, Florida, with the name of Insta-Burger King. In 1954, David Edgerton and James McLamore bought the company and they renamed it Burger King. "The original HOME OF THE WHOPPER®", its commitment to premium ingredients, signature recipes, and family-friendly dining experiences is what has defined this brand for more than 50 successful years. They are now privately held by a 3G Capital a global multi –million-dollar investment firm that is focused on value creation. Their goal is focus on maximizing the potential of brands and businesses. Burger King is about to become the third-largest international chain of fast food restaurant.

McDonald's: it is the most popular and largest chain of hamburger and fries fast food restaurant around the world. It is ranked number 6th in the World as most valuable brand. It was founded in 1940 by Richard and Maurice McDonald under the name of McDonalds Bar-B-Q. In 1955, the McDonald Corporation was founded after the American businessman, Ray Kroc, joined the company. Years later, he bought the company and had a successful worldwide growth. McDonald's was the first company in the World to implement drive-thru service, which brought a lot of success for the company. McDonald's is serving in 119 countries and it serves an average of 69 million of consumers per day. The main goal of this company is to serve good food in a friendly environment.

Wendy's: is a quick-service hamburger company which operates more than 6,500 franchise companies in the US as well as 29 other countries. This company was founded in 1969 in Columbus, Ohio. Dave Thomas was the founder of the company and he opened his first restaurant in Columbus. The company is well recognized for their quality hamburgers, sea salt fries, and the frosty ice-cream. In order to continue with their improvement across the World, Wendy's will remodel more than 400 stores and it will open another 100 new stores. Their vision is to deliver honest food which is fresh and higher quality than other fast food restaurants which is prepared fresh when ordered.

Chipotle Mexican Grill: this company was founded by Steve Ells in 1993 as a means to earn enough money to launch his dream high-class restaurant. Ells later dismissed his fine dining dream to continue with the streak of ingenuity that Chipotle presented to fast-food seekers. Founded with the idea to bring an air of fine-dining to the quick service restaurant industry, the chain has grown in leaps and bounds over the past 22 years. Chipotle currently operates more than 1,600 restaurants. This company was the first American restaurant company to disclose GMO ingredients in all of their products. Their ultimate goal is to cook with Non-GMO ingredients.

Papa John's: this company operates and franchises pizza delivery and carries out restaurants and, in certain international markets, dine-in and delivery restaurants. Papa John's began operations in 1984. At September 28, 2014, there were 4,537 Papa John's restaurants (741 Company-owned and 3,796 franchised) operating in all 50 states and in 36 international countries and territories. The Company's revenues are principally derived from retail sales of pizza and other food and beverage products to the general public by Company-owned restaurants, franchise royalties, sales of franchise and development rights, sales to franchisees of food and paper products, printing and promotional items, risk management services, and information services and related services used in their operations.

Corporate Governance Analysis

Corporate governance refers to the relations and processes that exist between managers and stockholders by which corporations are managed and controlled. The good connection between these two parts led to a better performance of the company. The central part of this corporate governance is the board of directors. In any corporation, the relationship among managers and shareholders is critical.

Chief Executive Officer

It is the highest-ranking person in a company. The CEO is responsible for overseeing the day-to-day operations of the company.

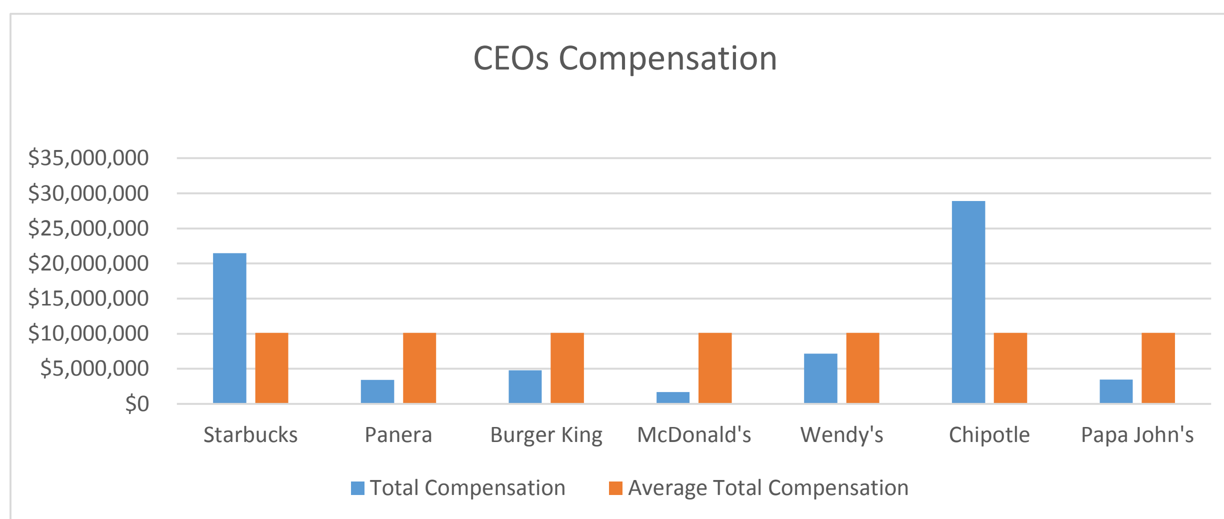
CEO	Starbucks	Panera	Burger King	McDonald's	Wendy's	Chipotle	Papa John's
Name	Howard Schultz	Ronald M.Shaich	Daniel Schwartz	Stephen Easterbrook	Emil J.Brolick	Steve Ells	John Schnatter
Age	62	61	32	47	67	49	54
Years at the Firm	30	28	1	20	18	22	31

Years as CEO	15	28	1	Less than 1 (10 Months)	0	22	31
Founder	No	Yes	No	No	No	Yes	Yes
CEO COMPENSATION							
Salary	$1.5 M	$823,077	$600,000	$633,333	$1,137,500	$1.4 M	$900,000
Bonus	$2,926,875	$1,327,155	$1.3 M	$0	$1.435 M	$3.57 M	$796,087
Others	$502,076	$ 25, 985	$12,200	$134,449	$91,708	$255,770	$0
Stock Options	$10,242,944	$1,235,852	$2,858,587	$535,453	$2,699,998	$23,698,500	$1,160,011
Stock Awards	$6,294,559	$25,985	$0	$386,627	$1,799,992	$0	$600,048
Total	**$21.466 M**	**$3.412 M**	**$4.770 M**	**$1.689 M**	**$7.164 M**	**$28.924 M**	**$3.456 M**

Table 1: CEO Compensation

The age range for the CEOs of these seven companies goes from 32 to 67 years old. Daniel Schwartz and Stephen Easterbrook, CEOs of Burger King and McDonald's, are the youngest CEOs among these companies. At the same time, they just have one year of experience as CEO of their respective companies. Papa John's, Panera, and Chipotle have their founder or co-founder as CEO of its companies. All of them CEOs have more than 20 years of experience.

There is a huge difference among the total compensation between these seven CEOs. Steve Ells (CEO of Panera) and Howard Schultz have a total compensation, which is above the average total compensation ($10,126,255). Most of their total compensation comes from the amount of stock options that they own. Stephen Easterbrook has the lowest total compensation among these CEOs. However, he just became CEO of McDonald's a couple months ago.



Graph 1: CEOs Compensation

Board of Directors

It is defined as the body of elected members who has defined responsibilities and roles in the company. They oversee the activities of the company. The board of directors has the responsibility to designate the CEO of the company. Some of the members of the board are insiders of the company. Insiders are defined as directors or senior officers of the company. These members own more than 10% of a company's voting shares. In some companies, members of the board directors are CEOs of other companies.

Board of Directors	Starbucks	Panera	Burger King	McDonald's	Wendy's	Chipotle	Papa John's
Number of Members	12	7	11	14	10	9	8
Number of Insiders	5	2	7	6	1	2	1
% of Insiders	41.67%	28.57%	63.64%	42.86%	10%	22.22%	12.50%
CEOs at other Companies	2	3	1	5	3	0	0
%of CEOs at other Companies	16.67%	42.86%	9.09%	35.71%	30%	0.00%	0.00%
Members with large stockholdings	1	0	1	0	2	0	1

Table 2: Board of Directors

The number of members in the board of directors among these corporations ranges from 7 to 14. Starbucks, Burger King, and McDonald's are the companies with more members and with more numbers of insiders at the same time. At least 10% of the members of these companies are insiders. Burger King is the only company that has more than 50% of their members as insiders of the company. McDonald's has 5 directors, which are CEOs of other companies. There are total of 71 members among the board of directors of these companies and just 5 of them possess a large amount of stockholdings.

Share Voting Structure

Corporations differ in their share voting structure. Some corporations have differences in voting rights across all of their shareholders.

Share Voting Structure	Starbucks	Panera	Burger King	McDonald's	Wendy's	Chipotle	Papa John's
Differences in Voting Rights	No	Yes	Yes	No	No	Yes	No

Table 3: Sharing Vote Structure

Companies such as McDonald's, Papa John's, Starbucks, and Wendy's don't have differences in voting rights across shares. In these companies, holders of common stock are entitled to one vote per share. The voting structure for Burger King, Chipotle, and Panera is different. Burger King has three different classes of shares. They have common share, special voting share, and preferred shares. Chipotle has two different classes of shares. They are Class A (1 vote right per share) and Class B (10 vote rights per share). Panera has also two classes of shares. Class A (1 vote right per share) and Class B (3 votes right per share).

The Firm and Financial Market

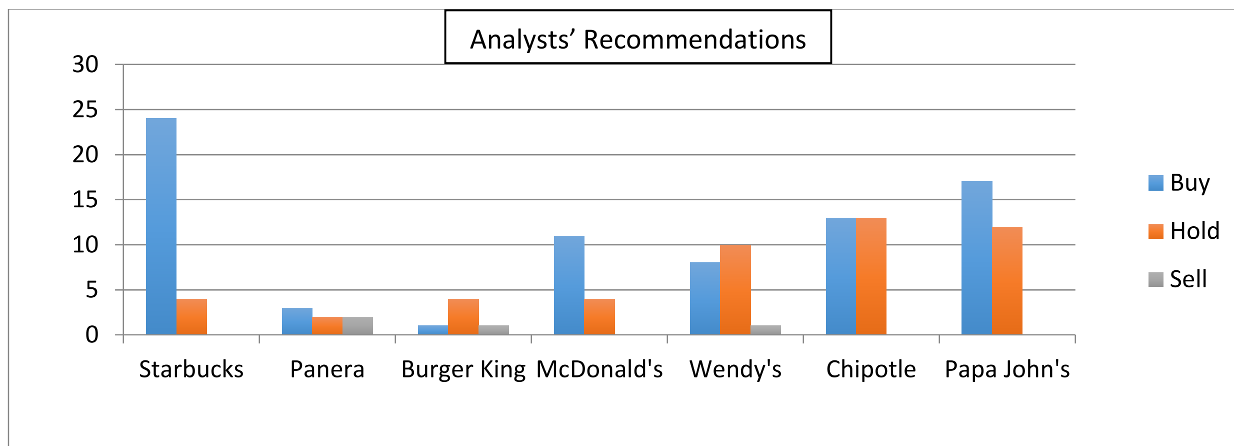
One of the most important things investors look at when deciding whether to invest or not in a corporation is the analysts' stock reviews. Analysts use fundamental analysis to evaluate the market environment. The analysts would provide a rating recommending an investment action. They would qualify the investment of the company between buy, sell or hold the security.

Analysts' Recommendations							
	Starbucks	**Panera**	**Burger King**	**McDonald's**	**Wendy's**	**Chipotle**	**Papa John's**
Number of Analysts (2014-Present)	28	7	6	15	19	26	29
Buy	24	3	1	11	8	13	17
Hold	4	2	4	4	10	13	12
Sell	0	2	1	0	1	0	0
Average Daily Trading Volume	9,100,588	409,575	15,802,770	7,778,164	5,166,499	2,708,454	494,456

Table 4: Analysts' Recommendation

According with analysts, who have being analyzing stock prices of these seven companies in the past two years, Panera is the only company in which may be beneficial to sell stocks. Analysts strongly recommend buying stocks in companies such as Starbucks and McDonald's. Most of them agree that the actual stock price of these companies is low. In companies such as Chipotle, Wendy's, and Burger King, analysts recommend to hold and wait for further analysis before making a decision of buying or selling stocks from these companies. Trading volume refers to the liquidity of a security of certain corporation.

Burger King and Starbucks have high average daily trading volume. It means that the stock of these corporations can be easily traded and they also have high liquidity. In the case of Papa John's and Panera, the average daily trading volume is low. The security is less expensive because business people are not willing to buy stocks.



Graph 2: Analysts' Recommendation Comparison

Corporate Social Responsibilities

Corporate Social Responsibility (CSR) is defined as the initiative from the corporation to assess and take responsibility for the corporation effects it produces on society. Corporations can have short-term expenses, which are required to promote a positive social impact on consumers. The food production can generate environmental contaminates in its process, which are harmful to the society. Corporations have the responsibility to reduce the amount of environmental contaminants. For that reason, these seven corporations have contributed in different ways to society.

Starbucks: has maintained an extremely good reputation in the global coffee market. Starbucks was one of the leading companies to introduce Wi-Fi technologies to Starbucks customers in the early nineties, and has continued this innovative trend with securing rights to Google Fiber technology. Starbucks was also the first company to offer a stock option program that includes part time employees in 1991. Starbucks has also been one of the few large companies to support LBGT rights and do not discriminate during the hiring process.

Panera: when talking about Corporate Social Responsibilities in regards to Panera, the most important contribution this company has made to society has been the one of giving consumers' fresh and healthy food and ingredients. Panera's plan for 2016 is the one of removing all artificial colors, Trans-fat, and other additivities that its food offers. This is the greatest contribution to society since consumers are leaning towards healthier choices. In addition, Panera has a program called "Panera Cares." This program helps reduce hunger in the U.S by setting community cafes in which customer go and "pay what they can" so those whose cannot pay would be able to receive a free meal per week. The main goal of this initiative is for Panera to help reduce hunger in the U.S which ratio is about "1 in every 7 people starve."

Burger King: the corporation defines corporate responsibility as looking beyond a strong bottom line to consider the impact of everything we do. It's about doing the right thing as a corporate citizen in today's global marketplace while successfully meeting business goals and objectives. Burger King has even developed a philanthropy program called the Burger King McLamore Foundation, it's a not for profit public charity whose efforts are targeted to the advancement of education around the world.

McDonald's: has been seen as corporately irresponsible and socially responsible. McDonalds decided to eliminate its polystyrene packaging. For that reason, McDonald's decided to incorporate a cardboard packaging to solve the problem. McDonalds had an issue with the beef production, which is one of the highest generators of greenhouse gases. In order to solve this problem, McDonalds decided to form a beef coalition with other companies to reduce greenhouse gases (Warner, 2009). In addition, McDonalds decided to help reduce the amount of pesticide used in its potato supply chain. McDonald's is also using the new fryers for French fries with use less cooking oil. The company also launched some initiatives, such as the implementation of healthy salads along with happy meal options.

Wendy's: the company prides itself on trying to be a good corporate citizen. They pride themselves on sourcing their food from American farmers as this supports homegrown food sources as well as ensuring the quality of food is the fresh and the best. Wendy's most important ethos is to make sure that their food is of higher quality and "a cut above". This is achieved by the way they conduct their company from the source to the customer service their employees deliver. They have the Wendy's Animal Welfare Program which highlights how important the humane treatment of animals is to them and they make sure they follow government regulations on this matter. In addition, Wendy's launched the Kids Live Well program. This helps parents make health conscious decisions for their children's diets.

Chipotle: the goal from the very beginning has been to give consumers good quality quick service food. The company does this by sourcing from farms instead of factories. They use only non-GMO ingredients in their food. Chipotle also established the Chipotle Cultivate Foundation in 2011 with a goal to extend their commitment to creating a more sustainable food future. The foundation works to provide necessary resources to farmers, promotes better livestock husbandry, and educates people on cooking education and nutritious eating. Also, Chipotle has created distinctive positioning with its focus on sustainability and green market. Chipotle originally only sourced its meat from farmers who also supplied pork to top fine dining US restaurants. Other notable green marketing efforts include their elimination of Trans-fats from their foods in 2004.

Papa John's: the company is considered a pizza category leader in customer satisfaction among limited-service restaurants, according to the 2015 American Customer Satisfaction Index (ACSI) released in June of 2015. The firm has earned the highest scores in overall quality, product quality, and service-quality and customer expectations among quick-service pizza restaurants in the individual American Customer Satisfaction Index ratings. In addition, Papa John's has recognized its responsibility to conduct the company in a way to protect the environment. For that reason, the company has reduced the use of paper at their corporate office and they had increased the recycling cardboard. Papa John's continues working with its suppliers to reduce the use of fossil fuels and other natural resources.

Wendy's is the only of these seven companies that has a code of conduct which employees and directors must adhere to which is in line with the law and Christian values. Some of the other companies have directors on board that follow Christian values. However, they do not impose their belief on their companies.

Stockholder Analysis

To conduct a stockholder analysis it will be necessary to look at who the stockholders of the company are. The stockholders are made up of institutional holders and fund holders. Fund holders include insiders and outsiders of the company.

The following table highlights who the majority owners are for the seven companies.

Company	% of shares held by Institutions	% of shares held by Insiders	Marginal Investor
McDonald's	69.30%	0.05%	Institutional Investor
Burger King	10.85%	N/A	N/A
Chipotle	92%	1.58%	Institutional Investor
Wendy's	83%	9.12%	Institutional Investor
Panera	99%	1.12%	Institutional Investor
Starbucks	72.88%	3%	Institutional Investor
Papa Johns	44%	29%	Institutional Investor
Industry			
Restaurant	53.37%	15.56%	Institutional Investor

Table 5: Majority Stockholders

As shown in the table, institutions are the largest stockholders in all of our companies. The highest percentage of Institution ownership is found at Panera. This has a value of 99%, which is much higher than the other companies. The average % in the restaurant sector is 53.37% for Institutional stockholders. It can be seen that all the companies apart from Papa Johns and Burger King have an above average amount. Institutional involvement can be regarded as a good thing because Institutions have large amounts of resources available, which they can use to invest into a company to drive and generate more profit.

However Institutions could easily decide to drop the company and choose to invest in a competitor that might offer more promise, leaving the original company at risk.

It can also be seen that all the companies with the exception of Papa Johns have a lower % of shares held by insiders than the restaurant sector average. A low percentage of insider ownership could potentially indicate that there is less confidence in the company because insiders typically have more knowledge of how the company is performing.

The following table shows a breakdown of Institutional Ownership.

Institutional Ownership	McDonald's	Burger King	Chipotle	Wendy's	Panera	Starbucks	Papa Johns
#Buyers	692M	N/A	257M	77M	129M	664M	95M
#Sellers	984M	N/A	311M	157M	163M	727M	95M
Shares Owned	633M	N/A	29M	219M	24M	1,046M	30M
Shares Bought	47M	N/A	4M	15M	4M	64M	5M
Shares Sold	69M	N/A	3M	101M	5M	85M	5M
# of Inst. Holders	2,390	N/A	860	350	359	2,024	294
Top Institutional Holder	Vanguard Group Inc	N/A	Fidelity Management	Trian Fund Management	Fidelity Management	Fidelity Management	Fidelity Management
Top Holder Percentage	6%	N/A	12.45%	14.92%	14.64%	6.88%	10.69%
Institutions owning over 5%	1	N/A	3	4	3	2	2

Table 6: Institutional Holders Breakdown

All the companies listed mainly have more sellers than buyers. This indicates that there is a lot movement among the stock buyers selling their shares. This could be down to market factors or the fact that a different restaurant company is performing better than another.

The top institutional holder for the majority of the companies appears to be Fidelity Management and Research Company. It is the second largest mutual fund and financial services group in the world. The total amount of assets Fidelity had at the end of 2014 was $2.03 trillion.

The total percentage that the Institutions hold in the companies varies from 6% to 14.92%. This looks to be pretty stable across all the companies but Wendy's may be more volatile to risk as it has 4 Institutions owning over 5%. This could cause the price of the shares to increase or decrease based on the behavior of the Institutions.

Next we will look at Insider Ownership:

McDonald's

At McDonald's, insiders own just 0.05% of the total stocks. Andrew McKenna who is the non-executive Chairman of the board is the only insider who has bought stocks in the company in the past year. All other insiders sold their stocks in the past 10 months.

Burger King

There does not appear to have been any recent insider transactions at Burger King due to a recent acquisition of the company.

Chipotle

Individuals including insiders at Chipotle hold $208.31 million worth of Chipotle stocks. Only 1.58% of the total stock is held by insiders. There have been no insider purchases in the last 6 months, only sales. Chipotle does however have an Employee Stock Purchase plan. This consists of 250 shares of common stock being reserved for issuance to eligible employees. Out of this, only 2 shares have been issued, highlighting that the employees do not take advantage of this offer.

Wendy's

Insiders at Wendy's hold 9.12% of the total shares. In the last 6 months there have been no insider purchases. There have been 14,762,000 sales made through the last 6 transactions.

Panera

Insiders at Panera hold only 1.12%. There are no other holders who own at least 5% of the shares that are not insiders. The founder and CEO of Panera holds just 5.01% of Class A stocks. There have been no insider purchases in the last 6 months at Panera.

Starbucks

At Starbucks, insiders account for 3% of the total holders. Besides managers and directors there is no one else who owns more than 5% of the total shares. In the past 6 months there have been no insider purchases.

Papa Johns

Papa Johns has 29% of insiders accounting for the total number of shares. This is higher than all the other companies. However in the past 6 months there have been no insider purchases.

As can be seen in all our companies, there have been no insider purchases in the last 6 months, with the exception of Andrew McKenna AT McDonald's buying 628,240 stocks in the recent year. This could potentially raise questions for those wanting to invest in the companies as to why insiders aren't buying any stocks within their own company.

Risk and Return

Risk can be viewed as a negative situation for many firms or as an opportunity for many others. In this section, risk will be addressed from two different scenarios; the first one called "equity risk" in which investors do not have promised cash flows but only expected cash flows, and the other one called "default risk" in which investors have promised cash flows. Beta can be seen as the number that expresses the volatility or risk of a portfolio of assets (stocks) relative to the market.

Company	Beta
Burger King	0.64
Chipotle	0.23
Mc Donald's	0.79
Panera	0.46
Papa John's	0.37
Starbucks	0.76
Wendy's	0.74
Average	0.57

Table 7: Betas

The beta of the market is 1 and according to the different values of the companies, it is clear to understand that all of them are down below the beta of the market. The highest beta value among the 7 different companies is the one from Mc Donald's with a 0.79 and the lowest one comes from Chipotle with 0.23. The betas are very low according to the market as a whole. The average of all betas is 0.57 which means that the risk of all companies is low and the firm has almost half less volatility than the market. From other perspective, the volatility also represents that when the market will do very well, the expected return will not be as great as the trend of the market. However, low beta stocks are stable, the performance is weaker than the market as a whole when the stock market is strong but when the markets drop, this stock usually experience less dramatic declines.

Expected Return on an Equity Investment

In order to calculate the expected return it is necessary the formula to calculate the cost of equity which is:

Ke= Risk-Free Rate + Beta of Stock x Risk Premium on Market Portfolio

For this case, the risk free rate value to be considered for all the companies was 3.5% and the value of the market premium also for all the companies was 7%. The following table is showing the cost of value for each company and it is evident that those companies who have a higher beta, also have a higher cost of equity.

Company	Ke
Burger King	**7.98%**
Chipotle	**5.11%**
Mc Donald's	**9.03%**
Panera	**6.72%**
Papa John's	**6.09%**
Starbucks	**8.82%**
Wendy's	**8.68%**

Table 8: Cost of Equity

Four of the companies have a higher value than the market premium and the other 3 are very close to the 7% premium. As a manager, I will use this expected return as a sign to evaluate the potential gain or loss resulting from investing capital in the company. Investment decisions are based on expectations about the future, which incorporates an inherent level of risk. According to this, the values do not represent a huge percentage, but it is understandable that while the asset possess a lower risk, the expected return from this asset will be lower as well and vice versa.

Default Risk and Cost of Debt

Any company that wishes to finance operations can either issue stock (equity) or ask for loans (debt). In any of these two situations, both investors and lenders evaluate the creditworthiness of the company in order to see the willingness and ability of this company to pay back. For that reason, just as individuals possess a social security number and a credit score, organizations are also rated in certain way to measure their credit score. This ratings can range from "AAA" (lowest credit risk and highest quality) to "C" (obligations are in default with little prospect for recovery of principal or interest) as it is shown below.

For large manufacturing firms

If interest coverage ratio is			
>	≤ *to*	***Rating is***	***Spread is***
-100000	0.199999	D	12.00%
0.2	0.649999	C	10.50%
0.65	0.799999	CC	9.50%
0.8	1.249999	CCC	8.75%
1.25	1.499999	B-	7.25%
1.5	1.749999	B	6.50%
1.75	1.999999	B+	5.50%
2	2.2499999	BB	4.00%
2.25	2.49999	BB+	3.00%
2.5	2.999999	BBB	2.00%
3	4.249999	A-	1.30%
4.25	5.499999	A	1.00%
5.5	6.499999	A+	0.85%
6.5	8.499999	AA	0.70%
8.50	100000	AAA	0.40%

Table 8: Synthetic Rating Estimator
Taken from: Synthetic Rating Estimation by Aswath Damodaran

Following the values of the table above, there are three companies which possess an "AAA" rating with a correspondent default spread of 0.40% and a coverage ratio of 8.50-100000. These three companies are Chipotle, Papa John's and Starbucks. And it means that these firms have a lower level of risk possible and a great ability to pay back. And by that, this companies would be the best three to invest.

Company	Rating	Default Spread
Burger King	D	12%
Chipotle	AAA	0.40%
McDonald's	A-	1.30%
Panera	AA	0.70%
Papa John's	AAA	0.40%
Starbucks	AAA	0.40%
Wendy's	CCC	7%

Table 9: Companies' Synthetic Ratings

After finding the default spread thanks to the data base of Damodaran that relates the rating with this value, it is easier to estimate the cost of debt of the firms. Cost of debt is calculated in order to see the interest rate that the company pays on its borrowings. It can be affected by some different macroeconomic conditions, the amount of borrowing and credit rating of the company, and government policies regarding tax rates. The calculation of cost of debt value is expressed through the following formula:

Cost of debt (Kd) = (Risk-free rate + Default Spread) (1 – Marginal tax rate)

The following table is showing the solution of the formula above for each company and at the end in the right side of the table is the estimated cost of debt for each one.

Company	(Risk-free rate	+ Default Spread)	(1 – Marginal tax rate)	Kd
Burger King	3.5	12%	(1-35%)	**10.08%**
Chipotle	3.5	0.40%	(1-35%)	**2.53%**
McDonald's	3.5	1.30%	(1-35.5%)	**3.09%**
Panera	3.5	0.70%	(1-40%)	**2.52%**
Papa John's	3.5	0.40%	(1-40%)	**2.34%**
Starbucks	3.5	0.40%	(1-35%)	**2.53%**
Wendy's	3.5	7%	(1-42.39%)	**6.05%**

Table 10: Cost of Debt

As the table shows, the risk free rate for all the companies is the same for the purposes of this study. The default spread and the marginal tax rate changes according to the rate of each one of the firms and the effective marginal tax rate that each company established respectively. The lowest cost of debt found is the one of Papa John's with a marginal tax rate of 40% and a default spread of 0.40, the cost of debt for this company is 2.34%. Even though this number shows that company's borrowing costs are low, it would have to be placed against the cost of debt for competitors in the same industry. In other hand, the highest cost of debt is the one for Burger King which with a marginal tax rate of 35% and a default spread of 12% its debt costs are 10.08%

implying higher costs in borrowing than all the other companies in the sector. This can be traced a product of a negative EBIT or not enough capital to pay for the debt they have borrowed.

Weighted Average Cost of Capital

The formula to estimate the Weighted Average Cost of Capital (WACC) is:

$$\boldsymbol{Kwacc} = \frac{\mathbf{E}}{\mathbf{V}}(\boldsymbol{Ke}) + \frac{\boldsymbol{D}}{\boldsymbol{V}}(\boldsymbol{Kd})$$

Where V = E (number of outstanding x price of stock) + D (market value of debt or book value of debt)

The Weighted Average Cost of Capital (WACC) allows stakeholders to know how much they can expect to receive in return for investing in the company. But in order to explain which one is the best percentage among all the companies it has to be considered the Return on Invested Capital (ROIC) for the year 2014. In the following table the value of the WACC and the ROIC are expressed and in the last column where the sign of currency ($) is, are the amounts of each company that represent how much is been generated for each dollar the company invests into capital.

Company	WACC	ROIC	$
Burger King	8.45%	10.13%	-$0.84
Chipotle	8.83%	40.03%	$3.12
McDonald's	6.72%	16.03%	$0.93
Panera	6.30%	19.65%	$1.33
Papa John's	5.71%	27.66%	$2.20
Starbucks	8.19%	50.27%	$4.21
Wendy's	9.90%	5.31%	-$0.46

Table 11: Weighted Average Cost of Capital

As it is shown, there are two companies with negative results, signaling that this firms are not investing its capital as effectively as it could or are investing in wrong projects. In the other hand, Chipotle and Starbucks have very high results meaning that they have been taking good decisions by investing into capital or/and also in some other good projects. A WACC lower than the ROIC allows the companies to know to which extent the company can enter into new projects.

Return on Projects

ROIC

Return on invested capital measures how well a company generates cash flow relative to the capital it has invested in its business. It is also called Return on Capital (ROC). The following table shows the return on invested capital for all companies, in the bottom an average of all companies during a determined period and in the right an average of each company individually.

Return On Invested Capital					
Company	**2014**	**1Q-2015**	**2Q-2015**	**3Q-2015**	**Company Average**
Burger King	10.18%	10.47%	12.28%	0.05%	8.25%
Chipotle	40.03%	39.03%	42.54%	40.92%	40.63%
McDonald's	16.03%	15.16%	14.68%	16.13%	15.50%
Panera	18.08%	6.09%	11.46%	16.15%	12.95%
Papa John's	27.66%	34.25%	31.26%	29.45%	30.66%
Starbucks	42.32%	33.50%	38.94%	42.98%	39.44%
Wendy's	5.31%	4.94%	5.40%	2.25%	4.48%
Total Average	22.80%	20.49%	22.37%	21.13%	21.70%

Table 12: Return on Invested Capital (ROIC)

The two firms with more return on investment are Chipotle and Starbucks with values close to 40% on return on their capital investments. In other hand, Burger King and Wendy's both have lower returns when compared to all the other firms. As analyzed in the section before, when the weighted amount of cost of capital is less than the return on investment on capital, it means that the firm generates higher returns on investment than it costs the company to raise the capital needed for that investment. Chipotle and Starbucks are earning excess returns and if they continue generating positive excess returns on new investments in the future, will see its value increase as growth increases.

ROE

Return on Equity (ROE) measures the rate of return on the ownership interest (shareholder's equity) of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity. ROE shows how well a company uses investment funds to generate earnings growth. Return on equity is calculated as net income divided by its average shareholder equity. The following table address the return on equity values for the companies during the last year (2014) and the three quarters of the current year (2015). In the bottom can be found an average of all companies during determined period and in the right an average of each company individually

Return On Equity					
Company	**2014**	**1Q-2015**	**2Q-2015**	**3Q-2015**	**Average Company**
Burger King	17.37%	15.89%	19.63%	-6.44%	11.61%
Chipotle	25.09%	23.66%	25.57%	24.91%	24.81%
McDonald's	31.81%	31.09%	32.35%	38.95%	33.55%
Panera	24.35%	6.09%	13%	18.42%	15.47%
Papa John's	65.09%	106.33%	59.57%	127.56%	89.64%
Starbucks	42.41%	33.60%	42.25%	44.71%	40.74%

Wendy's	6.14%	5.95%	6.58%	6.48%	6.29%
Total Average	30.32%	31.80%	28.42%	36.37%	31.73%

Table 13: Return on Equity

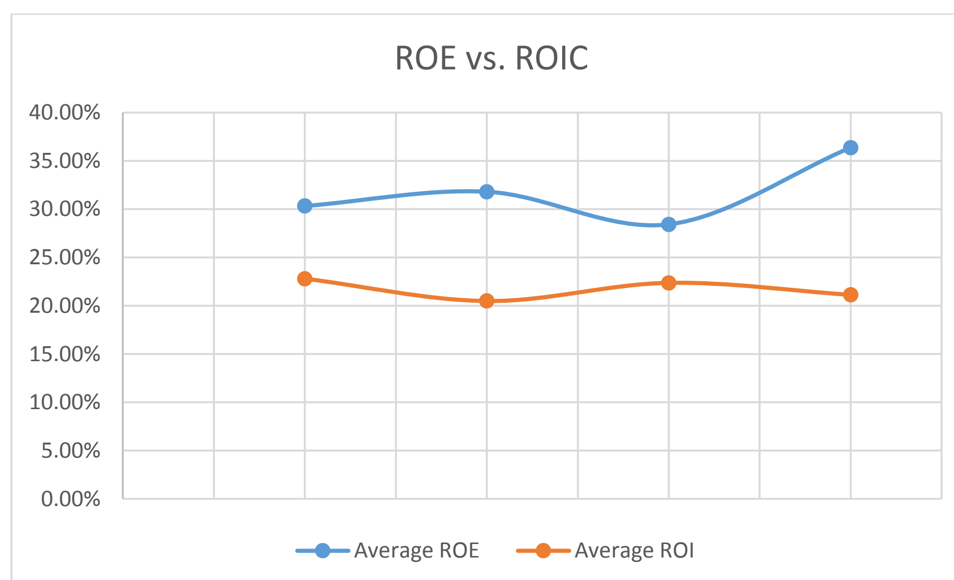
As the table is showing, the two companies with less return on equity are Burger King and Wendy's. In other hand Papa John's and Starbucks have big returns on equity. The average of Papa Johns is too high and it could be related with the corporate governance of the company, because the owner of the company is the biggest shareholder at the same time.

Next table collect the average of all companies during the times specified.

	2014	**1Q-2015**	**2Q-2015**	**3Q-2015**
Average ROE	30.32%	31.80%	28.42%	36.37%
Average ROI	22.80%	20.49%	22.37%	21.13%

Table 14: Average ROE

The following graph illustrates both, return on equity and return on invested capital averages for all the companies mixed. It is clear that the amount of the return on equity is higher than the return on invested capital.



Graph 3: Return on Equity vs Return on Invested Capital

The average of ROE is always higher than the ROI. However, the percentages are positive and not too small which means that these particular companies in average have been taking good decisions on capital investment and projects.

Optimal Capital Structure

This section seeks to assess the optimal financing mix of each selected firm. Two primary methods may be used to sole for each firm's optimal capital structure (OCS):

1. Adjusted Present Value (APV)
2. Comparative Approach

For our purposes of calculating the OCS, the APV method will be used. The debt ratio needs to be calculated and compared with the industry ratio to see how the firm is positioned in relation with others. The "Adjusted Present Value Approach" is used to calculate the value of the firm. It requires three different steps.

1. Estimate the firm's value without debt (unlevered value):

Current value of the firm
Less: Tax Benefit on Current Debt
Add: Expected Current Bankruptcy Cost
Unlevered Value of Firm

Company	Unlevered Value
Burger King	$12,390M
Chipotle	$16,726M
McDonalds	$110,594M
Panera Bread	$5,161M
Papa John's	$2,406M
Starbucks	$50,352M
Wendy's	$4,014M

Table 15: Firms' Unlevered Values

2. Estimate the present value of tax benefit from debt: tax benefits from debt values were calculated previously for the unlevered firm value. It is important to calculate the different values of tax benefits in correlation with their respective debt ratios. The unlevered value at different levels of debt ratio remains the same.

After-tax cost of debt = [Pre-tax cost of debt (1 – tax rate)]

AFTER-TAX COST OF DEBT (in million)							
Debt Ratio	**Burger King**	**Chipotle**	**McDonald's**	**Panera Bread**	**Papa John's**	**Starbucks**	**Wendy's**
0%	0	0	0	0	0	0	0
10%	0.522	635.590	4,035	196.171	100.063	1,839	0.161

20%	0.522	1,271	8,070	392.341	200.126	3,679	0.323
30%	0.522	1,906	12,105	588.512	300.189	5,519	0.485
40%	0.522	2,542	16,140	784.682	400.252	7,359	0.647
50%	0.522	3,177	20,175	980.853	452.173	9,198	0.809
60%	0.522	3,813	24,210	1,092	385.185	11,038	0.971
70%	0.522	4,449	24,924	997.334	385.185	12,878	1.133
80%	0.522	3,846	19,386	849.581	224.483	13,517	1.295
90%	0.522	3,846	19,386	849.581	335.483	13,517	1.457

Table 16: After-Tax Cost of Debt

3. Estimate the expected bankruptcy cost: In order to calculate the expected bankruptcy cost, we need the value of default probability (rating of the company), estimated bankruptcy cost, and the unlevered firm value. The formula for this value is as follows:

Expected bankruptcy cost = Default probability x Estimated bankruptcy cost x Unlevered firm value

EXPECTED BANKRUPTCY COSTS (in million)							
Debt Ratio	**Burger King**	**Chipotle**	**McDonald's**	**Panera Bread**	**Papa John's**	**Starbucks**	**Wendy's**
0%	0.02	1.170	31	0.723	0.235	8.811	0.0703
10%	3.097	1.215	32	0.750	0.245	9.133	0.0731
20%	3.097	10.798	242	5.665	9.122	9.455	0.0759
30%	3.097	46.582	324	7.590	139.434	83.807	0.0788
40%	3.097	709.089	1,267	29.732	275.034	95.224	0.0816
50%	3.097	895.694	30,867	724.949	280.123	372.196	0.0844
60%	3.097	1,437	31,819	738.104	332.177	5,647	0.0873
70%	3.097	1,482	31,988	862.270	332.177	9,328	0.0901
80%	3.097	1,748	44,193	1.021	383.839	9,422	0.0929
90%	3.097	1,748	44,193	1.021	383.839	9,422	0.0958

Table 17: Expected Bankruptcy Costs

FINAL LEVERED FIRM VALUES (in million)		
Company	**Debt Ratio**	**Levered Value**
Burger King	0%	$12.388
Chipotle	70%	$19,693
McDonalds	40%	$125,467
Panera Bread	40%	$5,916
Papa John's	20%	$2,597
Starbucks	50%	$59,179
Wendy's	90%	$5.471

Table 18: Firms' Levered Values

Dividend Policy

In this section we go a step further on the issuance of debt to finance operations. Once a company issues stocks as a way to finance its operations and becomes more liquid, a payment of dividends must follow in order to return cash and/or assets to investors. But how does each company pay its dividends to stockholders? How much dividends do they pay annually? And what are the patterns that this firm follows when paying these dividends?

	Panera	Papa John's	Wendy's	Chipotle	MacDonald's	BK	Starbucks
Dividends Paid out on	Quarterly Basis	Quarterly Basis	Quarterly Basis	None	Quarterly Basis	Quarterly Basis	Quarterly Basis
Year used	2006	2013	2014	N/A	2015	2014	2015
Divided Yield	0%	1.08%	2.14 %	0%	3%	2.25%	1.30%
Dividend Payout Ratio	0%	30%	62.5%	0%	73.64%	0%	37.86%
Dividends Paid Out	None	60M	75.11 M – payout is increasing	None	Paying out too much to their shareholders	None	80.6M
Buyback	$ 154.1M	$1,325 M	$ 679.2M	$ 40M	$ 1,800 M	None	$ 50M

Table 19: Firms' Dividend Policy Summary

Based off the gathered company data, we can see that in the Restaurant industry there is a 9.16% and a 0.58% of dividend payout ratio and dividend yield respectively. MacDonald's has the greater dividend yield and payout ratio towards its shareholders and a greater benefit towards buyback. On the other hand, companies like Panera, Chipotle, and Burger King have different policies when it comes to paying dividends. As we can see, none of them are currently paying dividends as we can tell by their dividend payout ratio for different reason. In the case of Panera, the company has never paid out dividends to stockholders. But now more than ever before, Panera has not intentions on paying dividends due to a possible movement towards a more private firm.

That is why the company is involved in annual buyback programs because they want to repurchase what other holders are selling in order to avoid some else to do it.

In the case of chipotle the situation is different. The company is simply not paying dividends because they are in the process of expansion and they need to be liquid in order to purchase new stores or lease existing ones. Under Chipotle's dividend policy section it states that "we are not required to pay any dividends and have not declared or paid any cash dividends on our common stock. We intend to continue to retain earnings for use in the operation and expansion of our business and therefore do not anticipate paying any cash dividends on our common stock in the foreseeable future" (Chipotle's 2014 Annual Report, Dividend Policy, page 26). This statement more than clarify the intentions of Chipotle of not paying dividends until they finish their expansion period.

The last company that is not paying any dividends at all is Burger King. This is a situation that was already predicted because the company does not currently have a positive EBIT. In this regarding, if Burger King is not able to cover its liabilities with its assets and cash available, then it is expected for this company to retain to retain as much earning as possible in order to have some liquidity left for the following year. Also, due to this negative EBIT, the company has been forced to as for a lot of debt which has placed restrictions on its current dividend policies. The reason for this is because some lenders give out money to investors as long as the borrowers agree to follow certain rules. For Burger, one of those rules is the one of not paying dividends.

Valuation

When valuing and comparing any of our seven companies with each other and with the industry, the first step that needs to be taken is to decide the model that will be used. It is important to remember that this model has to be consistent throughout all the companies in order to avoid differences in their valuations. For the purpose of this project, the Discounted Cash Flow (DCF) Valuation will be chosen and then the dilemma comes when we have to decide between the Free Cash Flow to Equity (FCFE) approach or the Free Cash Flow to the Firm (FCFF) approach. Even when both approaches should yield consistent estimates, the choice between one and another will depend on how stable the equity of those firms are after debt or how stable the companies are before debt.

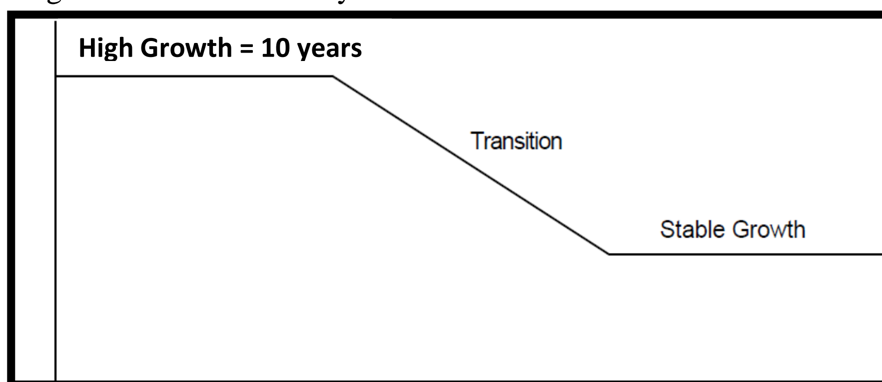
FCFE or FCFF?

In this particular case, the seven companies that we are analyzing are very different with respect to the equity and debt they accumulate or give out. We have the case of Panera Bread which has never paid dividends to its stockholders and which has been accumulating debt in the last two years in order to have liquidity and buy the company back. We also see the case of Chipotle which does not pay dividends nor do they finance their operations through debt either. Finally we see McDonald's which it both pays dividends to stockholders and accumulates debt for financing purposes. For this reason, since leverage is expected to change among our companies, we will use the Free Cash Flow to the Firm (FCFF) approach.

Growth Model and Timing

After deciding the discounted cash flow that will be used for all seven companies, the next step is to define the growth model. This means that our companies can either grow at a stable rate all the time, they can grow fast for a fixed period of time and them drop abruptly to stable growth forever (two-stable growth model), or they can grow high for a fixed period of time and then transition to a stable growth (high growth followed by transition). For the purpose of this project, we have decided to use to the third model (high growth followed by transition) in which companies will have a period of high growth for 10 years and then the companies will start transitioning towards the stable growth forever. The illustration of the model follows next:

High Growth Followed by Transition



Damodaran (2014). page 526

As we can see in the previous model, we have chosen 10 years as the length of the high growth period. The main reason for this lies on three important factors:

1. All of the seven companies are **one of the largest players** in their specific business category. They all fall into the restaurant industry but inside their specializations (coffee, Mexican food, hamburgers, non-GMO food), they are one of the leaders.
2. Most of the seven companies' **return on capital exceed their own cost of capital**. This means that these companies are being effective at turning capital into profits and finding ways to finance projects at lower costs.
3. All companies have some sort of **competitive advantage** in the industry. Papa John's uses fresh dough and ingredients that are never frozen, Starbucks gives to its clients more than just a place to have a cup of coffee, and McDonald's has one of the strongest brand names in the fast food industry.

All these factors influenced in the decision of choosing 10 years as the length for the high growth period because most of our companies have some sort of strong competitive advantage both in the industry and in their independent business categories.

Ratios Comparison

In order to arrive to the final company's stock prices and values, we first need to take a look at different ratios that directly affect these two calculations both in the present and the future. "Figure 1" will give us a summary of these ratios for all six companies.

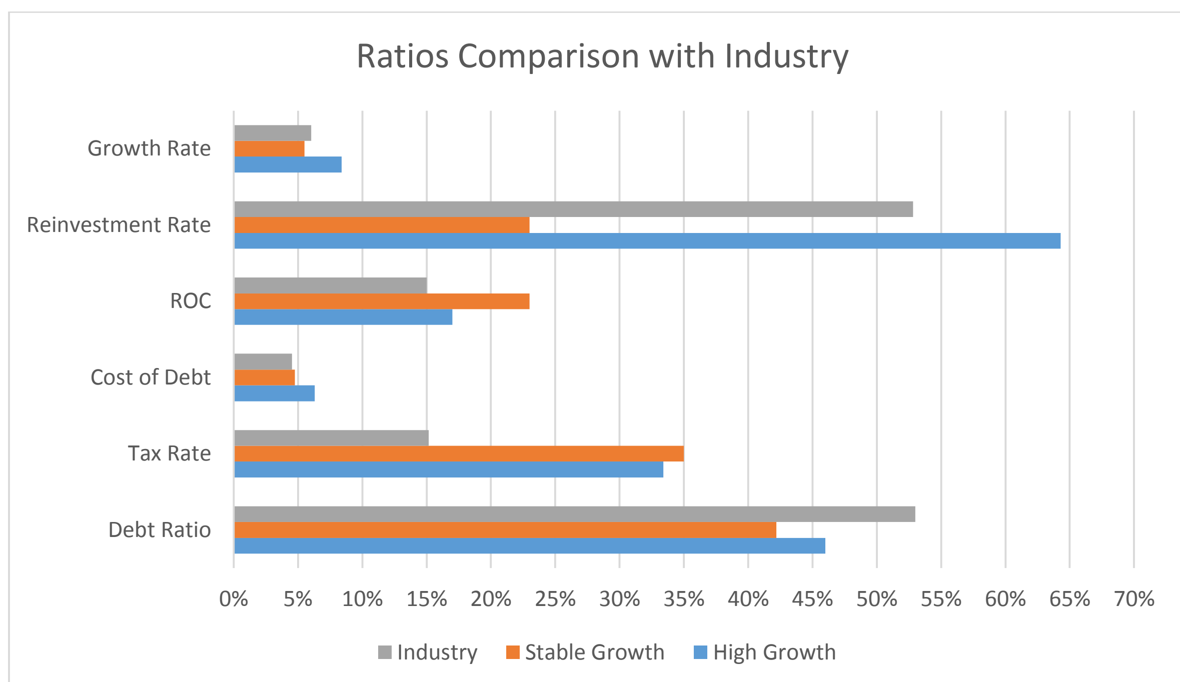
		RATIOS							
		Beta	Debt Ratio	Tax Rate	Risk Premium	Pre-Tax Cost of Debt	ROC	Reinves Rate	Growth Rate *
Panera Bread	High	0.46	40%	35.3%	7%	4.2%	9.7%	58.6%	5.7%
	Stable	0.8	33%	35%	6%	3.9%	18%	15.5%	2.8%
Starbucks	High	0.76	50%	34.6%	7%	3.9%	18%	48%	8.54%
	Stable	0.8	20%	35%	6%	3.7%	15%	20%	3%
Papa John's	High	0.37	20%	32%	7%	3.9%	17%	44.25%	7.5%
	Stable	0.8	25%	35%	6%	3.8%	15%	21.33%	3.2%
Chipotle	High	0.27	13%	37.6%	7%	3.9%	13%	52.5%	6.82%
	Stable	0.8	42%	35%	6%	3.6%	34%	8.33%	2.8%
McDonald's	High	0.79	40%	35.5%	7%	5%	13%	28.12%	3.65%
	Stable	0.8	20%	35%	6%	3.5%	20%	14%	2.8%
Wendy's	High	0.74	90%	35%	7%	10.5%	5.2%	99.3%	5.16%
	Stable	0.8	83%	35%	6%	6%	5.1%	54.5%	2.7%
Burger King	High	0.64	23%	-9.4%	7%	15.5%	24%	55%	13.2%
	Stable	0.8	30%	35%	6%	4%	30%	9.3%	2.8%
AVERAGE	High	0.66	46%	33.4%	7%	6.3%	17%	64.3%	8.4%
	Stable	0.8	42.2%	35%	6%	4.75%	23%	23%	5.5%
INDUSTRY*		0.94	53%	15.17%		4.54%	15%	52.82%	6.02%

Table 20: Comparison of Firms' Financial Ratios
*Industry values are taken from the "Restaurant" industry
* Growth Rate = ROC * Reinvestment Rate

One of the first things that we can notice from the previous table is low beta. Beta measures the volatility or risk of a security in a portfolio and in the case of the six companies that we have selected, their average beta is lower than the market. This suggests to us that these companies have lower volatility (of around 28%) than the market which is a positive sign for conservative investors. At the same time, another important vale that we see that could affect the final valuation is the tax rate. Regarding this number, the average tax rate for our six companies is 33.4% while for the industry it is half at 15.17%. Since tax rate is tied to a company's earnings, we could already make some assumptions about Chipotle's earnings being one of the highest among all six companies because it has the highest tax rate. The same analysis can be made for Burger King which has an effective tax rate of -9.4%. This would suggest to us that Burger King's earning might be negative. In our analysis, the higher the effective tax rate, the lower the value of the company will be up to a certain point.

The last two analysis from the previous table will pertain to the debt ratio and the growth rate. Regarding the first one, our six companies sit at 46% in the high period and 42.2% at a stable period while the industry average is 53%. This is positive for our companies because the higher the debt ratio the higher the financial risk and also the higher the firm's valuation. The reason for this is because as companies incur more debt, they become more liquid and their free cash flows

increases which creates an increase in both the stock prices and overall firm's values. Wendy's has the highest debt ratio and Chipotle the lowest because Chipotle does not have any long-term debt incurred. The second and final analysis is the growth rate calculated by multiplying the ROC and the reinvestment rate. The ROC tells investors how well the company is turning capital into profit. The higher the value, the better it is for investors and the higher the firm's value is. Currently the industry value is 15% while the average for high period is 17%. This value multiplied by the reinvestment rate will give us an average growth rate of 8.4% for high period and 5.5% for stable period with an industry value of 6.02%. This means that our companies are growing with the rest of the companies in the industry.



Graph 4: Firms' Financial Ratios Compared to Industry

Valuation through the FCFF Model

Company	Current Stock Price* (as of Dec. 4th, 2014)	Predicted Stock Price	Change	Current Firm Value* (in billions)	Predicted Firm Value (in billions)	Change	Undervalued or Overvalued
Panera Bread	$185.68	$176.57	↓ $9.11	$4.5	$5.9	↑ $1.9	Overvalued
Starbucks	$61.75	$83.78	↑ $22.03	$66.3	$70.9	↑ $4.6	Undervalued
Papa John's	$58.23	$65.78	↑ $7.55	$2.8	$2.7	↓ $0.1	Undervalued
Chipotle	$561.20	$598.07	↑ $36.87	$20.8	$21.2	↑ $0.4	Undervalued

McDonald's	$116.11	$117.30	↑ $1.19	$103.5	$117.6	↑ $14.1	Undervalued
Wendy's	$10.62	$8.21	↓ $2.41	$5.3	$4.3	↓ $1	Overvalued
Burger King	$35.50	$10.17	↓ $25.33	$11.7	$8.4	↓ $3.3	Overvalued

Table 21: Companies' Stocks and Values Summary
*Current stock prices taken from www.finance.yahoo.com
*Current firm values taken from www.macroaxis.com (in billion)

Form the previous graph we can make some conclusions and assumptions according to the movement in both stock prices and value of the firms. First of all, Panera Bread is the only company in that graph which stock price is predicted to decrease $9.11 but which firm value is expected to increase in value by $1.9 B. This might suggests (and in fact that is the case), that Panera is currently involved in a repurchasing program in order to buy the firm back. The company is both buying back the stocks that other holders sell as well as the franchises that used to be privately owned by investors. In order to finance these purchasing programs, Panera has been increasing its debt (which increases the value of the firm in the short run). In fact, according to its financial statements, in 2014, Panera had $100 million in debt and in this current year, the company incurred another $300 million in debt. Another important point that signals this buyback tendency is the fact that Panera has never paid dividends to stockholders. If they did not do it in the past when they had not debt, they will not do it now because that will leave them less liquid to repurchase assets.

On the other hand, Papa John's stock price is expected to increase while its overall firm value is expected to decrease by only $0.1 B. This is the only company which predicted values are closer to what experts say. One of the reasons for that could be because its market value of debt does not vary as much as it does for the other five companies. In estimating the market value of debt from the book value of debt we applied this formula from Damoran's book on page 148:

$$\text{Market Value of Debt} = \text{Interest Expense}\left[\frac{1-\frac{1}{(1+\text{Cost of Debt})^{\text{Debt Maturity}}}}{\text{Cost of Debt}}\right] + \frac{\text{Book Value of Debt}}{(1+\text{Cost of Debt})^{\text{Debt Maturity}}}$$

Where the cost of debt is 3.9%, debt maturity is 5 years, and book value of debt is $337 million. After substituting the values for Papa John's we get a value of around $156 million. This value being close to the book value of debt of $337 million contributes to a higher stock price but does not influence the value of the firm. That is why, we can make the assumption that since this is the only company from the six we are evaluating which market value of debt is closer to the book value of debt, the effect on the stock price will be to increase it while its effect on the overall value on the firm will be to lower it because it is not used to predict the firm's value but only to predict the stock price.

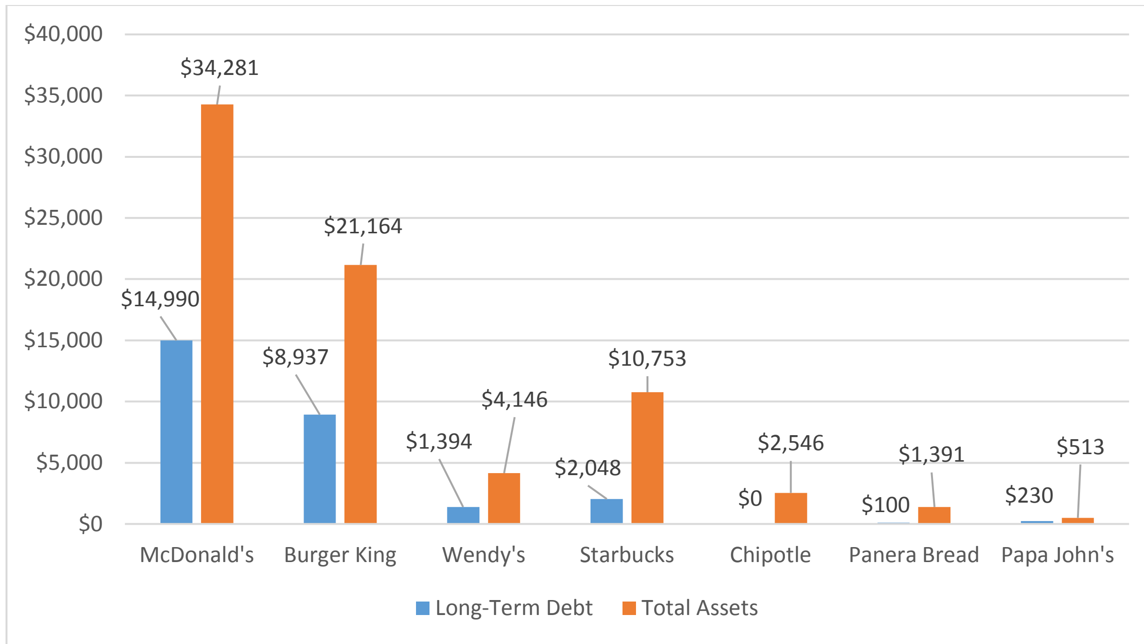
Another important trend we see is the large positive stock change for Starbucks ($22.03) as well as Chipotle ($36.87). Starting with the company that is the coffee empire in the U.S, Starbucks' predicted increase in both stock price and firm value can be caused by two reasons

attached to one single industry, technology and mobile phones. Throughout the end of 2014 and the beginning of 2015, this company has been announcing releasing new technologies into the market that not only allow customers to order through their phone and check the status of their orders but to also to pay using the Starbucks app. This innovation has kept investors with positive feelings about the future of the company. At the same, according to The Seattle Times, “customers can already skip the line using their mobile phones and now, at least in Seattle, they can have their coffee delivered” (The Seattle Times, 2015). Starbucks is testing its new delivery system is cities like Seattle and New York in an attempt to serve the business community. This is the second reason why investors are beating on Starbucks and making its prediction to go up.

For the second company that had a big change in its stock price (Chipotle), the situation might be a little bit different than just innovation or good news on the newspapers. Different from Starbucks, Chipotle has not long-term debt at this point. If we predict that in the future, Chipotle will have some debt incurred in its balance sheet, then both its stock price and its overall value will increase. In fact, if we take a look at Chipotle’s optimal debt ratio computed in the previous section, we will see that is predicted to be at 70%. If we compare this ratio with the ratio from the current financial statements of this company (13.08%), we will see that this value is expected to increase at some point from 13.08% close to 70% meaning that Chipotle will have to incur long-term debt in the future. This will be the reason why the predicted stock price of this firm changes by more than $30 from its current price.

The last important analysis from the previous table comes from companies like McDonald’s, Wendy’s, and Burger King which compete not only in the same industry of fast food but also in the same category of hamburgers. Why is McDonald’s expected to increase so drastically while Wendy’s and Burger King expected to decrease? A single look at “Figure 1” below will give us part of the answer. As we can see, McDonald’s long-term debt to total assets ratio is 44% compared to 42% for Burger King and 34% for Wendy’s. This suggest that McDonald’s in more dependent on debt that the other two companies which in the short-term makes McDonald’s to increase its value more than Wendy’s and Burger King’s. The difference on ratio between McDonald’s and Burger King in not as big as it for McDonald’s and Wendy’s. The main reason for this is related to expansion. While McDonald’s is being more aggressive in terms of purchasing and building more restaurants, Wendy’s is more conservative in that aspect. A look at their cash flows from investing activities will tells us that. McDonald’s cash flows from operating activities is $ 2.3 billion while Wendy’s is only $ 0.187 billion.

Another important reason for this larger increase for McDonald’s than for the other two company can be found on their financial statements. By taking a look a Burger King’s earnings before taxes (EBIT), we will see that it is a negative number ($ -253.1 millions). This undoubtedly makes it current free cash flow to be negative as well and it also creates a negative future expectations for stockholders. These are definitely bad numbers for Burger King not only because it decreases its stock price but also because it means that the company is not selling enough to cover its expenses.



<u>Graph 5:</u> Long-Term Debt to Total Assets Ratio

Conclusion

This project has focused on analyzing both the internal financial stability of seven different corporations as well as their methods to give back to their owners in order to arrive to a predicted valuation for each one. The project started with a company overview in order to give the reader the ability to know how we think those companies are seen in today's economy and how we want them to be seen in the future. Then we moved into the owners of the company section where we analyzed not only who possess the largest number of stocks or who makes more money in the company but also how decision making takes place and who has the most power to influence a decision.

After this topic is when we begin focusing on the internal financial stability of the firm. We first talked about risk and how it can affect the interest rates and the premiums that investors demand. In order to arrive to this risk, we had to look at each company's bond rating which in our analysis they remain stable around AAA and AA with only a few exceptions. We then estimated each company's cost of debt, cost of equity, and cost of capital. We used these calculations in order to know how much interest these companies were paying on their borrowings, how much they were giving back to owners of the company, and how companies were persuading investors to make an investment in their companies through the use of higher rates of returns. We end this section by explaining how these companies were utilizing their capitals to generate cash flows (ROIC) as well as how they were using shareholders' money to generate investments and returns on those investments (ROE).

The last two sections of this project, before we entered into the valuation, were about calculating the optimal capital structure of these firms as well as their dividend policy. In the first topic, our goal was to find that amount of debt that companies could have where their firm values were going to be maximized. We made these calculations in order to know how much room, in terms of debt, these companies had either up or down. For example, in many of the cases our companies found themselves in the 40% debt ratio bracket because at that percentage, the firm had it highest predicted value. In this situation, we know that these firms still have room to incur more debt (even when their value will start decreasing). On very specific case like the one of Burger King which has a negative EBIT, the debt ratio was 0% because since the company cannot even pay its current debt, it is obvious that it cannot incur any more of it. The second topic talks about the dividend policy in this project. From our seven companies only four of them (Starbucks, McDonald's, Wendy's, and Papa john's) are currently liquidating their owners. The rest of the companies, do not pay dividends to stockholders either because they want to repurchase the company back, they do not have enough liquid cash available, or they are in the process of rapid expansion in which they need liquidity to finance its operations.

Before we get into the topic of valuation, it is important to highlight the three most important decisions that managers have in a corporation. As explained in the introductory section of this project, after going through all the calculations explained before, investors like us were going to be able to know which was the best company to buy (or to sell) based on three important decisions: the investment decision, the financing decision, and the dividend decision. We will now

present readers with our conclusion of which of the seven companies is the best one to invest on based on each of these three decisions.

Investment Decision

The first category that investors should take into account when choosing a company to invest on is the investment decision. Regarding this section, investors must look if the firm's assets are earning a higher return than the minimum acceptable hurdle rate (risk). For this purpose, we will look at the section on this project called "Risk and Return". Since all of the seven companies have a beta that ranges between 0.2 and 0.8 with an unlevered industry beta of 0.94, the volatility of this portfolio is relatively low which creates positive signs for investors. When we moved to the default risk and the risk premium of the security and we take a look at each company's rating, we will see that these values and rating letters are more volatile from one company to the other. As seen in the table below, companies like Chipotle, Papa John's, and Starbucks have low default spreads which suggests that they will have lower interests because they are less risky to invest on (their default spread are closer to the U.S default spread of 0.00%). On the other hand, companies like Burger king and Wendy's will have higher interest because their default spread is much higher than the other companies and farther from the 0.00% default spread in the U.S which suggests a higher risk to investors but also a higher return. Only companies like Panera and McDonald's have spreads that range between the highest and the lowest values.

Company	Rating	Default Spread
Burger King	D	12%
Chipotle	AAA	0.40%
McDonald's	**A-**	**1.30%**
Panera	**AA**	**0.70%**
Papa John's	AAA	0.40%
Starbucks	AAA	0.40%
Wendy's	CCC	7%

In terms of the cost of debt, cost of equity, and cost of capital, the table below will give us a rough summary of the results. Regarding the cost of debt (Kd), we can see once again how companies like Papa John's, Starbucks, and Chipotle are among the lowest numbers. In this section the lower the cost of debt, the better for investors because it means that companies are not paying as much interest in their borrowing as other companies are. On the other hand, companies like Burger King and Wendy's are on the extremes of a high cost of debt which suggests too much risk for investors. Regarding the cost of equity, the higher the percentage, the better for investors. In the case Starbucks, Papa John's, and Chipotle, we see that their numbers are not the highest anymore. In this situation, companies like McDonald's and Wendy's would be the best investments because stockholder will be receiving around 9% of their total investments made in the company. Remember that for this topic, we are considering a risk-free rate of 3.5% and a risk premium of 7%.

The last calculation in order to determine the best investment decision will be the cost of capital (Kwaac). Cost of Capital will be valuable for those investors who measure returns in terms

of a composite of all claimholders instead of just equity like cost of equity does. According to Damodaran on page 153, “the cost of capital will be the minimum acceptable hurdle rate that will be used to determine whether to invest in a project or not” (Damodara, 2014). Once again, investors will try to look at a value that is low enough for them to reduce risk but high enough to receive a better return than what they will get with a riskless security. In this particular case, only McDonald’s with a Kwaac of 6.72% will give investors the best investment decision. Others companies are either too close to the risk-free rate of 3.5% which signals almost no return on investment or higher than the cost of equity which signal a high risk.

Company	Kd	Ke	Kwaac
Burger King	10.08%	7.98%	8.45%
Chipotle	2.53%	5.11%	8.83%
McDonald's	**3.09%**	**9.03%**	**6.72%**
Panera	2.52%	6.72%	6.30%
Papa John's	2.34%	6.09%	5.71%
Starbucks	2.53%	8.82%	8.19%
Wendy's	6.05%	8.68%	9.90%

Financial Decision

The second most important decision for any manger in a corporation and for investors is the financial decision. For the financial decision, both insiders and outsiders will look at the companies that have the best mix of debt and equity in its portfolio. This “mix” will make those companies maximize their firm value because their cash flows will be compromised. As companies incur more debt, their cash flows will go up in the short-term but eventually they will be reduced due to the payments of dividends or interest expenses that the company must make to those lenders. This means that only those companies that can have a good balance where they are incurring a certain amount debt in which they are paying its respective dividends and interest (balancing it cash flows) will be able to maximize its value.

In the table below, we will see a rough summary of all the seven companies’ optimal capital structures. As we can see, only McDonald’s is able to maximize its value at $125,467 million with one of the lowest debt ratios at 40%. This due not only to the fact that McDonald’s is a much larger company in terms of total assets than the rest of the companies but also to the ability of McDonald’s to reduce the amount of assets that are financed through debt. If we compare this 40% with the 0% from Burger King or the 90% from Wendy’s, we will see that these last two companies (which are both on the extremes), are either not financing increased operations through borrowing at all (Burger King) or are compromising its operations if its cash flows dry up (Wendy’s). From an investor’s perspective, neither Burger King (because of the 0% debt ratio, they will limit its returns to investors) nor Wendy’s (because of too much risk to return the money back to investors) will be chosen. On the other hand, even when Panera has the same debt ratio of 40% that McDonald’s has, the intentions of this cafes chain company is leaning towards buying the company back and making it private. Panera is involved in stock repurchase programs of more than $600 million each year as well as long-term debt of $300 million for this year. For this reason, investors will not look

at Panera as an option to invest on. That is why, McDonald's will once again be the best company to invest when analyzing the financing decision.

FINAL LEVERED FIRM VALUES		
Company	**Optimal Debt Ratio**	**Levered Value**
Burger King	0%	$12.388 M
Chipotle	70%	$19,693 M
McDonalds	**40%**	**$125,467 M**
Panera Bread	40%	$5,916 M
Papa John's	20%	$2,597 M
Starbucks	50%	$59,179 M
Wendy's	90%	$5.471 M

Dividend Decision

The last important decision for both an investor and a manager is the dividend decision. This decision was related to which firms are currently returning cash back to owners and how they are doing it. If we take a look at the "Dividend Policy" section of this project, we will see that from the seven companies we analyzed, only four of them are paying dividends out. For this reason, we will only focus our conclusion on these four corporation in order to arrive to that company that is the best liquidating its owners while at the same time doing it in the best way possible. The table below gives a summary of these four companies. As we can see once again, McDonald's is highlighted as the company that pays out the most amount of dividends to owners of the company. They are also involved in the highest amount of buyback programs which signals one of the ways in which the company returns cash to stockholders. Not only that but McDonald's also has the highest payout ratio from all these four companies with 3%. In this regard, McDonald's will be attracting more investors because the payouts are higher.

	Papa John's	Wendy's	**MacDonald's**	Starbucks
Dividends Paid out on	Quarterly Basis	Quarterly Basis	**Quarterly Basis**	Quarterly Basis
Dividends Paid Out	60M	75.11 M	**6,391 M**	80.6M
Buyback	$1,325 M	$ 679.2M	**$ 1,800 M**	$ 50M

Finally, we have decided that the best company to invest according to the investment, financing, and dividend decisions is McDonald's. The company's cost of debt and equity and considered to be the lowest ones on risk and the highest ones on returns compared to rest of the companies. Also, its optimal debt ratio of 40% with a firm value maximization of $125,467 million, is the most appropriate for investors when it comes down to deciding if the company will have enough cash flows to liquidate them and being able to pay its obligations as well. The dividend decision confirms the previous line by showing us once again that McDonald's is the company that pays the highest amount of dividends and dividend payout ratio and it is still capable

of incurring more debt. From the stock chart showed at the end of page 25, we will see that McDonald's current stock price is undervalue and that we predict that it will go up $1.19 in the future. This give us the ability to invest in McDonald's low at $116.11 and sell high at $117.30.

References

Damodara, A. (2014). Applied Corporate Finance. New York City: Wiley.

The Seattle Times. (2 de December de 2015). From http://www.seattletimes.com/business/starbucks/starbucks-tests-delivery-service-in-seattle/

Yahoo Finance (2014). Taken from www.finance.yahoo.com

Macroaxis Firm Values (2014). Taken from www.macroaxis.com