MTY GROUP

Stock valuation

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Executive summary

MTY group is a fast-food company that offers its customer base a plethora of cuisine from distinct cultures. It mainly operates in Canada with some locations in the USA. MTY's principal revenue comes from royalty and franchise fees. Without any doubts, MTY's biggest assets are goodwill and other intangible assets, which accounts for approximately 65% of their total assets. The industry tends to be cutthroat with a lot of competitors competing for a clientele that has almost no transfer costs. According to the data, ROE and ROA in the last year were 13% and 36%, respectively. Moreover, from our SWOT analysis we find that the company tends to have more strengths than weaknesses namely due to its large portfolio of brands and its logistical control. Again, our SWOT analysis suggests that the external environment is not to their advantage, namely because of certain threats such as the prices of commodities, labor shortages and the elasticity of demand.

Per our analysis we value MTY at $49.61, approximately what it was worth in February 2022, which is below the current market price of 59$. We recommend selling the stock, as we believe economic hardships are on the horizon and that companies that deal in the service industry will be significantly harmed in the coming years following the increase in interest rates. When taking into consideration the sensitivity of the major inputs in our model, those inputs being the EPS and the change in intangible assets and goodwill, we find an acceptable range between $60.35 and $44.24. This is mainly due to the fact that MTY tends to have large changes in EPS and Goodwill in-between quarters.

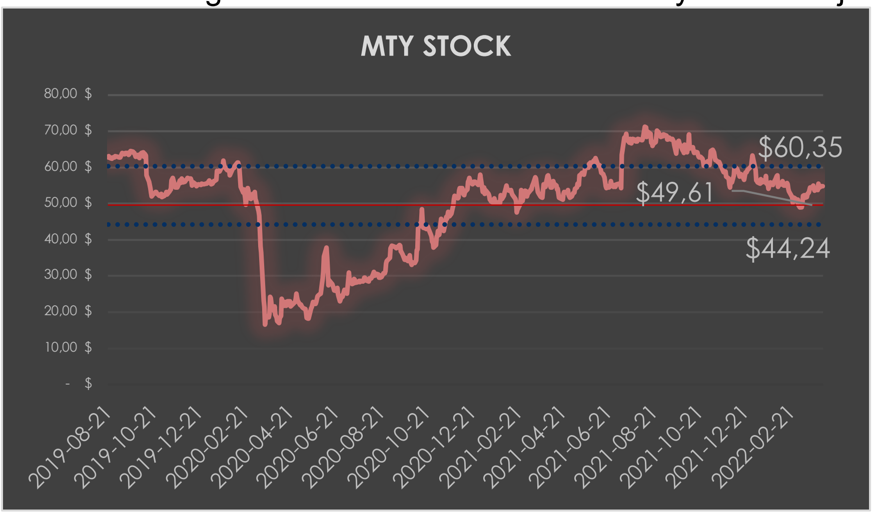

Figure 1 Historic prices of MTY with our prediction (red) and acceptable ranges (blue)

Economic environment

Economic events influence the performance of the market, hence the performance of each company separately as everything in the market is connected with each other. The MTY Group operates in the food/restaurant industry, which means that any impact on the food prices or any lockdowns which happened in the previous two years significantly impact the company's performance. The price of wheat has been constantly rising, it almost doubled within the last two years, from $600 per bushel in 2020 to $1100 as of today. Similarly, soybean and corn followed the trend increasing from $900 per bushel and $400 per barrel in 2020 to $1700 and $750 in 2022, respectively. Finally, the price of canola spiked by more than 200%, from $500 per ton in 2020 to more than $1100 as of today. *(Appendix 1)* Besides, the price of natural gas and crude oil are sky rocketing. Crude oil is a main inflation factor as everything needs to be transported; any price change will influence the price of final goods. The rising costs of basic ingredients indicate that restorers' cost of production for products that use these ingredients in their menu have become significantly more expensive. That increases the final price of the products, that therefore decreases the incentive to start restaurants. With a decreasing number of clients and franchisees, the profit of the company decreases.

There are also other factors which can influence the performance of the company and its profitability. Over the last two years a lot of restrictions were introduced, which in big part decreased the number of customers, especially in restaurants that were forced to shut down. To counteract the imposed changes, governments and central banks adopted a strategy of Quantitative Easing (QE), which now contributes to the highest inflation since the 80's. According to the Fed's chairman, we will probably struggle with high inflation till the end of the next year, which could also create another recession or worse, stagflation. Rapidly increasing inflation contributed to skyrocketing prices, people demand higher wages for their work, accordingly, pushing prices of the final products up which tightens profit margins *(2022, Tradingeconomics.com).*

Because of the pandemic, many people lost their jobs, so the government started offering them checks and benefits, so they could withstand the hard times. This contributed to many open vacancies with owners struggling to find employees. They had to offer more incentives, in many cases in the form of higher wages *(2022, Tradingeconomics.com).* Furthermore, health guidelines such as lockdown and indoor crowd restrictions and the random nature of these policies have brought new forms of risk to service and hospitality businesses.

Finally, demand for fast-food is "elastic", which means that customers have a large array of products they can substitute fast-food with. Cooking food already came in favor as many people worked from home. In this case there is a smaller need for many people as they can easily and cheaply cook something at home, where even fast-food delivery will not be as quick to deliver food. Moreover, increased prices of basic needs, increases the aversion of spending money on "eating out". To be able to combat those effects, owners need to fight for each customer. They could try to overcome those hard times by reducing prices, but in many cases that can only be done by reducing the quality of products. That of course will contribute to worsening the company's image, which is often their most valuable asset.

Industry & Sectorial

Current environment

In recent history, many changes have taken place. Indeed, in the last few years we have seen the integration of technology and a rise in food delivery. Increasingly common it is for restaurants to have their own app or a self-service desk where one can order. Additionally, most fast-food restaurants have a system to receive orders from external companies such as UberEATS, Door dash, etc. This transition has been encouraged by the Covid-19 pandemic that forced restaurants to adopt a contact less service and integrate them into the delivery system. Furthermore, the industry has seen steady growth except for the years 2019-2020, where there was a decrease, because of government-imposed mandates on restaurants.

Nevertheless, in recent years there has been a shift in customers' preferences for more healthy food, meat alternatives, environmental packaging and production combined with social responsibility. This has forced most industry players to adapt their menus and way of running the business. All the new restrictions touched smaller players/single location restaurants the hardest, which contributed to their bankruptcy or their acquisition by bigger industry companies. Subsequently big companies are getting bigger and still offer lower prices than small businesses. Speaking of which, there are 4 big main players, followed by 2 medium players. The biggest company is McDonald's with a market share of 16%. Followed by Tim Hortons Inc, Subway and A&W Food services of Canada Inc with a market share of 11.9%, 5.6%, 5.2%, respectively. For the two medium companies we can count are Yum! Brands Inc and MTY with 3.8% and 1% of the market share, correspondingly *(Market Research, 2022)*. The following part will focus on the last-mentioned company.

After understanding the major players, one sees the competitive situation in which the top 4 companies control 38.7% of the market. The rest of the market is divided among smaller franchise/international entities and small restaurants. Keeping in mind that there is still 62.3% of the market share in the hands of small restaurants, there might be a potential for expansion for the medium-sized franchises mentioned before such as MTY and Yum! which are in multiple taste niches.

One of the reasons why prices have risen is because of lockdowns, pandemic and inflation which in the last few months has been skyrocketing. This inflation is a consequence of the government's policy, mostly Quantitative Easing (QE) to combat Covid-19. Since fast food is a non-necessary service, people have started cutting this expense from their life. An example of this rise in cost can be demonstrated with the Big Mac Index, which shows that from 2016 till the end of the last year, increased by 13.21% from $5.98 to $6.77 *(The Economist, 2022).*

Here comes the question: why are there some successful businesses when others go bankrupt? First of all, there are different sub-sectors, depending on their cuisine and the niche which they serve. Also, the owner's expertise plays a crucial role. When it comes to franchises, the most important aspect is to keep prices low and an ability to manage business costs. MTY Food Group has a franchisor-franchisee structure which means that the company's aim is to help all their franchisees to stay on the market.

Prospects (medium-term 3 to 5 years)

For the industry, it could be assumed that with the end of the pandemic and the return to normal life most likely after a recession, we will see an acceleration in growth as companies will no longer be in survival mode and hence will be actively trying to expand. Also, larger players such as MTY may have more interest in purchasing brands who've been ravaged by the recession. In addition to this, many customers will have regained financial stability and will have more disposable income for eating fast food. And so, the possible growth of the economies will benefit this industry. Followed by that, companies will risk and try to do some experiments and launch of new product. This is good for MTY, because this means there will be new restaurants that will innovate and could make great acquisitions. Also, many restaurants would opt for moving international or opening new locations. That means for MTY many new opportunities because people would want to become owners and franchises, as they would be a good option for them.

In numbers, the industry growth is as follows:

Year	Revenue ($m)	IVA ($m)	Establishments (Units)	Enterprises (Units)	Employment (Units)	Wages ($m)	Consumer spending ($b)
2021	27,570	10,730	31,361	21,092	402,477	8,755	1,199
2022	29,838	11,519	32,700	21,930	427,426	9,333	1,254
2023	30,654	11,827	33,347	22,349	438,212	9,572	1,284
2024	31,101	12,010	33,830	22,670	445,297	9,724	1,306
2025	31,415	12,148	34,273	22,971	450,991	9,843	1,328
2026	31,675	12,265	34,669	23,241	456,022	9,947	1,350
2027	31,900	12,371	35,113	23,547	460,769	10,044	1,371

Figure 2 Forecast of industry growth (Ibis World, 2022)

So far, the major obstacle in the sectoral landscape seems to be the competition, with corporations like McDonald's, Tim Hortons Inc, Subway, A&W Food, Foodtastic, Yum!, Recipe Unlimited and many more. Likewise, substitutes likewise remain a potent threat as several companies such as HelloFresh ship semi-finished dishes to their customers, so the client only needs to prepare them in the proper way. Finally, no single company holds enough power towards large suppliers to control their prices as they often have a wide variety of avenues where they can sell their product. That means that suppliers can charge premiums over the price of ingredients, especially when the prices increase, which can become expensive and dangerous for companies very quickly.

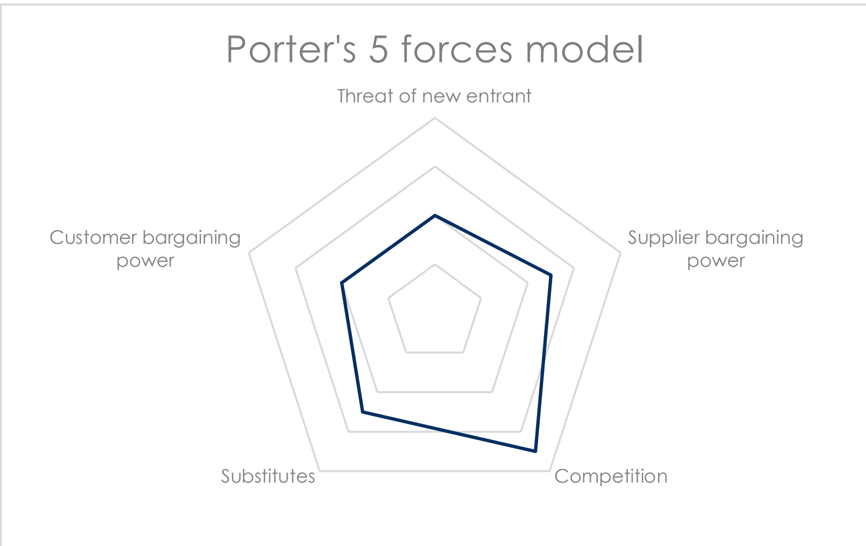

Figure 3 Model which represents the intensity of challenges for the restaurant industry

Company analysis

Presentation of the company

Founded in 1979 by Stanley MA, MTY Group is a growing business in the restaurant industry specialized in Oriental fast food and is known today as “one of the largest franchisors in North America’s restaurant industry”. MTY Group offers authentic Oriental cuisine starting with their first restaurant in 1979 “Le Paradis du Pacifique. For the next 20 years, MTY has become a leader in Oriental fast food in Quebec. To this day, over 6,000 restaurants and more than 70 brand names like: Thaï Express, Sushi Shop, Tandori, etc. are under MTY’s umbrella. Their perceived quality in oriental and exotic cuisines attracts customers who are willing to pay a premium compared to other restaurants. According to MTY Group’s website, their goal is to meet all customers’ dietary preferences so it could correspond to their busy lifestyles *(MTY Group).*

MTY’s business is based on supervising their franchisees, logistics and quality management over their franchise locations which bring revenues to the company, besides to sales of goods and services, rent and other company’s program such as gift/member cards.
The market share for fast food industry in Canada in 2022 is estimated at $27B *(Ibis World, 2022).* MTY Group’s current market cap is valued at $1.339B. In 2021, MTY made the acquisition of Kuto, a high-end tartar fast food brand that in total has around 31 locations across the province of Quebec. Kuto made between $20M to $25M in revenues annually and has been growing at a phenomenal rate opening 13 new locations in 2021 alone *(Cision, 2021).*

As fast-food services have a constant increasing demand across Canada, MTY food group expects to increase their demand by at least the same rate. As of the fourth quarter of 2021 the company made more than 100M sales that generated revenues of $146.3M, which was an enormous increase of 15% from the previous year and 17% from 2019. The profits rose by 37% between 2021 and 2019, with losses recorded in 2020. Profit achieved at the end of 2021 hit almost $86M, which increased from loss of -$36.9M in 2020 and the profits of $77.7M in 2019. The ROE rose from 11,7% in 2019 to 13.2% in 2021. This can be explained by assets who grew by almost 16% between 2021 and 2019. On the other hand, company’s liabilities increased by 28% from $0,983M in 2020 to $1,256M in 2021. Though between the years 2020 and 2021 the trend has reversed. The debt ratio decreased from 71.07% in 2020, to 65.93% in the last year, a big reduction of almost 5%. A lower debt ratio also means lower cost of running a business, as a company needs to pay less interest, especially when we assume that in this year (2022) interest rates will rise *(MTY Annual, 2021, 2020 & 2019).*

Furthermore, for many investors dividends are a crucial aspect, when it comes to investing in one company, as not only it increases the level of return, but also shows a stable policy and way of running a business, when a company is able to pay out dividends every year. In the case of MTY, the company increased its dividend rates every year from 2017 to 2019 including, however it had to reduce it in 2020 missing a few payments. That was supported also by a smart business policy in 2019 when the company’s stock price was very low, the company used $18.9M to repurchase its shares. The same as last year but on a smaller scale of $2.1M. *(MTY Annual, 2020 & 2019).*

On the other hand, one should also look at the costs and expenditure growth, especially when it is believed that in the following months and years, huge risks can be expected. The food company should always be prepared for the possibility of price increase, which currently is happening because of the war, but also inflation. The company is relatively well prepared, however one could say that over the last 2 years the company has accumulated too much inventory, which, when it comes to food, cannot be stored without limits. Inventory levels increased from $8M in 2019 to $11M mainly in semi-finished products and WIP ($1M). *(MTY Annual, 2021, 2020 & 2019).*

Besides, intangible assets fell largely from the level of $1468M in 2019 to $1249M by the end of the previous year. This happened because of net goodwill and other intangible asset reductions during the sale of Houston Stake Bar and Industria Pizza *(Cision, 2021).* At the same time, it can be a good and a bad sign, because it reduced the non-feasible assets, however it can also mean that intellectual property and other intangible assets have been sold to other companies, which will use logos and company's brands to do marketing.

Finally, when it comes to cash and its level, these play an important role as it's a sign of good proportion and security, which whenever needed might be used. In this case, the company accumulated in the last year $61M, $17M more than in the year before. Likely to prepare for expenditures that a company might make soon *(MTY Annual, 2021 & 2020).*

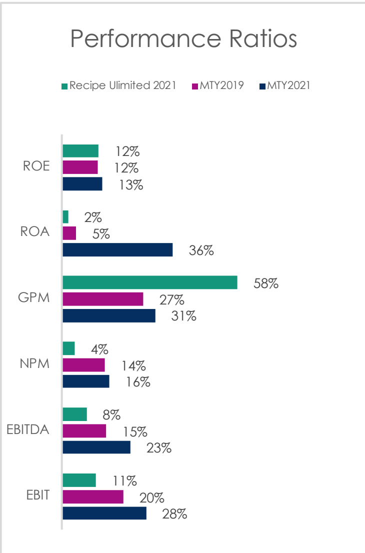

Figure 5 Different performance ratios (MTY Annual, 2021 & 2019) (Recipe Unlimited Annual, 2021)

As mentioned before, there are a lot of companies on the market, however, there is only one direct competitor which has relatively the same market size as the MTY group, Recipe Unlimited. The company Recipe Unlimited is a bigger company than MTY, but they compete on the same Canadian market. They hold competing brands such as St-Hubert, Harvey's, The Keg, newyorkfries, etc. The largest difference between the two firms can be seen from their gross profit margin and their net profit margin. MTY's GPM for the year 2021 was of 30.7% whilst Recipe Unlimited's GPM is of 57.6%, this shows that MTY holds less power over its suppliers which entails higher prices for its good sold, in other words its competitor can buy goods at a lower prices which enables them to have more competitive prices. On the other hand, if we look at MTY's net profit margin of 15.6% compared to its competitor margin of 4.2% we can see that generally MTY has greater flexibility overall. Furthermore, MTY's ROA of 36.4% compared to Recipe Unlimited's ROA of 2.1% shows that on average MTY's assets are significantly more productive. *(MTY Annual, 2021 & 2019) (Recipe Unlimited Annual, 2021).*

For its financing, MTY tends to be less levered than its most fierce competitor with a long-term debt to equity ratio of 1.38 for MTY and 3.56 for Recipe Unlimited. And for its liquidity ratios, following the assertions made above, MTY tends to have more liquidity than Recipe Unlimited, with a cash ratio of 0.17 vs 0.10. Nonetheless they both tend to have similar current ratios of 0.65 and 0.64, which essentially shows that they both have more short-term liabilities than short term assets, a sign of fragility seen across the board for the restaurant industry *(Appendix 2).*

All in all, from the external analysis and the internal analysis it seems apparent that MTY possesses a lot of strengths but that its environment is in many ways worrisome as grim economic conditions are on the horizon.

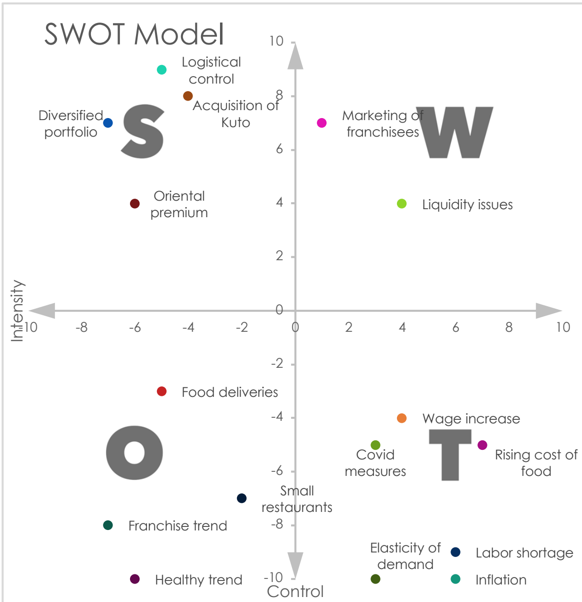

Figure 4 Model which displays the main arguments made in four categories (strength, weakness, opportunity, threat)

Valuation models

Gordon model

This model attempts to value MTY based on its dividend pay-outs which historically had a dividend yield of approximately 1.12% per year, based on calculations using a time series of 5 years (from 2017/04/03 to 2022/04/01). Additionally, from financial statement analysis MTY's return on equity is approximately 13.2% for 2021. Furthermore, according to MTY's 2021 annual financial statement its earnings per share are about 3.47$. Dividends are used instead of the alternative (EPS * dividend yield) to calculate pay-outs for the next MTY's next dividend.

Below are the inputs which were used for the presented model:

- Dividend: $0.88: Assuming that dividends will continue increasing from 2021's quarterly dividends of $0.20 to $0.22, an annual dividend of $0.88 for 2022 is counted.

- Growth rate: 13%: From the calculation it is seen that MTY's dividends tend to grow at a rate of 16% under normal circumstances. Nonetheless, to adjust for the risk that MTY didn't pay dividends for certain periods, that were suspended 4 dividend payments during the years 2020 and 2021, growth rate was decreased to 13%.

- Required rate: 16%: Multiple sources tend to suggest that MTY's 5-year beta is approximately 2 *(Yahoo Finance).* From this and using 1-year treasury bills as risk-free rate of about 1,746% *(Market Watch),* and a market return on the TSX of around 9%, the required rate is found using the CAPM formula.

$$k = 0.0174 + 2 * (0.09 - 0.0174) \approx 0.016$$

Based on the calculations a price of $30 is returned, which is well below the current price of $54.

$$V_0 = \frac{0.88}{0.016 - 0.132(1 - 0.01)} \approx \$30$$

At first glance this might be shocking but there are a few things to bear in mind:

1. Given that the Gordon growth model considers a few variables it may omit a lot of subtleties that could have significant impacts on the company's stock price.

2. The markets may expect a different return rate than the calculated one as a result of using a different interval frame for their beta in their calculations. The 5 year-time frame was chosen because it is the most potent as it accounts for pre-pandemic data, pandemic volatilities, uncertainty, and current risk.

3. Markets may not bear in mind the dividend pay-out risk. Indeed, in the past few years MTY has shown that it may omit paying dividends when push comes to shove. Attributable to closed restaurants due to pandemic, dividend suspension is comprehensible as expenses skyrocketed while income plunged. Whilst the same situation may not happen again soon, this risk must be considered, that's why lowering the growth rate is a reasonable decision.

FCFE model

The free cash flow to equity model (FCFE) in its purest form is not well adapted to a company like MTY since it omits to consider intangible assets such as goodwill which are MTY's most important assets, in fact they represent about 65% of total assets. In other words, what makes MTY so competitive is its diverse portfolio of brands. Therefore, we took the liberty of adding a certain variable named "Change in intangibles and goodwill" to our model. In addition, per our economic analysis our model also accounts for a light recession between the years 2022 until 2024. Afterwards will come a period where we believe that MTY will outperform the industry through its ability to buy brands and latch onto trends. Finally, there will be a period of normalcy where MTY's growth will slow down to normal levels.

Here are the starting variables we've chosen they've all been found using previous financial statements:

- Earnings per share (EPS): $3.52
    - Although this is different from the EPS of $3.47 that was mentioned in the Gordon model from MTY's 2021 annual report, we preferred calculating this variable manually for more transparency.

- Capital expenditures (CAPEX): $0.003
    - This variable is quite insignificant since MTY's short-term assets and liabilities represent so little of their balance sheets. We found it by making an average of the change in net working capital over the past three years.

- Amortization and depreciation: $0.002
    - Again, this variable is quite insignificant since most of MTY's long term assets are intangible which have longer amortization periods, with little to no estate to their name. The same procedure from the CAPEX calculation was used to compute MTY's amortization and depreciation.

- Change in net working capital: $0.001
    - Again, this variable remains insignificant, for the simple fact that MTY is quite a stable company and that its structure barely changes throughout time. We found this from data between 2020 and 2021.

- Change in intangibles and goodwill: $1.41
    - This variable comes from a manual adjustment we did to take into consideration MTY's largest assets by far. We found this variable by using data from 2018 to 2021. We found the change in intangibles throughout this period and made a weighted sum based on our logical assumptions. We decided that in the future MTY would try to restructure its company by diversifying into healthy premium foods at a low price (like their acquisition of Kuto), therefore slightly increasing their intangibles.

	A	B	C	D	E	F	G	H	I	J
1	Firm	MTY								
2	Intrinsic value	49,61 $								
3		Recession	Recovery	Stability						
4	Growth rate of EPS	-5,00%	7,00%	2,00%						
5	Growth rate of CAPEX (Capital Expenditure)	-5,00%	7,00%	5,00%						
6	Growth rate of amortization	-1,00%	7,00%	5,00%						
7	Growth rate of intangibles and goodwill	15,00%	12,00%	6,00%						
8	Required rate of return	16,00%	12,00%	11,00%						
9	Total Debt to Total Asset		20,00%							
10										
11										
12		Recession				Recovery				Stability
13		0	1	2	4	5	6	7	8	9
14	EPS	3,52 $	3,34 $	3,18 $	3,02 $	3,08 $	3,14 $	3,36 $	3,89 $	3,97 $
15	CAPEX	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	
16	Amortization	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $
17	(1-δ)(CAPEX-Amort.)	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $
18	Change in intangibles and goodwill	1,41 $	1,63 $	1,87 $	2,15 $	2,41 $	2,70 $	3,02 $	3,38 $	3,59 $
19	Change in NWC	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $	0,00 $
20	(1-δ)(Change in NWC)	0,00 $	-1,30 $	-1,49 $	-1,72 $	-1,93 $	-2,16 $	-2,42 $	-2,71 $	-2,87 $
21	FCFE		**4,64 $**	**4,67 $**	**4,74 $**	**5,00 $**	**5,30 $**	**5,77 $**	**6,60 $**	**6,84 $**
22	PV(FCFE)		4,00 $	3,47 $	2,62 $	2,47 $	2,33 $	2,54 $	2,32 $	29,87 $

Figure 6 Free cash flow to equity with three phases, recession (red), recovery (green), stability (yellow)

To populate our model through the vector of time, we chose to take into consideration 5 rates: the growth rate of EPS, the growth rate of CAPEX, the growth rate of amortization, the growth rate of intangibles and finally the periodic required rates. The growth rates follow the same general directions throughout the 3 different phases of our model, with the intangible growth being larger at the beginning as MTY buys smaller chains for a discount during the recession. For our required rates, we first used the 16% required rate found previously, and made the assumption that it would decrease as the stress of the recession would fade and central banks would start decreasing their interest rates.

Our FCFE model returns an intrinsic value of $49.61 per share, a $19.61 gap from the intrinsic value found from our model. As argued during the Gordon model, certain variables are left unconsidered, since MTY's major added value comes from its multiple brands it is without a doubt that the Gordon model would underestimate the intrinsic value. The phases used in the model have an even greater importance in the grand scheme of things, since we can now account for decreasing required rates. In conclusion, the difference between both models could be in fact a good representation of the value we attribute to MTY's catalog of brands, with the rest of the value being derived from its logistics, locations, profits, etc.

Sensitivity analysis

When comparing MTY to the TSX300 on a time series of about 5 years, one finds an r2 of 22,5%, which means that 22,5% of fluctuations in the price of MTY can be explained by fluctuations in the Canadian stock market. From this small r2, intuitively an investor may believe that this is caused by the fact that the Canadian economy is diametrically different from MTY. For instance, Canadian energy, which is significant within the TSX300 has various fundamental differences from the restaurant industry. And although this may be true, prices of commodities and various economic indicators that do not withstand the TSX300, tend to have noticeable correlations with the MTY's stock price.

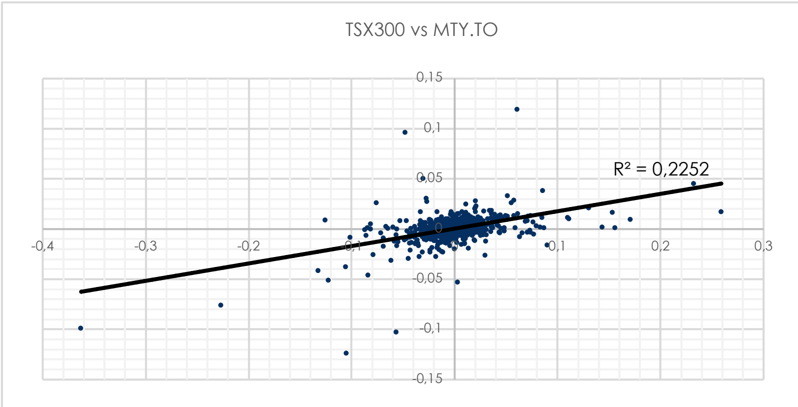

Figure 7 Plot of the stock daily returns of MTY (x-axis) and TSX 300 (y-axis)

So far, the intrinsic nature of the restaurant industry was declared as "elastic", but in financial terms this implies several realities. First and foremost, as the demand shrinks for meals, so will key metrics determining the value of the company. Second, every single input is necessarily impacted from the internal decisions of the organization. These two can move in opposite directions, yet generally the economic situation more broadly will tend to have a larger impact on the stock price than the decision the company takes. Therefore, in order to make an appropriate estimation of the sensitivity of the stock price it is necessary that we perform both an external analysis of the economic variables that are most likely to affect the price of the stock, coupled with an internal sensitivity analysis.

Internally, if the impactful inputs used in the FCFE model are considered: the earnings per share and the change in intangibles and goodwill, the respective value and derive from this an estimate of the lower and upper bounds using quantiles of 75% can be distributed. Arbitrarily the means of both the EPS and change in intangibles are equal to their values in 2021, \$3.52 and \$1.41, respectively. The standard deviations were found by simply calculating the standard deviation of these metrics historically. The standard deviation of the EPS and the change in intangibles are 130% and 20%, respectively. This gives us a lower bound of \$38.87 and an upper bound of \$60.35.

Externally, the correlation between MTY's stock price and a variety of macroeconomic indices shows that indeed MTY is not an island and that its price is in fact affected by economic trends.

Crude Oil Prices: West Texas Intermediate (WTI) - Cushing, Oklahoma-> **0.6729518638422606**
Crude Oil Prices: Brent - Europe-> **0.7185583921335799**
No. 2 Heating Oil Prices: New York Harbor-> **0.7362524136504823**
Wilshire US Real Estate Securities Price Index (Wilshire US RESI)-> **0.6151404787303818**
CBOE Volatility Index: VIX-> **-0.512385196368343**
CBOE Gold ETF Volatility Index-> **-0.5884828525474708**
CBOE Crude Oil ETF Volatility Index-> **-0.5352955806148578**
CBOE S&P 500 3-Month Volatility Index-> **-0.5531040659437649**
Mexican Pesos to U.S. Dollar Spot Exchange Rate-> **-0.5759149328811353**

Figure 8 Metrics with their correlations in bold, data directly imported from FRED using Python

The analysis shows that MTY's largest correlations are with oil, real-estate, market volatility, gold and the exchange rates between Mexico and the US. Generally, the rising price of oil indicates that the economy is growing and that its need for energy is rising, the correlation between the two is positive therefore implying the importance of good economic performance to MTY's success. Similarly, the positive correlation between real estate and MTY implies that the company benefits from increases in the price of rental commercial properties, which can be explained from the fact that they're in the business of franchising which most often lays the burden of rent on the franchisee. Volatility and gold are both metrics which help measure economic tensions. When these indices increase, they indicate that investors have less confidence in financial markets' stability and the value of currencies (onlooking monetary stimulation). Again, these metrics align with the overall concept of elasticity, when the economy seems grim, MTY's business will be harmed (concept of elasticity). The Pesos remains important for MTY since it supplied by Mexican agriculture that is a notable producer of grains, oilseeds and horticultural products. When the value of the Pesos decreases goods become cheaper for MTY which explains the negative correlation.

From economic theory, considering the current situation, it can be argued that inflation may continue, that the price of oil may continue increasing, that market volatility may stabilize, that real estate may lose value and that exchange rates between Mexico and Canada will likely increase as restrictive monetary policies are deployed in Canada. All in all, these variables seem to have a moderate to positive impact on MTY's future endeavors.

Finally, taking into consideration the internal and somewhat positive external aspects, the lower range might increase, that would become $44.24. In conclusion, the price range is found between $44.24 and $60.35 *(Appendix 3).*

Appendix

Appendix 1:

Figure 9 Price of wheat per bushel in USD (Trading Economics)

Figure 10 Price of soybean per bushel in USD (Trading Economics)

Figure 11 Price of corn per barrel in USD (Trading Economics)

Figure 12 Price of canola per ton in USD (Trading Economics)

Appendix 2:

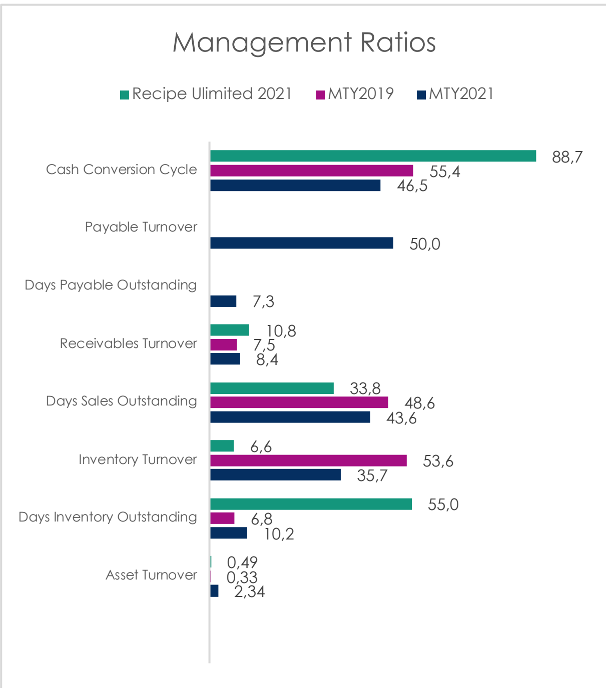

Figure 13 Ratios that show the flow of operational activities (MTY Annual, 2021 & 2019) (Recipe Unlimited Annual, 2021)

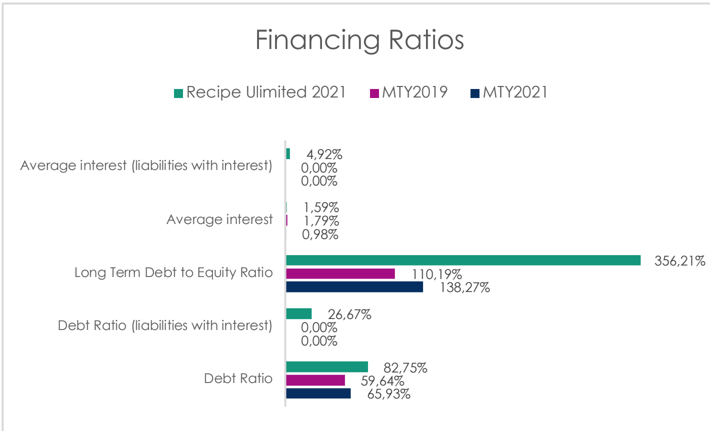

Figure 14 Ratios that show company financing strategy (MTY Annual, 2021 & 2019) (Recipe Unlimited Annual, 2021)

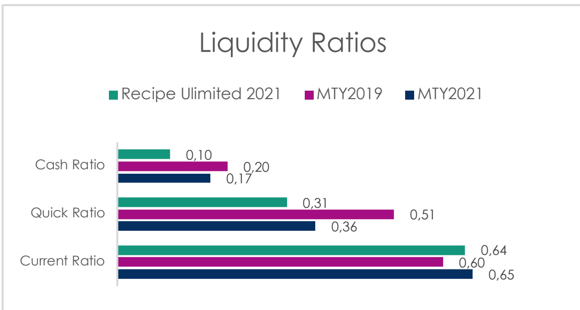

Figure 15 Ratios that shows solvency of the firm (MTY Annual, 2021 & 2019) (Recipe Unlimited Annual, 2021)

Appendix 3:

		EPS															
Intangibles		0,0094967	0,0218516	0,0449925	0,0828976	0,1366751	0,2016423	0,2662067	0,314486	0,3324519	0,314486	0,2662067	0,2016423	0,1366751	0,0828976	0,0449925	0,0218516
goodwill		0,32 $	0,72 $	1,12 $	1,52 $	1,92 $	2,32 $	2,72 $	3,12 $	3,52 $	3,92 $	4,32 $	4,72 $	5,12 $	5,52 $	5,92 $	6,32 $
0,00	0,42 $	8,61 $	12,01 $	15,42 $	18,83 $	22,24 $	25,65 $	29,06 $	32,47 $	35,87 $	39,28 $	42,69 $	46,10 $	49,51 $	52,92 $	56,33 $	59,73 $
0,00	0,57 $	10,57 $	13,98 $	17,39 $	20,79 $	24,20 $	27,61 $	31,02 $	34,43 $	37,84 $	41,25 $	44,65 $	48,06 $	51,47 $	54,88 $	58,29 $	61,70 $
0,00	0,71 $	12,53 $	15,94 $	19,35 $	22,76 $	26,17 $	29,57 $	32,98 $	36,39 $	39,80 $	43,21 $	46,62 $	50,02 $	53,43 $	56,84 $	60,25 $	63,66 $
0,04	0,85 $	14,49 $	17,90 $	21,31 $	24,72 $	28,13 $	31,54 $	34,94 $	38,35 $	41,76 $	45,17 $	48,58 $	51,99 $	55,40 $	58,80 $	62,21 $	65,62 $
0,21	0,99 $	16,46 $	19,86 $	23,27 $	26,68 $	30,09 $	33,50 $	36,91 $	40,32 $	43,72 $	47,13 $	50,54 $	53,95 $	57,36 $	60,77 $	64,18 $	67,58 $
0,73	1,13 $	18,42 $	21,83 $	25,24 $	28,64 $	32,05 $	35,46 $	38,87 $	42,28 $	45,69 $	49,10 $	52,50 $	55,91 $	59,32 $	62,73 $	66,14 $	69,55 $
1,55	1,27 $	20,38 $	23,79 $	27,20 $	30,61 $	34,02 $	37,42 $	40,83 $	44,24 $	47,65 $	51,06 $	54,47 $	57,88 $	61,28 $	64,69 $	68,10 $	71,51 $
1,99	1,41 $	22,34 $	25,75 $	29,16 $	32,57 $	35,98 $	39,39 $	42,80 $	46,20 $	49,61 $	53,02 $	56,43 $	59,84 $	63,25 $	66,66 $	70,06 $	73,47 $
1,55	1,55 $	24,31 $	27,72 $	31,12 $	34,53 $	37,94 $	41,35 $	44,76 $	48,17 $	51,58 $	54,98 $	58,39 $	61,80 $	65,21 $	68,62 $	72,03 $	75,43 $
0,73	1,70 $	26,27 $	29,68 $	33,09 $	36,50 $	39,90 $	43,31 $	46,72 $	50,13 $	53,54 $	56,95 $	60,35 $	63,76 $	67,17 $	70,58 $	73,99 $	77,40 $
0,21	1,84 $	28,23 $	31,64 $	35,05 $	38,46 $	41,87 $	45,27 $	48,68 $	52,09 $	55,50 $	58,91 $	62,32 $	65,73 $	69,13 $	72,54 $	75,95 $	79,36 $
0,04	1,98 $	30,19 $	33,60 $	37,01 $	40,42 $	43,83 $	47,24 $	50,65 $	54,05 $	57,46 $	60,87 $	64,28 $	67,69 $	71,10 $	74,51 $	77,91 $	81,32 $
0,00	2,12 $	32,16 $	35,57 $	38,97 $	42,38 $	45,79 $	49,20 $	52,61 $	56,02 $	59,43 $	62,83 $	66,24 $	69,65 $	73,06 $	76,47 $	79,88 $	83,29 $
0,00	2,26 $	34,12 $	37,53 $	40,94 $	44,35 $	47,75 $	51,16 $	54,57 $	57,98 $	61,39 $	64,80 $	68,21 $	71,61 $	75,02 $	78,43 $	81,84 $	85,25 $
0,00	2,40 $	36,08 $	39,49 $	42,90 $	46,31 $	49,72 $	53,13 $	56,53 $	59,94 $	63,35 $	66,76 $	70,17 $	73,58 $	76,99 $	80,39 $	83,80 $	87,21 $
0,00	2,54 $	38,05 $	41,45 $	44,86 $	48,27 $	51,68 $	55,09 $	58,50 $	61,91 $	65,31 $	68,72 $	72,13 $	75,54 $	78,95 $	82,36 $	85,76 $	89,17 $
0,00	2,69 $	40,01 $	43,42 $	46,83 $	50,23 $	53,64 $	57,05 $	60,46 $	63,87 $	67,28 $	70,68 $	74,09 $	77,50 $	80,91 $	84,32 $	87,73 $	91,14 $

Figure 16 Acceptable ranges analytically normalized with 75% quantiles and an adjustment for economic variables

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