DISCOUNTED CASH FLOW VALUATION OF DOMINO'S PIZZA, INC.

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ABSTRACT

The purpose of this valuation report is to find the target price of Domino's Pizza, Inc (DPZ), the well-known chained pizza brand, by using the discounted cash flow for the upcoming four years, 2021 to 2025, and the present value of the terminal value at the end of 2025. After analyzing the drivers of DPZ's cash flows, which are royalty fees and profit from the supply chain, the projection for its sales for the next four years has a CAGR of 6%. With a cost of capital of 4.25% and a terminal growth rate of 1.15%, the target price of DPZ at the end of 2021 is 538.4 dollars which is 4.7% upside from the current price of 514.5 dollars. As the valuation result, via taking into consideration DPZ's past outstanding performance compared to the market and its peers, the positive relationship between GDP growth and per capita consumption in the foodservice industry, and the high base years that DPZ has built, the investment recommendation is to "hold." Nevertheless, the limitation and triggers

KEY WORDS: DPZ/ Valuation/ Discounted Cash Flow/ Foodservice/ Limited Service Restaurant

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CAGR	Compounded Annual Growth Rate
CAPEX	Capital Expenditure
CAPM	Capital Asset Pricing Model
Chipotle	Chipotle Mexican Gill, Inc.
COGS	Cost of Goods Sold
COVID-19	Novel Coronavirus 2019
DCF	Discounted Cash Flow
DMP	Domino's Pizza Enterprises Ltd.
DOM	Domino's Pizza Group PLC.
DPZ	Domino's Pizza, Inc.
EBIT	Earnings before Interest and Taxes
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
ESG	Environmental, Social and Corporate Governance
FCFF	Free Cash Flow to the Firm
NASDAQ	Nasdaq Composite
NYSE	New York Stock Exchange
Papa John's	Papa John's International, Inc.
PV	Present Value
PZA	Pizza Pizza Royalty Co.
QSR	Quick Service Restaurant
RSP	Retail Selling Price
SP500	The Standard & Poor's Index
U.S.	United States
U.K.	United Kingdom
WACC	Weighted Average Cost of Capital
Wendy	Wendy's Co.
YUM	Yum! Brands, Inc.

CHAPTER I
ABOUT DOMINO'S PIZZA

Domino's Pizza is one of the notable leading players in the quick-service industry under the pizza category. The pizza manufacture has rapidly grown in customer base and price since its establishment in the 60s. To further understand the business, including the business model, the drivers for profit and growth, past performance, and the corporate governance, this chapter will discuss and perform the visualized data about domino's Pizza regarding the abovementioned aspects of the business. Firstly, the company's broad background and historical price performance will be illustrated, followed by the revenue and segment breakdown. Afterward, a more qualitative aspect of the company is described later in the strategy and the corporate governance under the management of the current CEO.

1.1 Overview

Domino's Pizza, Inc. (DPZ) is a well-known pizza corporation that originated in America since 1960. DPZ has incorporated a small company in convenient pizza delivery and has earned income from carryout customers. In addition, the company has continuously expanded its franchises to other countries and continents. With over 17,600 locations in more than 90 markets around the world as of January 2021, the company is recognized as one of the largest pizza companies worldwide.

With a ticker "DPZ" in the New York Stock Exchange (NYSE), the company was first publicly traded in July 2004. At the very beginning, DPZ was traded at around 10 dollars per share; not until 2013 that the stock is traded at more than 40 dollars per share. Since then, the price of DPZ has rapidly grown from 40 dollars to 460 dollars. Figure 1.1 illustrates the growth in DPZ's price over the past 17 years.

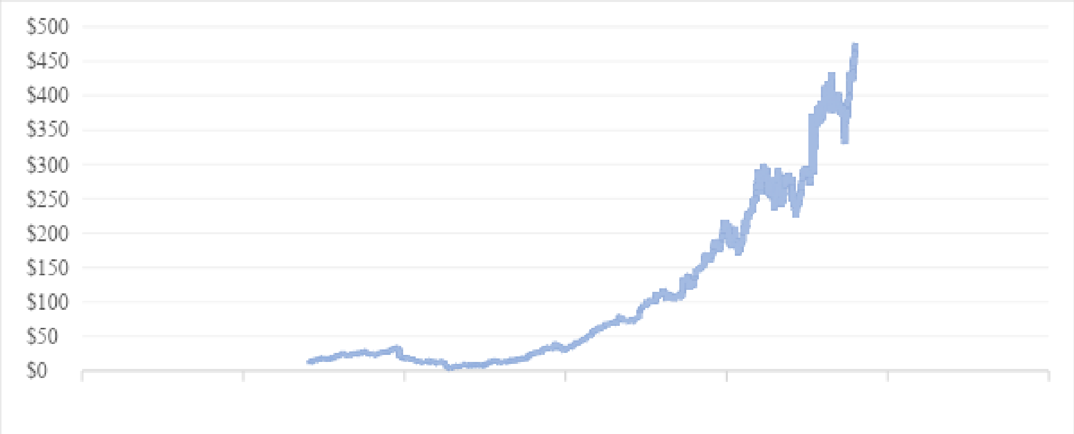

Figure 1.1 DPZ's Price History

Source: Own calculation from Refinitiv, (2021)

Sustainably growing dividend payment to the shareholders has positively affected DPZ's price. Table 1.1 demonstrates the dividend growth rate since DPZ has started in 2013 up until the current year. On average, the company has a dividend growth rate of about 20% while a dividend yield of about 1% per year.

Table 1.1 Annualized dividend and Yield

Year	Annualized Dividend	Dividend Growth Rate	Price at Year BGN	Dividend Yield
2021*	1.88	N/A	370.76	0.51%
2020	3.12	20.00%	281.75	1.11%
2019	2.60	18.20%	283.73	0.92%
2018	2.20	19.60%	216.85	1.01%
2017	1.84	21.10%	174.54	1.05%
2016	1.52	22.60%	113.93	1.33%
2015	1.24	24.00%	99.05	1.25%
2014	1.00	150.00%	70.61	1.42%
2013	0.40	N/A	46.57	0.86%

Source: Own calculation from Refinitiv, (2021)

Note: The latest data is in June 2021

In addition to the dividend yield that DPZ has returned to its shareholders, the company also launched repurchase programs to purchase shares back from investors by compensating them with a higher price than the current market price, which investors believe their stock value is worth. The repurchase demonstrates DPZ's strength, and the market has a positive view on the repurchase program that its price has increased over the years. Figure 1.2 shows the ten-year historical repurchase program of DPZ, with the price of repurchasing per share being averaged for the whole year.

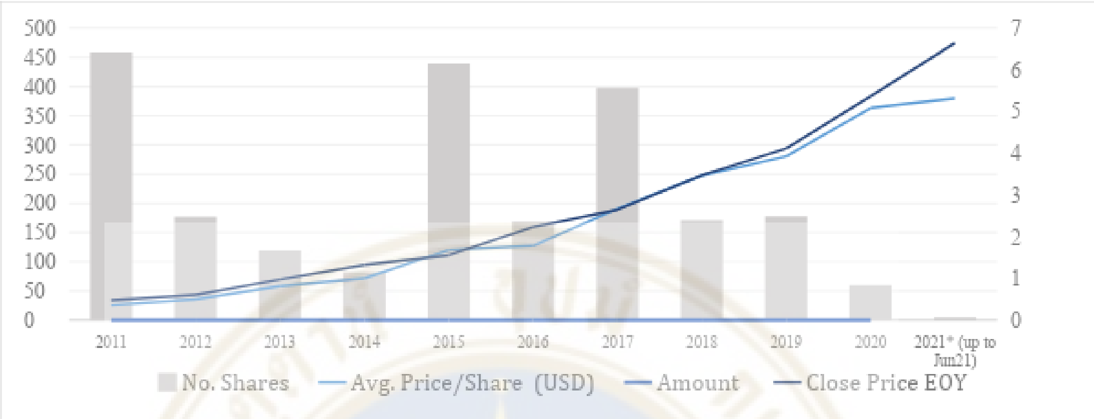

Figure 1.2 10-Y DPZ's Repurchase Program

Source: Own calculation from DPZ's annual reports, (2020), (2017), (2014), (2011)

1.1.1 Product, Service, and Brand

Even though DPZ started by producing pizza to serve various customer needs, the company has expanded the product lines to non-pizza items, such as breadsticks, crust pizza, and buffalo wings with different products in different regions. However, the core menu remains pizza as they are mainly focused more on expanding delivery and franchise than the food line.

Besides, DPZ has also derived from carryout pizza stores to delivery service. The company has expanded many company-owned stores in the United Stated (U.S.) before providing the franchise services. Franchise service enables the franchisee to have the right to operate the pizza stores as an owner of DPZ stores in different regions. As of the year ended 2020, DPZ has 363 company-owned stores and 5,992 franchised stores located in the US The company also provides franchise agreements internationally.

Additionally, most franchisee companies outside the domestic market would also enter into a distribution right agreement for the entire region or country under master franchises. Then, master franchisees would have an exclusive right to develop and sub-franchise stores in the local market. There are 11,289 international franchise stores as of the year ended 2020, as shown in Table 1.2: number of international franchise stores.

Table 1.2 Top International Franchises Stores

Market	Numbers of stores
India (JUBLFOOD: NS)	1,313
United Kingdom (DOM: L)	1,144
Mexico (ALSEA: MX)	779
Japan (DMP: ASX)	742
Australia (DMP: ASX)	709
Turkey (DPEU: L)	560
Canada	541
South Korea	466
France (DMP: ASX)	431
China	363

Source: DPZ's annual report, 2021

Note: The companies in parenthesis are the master franchisees.

1.1.2 Sources of Revenues and Growth

In addition to food and the franchise service, the supply chain segment plays a vital role in the revenue of DPZ. The company maintains and supplies materials to company-owned stores and some of the franchise stores. By running dough manufacturing and supply centers in the US and Canada, the company grows revenue along with their sales and supports stores with quality bread and vegetables.

Over the past seven years, DPZ's revenues continuously grew. To further analyze the development, detailed data of the company's single segments is illustrated (Figure 1.3).

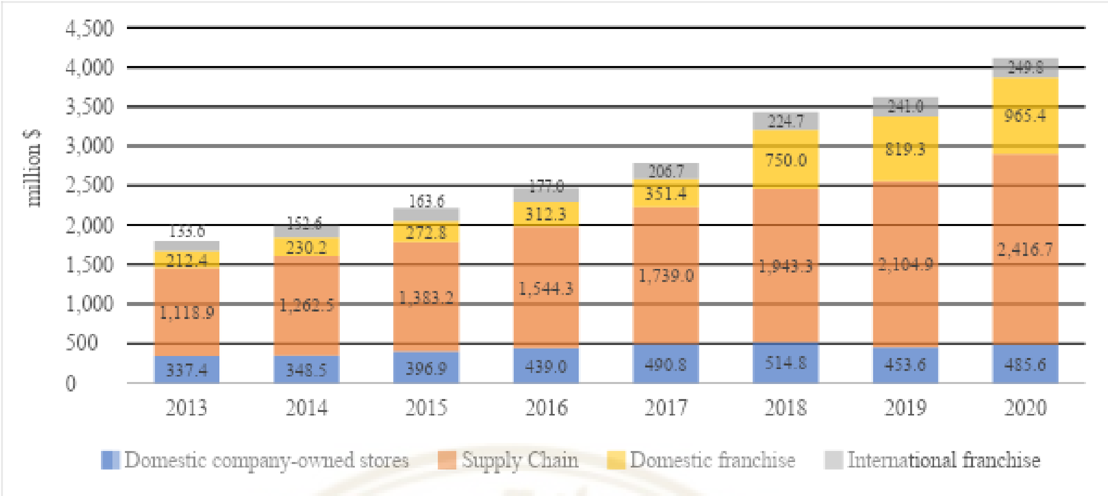

Figure 1.3 Revenue by Segments 2013-2020

Source: Own calculation from DPZ's annual report, (2020), (2017), (2014)

DPZ has classified their revenue scheme into 4 segments which are domestic company-owned stores, domestic franchises, supply chain, and international franchises. While there are growths in the supply chain and domestic franchise, the others two segments are considerably stable. Figure 1.4 displays the summary of DPZ's revenue portion in 2020.

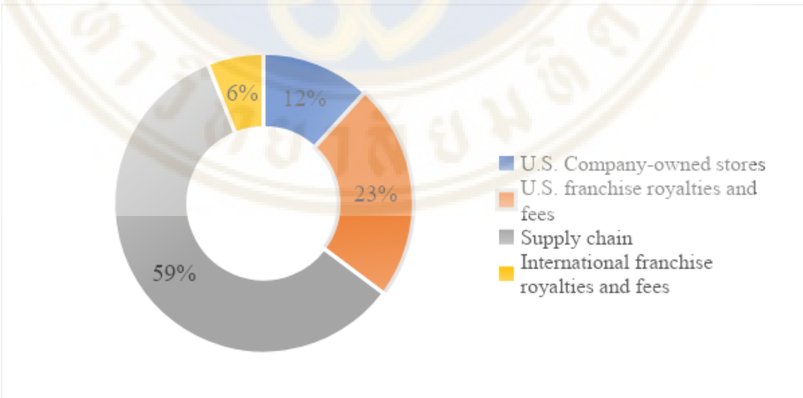

Figure 1.4 Revenue Portion by Segments 2020

Source: DPZ annual report, 2020

The following is an analysis of each segment that is based on DPZ's annual report year 2020. (DPZ, 2021)

a) Domestic company-owned stores or US company-owned stores generate revenue by carryout customers. It accounts for about 12% of total revenue in 2020 from 363 US Company-owned stores. The revenue is relatively stable each year from the constant number of stores owned by the company.

b) Domestic franchises or US franchise stores generate an income of about 23% of total revenue in 2020 from 5,992 franchise stores. The franchisees are required to pay a royalty fee and advertising fee on sales, with a charge rate of approximately 5.5% of sales. The U.S royalty fee has grown by 9.2% in 2019 and 17.8% in 2020 from its previous year due to the new franchise stores opening. Note that the revenue derived from domestic franchises has grown from 351.4 million dollars in 2018 to 750 million dollars in 2019, as shown in Figure 3, which is an effect of the adaption of the new accounting standard.

c) The supply chain is the most significant part of revenues that it accounts for about 59% of total revenues in 2020. Further, the segment has grown 14.8% in 2020 and 8.3% in 2019 from the previous year. The growth is originated from manufacturing and supply centers providing raw materials to support their stores as sales have grown over time.

d) The international franchise is 6% of total revenues. Master franchises are required to pay an upfront fee and royalty fee to DPZ. In return, they will have the right to sub-franchise internationally. The royalty fee is relative to the franchisee's revenue. The most recent charge rate is approximately 2.9%. However, it could vary depending on the market.

1.2 Strategy

Snowballing for over thirty successive quarters due to well-organized strategies, DPZ has outstanding performance over its competitors. The following paragraphs discusses vital strategies that give DPZ competitive advantages with information obtained from the 2020 annual report.

With a market share of 36% in the U.S. pizza delivery category, the company has strengthened its bargaining power as a buyer in supply chain management, marketing investments, and technology innovation with economies of scale. Additionally, in terms of the pizza carryout category, DPZ has a 15% market share by the end of 2020. When it comes to its success, there are four main factors to grow the business with quality consistency:

a) The franchising business model enables the company to stabilize the cash flows from franchisees on sales and provide raw materials.

b) The vertically integrated supply chain creates the consistency of quality products; the self-owned supply chain provides more stability in raw materials.

c) The actively advertising and marketing programs with moderate expenditure allow the company to maintain and attract customers.

d) The continuous investments in technology innovation have fastened the company's ability to provide better and more convenient services, which allows the company to keep the leading position in the highly competitive service restaurant market.

Besides the abovementioned factors, DPZ currently conducts two strategies, the growth strategy, and the fortressing strategy. The company aims to expand more stores, both company-owned and franchised, to increase the revenue and the operating income from more bases under the growth strategy, while the fortressing strategy enhances better and faster services by opening more stores in their existing areas for timely delivery service. However, the fortressing strategy expects to see a small impact on sales performance for some existing stores due to the increased competition in the tight areas.

1.3 Management and Governance

In this section, DPZ under the management of Allison, corporate governance in terms of Environmental, Social and Governance (ESG) rating, and the significant ownership of the company will be discussed. The information in the following paragraphs is mostly from DPZ's official website, 2020 annual report, and 2021 Proxy Statement.

Current Chief Execute Director

Richard Allison, the former president of Domino's International from 2014 to 2018, has been joined the company for ten years and is the current chief executive officer since July 2018. Besides, he is also one of the board of directors of both DPZ and Starbucks Corp. Apart from being a CEO, Allison will take the role of interim CFO in September 2021 after Stuart A. Levy, the current CFO, resign at the end of August. As a result, Allision will oversee the finance office till the company finds the successor of Levy.

Under the leadership of Allison, DPZ's sales performance has kept growing with more focus on technology investment and the implementation of the fortress strategy to achieve DPZ's mission of "to be number one" in the industry. To accomplish the fortress strategy, Allison, the CEO, in 2019, has announced to have a total of 25,000 stores in the U.S. market by 2025, whereas there are 17,644 stores as reported in the 2020 annual report.

DPZ under the ESG Rating

According to Sustainalytics (2021), DPZ has an ESG risk score of 26.8, 44th percentile among 13,573 companies, considered a medium risk as July 2021, as shown in Table 1.3. The score is measured by two factors which are the company's exposure to material ESG issues in the industry and the management's capability in tackling the specific issue. There are three overall ESG risks for DPZ: product governance, environmental and social impact on products and services, and human capital, illustrated in the following paragraph.

Table 1.3 DPZ's ESG Risk Rating

ESG Risk Rating	Negligible	Low	Medium	High	Severe
DPZ			26.8		

Source: SUSTAINALYTICS , 2021

In terms of environmental exposure, DPZ is trying to reduce its environmental impact by increasing the recyclable ingredient of the pizza box from 40% to 72% with cooperation with Westrock, a paper, and packaging company. Besides launching the pizza box recycling program in 2020, the company also uses e-bike as an alternative way for delivery to be more eco-friendly. On the other hand, for social exposure, especially under the Covid-19 situation, DPZ has provided more bonuses and sick leave for employees. The company has donated not only money but also pizza to the frontline people and organizations regarding the pandemic. Last but not least, for the governance, it is significant for investors that DPZ's financial reporting is considered fairly reliable by the independent registered public accounting firm. The company also has effective internal control practices and processes from an independent auditor's perspective, which is disclosed in the 2020 annual report.

Ownership Structure

Though with adequate transparency and internal control over the financial reporting, free float and ownership of DPZ play essential roles for investors since it shows the price volatility. At the end of July 2021, the company has a free float of 99.29% and a left of 0.71% to strategic entity owners, mainly insider holders, as shown in Figure 1.5. Further, in all shares issued, 52.6% is held by top ten holders, insiders hold 0.7%, and 46.7% is held by other investors, as shown in Figure 1.6. Thus, with almost all shares issued are tradable for investors, the price of DPZ is mainly driven by the top investors.

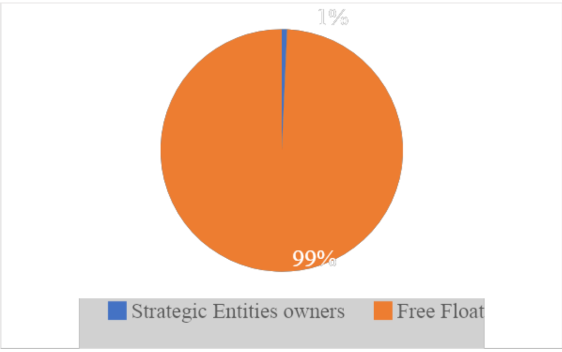

Figure 1.5 % Free Float

Source: Refinitiv,2021

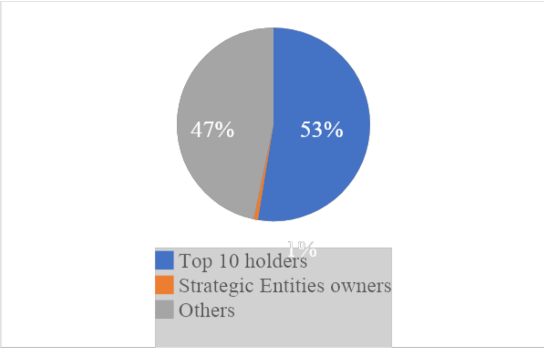

Figure 1.6 Ownership Breakdown

Source: Refinitiv, 2021

As shown in Table 1.4, the top ten holders of DPZ are institutional holders, which each top four holders have over 5% of the ownerships. Therefore, there is the risk that the price would fluctuate considerably if some of these top holders have active trading over DPZ.

Table 1.4 Top 10 Holders

	Top 10 Shareholders	Number of Shares	% Hold
1.	Capital World Investors	4.73 M	12.82%
2.	The Vanguard Group, Inc.	4.14 M	11.25%
3.	BlackRock Institutional Trust Company, N.A.	2.15 M	5.84%
4.	Pershing Square Capital Management, L.P.	2.04 M	5.53%
5.	State Street Global Advisors (US)	1.64M	4.46%
6.	T. Rowe Price Associates, Inc.	1.35M	3.67%
7.	Principal Global Investors (Equity)	1.18M	3.20%
8.	Soroban Capital Partners LP	1.11M	3.02%
9.	AllianceBernstein L.P.	1.09M	2.95%
10.	Renaissance Technologies LLC	0.94M	2.54%

Source: Refinitiv, 2021

CHAPTER II
FOODSERVICE INDUSTRY

After understanding the core business of DPZ, in this chapter, a broader understanding of the company's positioning in the industry and the external factors to the business are discussed. Following the top-down order of the company's external environment, the macroeconomic will be first displayed since it is one of the most significant indicators of all business environments. By narrowing the scope to the industry, the foodservice industry is then discussed with its current market situation and the trend in consumer behaviors that may have challenges to the industry. Lastly, domestic and international peers are selected to compare the DPZ's historical performance in terms of growth by sales with peers to see the competitiveness among the top players in the industry.

2.1 Economic Effects

Because of the Covid-19 pandemic outbreak in the U.S. market in early 2020, DPZ's sales have been hit shortly at the beginning stage of the economic downturn. In addition to DPZ, the whole restaurant industry, including full-service and limited-service, has fallen victim to the economy's shock. Nevertheless, as time went by, consumers and businesses have adapted to the new-normal lifestyle; additionally, with the rollout of the vaccine, the U.S. is the most resilient economy to undergo recovery. In this section, the negative economic effect is discussed in 2.1.1, following by the economic indicator showing that the economic situation is getting better from the previous year.

2.1.1 Restaurants Under the Pandemic

Restaurants are struggled to survive due to the concern and restrictions resulting from the Covid-19 pandemic with an estimated contraction of 18%, as shown in Figure 2.2. After the pandemic outbreak, out of safety and sanitary worry, consumers prefer to eat at home and not dine out or, in some regions, dining at restaurants is not allowed because of the restriction in social distancing. As a result, restaurants do suffer from bringing money in during the pandemic. According to the US National Restaurant Association, 17% of the well-established restaurants have closed permanently within three months at the end of 2020. Moreover, the total sales in the foodservice industry had a sharp decrease of 240 million from the previously projected 899 million.

Even though the pandemic heavily hits the foodservice industry, quick service restaurants (QSR), fast food, adapt to the pandemic faster due to technology application and contactless service. For example, during the pandemic, the drive-through service has surged and accounted for 42% of total restaurant visits by the end of June 2020. (QSR, 2020) Further, drive-through service has boosted the sales of major fast-food players, such as DPZ and McDonald's. The same-store sales increased by 17% in the third quarter of 2020 for DPZ. Overall, the QSR has taken the market share by 7.1% from full-service restaurants, according to NPD Group, a market research company. Another market research company – Mckinsey Research (2020), shows that the foodservice industry, which includes fast-food and fast-casual restaurants, may take up to four years to recover to the pre-pandemic level if the novel coronavirus recurs, as shown in Figure 2.1.

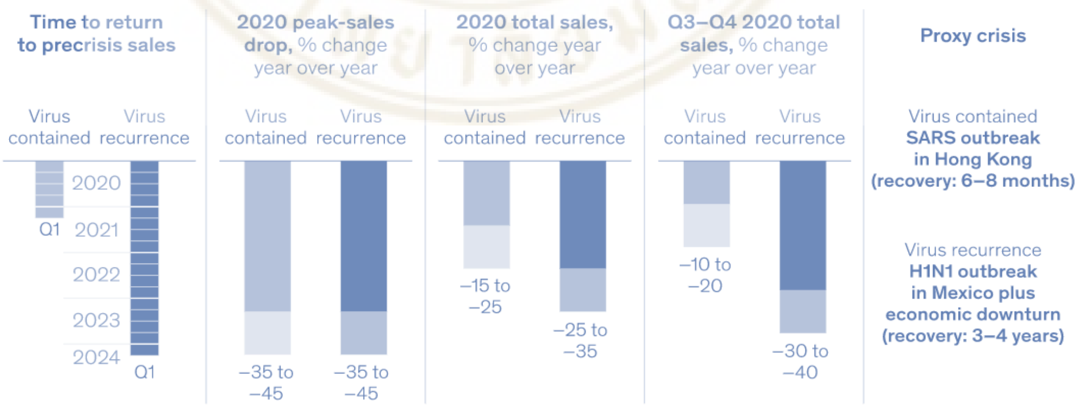

Figure 2.1 Recovery Time of Foodservice Industry (exclude of fine-dining category)

Source: McKinsey&Company, 2020

2.1.2 Food Consumption Under Recovery

Since the outbreak of the novel coronavirus (Covid-19), the world economy has been hit hard, with a GDP contraction of 3.3%, especially for economics that depends on the tourism industry or commodity-exporting. The world economy is currently under recovery with monetary and fiscal policies carried out in different countries and the rollout of the vaccine. It is estimated to have a 6% and a 4.4% growth in 2021 and 2022, respectively. (International Monetary Fund , 2021) Divergence of recovery emerges between advanced economies and developing economics due to different supporting policies and vaccination rates. In advanced economies, the US had a faster recovery since the end of 2020; it expects to return to the pre-pandemic level at the end of 2021 while emerging economics, except for China, are expected to resume pre-pandemic level in 2023 according to International Monetary Fund. In terms of DPZ, the divergence may influence its international markets in the coming years.

2.1.3 Higher-than-expected US Economic Growth

After an economic contraction of 3.67% in 2020, the U.S. market has an exceptional growth in the first quarter of 2021, with an annualized GDP growth of 6.4%. Moreover, the Federal Open Market Committee report in June 2021 (FOMC, 2021) forecasts GDP to grow 7%, 3.3%, and 2.4% in the second half of 2021, 2022, and 2023. Thanks to the vaccination and a 5.2 trillion fiscal support, the economy is going through a V-shape recovery.

The foodservice industry will gradually resume to a pre-pandemic level from a plunge in the growth of 18.1% in 2020 in the coming years, as shown in Figure 2.2.

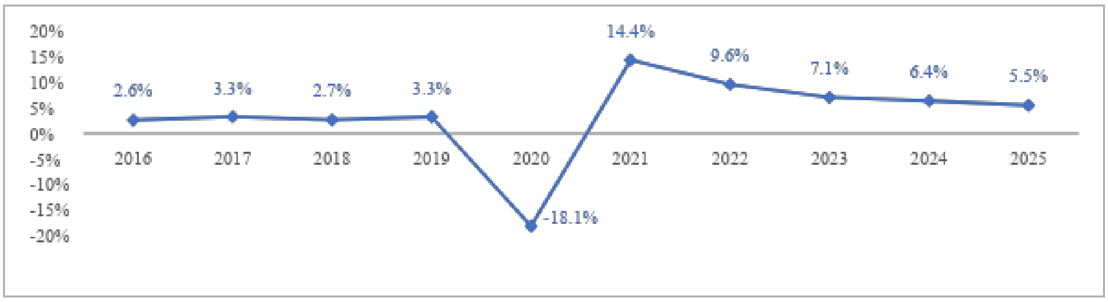

Figure 2.2 U.S. Restaurant Industry Growth 2016-2025

Source: Euromonitor, 2021

In addition, indicators are showing the upturn in the economy. For example, the unemployment rate has progressively decreased to 5.9% in June 2021 from the highest of 14.8% in April 2020; and the nonfarm payroll has gradually increased since a sharp decrease since April 2020, as shown in Figure 2.3. With the increase in workforce and increased consumer confidence, the US economy is expected to have accelerated growth in the second half of 2021.

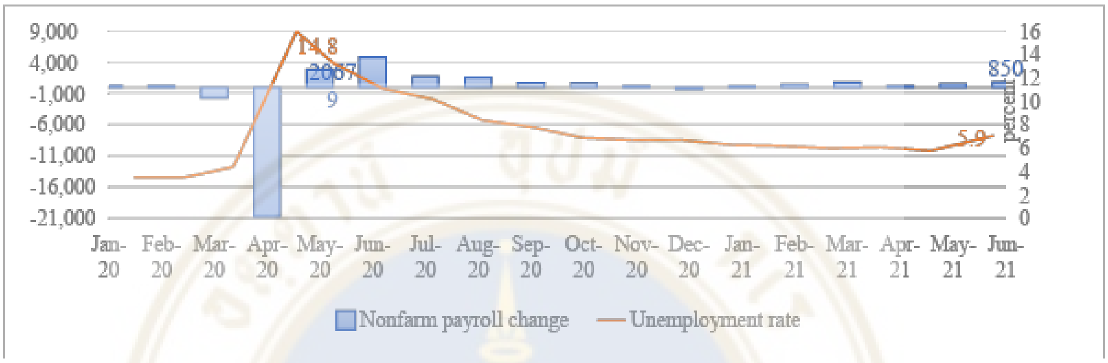

Figure 2.3 U.S. Unemployment Rate and Non-farm Payroll Change

Source: U.S. Bureau of Labor Satistics, 2021

2.2 Trend of Healthier Food Selection

Although in economic recovery, the pandemic has raised food security concerns and increased the awareness of healthy eating in the U.S market. According to the 2020 survey of the International Food Information Council (IFIC, 2020), 54% of consumers and 63% of those over 50 years old take health as a factor for food selection more than they did ten years before. Further, compared to 2019, consumers do intake more plant-based food and consume less sugar. As healthy eating being a new lifestyle nowadays, consumers are looking for alternative food selections over traditional fast food. Even though the industry has well met the demand for a new lifestyle of convenience and affordability, pizza is also considered an unhealthy meal that consumers may reduce the frequency of consumption. Pizza is still a popular food selection in the U.S. market, that consumers are looking for a new menu, such as veggie pizza or gluten-free dough, to make it look healthy. However, when it comes to inventing a new menu, DPZ is a giant player in the pizza industry who primarily focuses on the core menu with only a few new items, which would be a potential challenge for the company to be sustainable in the long run if the company cannot meet the trend of eating healthy.

Besides, the aging society is also an accelerating driver for the trend of eating healthy, which may impact the pizza industry in the long future since the significant consumer of fast food is the working population. Therefore, low population growth and an increase in the elderly population can lead to slower growth of pizza or other fast-food categories in the longer future. As the US is an advanced economy, its population projection has an annual growth of 0.2% in the next 20 years. In 2021, those over 65 years old account for 17% of the total population while accounting for 22% in 2040, as shown in Figure 2.4. That is, in 2040, over one-fourth of the population in the US is the elderly population.

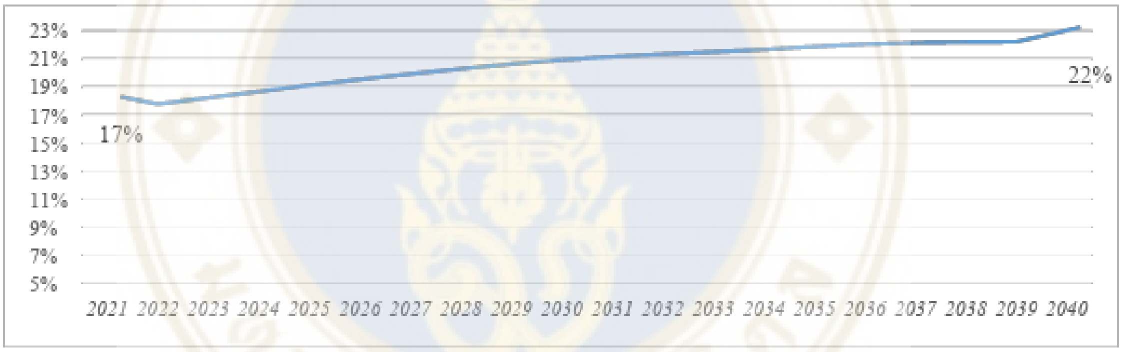

Figure 2.4 U.S. Proportion of Population Over 65 Years Old Projection

Source: Euromonitor, 2021

2.3 Restaurant Type and Service

After discussing the macroeconomic impact on the industry and DPZ and the trend in consumer taste, a narrower quick-service restaurant environment is shown in this section. Next, there will be a comparison between full-service and limited-service restaurants and a more current market share of both categories in 2.3.1. Finally, in the following 2.3.2, the pizza category's role in the industry is further illustrated.

2.3.1 Growing Limited-Service Restaurant

DPZ is a limited-service restaurant which generally means the customer order, select, and pays before eating. The limited-service restaurant includes a fast-casual restaurant, fast food, coffee shop, et cetera that there is no service from the restaurant; it is self-service by customer. Unlike a limited-service restaurant, the full-service restaurant provides tables, menu, and waiters with the full service to customers, which payments will be processed afterward. About five years ago, limited and full-service restaurants in the US had shared the market almost 50-50, but since then on, the limited-service restaurant has been rapidly grown over the full-service restaurant as illustrated in Figure 2.5.

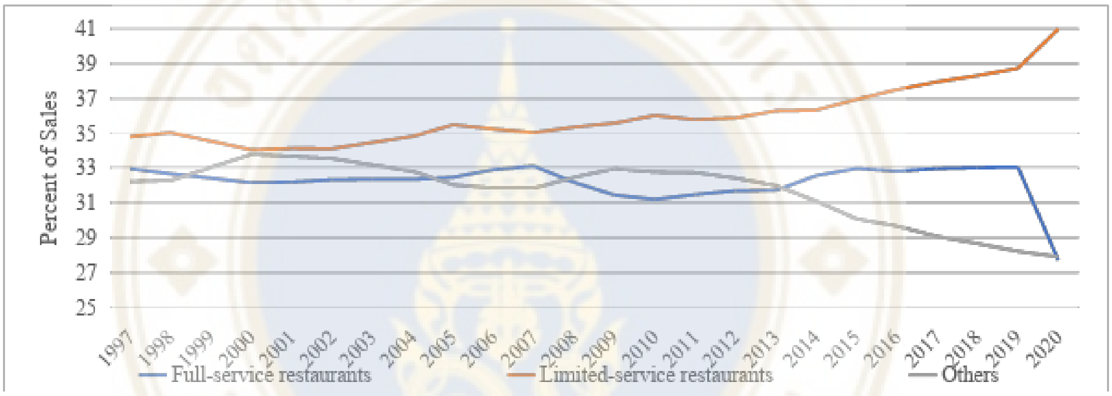

Figure 2.5 Food-Away-From-Home Market, by Outlet Type

Source: USDA, 2021

The vital advantage of a limited-service restaurant is lower prices and more convenience than a full-service restaurant. We can see a significant change in the statistic in 2020 where there is a 10 percent decrease in full-service restaurants whereas a 10 percent increase in the limited-service restaurant, which is an effect from the Covid-19 pandemic that causes the shutdown of restaurants resulting from the change of customer behavior. Customers turn to more affordable meals, convenient orderings, and take-home choices due to the economic downturn and social distancing measurement.

There are types of limited-service restaurants which are drive-through, eat-in, home delivery, and takeaway. DPZ has a good reputation on everything but eat-in. However, the Coronavirus pandemic has an enormous impact on the eat-in category, especially under the restriction that people cannot eat in restaurants. Consequently, sales from eat-in drop while sales from the drive-through, home delivery, and takeaway increase.

Figure 2.6 below shows a constant ratio between 4 categorization types during 2015 to 2019, except for 2020 that the eat-in category drops from 23 to 9 percent while the drive-through, home-delivery, and takeaway increases 5, 3, 6 percent respectively comparing to the prior year.

After all, the coronavirus pandemic harms almost the entire foodservice industry, especially fine-dining restaurants. Nevertheless, on the other hand, it helps urge the sales from home delivery, takeaway, and drive through, which are good opportunities for DPZ.

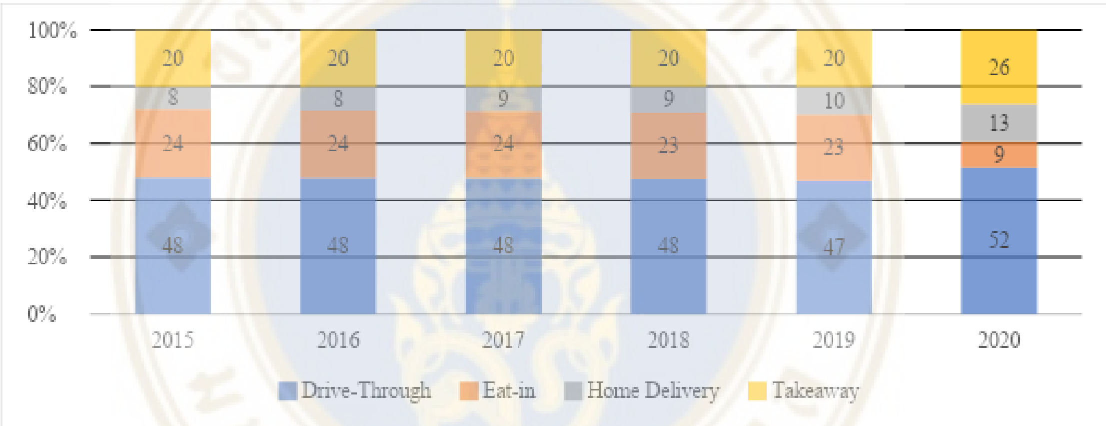

Figure 2.6 Limited-Service Restaurant Market by Type

Source: Own calculation from Euromonitor, (2021)

2.3.2 Pizza Category in the Fragmented Chained Quick-Service Restaurant

Quick service restaurant or fast-foodservice restaurant is a significant food industry segment, especially in the US. This type of restaurant is known to serve food quickly. Recently, the fast-food industry has rapid growth due to people's new lifestyles, looking for more economically safe time and money.

It also can be distinguished into independent and chained service restaurants. Independent restaurant is owned mainly by an independent or small chain, focusing on luxury or customized dishes, while chained restaurants or big franchise companies focusing on quality standard dishes in limited time. Usually, technology innovation is involved in quick-service restaurants in helping shorten the time of serving a massive customer demand.

DPZ is long known as a chained quick-service restaurant that focuses on pizza. Divide by segment, pizza is the second biggest market share of fast-foodservice restaurants after the biggest one, the hamburger-focused restaurant in the US, as shown in Figure 2.7. (Franchise Help, 2020)

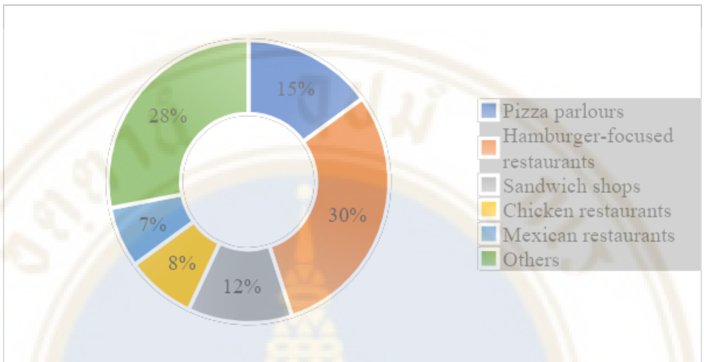

Figure 2.7 Fast Food Segments

Figure 2.8 divided the top five of limited-service pizza chains into portion of foodservice value retail selling price (RSP) of year 2020. DPZ is the leading one, following by Pizza Hut, the brand under YUM! brand Inc., which has a similar portion as Little Caesar's and Papa's John's.

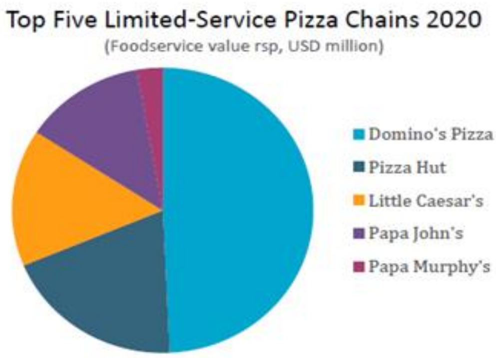

Figure 2.8 Top 5 Limited-Service Pizza Chains 2020

Source: Godinsky, 2021

2.4 Peers Selection

In this section, some domestic and international peers in the quick-service restaurant industry are chosen to compare their performance in the past five years in terms of sales in section 2.5. Therefore, this section will describe every selected competitor and a brief introduction of their core business.

2.4.1 Domestic Peers

Figure 2.9 illustrates market shares in limited-service restaurants in the U.S. measured by foodservice value RSP in 2020 while isolating the top 20 market shares and combining the rest into others. For example, DPZ is at rank number 8, 2 percent of the total value of 279 billion dollars. Compared with their direct competitor, Papa John's inc. and YUM! Brand inc., they are in a higher rank than Papa John and lower rank compared to YUM! Brand. Papa's John and YUM! Brands have market shares in foodservice RSP as 1 and 6 percent with the rank number 18 and 2 respectively.

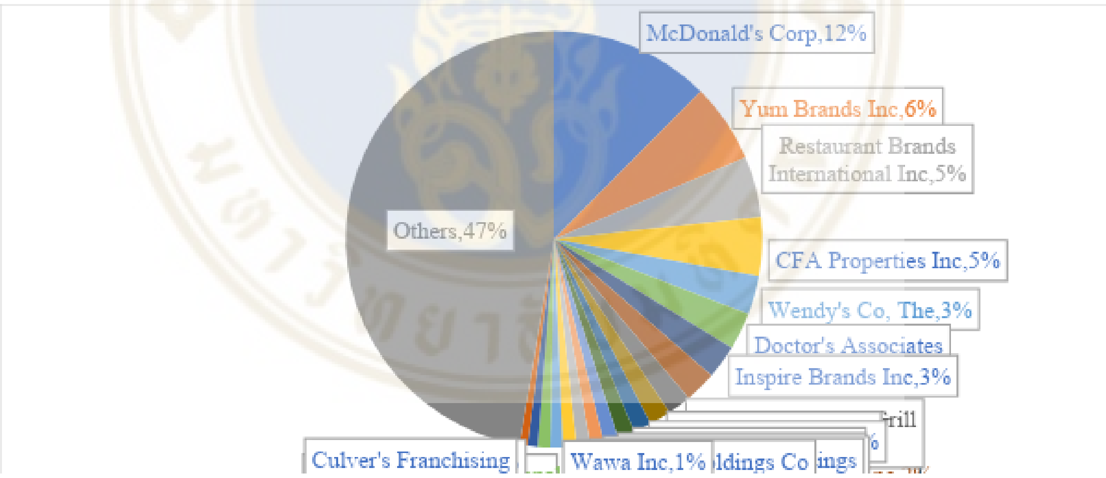

Figure 2.9 Market Share by Sales of Limited-Service Restaurants in the U.S.

Source: Own calculation from Euromonitor, (2021)

DPZ has an advantage on digital strategy over competitors; it keeps developing the technology to increase time efficiency from ordering to delivering products at high-quality standards by its supply chain. The strategy is sustainable and continuously expanding their brand. They are focusing on their original core menu meanwhile competitors focus on new menu innovation. Besides direct competitors like

Papa’s John and Yum! Brand inc., this paper will compare DPZ among indirect competitors in quick-service restaurants: Restaurant Brands International Inc, Wendy’s Co, and Chipotle Mexican Grill Inc. However, we have dropped McDonald’s out of its pool of peers even though they have similar industries because their market capitalization is too large compared to all others.

Papa John's International Inc (PZZA) - NASDAQ

Papa John's International, Inc. (Papa John's) is the most similar to DPZ in the industry; they have the main operation in pizza stores, pizza franchises, pizza delivery, carryout restaurant mainly in the US and dine-in delivery restaurants in some international market. The restaurants can be separated into company-owned 588 and franchise 4,812 stores, and their segments are included geographically into account: North America commissaries, Domestic company own restaurants, international and North America Franchising with 5.31, 47.93, 38.47, 8.29, 5.31 percent respectively.

Papa John's as DPZ's peer and its direct competitor because both have revenues in the same industry and market: the pizza industry and the U.S. market. Therefore, their external factor like opportunity and tread will be mostly the same. For example, the opportunity from a new lifestyle (convenience and small budget) will help to increase their sale while having a thread from unhealthy food perception.

Yum! Brands Inc (YUM) – NYSE

YUM! Brands, Inc. is known for KFC, Pizza Hut, or Taco Bell brands. It operates the franchise restaurants globally with more than 150 counties and over 50,000 restaurants and only has 57.36 percent income from the U.S. market. The company divides its revenue into three segments: KFC, Pizza Hut, and Taco Bell. The revenue by segments is 44.10 percent for KFC, 33.59 percent for Taco Bell, and 16.57 percent for Pizza hut.

YUM has been considered a direct competitor even though their source of revenue from the pizza segment is only 16.57 percent. YUM and DPZ have always been competing for pizza market shares; they are the two largest pizza franchises in the U.S. market and switching up and down in past years. The shares for YUM in the limited-service restaurant is 12 percent, which is 7 percent higher than DPZ because they have

KFC, its most significant segment. KFC and Taco Bell are not in the pizza industry; however, YUM is still a good peer since its revenues are from the quick-service restaurant category.

Restaurant Brands International Inc (QSR) - NYSE

Restaurant Brands International Inc. is operating restaurant under Burger King, Tim Hortons, and Popeyes brands. It is a quick-service restaurant and managed over 27,000 restaurants and 100 countries. Their segment sizes measures by revenues in the year 2020 are Tim Horton 56.56 percent, Burger King 32.25 percent, and Popeyes 11.19 percent.

QSR is a good peer for DPZ even none of their brand is under pizza industry but still, all of them is from quick-service restaurant type. Tim Horton, as a coffee brand, might be a minor difference but Burger King and Popeyes brands can seize for market share with DPZ. As they are all in the fast-food industry but the difference in specific type, it is a good measurement to compare these 2 companies together.

Wendy's Co, The (WEN) – NASDAQ

The Wendy's Company (Wendy) mainly operates a quick-service restaurant franchise globally under Wendy's U.S. and Wendy's International segments. In addition, there is another segment unrelating to the food industry under Wendy: Global Real Estate & Development, which contributes only 13.66 percent income while Wendy U.S. and Wendy international account for 82.66 and 13.66 percent of income, respectively. In the U.S., there are Wendy's franchises, about 5,852 restaurants which are 357 owned by the company and 5,495 operated by franchisees.

Even though global real estate and development is not related to these peers, the company's shares in the food industry are still valid. Because over 85 percent of Wendy's income is from the quick-service restaurant industry and significantly contributed to limited-service restaurants in the U.S. In 2020, Wendy had 6 percent market shares, and DPZ had 5 percent, which means they are in the foodservice industry with similar market shares. As a result, this could be good to compare among peers.

Chipotle Mexican Grill Inc (CMG) – NYSE

Chipotle Mexican Grill, Inc. (Chipotle) is a Mexican Grill restaurant located mainly in the US but only a few internationally, such as Germany, Canada, United Kingdom. They have operated the franchise stores approximately 2,491 restaurants with only one segment in revenues which is food.

We selected Chipotle as a peer because its 100 percent is from the food industry and is based geographically mainly in the U.S., similar to DPZ. Additionally, their strategy is like Chipotle's brand strategy, "food with integrity," which means they carefully selected the source of their ingredients and focused on the supply chain as same as DPZ's dough manufacturing.

2.4.2 International Peers

Besides chained restaurants in the U.S., we decided to include international companies in the pizza industry to diversify continents while remaining the same industry and similar business profile.

Domino's Pizza Group plc (DOM) – London Stock Exchange

Domino's Pizza Group plc (DOM) is based in United Kingdom (U.K.) and operates franchise pizza with 1,147 stores in the U.K. and 54 stores in the Republic of Ireland. Based on their 2020 annual report, they have only one segment for revenue of both countries, but we can separate from their financial highlight that 95 percent is from the U.K. and the remaining is from the Republic of Ireland. In addition, DOM is the master franchise of DPZ, which means DOM is eligible to sub-franchise under Domino's Pizza brand in those countries and compensate royalty and commission fees to DPZ.

We have considered DOM as a peer of DPZ because they are in precisely the same industry and brand but only in a different market. In this case, we could see how much country factors can affect the stocks. Below is Figure 2.10 illustrates market shares of the limited-service restaurant in the United Kingdom measured by retailing sale price in 2020. DOM is the third biggest with a 6 percent market share while McDonald's is in the first and YUM is in the second, which is the same as the top 2 players in the U.S. market.

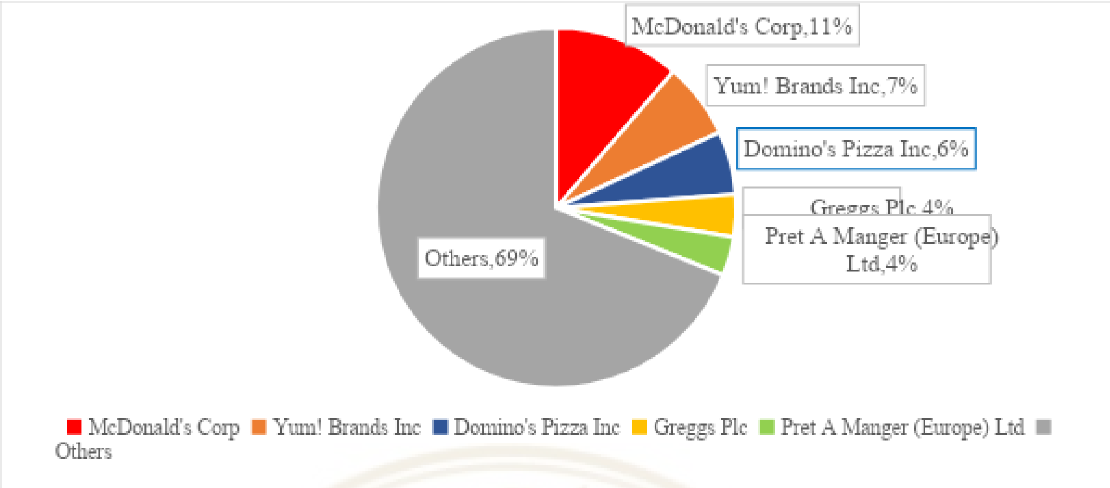

Figure 2.10 Top 5 Limited-Service Restaurants in U.K. Market 2020 (RSP)

Source: (Euromonitor, 2021)

Domino's Pizza Enterprises Ltd (DMP) - Australian Stock Exchange

Domino's Pizza Enterprises Ltd (DMP) is another master franchise of DPZ. They operate pizza franchise stores and sub-franchise both domestically which is the Australian market, and internationally. They divide the segment into three types, and its details are shown in Table 2.1 below.

Table 2.1 3 Segments of DMP

Year 2020					
Segment	**Stores (no)**	**Revenues (million $)**	**Revenues by segment**	**Market Shares**	**Rank in Market shares**
Australia/New Zealand	833	693	36%	5.10%	4th
Japan	674	652	34%	0.70%	15th
Europe	1,161	560	29%	2.90%	4th
Total	**2,668**	**1,905**	**100%**		

Source: DMP Annual report and Euromonitor, 2021

DMP is compared to our target company because it is holding the same brand under Domino's Pizza and all of their source of revenue is the same industry. The first difference is the trading market since DMP is trading in the Australian Stock Exchange, and the second difference is brand geography. While DPZ is mainly based in the U.S., DMP has distributed its revenues into three different continents almost equally. Like the U.S., Domino's Pizza is also significantly continued to DMP in each market after biggest competitors like McDonald's and YUM.

Pizza Pizza Royalty Corp. (PZA) – The Toronto Stock Exchange

Pizza Pizza Royalty Corp. is a pizza franchise company based in Canada. In 2020, they operated 749 stores under Pizza Pizza and Pizza 73 brands, and market shares are in 7th Rank with 2 percent of the total sale in the limited-service restaurant market in Canada as shown in Figure 2.11 below.

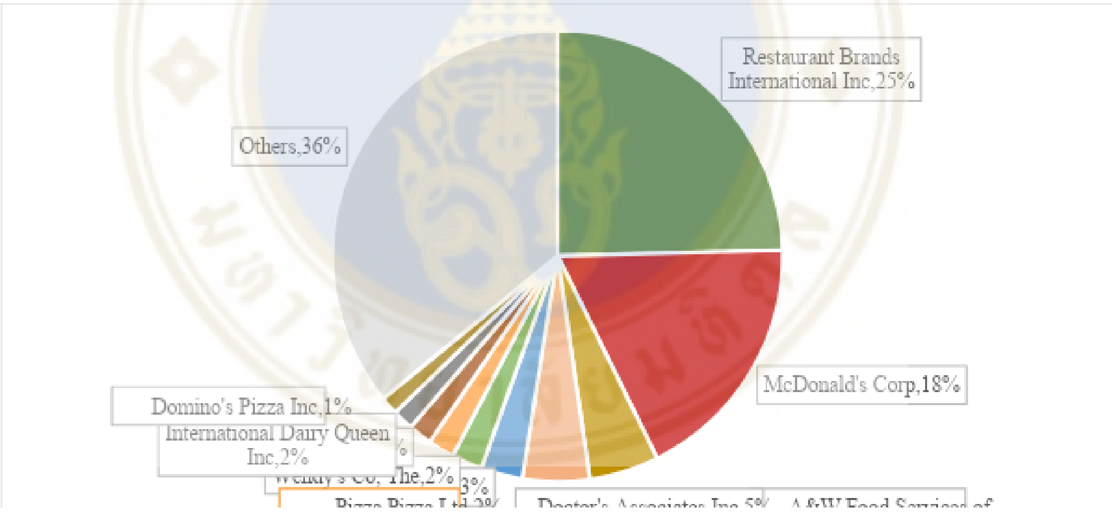

Figure 2.11 Shares of Limited-Service Restaurants in Canada 2020 (RSP)

Source: Euromonitor, 2021

We select PZA as a peer of DPZ because of its source of revenue. Its 100 percent of income comes from the pizza industry. They might operate under different pizza brands, but their geography strategy is similar, focusing on domestic sales. Moreover, even the international sale of DPZ is insignificant, PZA is a direct competitor with Domino's Pizza in the Canadian market with close percent market shares. As a result, PZA is considered a good peer for DPZ.

2.5 CAGR 5 years in comparison

Figure 2.12 compares 5 years compound annual growth rate (CAGR) for DPZ's peer. Among the peers, the highest is obviously to international peers like DMP with a 17 percent CAGR. It has rapid growth in the past few years with, as same as DPZ's strategy, innovation in ordering and delivery increases and meets high customer demand. As they continue expanding the number of stores, the growth has increased chiefly year on year in every continent, following by other 2 Domino's pizza brands, DOM and our target company – DPZ, which have CAGR as 7.56 and 6.96 percent respectively. It seems Domino's Pizza strategy is efficiently work in every country. Not too far behind, Restaurant Brands International Inc (QSR) has a CAGR of 6.19 percent, which is contributed mainly by the Popeyes brand that just opened during the year 2017. Chipotle Mexican Grill Inc also has a positive CAGR at 3.13 percent from franchises expanding mainly in the U.S., while YUM has a 1.49 percent growth rate globally. Unfortunately for the rest, Papa's John, Wendy, and PZA have lost their competitiveness over five years; as a result, the CAGR is -1.73, -1.68, and -0.55 percent, respectively.

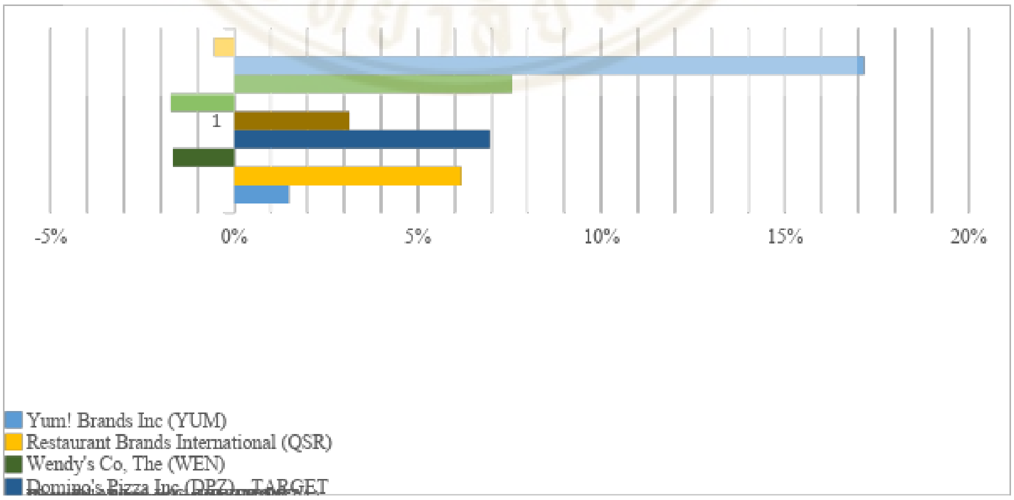

Figure 2.12 CAGR by Sales 2015 - 2020

Source: Own calculation. (Euromonitor, 2021)

CHAPTER III
DISCOUNTED CASH FLOW VALUATION

In this chapter, the discounted cash flow (DCF) valuation is displayed to find the intrinsic value of DPZ at the end of March 2021. The DCF valuation determines the company's target price from the potential future cash flows that the company can generate. As a result, in this chapter, the sales forecast is firstly developed in 3.1 with a pro forma income statement, and its assumptions are listed in the same section. Subsequently, the terminal growth rate and the cost of capital are demonstrated and explained in the following 3.2 and 3.3, respectively. Lastly, with the present value (PV) of firm and equity, the target price and sensitivity analysis are shown in 3.4.

3.1 Pro Forma Income Statement

In this section, the sales projection from 2021 to 2025 is calculated to forecast the free cash flow to the firm (FCFF) in section 3.4.1. As illustrated in the following paragraphs, the pro forma income statement is then formulated after the sales forecast with some fundamental assumptions on revenue, cost, and expense.

3.1.1 Sales Forecast

DPZ's profit is mainly driven by two sources: royalty fees from franchising and profit from running manufacturing and supply centers. Nevertheless, both drivers of the company's profit are subjected to sales. Therefore, to measure the intrinsic value of DPZ, sales forecast plays a significant step, estimating the growth before the company goes into perpetual growth. As shown in Table 3.1, the total sales forecast has a CAGR of 6.0% over the coming four years, with slower growth in 2021 since 2020 is a high base year resulting from the impact of the pandemic. The total sales growth consists of an international sales forecast with a CAGR of 6.2% and domestic sales with a CAGR of 5.7%. Breaking down the sales forecast of DPZ from 2021 to 2025, its U.S. and international markets will further be discussed below, respectively.

Table 3.1 Sales Projection

	Historical				Projection					
(Million $)	**2018**	**2019**	**2020**	**CAGR**	**2021F**	**2022F**	**2023F**	**2024F**	**2025F**	**CAGR**
U.S. retail sales	4,810	7,044	8,287	11%	8,348	8,918	9,439	9,927	10,435	5.7%
International retail sales	5,090.8	7,276.1	7,818.6	9%	8,309	8,703	9,339	9,950	10,558	6.2%
Total Retail Sales	**9,901**	**14,320**	**16,105**	**10%**	**16,658**	**17,621**	**18,778**	**19,877**	**20,994**	**6.0%**
YoY%		*5.7%*	*12.5%*		*3.4%*	*5.8%*	*6.6%*	*5.9%*	*5.6%*	

Source: Own calculation

U.S. Market Sales Forecast

In terms of the U.S. market, the sales forecast averages two results from different projection methods. To start with, the first approach utilized to forecast the sale is to find the relationship between GDP per capita and consumption per head. Since the total consumption of food may be influenced by the overall economic growth and the population growth; the linear relationship of both factors is used to project the sales. The sales estimation result using the linear regression is shown in Table 3.2.

Table 3.2 U.S. Sales Projection by 1st Approach

	Historical						Projection				
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Population (million)	321	323	325	327	328	333	335	337	340	342	344
GDP per capita	56,882	58,045	60,135	63,094	65,298	62,941	68,560	72,985	75,241	77,276	79,607
Consumption per head	15	17	18	20	21	25	25	29	31	33	35
Sales Forecast #1 (million $)							**8,076**	**8,939**	**9,614**	**10,235**	**10,945**

Source: Own calculation from Euromonitor, (2021)

In Table 7, the sales forecast grows year over year for the coming 4 years, from 8,076 million dollars in 2021 to 10,945 million dollars in 2025. With the linear regression, the projected consumption per head is obtained by input of GDP per capita forecast. Afterward, the sales projection is the function of consumption per head and population forecast. Although not perfectly linear, using a linear relationship between GDP per capita and consumption per head to estimate the sales is fair enough since the correlation coefficient, the R-squared, of the regression is high. Detailed calculation and visualization of data will be shown in the following paragraph.

Figures 3.1 and 3.2 show a linear relationship between two factors, GDP per capita and consumption per head, with a correlation coefficient of 0.69 and 0.98, respectively. Figure 3.1 shows the result of the linear relationship of consumption per capita from 2015 to 2020; however, there is an impact from the Covid-19 pandemic that one of the data points, the 2020, is away from the linear regression which lowers the R-squared. The point, as shown in the figure, with a GDP per capital of 62,941 dollars and a consumption per capita of 25 dollars is the data point from 2020.

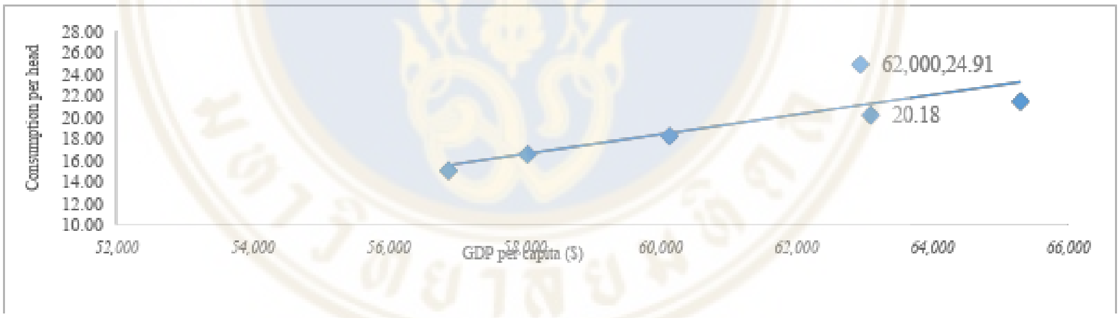

Figure 3.1 GDP Per Capita and DPZ's Consumption Per Head, 2015-2020
Source: Own calculation from Euromonitor, (2021)

Therefore, another linear regression is assessed with the same inputs from 2015 to only 2019, eliminating the effect of the non-recurring event like the pandemic, as shown in Figure 3.2. The R-squared, 0.98, in the second linear regression is much higher than the previous one in Figure 3.1. And then, the first U.S. sales projection is obtained by averaging the results from two linear regressions since it is considered that the impact of a pandemic will neither disappear immediately nor impact the sales pattern severely.

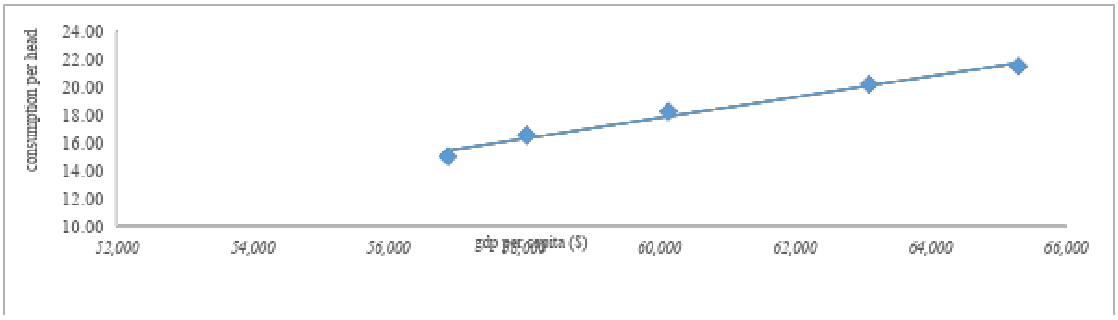

Figure 3.2 GDP Per Capita and DPZ's Consumption Per Head, 2015-2019

Source: Own calculation from Euromonitor, (2021)

For the second method in forecasting the U.S. sales, we estimate the sales using relative growth of food expenditure and the DPZ's share in food expenditure. As shown in Table 3.3, there is a constant multiple of 0.04 of U.S. food expenditure over the GDP; therefore, the food expenditure in 2021 to 2025 can be projected by the existing GDP projection times 0.04. In this forecast, assuming the DPZ's share in food expenditure will be the same at 1% as in 2020, the U.S. sales is estimated by multiplying the food expenditure by 1%.

Table 3.3 U.S. Sales Projection by 2nd Approach

	Historical						Projection				
(billion $)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
GDP	18,238	18,745	19,543	20,612	21,433	20,937	22,967	24,621	25,557	26,426	27,403
Food Expenditure	707	718	741	760	778	860	895	924	962	998	1,030
Food Exp./ GDP	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
DPZ/ Food Exp.	0.7%	0.7%	0.8%	0.9%	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Sales Forecast #2 (million $)							**8,621**	**8,897**	**9,265**	**9,618**	**9,925**

Source: Own calculation from Euromonitor, (2021)

As Shown in Table 3.3, the sales projection from 2021 to 2025 are increasing with the GDP growth. The sales forecast is 8,621 million dollars in 2021 while 9,925 million dollars in 2025 which is not too distinct from the first approach used in this section. Finally, the U.S. sales for the coming 4 years is the average of first and second approaches, as shown in Table 3.2.

International Market Sales Forecast

With more than 90 markets geographically, the international sales are estimated using the second approach as in the U.S. sales projection, but with only eight significant markets. The primary eight key markets include four developed countries: Australia, Canada, Japan, the U.K., and four developing countries: China, India, Mexico, and Turkey. As shown in Table 3.4, there is a constant multiple of GDP and food expenditure of 0.08, with the GDP and food consumption is the summation from 8 markets. The food expenditure is attained by multiplying the summation of GDP times 0.08. Then, using the relative growth of food expenditure and the DPZ's share in food expenditure, international sales from 2021 to 2025, with a CAGR of 6.2%, are obtained by multiplying the food expenditure forecast by the DPZ's share in food expenditure of 0.3%.

Table 3.4 International Sales Projection

	Historical						Projection					
(billion $)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR
GDP/	25,409	25,950	27,585	29,691	30,299	29,931	34,932	36,970	39,578	42,207	44,997	6.5%
Food Expenditure	2,132	2,218	2,312	2,373	2,433	2,603	2,767	2,898	3,109	3,313	3,515	6.2%
Food Exp./ GDP	0.08	0.09	0.08	0.08	0.08	0.09	0.08	0.08	0.08	0.08	0.08	
DPZ/ Food Expenditure	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	
Sale forecast #2 (million $)							**8,309**	**8,703**	**9,339**	**9,950**	**10,558**	**6.2%**

Source: Own Calculation from Euromonitor, (2021)

3.1.2 Revenue forecast

Some assumptions are made to formulate the pro forma income statement from 2021 to 2025, especially for the revenue since the business model for DPZ is profiting indirectly from sales by receiving royalty fees. Besides, there are also assumptions on the cost and expense to revenue proportion. With all the assumptions, the pro forma income statement is shown at the last of this section.

Key Assumptions

There are three main components for DPZ's revenue, the U.S. store, supply chain, and international franchise. The U.S. store consists of sales from company-owned stores, U.S. franchise stores, and advertising revenue; there are different assumptions on these three items. With assumption listed below, the revenue projection for 2021 to 2025 is displayed in Table 3.5.

a.) The rate of royalty fee remains at the current level, with an average rate of 6.4% on sales for U.S. franchise stores and 3.2% for international stores.

b.) The charge rate of advertising fees for U.S. franchise stores remains at a stated 6%.

c.) The revenue from the supply chain remains at 29.5% of U.S. sales since it depends on sales demand.

Table 3.5 Revenue Projection

	Historical		Projection				
(million $)	**2019**	**2020**	**2021F**	**2022F**	**2023F**	**2024F**	**2025F**
U.S. company-owned stores	454	486	501	535	566	596	626
U.S. franchise	429	503	506	541	572	602	633
% franchise sales	*6.5%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*	*6.4%*
U.S. advertising	391	462	471	503	532	560	589
% franchise sales	*6%*	*6%*	*6%*	*6%*	*6%*	*6%*	*6%*
Revenue from total U.S. stores	1,273	1,451	1,478	1,579	1,671	1,757	1,847
Revenue from Supply Chain	2,105	2,417	2,465	2,633	2,787	2,930	3,081
% U.S. sales	*29.9%*	*29.2%*	*29.5%*	*29.5%*	*29.5%*	*29.5%*	*29.5%*
Revenue from International franchise	241	250	265	278	298	318	337
% international sales	*3.3%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*	*3.2%*

Source: Own calculation

3.1.3 Cost and Expense Forecast

In terms of the cost and expense, cost of goods sold and SG&A, are variable costs and expenses that would increase as revenue grows. The assumption is that cost and expenses from 2021 to 2025 have the same percentage of revenue as that of 2020. As exhibited in Figure 3.3, DPZ's 2020 revenue structure consists of 61% cost of goods sold, 21% of SG&A, and a net profit margin of 12%. Therefore, in the pro forma income statement, the cost of goods sold accounts for 61% of the forecasted revenue, whereas SG&A accounts for 21%.

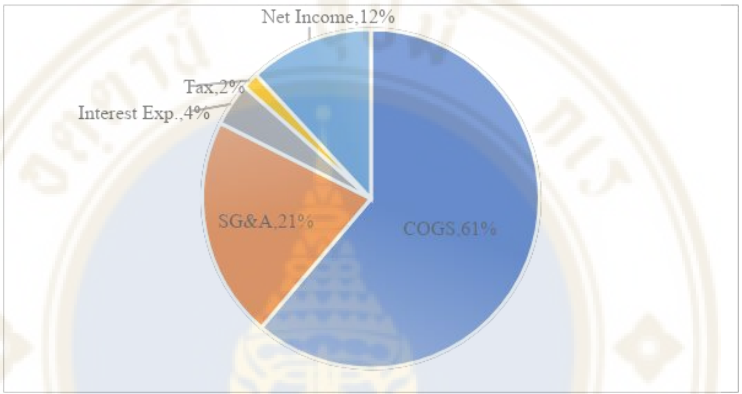

Figure 3.3 Revenue Structure 2020

Source: DPZ annual report, 2020

With the sales, revenue, and cost projection, the pro forma income statement is then demonstrated below in Table 3.6. The EBIT in this statement will subsequently be used to derive the FCFF in the DCF valuation in chapter 4.

Table 3.6 Pro Forma Income Statement

	Historical			Projection					
(million $)	**2019**	**2020**	**2021 3M**	**2021 9M F**	**2021F**	**2022F**	**2023F**	**2024F**	**2025F**
U.S. Stores	1,273	1,451	349	1,129	1,478	1,579	1,671	1,757	1,847
Supply Chain	2,105	2,417	568	1,896	2,465	2,633	2,787	2,930	3,081
International franchise	241	250	67	199	265	278	298	318	337
Total revenues	3,619	4,117	984	3,224	4,208	4,489	4,756	5,006	5,265
Total cost of sales	2,216	2,523	595	1,983	2,577	2,753	2,914	3,065	3,222
Gross Profit	1,402	1,594	389	1,241	1,630	1,736	1,842	1,941	2,044
SG&A	773	869	203	685	888	947	1,004	1056	1,111
EBIT	629	726	187	556	743	789	838	885	932
Interest expense	147	171	39.4	132	171	181	192	196	205
Pre-tax income	483	555	145	427	571	608	647	689	727
Provision for income taxes	82	64	32	48	80	85	91	96	102
Net income	401	491	113	379	491	523	556	593	625

Source: Own calculation

3.2 Terminal Growth Rate

Despite the forecasted growth from 2021 to 2015, it is assumed the company will have eternal life, supported by its organic growth. Unlike the sales growth projection for the upcoming four years, the terminal growth is considered stable and sustainable. As the company belongs to the foodservice industry, the growth can be driven by the industry's development and growth which is estimated by the consumer's food expenditure. Moreover, GDP growth is a good estimator for long-term growth for both the U.S. and international markets since there are constant multiples of food expenditure over GDP.

As shown in Table 3.7 below, U.S. long-term GDP has a CAGR of 3.79%, whereas the key international markets have that of 3.80%, calculated using GDP projection from 2021 to 2031. After having the long-term GDP growth, the long-term growth of foodservice industry in both markets are then estimated by multiplying the long-term GDP growth and a multiple of 0.3. The multiple is the CAGR of food expenditure over the CAGR of GDP in the past five years in the U.S. market. Since the international market include 90 countries with developed and developing countries, the multiple of the U.S. market is used to estimate the multiple of international market. And then, the long-term growth is 1.15% for the U.S. market and 1.10% for the international market.

Table 3.7 Long-term Growth of the U.S. Market and International Market

GDP (billion $)	2021	2031	CAGR	Multiple	Long-term Growth
U.S.	22,037	33,422	3.79%	0.3	**1.15%**
Key International Markets	52,421	76,110	3.80%	0.3	**1.10%**

Source: Own calculation from OECD iLibrary, (2021)

Last but not least, to estimate the terminal growth in the weighted average of long-term growth of each market with the respect to DPZ's revenue proportion. The perpetual growth for DPZ is 1.15%, as shown in Table 3.8 and the calculation below.

$$Terminal\ Growth\ Calculation = (U.S.L - T\ growth\ x\ Revenue\ Proportion) + (International\ L - T\ growth\ x\ Revenue\ Proportion)$$

Table 3.8 Terminal Growth Rate

Growth	L-T Growth	PROP.
U.S. market	1.15%	94%
International market	1.10%	6%
Total	**1.15%**	

Source: Own calculation

3.3 Cost of Capital

In addition to the terminal growth rate, cost of capital also plays a significant role in DCF valuation because it is the discount rate of future cash flows. The cost of capital used in this DCF valuation is the weighted average cost of capital (WACC), where the cost of equity is based on capital asset pricing model (CAPM). In this section, the cost of equity will be illustrated first by discussing the risk-free rate, equity risk premium, and the calculation of DPZ-specific beta. Subsequently, the WACC is displayed after the cost of debt.

Cost of Equity

Regarding the required rate of return on equity, the rate is based on CAPM, with a risk-free rate of 1.30%, the 10-year Treasury yield on July 8th. Moreover, for the equity risk premium, which is the return that investors expected over the risk-free investment, 5.50% is used in this valuation. According to a survey conducted by Fernandez (2021) in May, the equity risk premium used among 1,756 respondents who are professors in economics and finance, analysts, and manager in companies, the average rate used is 5.5%. While in CAPM, there is still company-specific risk-beta. The DPZ's beta is 0.57, measured by using weekly returns for the last three years. Via two approaches that the exact beta is obtained. For the first method, with weekly return change in % of DPZ and SP500, beta is the covariance over the market variance, as shown below. As for the second method, beta is the slope of the linear relationship between the weekly return of SP 500 and DPZ, as demonstrated in Figure 3.4; the slope of the line is around 0.57, with the y-axis is the weekly return of DPZ while the x-axis is the weekly return SP500.

$$Beta = \frac{Covariance\ (r_{sp500}, r_{DPZ})}{Variance\ (r_{sp500})}$$

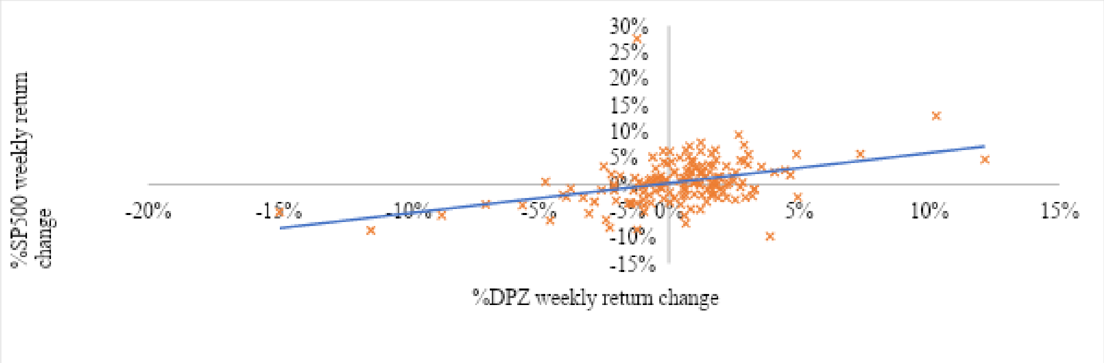

Figure 3.4 Linear Regression of Weekly Return of DPZ and SP500

Source: Own calculation from Refinitiv, (2021)

Cost of Debt

The cost of debt is the current effective cost of debt calculating by using interest expense over the total interest-bearing debt in 2020 to have a pre-tax cost of debt at 3.9%. To assess the after-tax cost of debt, since DPZ has effect tax rates lower than the statutory tax rate of 21% from the historical data, as shown in Table 3.9. The tax rate used in valuation is 14%, the last two years' average. As a result, DPZ's after-tax cost of debt is 3.4%.

Table 3.9 Historical Effective Tax Rate

(million $)	2018	2019	2020
Provision for income taxes	67	82	64
% effective tax rate	*16%*	*17%*	*11%*

Source: Own calculation from DPZ annual report, (2020)

WACC

After calculating the cost of equity and debt, respectively, WACC is 4.25%, as shown in Table 3.10. There is a weight of 82% of equity and 18% of the debt, where equity is the market capitalization on July 8th.

Table 3.10 WACC Calculation

$$WACC = R_e \times W_e + R_d \times W_d$$

Beta	0.57
Risk-free	1.30%
Market risk premium	5.50%
COST OF EQUITY(R_e)	4.44%
Cost of debt	3.9%
Tax	14.0%
AFTER-TAX COST OF DEBT (R_d)	3.40%
Weight of equity (W_e)	82%
Weight of debt (W_d)	18%
WACC	**4.25%**

Source: Own calculation

3.4 Valuation

After discussing the EBIT from the pro forma income statement, terminal growth rate, and the cost of capital, in this section, the target price is attained from the summation PV of future cash flows with perpetual growth. Firstly, the target price calculation is discussed in terms of FCFF and terminal value in 3.4.1, respectively. After that, there will be a sensitivity analysis of the target price by changing the value of WACC and terminal growth rate in 3.4.2.

3.4.1 Target Price

With cash flows projection such as Capex and working capital, further, with the adjustment of depreciation, the PV of firm and equity is subsequently obtained by using a calculated discount rate and terminal growth rate. The detailed process of the derivation of the target price is demonstrated in this sub-section. At the end of this section, the target price as the end of March 2021, the end of 2021, and 2022 are presented.

FCFF

As shown in Table 3.11, the projection of cash flows, working capital, depreciation and amortization, and Capex is estimated using the same revenue proportion in 2020. For working capital estimation, it is 6% of the revenue in the pro forma income statement while the Capex is 3% for the first three periods and 2 %, same as 2020, for the last two periods since DPZ has announced to expend more store and supply center by 2025. As a result, it is estimated more Capex from 2021 to 2023. Instead of using revenue proportion, depreciation and amortization is forecasted by the percentage to Capex of 73%, as in 2020.

After having the EBIT in the pro forma income statement and a tax rate at 14%, the free cash flow to the firm is subsequently found by using after-tax EBIT adds back the non-cash depreciation and amortization while deducting the necessary cash for operation change in working capital and capital expenditure, as shown in Table 3.11.

Terminal Value

In this DCF valuation, the terminal value is obtained with Gordon Growth Model with the assumption that the last projected free cash flow in 2025 will grow perpetually at a rate of 1.15%. Then, the terminal value is discounted by a period of 4.75 years, as the same with the last free cash flow in 2025, to have a present value of 21,017 million dollars.

The company's net present value is 24,124 million dollars, the summation of the present value of FCFF and the terminal value with discount period of 4.75 years, as shown in Table 3.11. Further, in terms of the discount period, 2021 3M is the present time with a discount period of 0, following by 2021 9M with its cash flow calculated by using the projection of 2021 deducting the actual value in 2021 3M.

Table 3.11 PV of FCFF and Terminal Value

DISCOUNT PERIOD		0	0.75	1.75	2.75	3.75	4.75	
(million$)	2020	2020 3M	2021 9M F	2022F	2023F	2024F	2025F	Terminal Value
EBIT	726	187	556	789	838	885	932	
TAX	64	32	48	85	91	96	102	
AFTER-TAX EBIT	662	155	508	704	748	788	831	
DEPRECIATION AND AMORTISATION	65	16	76	99	105	79	83	
% of Capex	*73%*	*73%*	*73%*	*73%*	*73%*	*73%*	*73%*	
WORKING CAPITAL CHANGE	92	7	5	17	16	15	15	
CAPEX	89	17	110	135	143	108	113	
% of revenue	*2%*	*2%*	*3%*	*3%*	*3%*	*2%*	*2%*	
CASHFLOW TO THE FIRM	547	147	469	651	694	745	785	25,609
DISCOUNTED CASHFLOW		147	455	606	619	637	644	21,017

Source: Own calculation

The intrinsic value of DPZ is 521.2 per share at 2021 3M, which is calculated with a PV of the equity value of 20,170 million dollars and 39 million common shares, as demonstrated in Table 3.12. Therefore, with the cost of equity of 4.44%, the target price at the end of 2021 is 538.4 by compounding the intrinsic value at 2021 3M for 0.75 years. The PV of equity value is obtained by PV of firm value deducting the interest-bearing debt while adding the cash. Because the current price is 514.5 on September 3rd, the target price is 4.7% upside of the current price.

Table 3.12 Target Price

	(million $)
PV OF FIRM VALUE	24,124
DEBT	4,354
CASH	400
PV OF EQUITY VALUE	20,170
No. OF SHARES (MN)	39
PRICE at 2021 3M	521.2
TARGET PRICE	**538.4**
CURRENT PRICE	514.5
UPSIDE	4.7%

Source: Own calculation

To further analyze the intrinsic value and target price of DPZ, the target price at the end of 2022 is calculated, with the cost of equity of 4.44%. As shown in Table 3.13, the target price is 562.3 at the end of 2022.

Table 3.13 Target Price at the End of 2021 and 2022

				($)
Target Price at the end of 2021				538.3
Target Price at the end of 2022				562.3

Source: Own calculation

3.4.2 Sensitivity Analysis

In the sensitivity analysis of the change in WACC and terminal growth rate to the target price, the change is that these two variables are tested with 50 basis point steps difference. As shown in Table 3.14, the target price is considerably sensitive to changes of these two significant variables. For example, for a 50 basis point increase in WACC to 4.75%, the target price will decrease by 17%, while a 50 basis point decrease in WACC will lead to a 23% increase in the target price. On the other hand, compared to change in WACC, the change in terminal growth rate has slightly less impact on the target price. However, the shift in terminal growth rate is still considered sensitive to the target price. For example, a 50 basis point increase in the growth rate will cause the target price to increase by 21%, whereas a 50 basis point decrease in the growth rate makes the target decrease by 15%. As indicated in Table 3.14, the price in the yellow area is the combination of WACC and terminal growth rate that has prices within 10% from the target price of 538.4 dollars.

Table 3.14 Sensitivity Analysis of WACC and Terminal Growth Rate

		WACC								
		2.25%	2.75%	3.25%	3.75%	**4.25%**	4.75%	5.25%	5.75%	6.25%
TERMINAL GROWTH	-0.85%	9%	-9%	-23%	-34%	-42%	-49%	-55%	-60%	-64%
	-0.35%	31%	6%	-11%	-25%	-35%	-43%	-50%	-56%	-61%
	0.15%	64%	28%	4%	-13%	-26%	-36%	-45%	-51%	-57%
	0.65%	117%	60%	26%	2%	-15%	-28%	-38%	-46%	-53%
	1.15%	218%	113%	57%	23%	**0%**	-17%	-29%	-39%	-47%
	1.65%	489%	212%	109%	54%	21%	-2%	-18%	-31%	-40%
	2.15%	3425%	478%	206%	105%	51%	18%	-4%	-20%	-32%
	2.65%	N/A	3361%	467%	201%	101%	48%	16%	-6%	-22%
	3.15%	N/A	N/A	3299%	457%	195%	97%	45%	14%	-8%

Source: Own calculation

Because the nature of DCF valuation is the summation of PV of equity derived from the future cash flows that the company can generate, the valuation is sensitive to the terminal value. Further, the terminal value is calculated by the perpetual growth rate and the WACC as the discount rate; therefore, the valuation is most sensitive to these two factors. As shown in Figure 3.5, the contribution of cash flow from terminal value accounts for 87% of PV of the firm, whereas the other 6 periods stand for only 13% of the firm value.

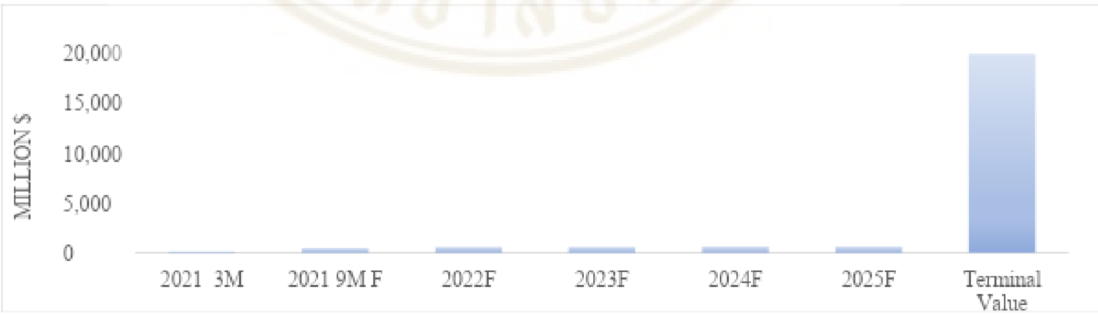

Figure 3.5 Cash Flows Proportion to PV of the Firm

Source: Own calculation

Further sensitivity analysis is shown in Figure 3.6 with changes in 4 variables: WACC, terminal growth rate, cost of equity, and after-tax cost of debt. Target price is more sensitive to the change in WACC, especially regarding the cost of equity. Because the cost of equity weights 82% in this valuation, it has more impact on the target price. A 5% increase in cost of equity will decrease the target price by 6.7% while a 5% decrease will enhance the target price by 7.5%. As a result, the WACC is the most sensitive variable to the target price in this DCF valuation with the rate change driven mainly by the cost of equity.

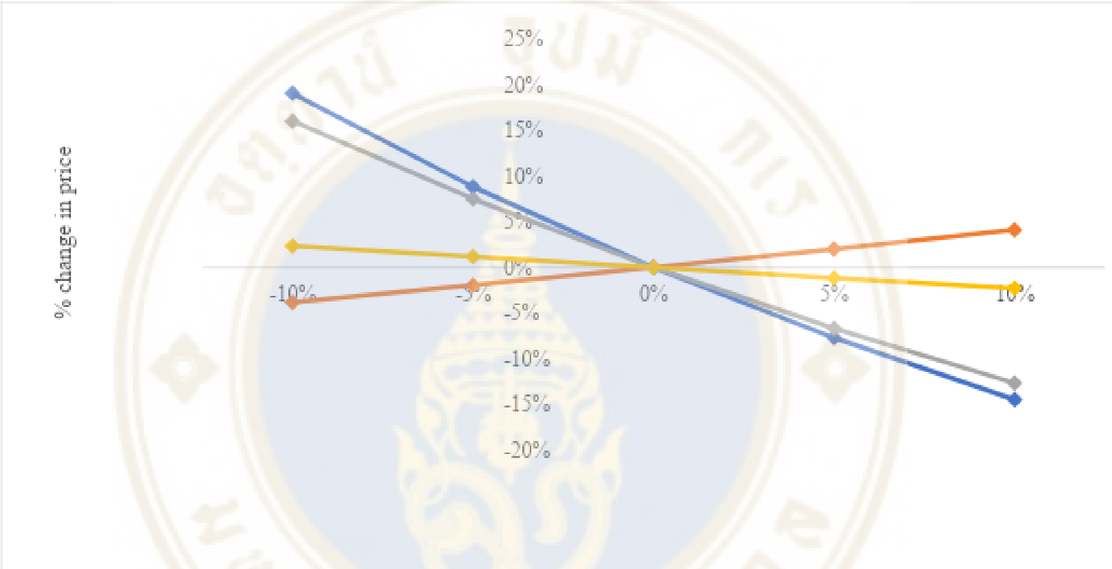

Figure 3.6 Sensitivity Analysis of 4 Factors

Source: Own calculation

CHAPTER IV
INVESTMENT RISKS AND DOWNSIDE POSSIBILITIES

Every coin has two sides; investment is also a double-edged sword with both return and downturn risks. Therefore, it is crucial to be aware of implied positive and adverse circumstances. In this chapter, the relevant risks and their potential impact on the company are identified and discussed. The information in following paragraphs is mostly from 2020 DPZ annual report.

4.1 Strategy Risks

In this section, strategic management's risks regarding the external factors that the company can tackle are categorized as strategy risks. There are three risks: competition risk, consumer behavior change risk, and cyber risks are discussed in the following sub-sections.

4.1.1 Competition Risk

The foodservice industry is highly competitive, and DPZ has a formidable challenge to retain its market shares while new competitors are entering the market every day. Especially after the Covid-19 pandemic, the hit-hard full-service restaurants are adapting and blending into limited-service restaurants, creating more alternative convenient food choices for customers. In addition, there are other competitors in different segments in the foodservice industry that the company must compete with, including supermarkets and convenience stores. There is a prospect that they could lose competitiveness. The consequence will not only be reflected in their lower profit margin but also decreasing in the share price.

4.1.2 Consumer Behavior Risk

An aging population and a healthy eating trend are two main factors that could negatively impact DPZ. As pizza represents an unhealthy food perception, consumers will incline to change their selection that fits with new lifestyles. DPZ's strategy mainly focused on core products and the original menu, while others invented alternative and healthier ones to match consumers' preferences. This could be harmful to DPZ. Depending on a particular menu is dangerous. When demand in the menus decreases, it will be directly affected its sales and operating performance.

4.1.3 Cyber Risk

The cyber risk could harm businesses in several ways and creating severe damage. It can lead to operation disruption and sensitive data exposure. Information systems and technology are directly involved in DPZ's business; ordering, delivery, franchising, and even supply chain. Cyber-attack will not only cost them money and time but mainly their reputation.

4.2 Market Risks

The uncontrollable market situation, either in macroeconomic or commodity price fluctuation, which influences DPZ in the raw material, is categorized as market risk. In this section, the impact and potential risks DPZ may undergo are illustrated below.

4.2.1 Economic Uncertainty

Though with high sales growth, DPZ is still hit by the pandemic. With the contactless service and dine-in restrictions, the company has two-digit same-store sales growth of 16.9% in quarter two, 17.5% in quarter three, and 8.1% in quarter four. However, their profit is muted partially because of the rise in ingredient prices resulting from the pandemic. Further, the profit is offset partially because of a 9.5% rise in administration cost with 11 million extra spending on Covid-19 protocols, including sanitary supplies, employee sick-pay, and bonuses.

Except for the ongoing uncertainty, the company is also exposed to economic risk in GDP growth. Consumer expenditure on food growth is related to the household disposable income, which will reflect in the company's sales. Therefore, if there is an economic downturn or shock, it will directly impact the company on sales and indirectly on the cost side.

4.2.2 Exchange Rate Volatility

Revenue derived from international franchise loyalty fees accounts for around 6% of the total revenue. Besides, there are also dough factories in Canada. The international sales and factories in Canada are denominated in local currencies. Since the company does not hedge any foreign exchange rate risk, the fluctuation in the foreign exchange rate may harm the company's revenue if there is a drastic change in the foreign currency exchange rates, especially for major international markets such as India, Australia, and United Kingdom.

4.2.3 Interest rate

The company is exposed to interest rate risk in terms of the interest-bearing debt of around 3.7 billion, with a net debt-to-EBITDA ratio of around 5. 2017 five-year floating-rate notes using the LIBOR as a reference rate. The rise in the interest rate will result in higher interest expenses for the company. Further, there is concern that if LIBOR will no longer being used after 2021 that the company then needs to renegotiate the notes document with an unknown reference rate which poses uncertainty to the company. In terms of new debt, an interest rate risk exists since the company may need to borrow or refinance at a higher rate than the current cost of debt at 4.1%.

4.3 Raw Material Price Fluctuation Risk

Revenue derived from supply chain service accounts for 60% of DPZ's total revenue that the margin of the segment plays a significant role for the company's profit. To run the supply chain service which provides ingredients to DPZ's stores, the company procures pizza ingredients at a market commodity price. As a result, the company is exposed to commodity price fluctuation, especially for cheese, wheat, natural gas, and vehicle fuel. Because chained quick-service pizza restaurants like DPZ are delivery-dependent, the price change in fuels will also influence the company's margin. In the third quarter of 2020, the company had a same-store sales growth of 17.5%; however, the margin of the supply chain dropped by 1.64% due to the swing of cheese commodity prices. Therefore, instead of benefitting from the economies of scale from the high sales growth, the company's profit is offset by the cheese commodity price volatility. Moreover, during the Covid-19 pandemic, the cheese commodity price was very volatile and swung to a record high.

4.4 Financial Risks

Even though well-performed in the past, DPZ has higher leverage than its competitors, which needs to be considered when it comes to the company's value. Therefore, the financial risks such as liquidity risk and capital structure risk are shown in the following paragraphs.

4.4.1 Capital Structure Risk

Domino's Pizza has recapitalized its capital structure every year by increasing debt and reducing common shares. As of March 2021, the common equity total is -3.2 billion dollars, while their debt is 4.1 billion, which is possible because they have strength with their rapid growth, and both creditors and investors trust the company's profitability. However, with high interest-bearing debt, they could suffer from interest expense once their sale declines and after their business is in a downturn. As a result, the earning after interest expense could be less and affect creditors' and investors' confidence, which will finally reflect the decrease in share price.

4.4.2 Liquidity Risk

DPZ has a high debt level that could negatively affect the future. The repayment for the long-term constantly consists of principal and interest, and failure to generate net cash flow from operating activity over the payment could lead to a liquidity problem. It is a challenge for DPZ to maintain the level of cash inflow sufficiently for general operation, creditors settlement, dividend payment, and expanding its franchise. If they cannot deliver as others expect, it could destroy their reputation and limit their opportunity to grow.

4.5 Risk Matrix

Table 4.1 displays the risks and downside possibilities measured by the likelihood and the impact to the company. The worst-case presents the most likely occurrence and most significant disaster impact and vice versa.

Table 4.1 Risk Matrix

<table>
<tr><td colspan="3" rowspan="3"></td><td colspan="4">Impact</td></tr>
<tr><td>0
Acceptable</td><td>1
Tolerable</td><td>2
Unacceptable</td><td>3
Intolerable</td></tr>
<tr><td>Like or No Effect</td><td>Effects are felt but not critical</td><td>Serious impact to course of action and outcome</td><td>Could result in disaster</td></tr>
<tr><td rowspan="3">Likelihood</td><td>Improbable</td><td>Risk unlikely to occur</td><td></td><td></td><td>Capital Structure Risk</td><td>Cyber Risk</td></tr>
<tr><td>Possible</td><td>Risk will likely Occur</td><td>Consumer Behavior</td><td>Liquidity Risk</td><td>Raw Material Price Fluctuation Risk</td><td></td></tr>
<tr><td>Probable</td><td>Risk will occur</td><td>Exchange Risk
Interest rate risk</td><td>Competitive Risk
Economic Risk</td><td></td><td></td></tr>
</table>

Source: Own calculation

CHAPTER V
CONCLUSION

In this valuation report, the DCF method is displayed to look for the current target price of DPZ, with the present period stands in March 2021. Considering DPZ's past performance, foodservice industry environment, and the current macroeconomic under the impact of the Covid-19 pandemic, the future cash flows, and growth rate are projected in the previous analysis. Given that the sales growth is highly and positively related to the per capita consumption and the GDP growth, the CAGR of total sales forecast for the upcoming four years till 2025 is 6%. As for the terminal growth rate, 1.15% is the function of long-term GDP forecast and the foodservice industry's growth. Another Key input for this valuation is the WACC of 4.25%, consisting of 82% cost of equity and 18% cost of debt. Incorporating the terminal growth rate and WACC, the terminal value, which accounts for 87% of the PV of the firm, is 20,017 million dollars at the end of 2025.

Last but not least, the target price of DPZ at the end of 2021 is 538.4 dollars per share. In the chapter, the investment summary is carried out according to the target price and related considerations. Further, the limitation of this DCF valuation and the triggers for re-valuation are discussed later in this chapter.

5.1 Investment Summary

The target price of DPZ is 538.4 dollars with a 4.7% upside from the current price of 514.5 dollars, as shown in Table 5.1; therefore, the recommendation is “hold” with criteria in Table 5.2. Table 5.1 also summarizes the target prices at the end 2022 with a required rate of return of 4.44%.

Table 5.1 Price Summary

CURRENT TARGET PRICE	**538.4**
CURRENT PRICE	514.5
UPSIDE	4.7%
REQUIRED RATE OF RETURN	4.44%
TARGET PRICE IN THE END OF 2022	562.3

Source: Own calculation

Table 5.2 Recommendation Criteria

TRIGGER	RECOMMENDATION
Upside over than 20%	Strong buy
Upside 10% - 20%	Buy
Within Upside and Downside 10%	Hold
Downside over than 10%	Sell

With the target price is upside 4.7%, there are both quantitative and qualitative factors to “hold” the stock. The primary three considerations are discussed in the following paragraphs: past performance, growth potential, and high base year effect.

Firstly, DPZ has performed well in the past, with its price slightly outperformed both industry and the market, as shown in Figure 5.1. The quarterly percent price change from 2015 to July 2021 has demonstrated that DPZ has usually slightly performed better than the market and in the industry. The good performance of price is due to two reasons; the company’s profitability in the past and the ongoing repurchase programs, which is also a demonstration of DPZ’s market power. In addition, DPZ has a market share that is big enough in the QSR pizza category to compete with its competitors with economies of scale; and the profitable business model of franchising while further having control over its backward vertical integration in the supply chain. As a result, the company has competitive advantages in the past and the near future.

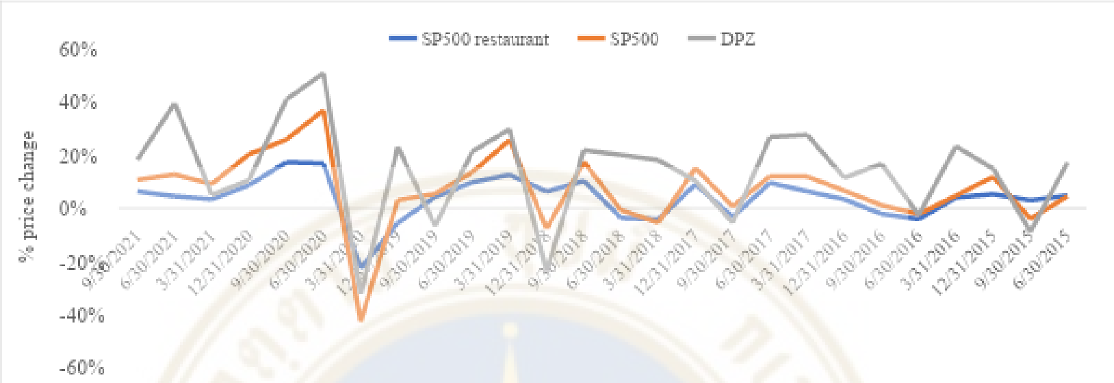

Figure 5.1 % Price Change of DPZ, SP500 Index, and SP500 Restaurant Sub Index

Source: Refinitiv, 2021

Secondly, since the foodservice industry grows along with GDP and per capita consumption, it is not an unpredictable industry. As the GDP keeps growing into the future, there is potential sales and revenue growth for DPZ. Even though population growth is also a driver for foodservice industry growth, DPZ's primary market is in the U.S., where the population growth has slowed down in the developed economy. Therefore, the per capita disposable income, which depends on the GDP growth and per capita consumption, is critical for DPZ. Nevertheless, on the other side of the coin, as the industry grows more extensive, more competition may oppress the growth opportunity for DPZ. Therefore, there is potential for DPZ; however, to what extent the business can grow is uncertain.

Finally, given that DPZ has overgrown and outperformed in the market, it is not easy to see the same growth pattern in the future due to the high base years effect and the fact that history may not repeat itself. As a result, the historical high return may be hard to duplicate in a forward-looking perspective, especially when the market is getting more saturated. Therefore, as shown in Figure 5.2, the year-over-year sales growth DPZ is much lower in the projection period, based on regression using the historical data from 2015-2020.

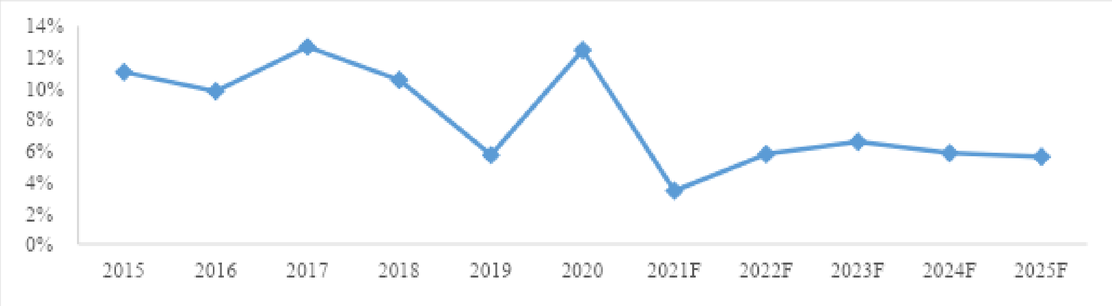

Figure 5.2 % YoY Sales Growth 2015- 2025F

Source: DPZ annual report, 2020. Own Calculation

To sum up, DPZ still has strong performance in the current and coming years because it is growing its sales year over year. However, consider that the market is getting more crowded and the high base years for DPZ, the recommendation is thus drawn. With a target price of 538.4, which is upside from the current price of 4.7%, it is considered to "hold" the stock.

5.2 Limitation and Triggers of Valuation

There are limitations on this DCF valuation, which will be discussed below. First of all, in sensitivity analysis, the target price is considerably sensitive to changes in the cost of capital that within up and down 5% will lead to around 8% change in target price. In addition, as the cost of equity accounts for 82% of the WACC, small changes in any CAMP component will lead to a significant difference in target price. Moreover, the increasing economic uncertainty during the Covid-19 pandemic makes risk-free rate and market risk challenging to estimate. The economic circumstances depend on the virus's path, which is unpredictable in that it injects more uncertainty into the market. As a result, reassessing valuation may be necessary if the market risk changes or the more significant change in the policy rate.

Secondly, another limitation is using historical data to project future trends, including sales, cost, revenue, tax, and beta. Because history may not repeat itself, the estimation derives from the historical data may differ from the reality; the target price may need to be evaluated if the assumption differs a lot from the fact in the future. Besides, there is a limitation in finding the sector beta, which is considered a better beta estimation. Because DPZ has ongoing repurchase programs that the Debt-to-Equity ratio is unavailable for the fundamental beta. As a result, if the capital structure or leverage of DPZ considerably change in the future, the cost of equity may also need to be reassessed.

Last but not least, the DCF valuation is based on the future cash flows projection, which growth rate plays a critical role that there are some limitations on sales assumption in this valuation. For example, the single-stage growth is used in this valuation that it assumes the company goes into terminal growth after four years projection period. Therefore, the target price may differ if the two-stage, three-stage growth sales projection is considered.

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