Valuing Domino's Pizza and Investment Decision Making – A Case Study

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ABSTRACT

Our case discusses the various alternative valuation models seniors and MBA students can use before they consider their choice of the most plausible one(s) in assessing the intrinsic value of DPZ's stock. Students are required to lay out all the relevant assumptions and provide a rationale for using different valuation metrics and determine the applicable cost of debt and equity and hence the weighted average cost of capital that should be used to discount future cash flow streams. This case addresses a graduating MBA student's desire to work for and gain business experience at Domino's Pizza (DPZ) in the Quick Service Restaurant Industry (QSR) before setting up his own franchise. While the background of the student's story is made up, actual data is used for this case analysis. Having analyzed the various valuation metrics and given their choice of the appropriate model(s), students should be able to offer their recommendation whether the company's stock is fairly valued.

Keywords: stock valuation, price multiples, dividend discount model, capital asset pricing model, weighted average cost of capital, fair price

INTRODUCTION: CORPORATION BACKGROUND

Domino's Pizza (DPZ) is one of the leading companies in the QSR Industry. It currently operates close to 14,500 restaurants in the U.S. and over 85 other markets globally. Its revenue grew steadily at an annual compound growth rate of 10.2% over the past five years. Its sales for 2016 was close to $2.5 billion (Table 1). Its operating profit increased steadily at a compound growth rate of 12.6% as well over the same time period.

The company has generated year over year positive free cash flows for the past five years and was able to pay 35% (=$1.52/$4.3) of its income as dividend in 2016. The average payout ratio for the past four years was about 35% while dividends grew by 24% annual rate (Table 2). The company is highly levered and has a substantial amount of year over year negative equity balance. This suggests that any down turn in the economy will certainly have a great adverse impact on the sustainability of its future financial performance. These concerns may have, so far, caused a damper in its operating performance and derailed its long-term growth trajectory.

Some of the inherent risks that the company has to confront with pertain to the use of technology to increase its market share, the uncertainty regarding wage increases and potential loss of business to a very crowded fast casual restaurants and negative consumer sentiment over health concerns. According to data from market research firm Euro monitor at the Washington Post, the market for fast-casual food – restaurants where full table service is not offered but higher quality food and ingredients are used than in traditional fast food - has grown by 550 percent since 1999, more than ten times the growth seen in the fast food industry over the same period. Despite the intense competitive landscape under which it is operation, this suggests that DPZ has more room to grow its business in the foreseeable future. This case attempts to address the valuation issues pertaining to DPZ and investor's investment decisions in light of these micro and macro risks and the threat of competition from its counterparts.

BODY OF THIS CASE

Jonathan was born and raised in a small town in Michigan. His parents were wrestling with their limited resources to raise three of their children. They were, nevertheless, able to encourage and impress upon them to do their best in school as their primary focus to advance and succeed in their academic and professional career. Their parents were also able to instill in them the value of hard work, personal responsibility and independence. Indeed, they all turned out to be very conscientious and self-motivated individuals with excellent academic credentials all through their high school years.

The three, however, parted ways in their career choice in college. While two of his siblings chose the science and engineering field, Jonathan decided to enroll in a business school where he was granted full academic scholarship. After completing his undergrad studies summa cum laude, he was admitted to the MBA program where he graduated with a cumulative GPA of 4.0. The research study he did on the restaurant industry for his masters' thesis when he was in grad school fascinated and inspired him to look into a career opportunity in this field. He applied to Domino's Pizza (DPZ), a company that has its roots in Michigan, and was readily accepted as a financial analyst in its head office.

In his first assignment, he was given the task of scouring the financial data of the company over the past five years to report his findings along with his recommendations on the financial performance of the company vis-à-vis its competitors to his immediate supervisor, Susan Miller. Jonathan was extremely pleased with the assignment and considered it to be a step

in the right direction that will further enhance his career of setting up his own franchise in the QSR sector in the foreseeable future in which DPZ plays a major part. The experience he will gain from conducting this study would certainly help him understand the nature of the restaurant industry, in general, and this sector, in particular, in a much earlier time frame than he had anticipated.

Jonathan decided to apply all the knowledge and skills he learned in his MBA finance courses to carry out a comprehensive study to assess the company's financial performance and valuation-related issues and whether or not its stock price is under- or overvalued. He also wanted to assess the risk that is inherent in the restaurant industry, in general, and that of DPZ, in particular, in the face of an apparent and mounting competitive pressure from its counterparts.

Based on his compiled data, Jonathan presented a summary of some of the financial highlights of the firm. DPZ operates close to 14,500 restaurants located in the U.S. and over 85 other global markets. The company's stock price has grown steadily over the past five years and has outpaced its rivals (Figure 1). Its earnings and dividends per share have also grown steadily year over year during this period (see Table 2). This is a remarkable performance given the company's heavy debt load. As long as the company continues to grow and generate positive free cash flows, it may be able to gradually draw down its debt balance (Table 3).

According to Domino's Investor Relations Website, the company has laid out the following business model which it considers to be mission critical to its success:

> "*We handcraft and serve quality food at a competitive price, with easy ordering access and efficient service which are aided by our technology innovations.*

DPZ has a market cap of $7.64 billion and a trailing P/E of 36.11.in 2016 (finance.yahoo.com), outperforming that of the QSR Industry Average and S&P trailing P/E of 26.1and 22.30, respectively

Over the past five years, Domino's revenues increased by a compound annual growth rate of 10.18 percent, while the corresponding increase in operating income was 12.64 percent. Because of its use a much higher level of financial leverage, its net income grew at a five year annual compound growth rate of 17.71% far outweighing the growth in its debt service growth of only 8.76 percent. The company has also been paying regular dividends which increased from a low of $0.80 in 2012 to as high as $1.52 per share in 2016 (Table 3).

In terms of its future prospect, Sub-Saharan Africa's and India's upward surge in middle classes offer a long-term opportunity for growth for the restaurant industry of which Domino's Pizza will be one of the major beneficiaries. Its market penetration in India in particular, which currently accounts for over 1,000 of its 14,200 stores, definitely gives it a competitive edge over its rivals.

To help him carry out his analyses, Jonathan obtained and compiled the following financial data from various sources: the company's website, Morningstar, Yahoo Finance and Value Line.   Table 1 provides Domino's income statements from 2012 to 2016. Table 2 documents Earnings Per Share (EPS), Dividends Per Share (DPS), payout ratios, Free Cash Flows (FCF) per share, Beta, market return and risk-free rate. Table 3 displays sales, operating incomes, net incomes, long-term debts, DPS, FCFs and their annual compound growth rates over the past five years. Table 4 highlights the 10-year average growth rate for revenue, operating income, net income, and EPS over the past ten years, given by the databases of Morningstar and ValueLine. Table 5 provides data on price multiples of P/E. P/Sales, P/FCF for Domino's Pizza

and its two peers of Yum!Brands and Papa John's. Table 6, 7 and 8 provide the solutions for the Question 5. And finally Figure 1 provides a comparative chart for the stock price performance of DPZ and its closest rivals.

QUESTIONS 1 TO 7

In this case students are required to represent Jonathan and address the following case questions and provide solutions to those questions.
1.   Identify and briefly explain the various models that can be used to value the company and its stock price. Consider the pros and cons of each model and whether or not they are relevant to the case.
2.   What growth rate or rates will the company likely consider in assessing the value of the firm? Provide your rationale for your choice of the most plausible growth rate since this may have a significant impact in firm valuation.
3.   Lay out all relevant assumptions and determine the cost of debt and equity for the company.
4.   What is the overall weighted average cost of capital for the firm?
5.   Determine the value of the company's common equity using different models and provide rationale for your choice of the most appropriate model. Additionally, determine the price of the company's stock under alternative valuation models and consider whether the stock is under- or over-valued.
6.   Would you recommend to potential investors whether or not they should invest in this company's stock? Identify various ways by which DPZ could possibly increase its market share and expand its business in the Quick Service Restaurant industry.
7.   What are the major risks that the company may be faced with and give your perspective of how such risks could be minimized?

INSTRUCTOR'S NOTES

Answer 1:

Students may use the Capital Asset Pricing (CAPM) and Constant Dividend Discount models (DDM) to determine the cost of equity. Students should assume that the markets are efficient and stocks are fairly priced and that the historical level of risk is a good indicator of the assessment of future risk. In using the DDM, students should also assume that dividends, revenues, earnings and prices grow at a constant rate. If there is significant variations in the rates of growth, one may, among others, justify the use of an average growth rate. The Free Cash Flow model as well as various price-multiple models may also be used to assess the underlying value of DPZ's stock

Answer 2:

The company may consider the average growth rate estimates of 7.68% and 8.75% by Morningstar and Value Line, respectively (Table 4). Students may consider a conservative growth rate of 7%. An upward revision may be warranted to perform a sensitivity analysis to come up with a different price range.

Answer 3:

A firm's cost of debt typically utilizes bond data to develop a comprehensive yield to maturity (YTM). However, Domino's does not publish their bond data. Domino's does show long term debt in their balance sheet, and interest expense as a percentage of long term debt can be used as a proxy to determine a cost of debt. For Domino's, the interest expense can be determined by averaging the previous two year's interest expense. An average of the latest two year's long term debt may be used likewise. This may have some bearing in distorting the weighted average cost of capital.

	2015	2016	Average
Interest Expense	$ 100.00	$ 110.00	$ 105.00
Long-term debt	$ 2,181.00	$ 2,149.00	$ 2,165.00

Source: Morningstar.

The cost of equity for the firm can be determined using the Capital Asset Pricing Model. The beta for Domino's is given in Table 2 as 0.85, as well as a given risk free rate of 2.33% and a market return of 11.91%. Before Tax Cost of Debt: Interest Expense / Long Term Debt = 105.00/2,165.00 = 4.85% = K_d. Cost of Equity: Risk Free Rate + Beta (Market Return Rate – Risk Free Rate = 2.33% + 0.85 (11.91% - 2.33%) = 10.47% = K_e

Answer 4:

Long Term Debt / (Long Term Debt + Equity) = $2.149 Billion / ($2.149 Billion + $7.640 Billion) = 21.95%. Equity / (Long Term Debt + Equity) = $7.640 Billion / ($2.149 Billion + $7.640 Billion) = 78.05%. The Tax Rate for Domino's can be determined via an average of 37.31% from the past two year's data:

	2015-12	2016-12
Income before taxes	$ 306.00	$ 345.00
Provision for income taxes	$ 113.00	$ 130.00
Tax Rate	36.93%	37.68%
Average Tax Rate		37.31%

WACC = K_e * E/V + K_d * D/V * (1-T) = 8.84%, where T = 37.31%

Answer 5:

A discounted cash flow model can be used to determine the total value of common equity for Domino's. The predetermined growth rate of 7.00%, along with a discount rate of 8.84% (the firm's WACC) were used for the Discounted Cash Flow Model. This method yields an estimated price per share of $227.92 (see Table 6).

Price Multiples may also be used to value the company. Price/Earnings, Price/Sales, and Price/FCF were all used to determine an estimated value today (market cap) as well as a price per share. Employing P/E multiple, it results in an estimated price of $158.03. Applying P/Sales, $169.93 per share is projected. Utilizing Price/Free Cash Flow (P/FCF) ratio yields a value of

$161.03 per share (see Table 7).

The dividend discount model can also be utilized as an alternative theoretical model to determine the price of Domino's Stock. The 2016 dividend per share was $1.52. Using a discount rate of 8.84% and a growth rate of 7.00%, the following formula is applied which results in an estimated price per share of $82.55.

DDM = Dividend per Share / (Discount Rate – Growth Rate) = $1.52 / (8.84% - 7.00%) = $82.55

Table 8 summaries the estimated fair prices from all these models. The $82.55 resulted from the DDM model is obviously an outlier and cannot be used as a rational choice to assess the underlying value of the stock. The averaged price without this outlier, yields an estimated price of $179.23, which is quite close to the actual closing price of $176.37. This result indicates that the method employed in this paper, is quite plausible in assessing the underlying value. Based on this result, students may suggest that the actual price of price of $176 is fairly valued. Moreover, a price range between $158 to $228, could be constructed under different scenarios that could have an impact the on the stock price in either direction.

Answer 6:

Students may recommend the stock on grounds that the company's growth trajectory looks good since it operates in a market that is yet untapped. Moreover, it has made advance inroads in fast developing nations like India where it could continue to grab and increased market share relative to its counterparts. Domino's has also recently created a smartphone app that allows for customers to custom design their pizza and order it online. This platform will continue to appeal to technology driven, millennial consumers.

Domino's could increase its market share by expanding into markets in Africa and Asia. The company already operates heavily in India and is exploring opportunities in Sub-Saharan Africa. "It's a place where we've been doing a lot of work," Patrick Doyle, CEO and President of Domino's said. "We are today in Nigeria, South Africa and Kenya and there will be others. It's a very, very significant market with a growing middle class." Additionally, the company recreated their image several years ago (http://www.businessinsider.com/dominos-turnaround-strategy-2015-4), and could continue to do so. A final option to increase market share would be to engage in licensing arrangement with a firm such as Wal-Mart. Yum! Brands is licensed to operate in Target and is able to sell pizza at in store locations. Domino's should and could do so likewise.

Answer 7:

Major risks for Domino's may include a change in consumer's tastes and preference to a healthy fast casual dining for many consumers. Domino's can, however, minimize this risk by continuing to publicize and brand itself as a healthy pizza alternative. Additional risks for Domino's include increases in wages and decreases in potential franchisees. Domino's can combat these through forward thinking and selling its strengths, including continual growth.

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APPENDIX

Table 1: Income Statements (In Millions $), 2012-2016

	2012	2013	2014	2015	2016
Revenue	1,678	1,802	1,994	2,217	2,473
Cost of revenue	1,177	1,253	1,399	1,533	1,705
Gross profit	501	549	595	683	768
Operating expenses					
Sales, General and administrative	219	235	249	278	314
Total operating expenses	219	235	249	278	314
Operating income	282	314	345	405	454
Interest Expense	101	89	87	100	110
Other income (expense)	-	-	-	-	1
Income before taxes	181	225	259	306	345
Provision for income taxes	69	82	96	113	130
Net income from continuing operations	112	143	163	193	215
Net income	112	143	163	193	215
Net income available to common share	112	143	163	193	215
Earnings per share					
Basic	2	3	3	4	4
Diluted	2	2	3	3	4
Weighted average shares outstanding					
Basic	56	55	55	54	49
Diluted	59	58	57	56	50
EBITDA	306	340	381	438	493

Table 2: EPS, DPS, FCF (Per Share) and Required Return Data

	2012	2013	2014	2015	2016
Earnings Per Share (EPS)	1.91	2.48	2.86	3.47	4.3
Dividends Per Share (DPS)		0.8	1	1.24	1.52
Payout Ratio		32%	35%	36%	35%
Average Payout ratios					24%
Annual Dividend Compound Growth Rate:	2.49	2.49	2.75	2.97	4.32
Free Cash Flows Per Share					15%
Annual FCF Compound Growth Rate:					0.85
Beta					0.85
Market Return					11.91%
Risk-Free Rate					2.33%

Table 3: Sales, Incomes, Debts, Dividends and FCF (In Millions $), 2012-2016

	2012	2013	2014	2015	2016	Annual Compound Growth Rate
Sales	1,678	1,802	1,994	2,217	2,473	10.18%
Operating Income	282	314	345	405	454	12.64%
Net Income	112	143	163	193	215	17.71%
Long-Term Debt	1,536	1,512	1,524	2,181	2,149	8.76%
Dividned Per Share ($)	0	0.8	1	1.24	1.52	23.86%
FCF	147	154	122	229	229	11.72%

Table 4: Growth Rates

	Morningstar	Value Line
Revenue	5.57%	7.00%
Operating Income	7.80%	
Net Income	7.29%	
EPS	10.05%	10.50%
Average:	7.68%	8.75%

Table 5: Price Multiples (P/E, P/Sales, P/FCF)

	Domino's	Yum! Brands	Papa John's	Average
Price/Earnings	36.11	15.68	31.23	27.67
Price/Sales	3.16	3.92	1.85	2.97
Price/FCF	34.07	31.91	15.38	27.12

Table 6: Discounted Cash Flow Model (Solutions for Question 5)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Terminal Value
Free Cash Flows*	147.00	154.00	122.00	229.00	229.00	245.03	262.18	280.53	300.17	321.18	18677.57
Discounted Cash Flows *						225.13	221.32	217.58	213.90	210.29	12228.63
Growth Rate	7.00%										
Discount Rate	8.84%										
DCF Sum*	13,316.85										
Less Long Term Debt*	2,149.00										
Market Cap*	11,167.85										
Shares Outstanding *	49.00										
Price/Share**	$ 227.92										

Note: Free cash Flow is assumed to grow at 7% annually from 2017 to 2022 in this table.

The line items with * are expressed in the unit of one million and ** are in one US dollar.

Table 7: Price-Multiple Models (Solutions for Question 5)

	2012	2013	2014	2015	2016	Annual Compound Growth Rate (%) from 2012 to 2016
Sales	1678	1802	1994	2217	2473	10.18%
Net Incomes	112	143	163	193	215	17.71%
FCF	147	154	122	229	229	11.72%

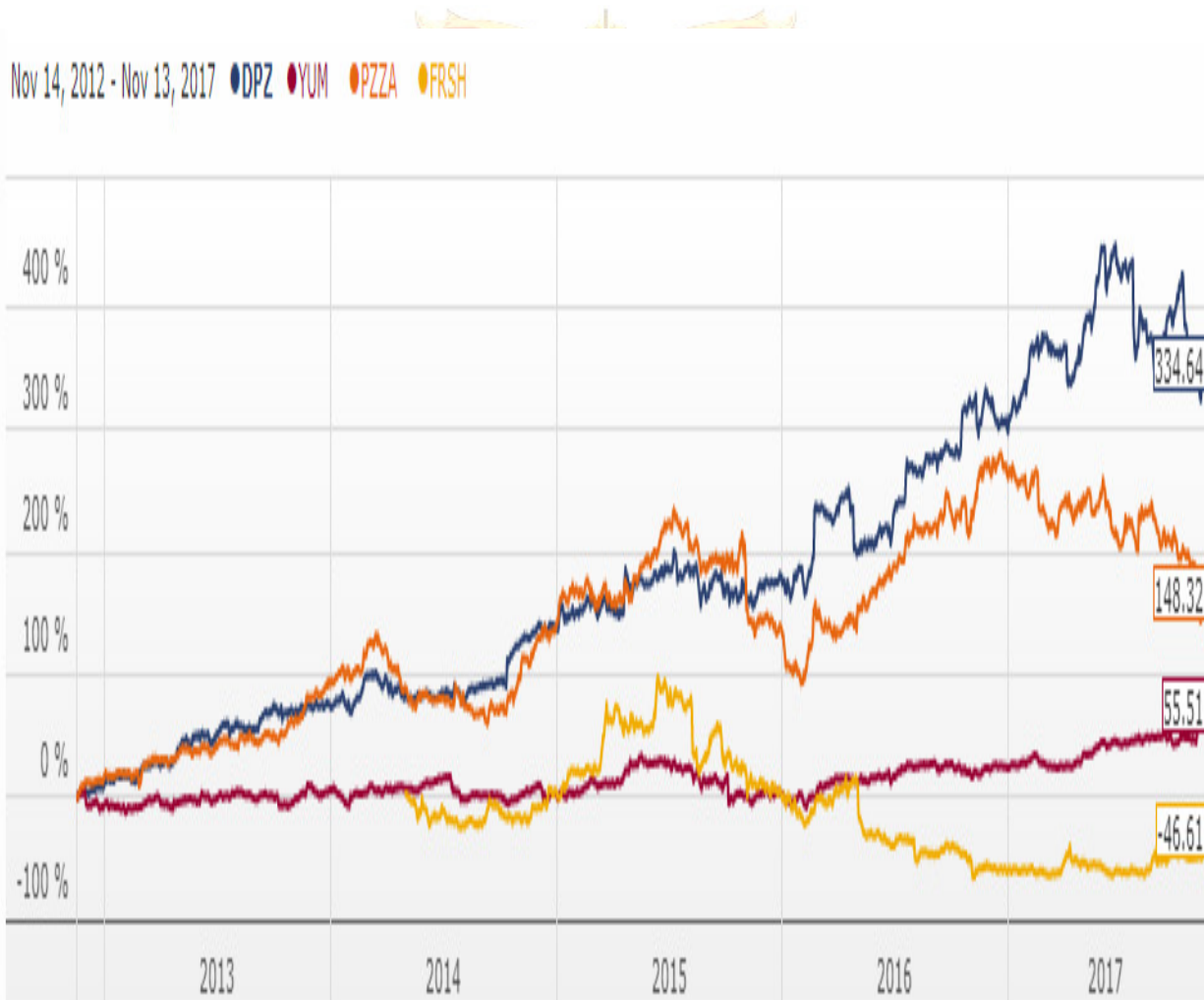| Domino's	Current Level (Domino's)	Annual Compound Growth Rate (%) from 2012	1-year Ahead Projected Level	End of Year Estimated Value of Market CAP	Estimated Value Today for Market CAP	At 49 Million Shares, Price per Share
	A	B	C	D = B*(1+C)	E = A* B	F = E/(1+Ke), Ke = 10.47%	G = F/49
Price/Earnings	36.11	215*	10.18%	237*	8554.09	7,743.36	158.03
Price/Sales	3.16	2473**	17.71%	2911**	9198.49	8,326.68	169.93
Price/FCF	34.07	229***	11.72%	256***	8716.40	7,890.29	161.03

* indicates Total Earnings, ** indicates Total Sales and *** indicates Total Free Cash Flows

Table 8: Summary of Estimations (Solutions for Question 5)

Method	Estimated Fair Price
DCF	$227.92
P/E	$158.03
P/Sales	$169.93
P/FCF	$161.03
DDM (Outliner)	$82.55
Average *	$179.23
Current Price	$176.37
Projected Price Range	$158 - $228

Average is calculated without using the outliner of $82.55

Figure 1: DPZ and Competitors Price History

Source: Morningstar