



Tesco plc (LSE: TSCO)

Every Little Helps.

9th May 2021



Retail Sector, Groceries, Consumer goods

Buy ▲ Target price – 300 GBP per share

Market Data	TSCO:LSE
Closing Price (GBP)	225.9
Shares O/S (B)	7.73
Market Cap. (GBP B)	17.59
P / E Ratio (LTM)	26.54
Enterprise Value (GBP B)	29.22
EV / EBITDA (LTM)	9.44
52 WEEK RANGE	201.71 - 250.23
PEGY Ratio (mrq)	0.7561
% Held by Insiders	2.23%
% Held by Institutions	63.46%

Financial Data	2016	2017	2018	2019	2020
Rev. Growth	4%	4%	12%	-10%	1%
Gross Margin	5.35%	5.59%	4.02%	3.91%	6.62%
EBITDA Margin	7%	7%	7%	5%	5%
EPS	3.35	3.47	3.28	2.93	2.95
ROE	1.96%	7.15%	6.62%	6.27%	9.00%
Debt / Equity	0.74	0.51	1.31	0.89	0.93

Valuation Results	
Valuation Date:	May 9, 2021
12-Month Target Price	300
Cost of Equity	6%
Implied Share Price	282.00
Annual Dividend	22.29

EXECUTIVE SUMMARY

Tesco (LSE TSCO) is a British multinational corporation and the largest retailer in the UK. Founded in 1924, the first store appeared in 1929 in the suburbs of London. One of the reasons for the success of this company is that it is one of the first (if not the first) to apply new retail technologies. A joint venture with Royal Bank of Scotland in the late 90s, the introduction of loyalty cards in 95, online advertising, and the takeover of other supermarkets have put Tesco ahead of the game since the 90s.

Investment Recommendation

We issue a **BUY** recommendation on Tesco with a 12-month target price of £300.00 of a share with a projected total return of 35% from its May 7th, 2021 closing price of £225.9. Our target price is calculated by (1) the found market underappreciation of the management of the company and (2) the forecasted stock price using 100,000 Monte Carlo Simulations (it is more than 300,000 if undocumented simulations are counted).

Investment rationale and Financial overview

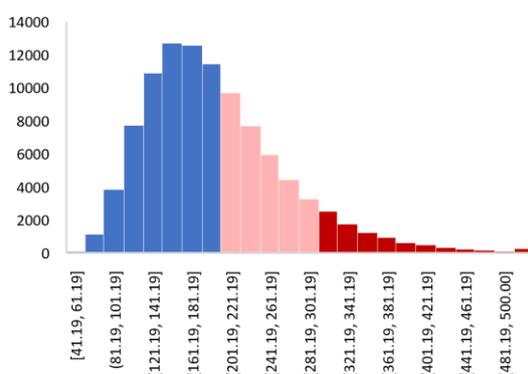
Even though the EPS is declining, the efficiency of use and the rate of circulation of assets is growing, and the marginality in 2021 became a record for a long time. In addition, dividends are getting higher year after year (now, the Annual dividends return is 4.43%). Moreover, even in spite of the growth of debt, the Debt/Equity ratio is stable (< 1). Furthermore, the decision of selling some of its divisions (Malaysia and Thailand) and maximizing the automatization in its properties had a positive impact on a financial stability of a company (an increase of all types of marginality during and after the Covid-19 pandemic). After determining the potential for positive growth in revenue as well as net income allocated to dividends and capital investments, while evaluating the corresponding impact of investment risks on the valuation, we came to a **BUY** recommendation.

- **Stable Industry Outlook**, based on an analysis of the drivers in the retail sector, including housing starts, the unemployment rate, and household disposable income in United Kingdom
- **Current Undervaluation**, based on the results of the analyses of the company strategy and the technical analysis of Tesco stock price.
- **Investment Risks**, including business and social, market, and other risks that were assessed for impact and likelihood and subsequently ranked in a risk matrix.
- The analysis of the Monte Carlo simulations shows: 68% of the simulations show the price higher than the current (Figure 1), 24% of the simulations show the price higher than the target.

Figure 2: Historical Share Price Chart: TSCO



Figure 1: Normal Distribution of the Monte Carlo Simulation: TSCO



BUSINESS DESCRIPTION

Tesco (LSE: TSCO) is a British multinational corporation and the largest retail chain in the UK. The headquarters is in Welwyn Garden City, Hertfordshire. Founded in 1924; the first store under this brand appeared in 1929 in the suburbs of London. Tesco is the largest retailer in the UK and the third largest in the world. [https://www.economist.com/britain/2005/08/04/this-sceptered-aisle], operates 2,700 shopping centers selling food and industrial goods. Used trade formats - hypermarket, supermarket, convenience store, etc.

Overview



Tesco Extra. Large, mostly suburban hypermarkets that represent almost all types of Tesco products, although some of them are located in the very center of the city and in the city center. Tesco Extra England's largest store is in Walkden, with 17,230 square meters (185,500 square feet)



Tesco Superstore. Tesco supermarkets are standard large supermarkets that sell groceries and a much smaller range of non-food items than Extra hypermarkets. Stores have always had the Tesco brand, but the new Liverpool store was the first to use the Tesco Superstore format brand over the door. Tesco operates a number of in-store cafes, but since 2013 has also begun opening new restaurants in its stores under the Decks Carvery brand.



Tesco Metro. Tesco Metro's personal pages range in size from Tesco supermarkets to Tesco Express stores, with an average store area of 1,000 square meters (11,000 square feet). They are mainly located in city centers, close to railway stations, city centers and central city streets.



Tesco Express. Tesco Express sites are convenience stores with an average of 200 square meters (2,200 square feet), mostly selling higher-margin foods such as sweets, chips, chocolates, cookies, sodas and convenience foods (convenience foods). - for the small size of the store and the need to maximize per square foot) along with the essentials. They are in busy city centers, shopping malls in residential areas, small towns and villages, and in the foregrounds of Esso gas stations.



Fuel stations. Tesco first started selling gasoline in 1974. Tesco sells fuel with RON 95, 97 and 99 (fuel developed by Greenergy, whose shareholder is Tesco). In 1998 Tesco and Esso (part of Exxonmobil) formed a business alliance that included several petrol stations rented from Esso, with Tesco operating adjacent Express stores. In turn, Esso operates the forecourts and sells fuel through the Tesco store. [67] As of 2013, there were 200 joint Tesco Express / Esso sites in the UK.



Tesco.com. In the United Kingdom, Tesco operates a home shopper service through the Tesco.com website. In May 1984, in Gateshead, England, Mrs. Jane Snowball used computer technology called Videotex on her television to purchase groceries from a local Tesco store in the world's first recorded online home shopping transaction. Since 2006, Tesco has operated a number of online grocery stores that specialize in fulfilling online grocery orders.



Loyalty card. Tesco launched its customer loyalty scheme, the Tesco Club Card, in 1995. Cardholders can earn one Club Card point for every £ 1 (or one point for € 1 in Ireland and Slovakia, or 1 point for PLN 1 in Poland) they spend at a Tesco store or Tesco.com, and 1 point for £ 2 for fuel. Customers can also collect points by paying with a Tesco credit card. Besides shopping at Tesco, Club Points can also be converted to Avios and Virgin Atlantic miles. summer passengers.



One Stop. Includes some of the smallest stores (smaller than Tesco Express), until 2018 the only Tesco store format in the UK that did not have the word Tesco in its name. Brand, along with original retail stores, was part of the T&S store business, but unlike many that were converted to Tesco Express, they retained their old name. One Stop's pricing strategy is to match its closest competitor, Costcutter, or even be cheaper.

Affiliated companies



Tesco Bank. In the United Kingdom, Tesco offers financial services through Tesco Bank, previously a 50:50 joint venture with the Royal Bank of Scotland. Products on offer include credit cards, loans, mortgages, savings accounts, and several types of insurance including car, home, life and travel. They are advertised in flyers in Tesco stores and through its website. In the 52 weeks to 24 February 2007, the company generated a profit of £ 130 million, of which Tesco's share was £ 66 million. This move towards the financial sector diversified the Tesco brand and

provided growth opportunities outside the retail sector. On July 28, 2008, Tesco announced that it would buy out Royal Bank of Scotland's 50% stake in the company for £ 950 million.



Tesco mobile. Tesco operates mobile phone businesses in the United Kingdom, Ireland, Slovakia, Hungary and the Czech Republic. It was first launched in the UK in 2003 as a joint venture with O2 and operates as a Mobile Virtual Network Operator (MVNO) using the O2 network, with the exception of Hungary, which uses the Vodafone Hungary network, and Ireland, which uses the Three Ireland. As a virtual operator, Tesco Mobile does not own or operate its own network infrastructure. By January 2011, Tesco announced that it had over 2.5 million UK mobile customers.



F&F In 2001, Tesco opened the first fashion stores in the UK and Ireland. Above average quality, focusing on the latest fashion trends have made this brand popular. The clothes of the brand are distinguished not only by their own style, but also by a suitable price-quality ratio. It is often emphasized that this is a popular everyday English fashion. TM F&F sponsored the London Fashion Week, which earned a lot of rave reviews, including the famous VOGUE magazine. The clothes are made for women, men and children.



Jack's. In 2018, Tesco launched a separate budget chain, Jack's, to compete with Lidl and Aldi; the first store opened in Chatteris, Cambridgeshire in September 2018.



Booker Group. Tesco completed its acquisition of wholesale food supplier Booker in March 2018. Booker also owns the brands Budgens, Londis, Euro Shopper and Premier Stores, which operate under franchises.

Figure 3: Sales

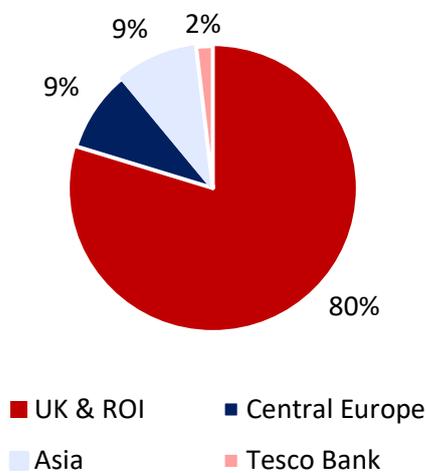


Figure 4: EBITDA

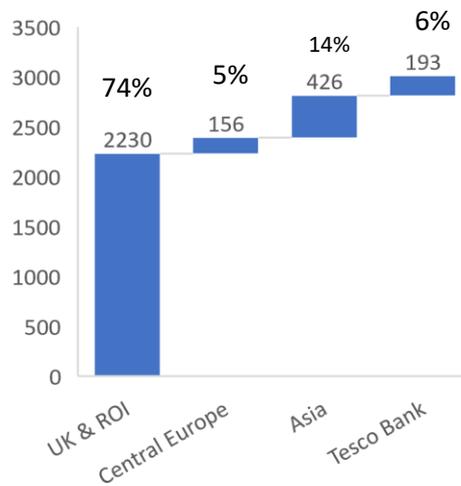
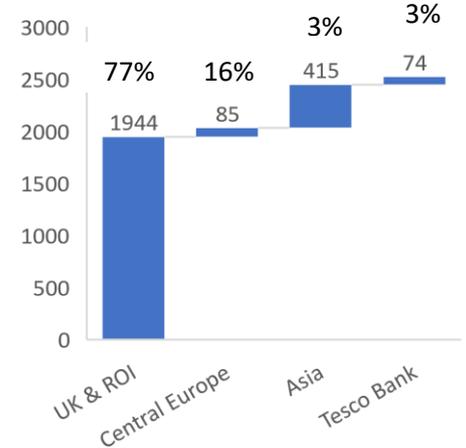


Figure 5: Group operating profit/(loss)

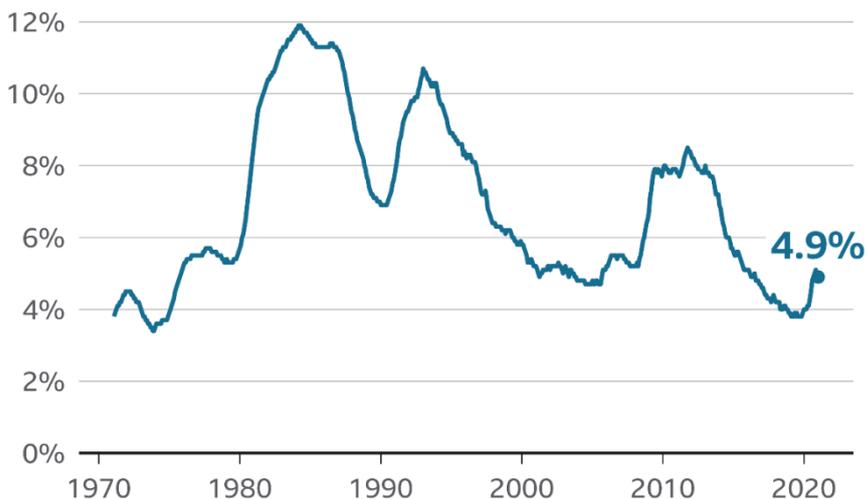


INDUSTRY OVERVIEW & COMPETITIVE POSITIONING

Figure 6:

UK unemployment rate at 4.9%

Dec 2020 to Feb 2021, percentage of economically active people aged over 16 who are unemployed



Tesco operates in numerous retail subsectors through the following fields:

- Tesco stores - retail trade in food and industrial goods.
- F&F - trade in clothing of its own style for women, men and children.
- Tesco Bank - Offers financial services (loans, credit cards, mortgages, savings accounts and several types of insurance)
- One Stop is a separate business within the Tesco Group, with its own supply chain and distribution network.
- Tesco.com - a home shopping online shopping service in the United Kingdom

Demand drivers

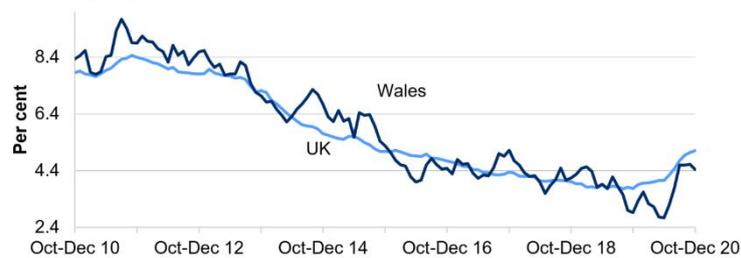
The foundation of success. The Club Card project was classified. To maintain this status, the company's team was located in a separate office in a quiet and inconspicuous city. For 3 months they worked day and night to create an effective loyalty program. Before introducing the Club Card, Tesco's team of specialists launched a pilot project to determine how buyers would react to this innovation. In 1993, the project was launched in 3 stores, and by 1994 it expanded to 11 outlets.

Project results: 80% of sales in participating stores were made with the "Club Card". Based on the results of the experiment, the board of directors decided to launch a loyalty program at the national level, expanding it to all chain stores without exception. All information about purchases fell into the client's personal profile. A powerful analytics system based on this data made it possible to create a clear portrait of the buyer and personalize communication with him. Having successfully implemented a project called "Club Card", Tesco continued to build momentum and launched, I'm not afraid of this word, revolutionary services on the market. As a result, Tesco became an innovator, stood out favorably against the background of competitors and achieved its main goal of "lifelong loyalty" of its customers.

Unemployment Rate Stable Nationally, Expected to Decline.

Figure 7:

Unemployment rate

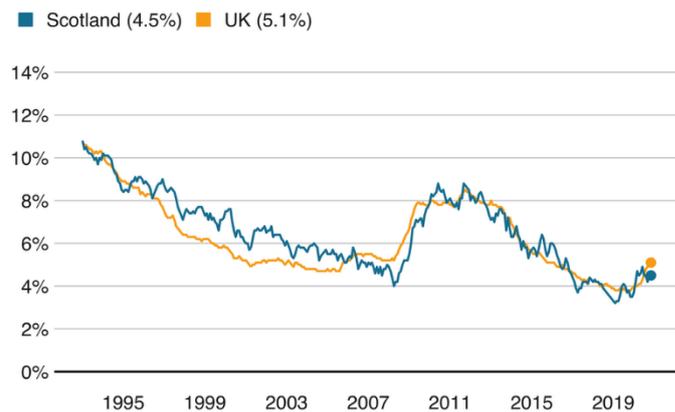


Source: Welsh Government analysis of Labour Force Survey

Figure 8:

Scotland unemployment rate

Percentage of population aged over 16 not in work



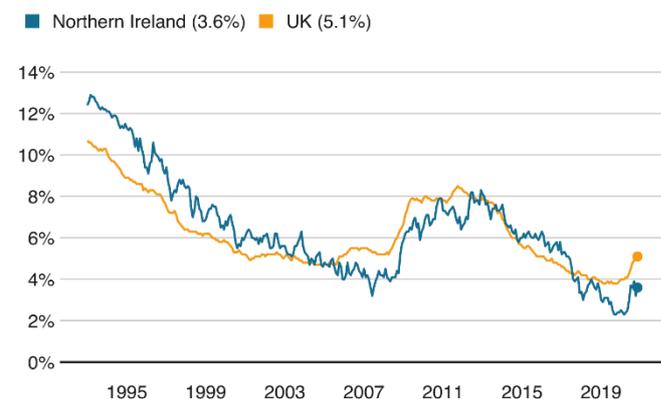
Source: Office for National Statistics

BBC

Figure 9:

Northern Ireland unemployment rate

Percentage of population aged over 16 not in work



Source: Office for National Statistics

BBC

Latest data from the Office for National Statistics give some sense of the jobs market last year: Scottish unemployment up 26,000 and those in work down 43,000. By year's end, the jobless rate was 4.5%: the UK, 5.1%.

The number claiming benefit because of no or low pay is 83% - up on January last year, and a higher rate than the UK. Unemployment is set to rise when furlough is withdrawn, although with business restrictions continuing well into summer, it is expected the Westminster budget next week will see furlough extended. UK: The UK unemployment rate was 5.1%. This is 0.4 percentage points up on the quarter and 1.3 percentage points up on the year. This is the largest annual increase in the unemployment rate since October to December 2009.

The UK unemployment rate fell for the second month in a row to 4.9 percent in the three months to February, a period when the country was under a tight COVID lockdown. The rate came in also below market consensus of 5.1 percent, supported by the government's furlough scheme, which was extended last month until the end of September. The number of unemployed people was down by 50,000 to 1.67 million, the first decrease since October to December 2019, while employment levels dropped by 73,000 to 32.43 million, less than the market consensus of a 150,000 decline. Meanwhile, employment was sharply down by 643,000 compared to the same period last year, the largest annual decrease since May to July 2009. Also, the number of employees on company payrolls fell by 56,000 between February and March, pushing up the total number of jobs lost since the coronavirus outbreak to 813,000. source: Office for National Statistics

Metamarketing at Tesco. A year after the launch of the club card, Tesco decided to modernize and improve this project. The idea for innovation came from the customers themselves: with the help of the card, they wanted not only to accumulate points, but also to be able to pay for their purchases. As a result, over the years, the club card has evolved from a simple points-earning card into the huge

Tesco Personal Finance program and Tesco Bank. Each program participant received a Tesco Visa card that could be used to pay anywhere in the world. In addition, Tesco offered favorable conditions for deposits (annual interest rate of 16.9%) and low loan rates. Also, each completed transaction gave the user additional points.

In the first months, the results of the introduction of new cards exceeded all expectations. The divisions of the company that were responsible for processing applications for obtaining a card could not cope with the flow of everyone. Agree, the results are impressive.

Tesco has succeeded in realizing both its winnings and that of the consumer. Buyers received additional privileges and services. The company, in turn, received loans from its own clients. From now on, buyers paid Tesco for an item they hadn't even bought yet.

Tesco finds what its target audience needs, implements it and sells it to customers. Thus, it still remains the largest retailer in the UK.

Increasing Direct Marketing Impact. Tesco began to create clubs in which it gathered a target audience of interests. For example, one of the clubs was a children's club, which brought together pregnant women and mothers with children under 5 years old. Work with this segment of consumers was built largely through magazines.

Any mother is always looking for information on how to properly care for a child, what is useful for him to eat, etc. They are interested in both expert advice (for example, pediatricians) and the experience of other mothers. In its magazine, Tesco offered mothers articles with solutions to issues that interested them. They did not perceive these materials as advertising, they saw useful advice in them. And even a direct reference in such an article to some manufacturer was not perceived as advertising.

In such a presentation, the number of consumers who will refuse your communication will be extremely low. On the contrary, they will eagerly consume it, share it with others, tell what a wonderful Tesco supermarket is and, of course, buy your product.

When solving a problem, Tesco finds solutions that benefit the consumer. In turn, the consumer buys goods from Tesco, "thanks" the company.

Return to duty

After the peak of the crisis in 2014, Tesco developed a new strategy to restore customer reputation and returned to service in 2016. Several factors are responsible for the recovery of the network.

First, Tesco has changed its attitude towards lower prices in supermarkets. Unlike Philip Clarke, who sharply reduced the prices of food by 30%, Dave Lewis has developed a program to gradually reduce prices for major categories of goods by 4% over two years.

Second, following the success of Whole Foods in the United States, Tesco has significantly expanded the chain's range of farm products, which has received a great response from customers. The retailer has launched a private label Exclusively at Tesco, under which it produces natural products from reliable manufacturers and suppliers.

Tesco also produces ready-made meals from farm products under its own brand. If earlier the retailer set its main task to compete with discounters, now it has reoriented itself to the quality of goods.

Thirdly, the marketing policy has changed. While Tesco previously invested more in TV advertising, in the past two years the company has begun to give preference to online advertising and interaction with online audiences, which has yielded positive results.

Competitive positioning



Tesco and Asda. In terms of prices, the product is cheaper at Asda, which would make you think the company will win over Tesco. However, in some way Tesco is still ahead of its competitor. Back in 2012, according to Kantar, Tesco's market share was 30.2%, while Asda's was only 17.9%. Even after the crisis, in 2016, the first company exaggerated its share by 1.6%, while the second lost 4.7%. The point is that Tesco, unlike Asda, has customer service, loyalty points, and online ordering flexibility. Thus, because of convenience, Tesco stores outperform their competitor.

Tesco and Sainsbury. In contrast to the previous confrontation, the situation is reversed in this. Sainsbury sells better quality and more expensive items. Interestingly, Sainsbury was planning a merger with Asda to outplay its main competitor Tesco, but the plan was blocked by the UK Competition and Markets Authority due to concerns that the deal could hurt millions of buyers. We would also like to mention that Sainsbury has no stores outside the UK. Thus, they receive much less profit and development.



Tesco and Aldi. Not so long ago, such a player appeared on the market as Aldi, a German chain of discounters (low-price retail outlets). Tesco's new competitor began to quickly win over customers. They were impressed by the low price of the goods offered to them. Tesco, which was improving the quality of its products at the time to be considered a more upmarket store, began to lose ground. Everyone was talking about the retailer losing its former greatness.

In 2018, the Jack's chain of stores appears - the budget chain Tesco, where instead of 35,000, only 3,600 lines were sold, but of a cheaper product. As a result, at the opening, prices in Jack's were lower than in Aldi. The competition between store chains continues. But no one can argue that Tesco has fought back against German discounters.

Figure 10: Leading 10 retailers based on sales in the United Kingdom (UK) (B GBP)

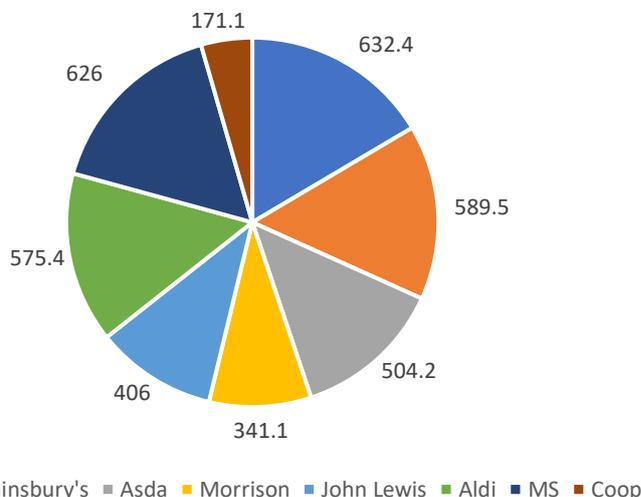


INVESTMENT SUMMARY

We issue a **BUY** recommendation on Tesco with a 12-month target price of £300.00 of a share with a projected total return of 35% from its May 7th, 2021 closing price of £225.9. Including an annual dividend forecasted at £22.29.

Iconic UK Brand

Figure 10: Twitter Follower Base



Tesco has the most responsible brand and the most followed Retailer's profiles in Social Media.

Strategic Mix of Different types of sizes of Stores

Such a huge set of sizes and shapes of stores makes it easy to adapt to the necessary conditions, while maintaining the strength of the brand and recognition for customers.

Value Opportunity Due to the closed US and Asia branches

The largest retailer Tesco has sold 2,000 Tesco Lotus outlets to the Thai conglomerate CP Group in Thailand and Malaysia for \$ 10.6 billion [<https://www.bbc.com/news/business-51796815>]. CEO Dave Lewis said the sale would allow Tesco to "further simplify and focus" its business. The retailer added that the sale would also reduce debt and simplify the group's work, allowing a "greater focus" on operations in the UK, Ireland and Central Europe.

Interestingly, after the sale, Tesco's shares jumped instantly. Prior to that, Tesco completely left China, selling its 20% stake in Gain Land for \$ 357 million [Retailer.ru]. Thus, Tesco's strategy was aimed at the British market.

VALUATION

	Tesco	Sainsbury's (as an average competitor)
Market Cap (intraday) ⁵	17.59	
Enterprise Value ³	29.22	
Trailing P/E	2.82	
Price/Sales (ttm)	0.3	
Price/Book (mrq)	138.47	
Enterprise Value/Revenue ³	0.5	
Enterprise Value/EBITDA ⁷	9.44	
Return on Assets (ttm)	2.66%	
Return on Equity (ttm)	5.61%	
Quarterly Earnings Growth (yoy)	778.40%	-
Levered Free Cash Flow (ttm)	1220	

INVESTMENT RISKS

Political risks:

1. increasing government efforts to regulate the market

Valuation impact: the need for more participation in various lobbies and associations

2. government support of competitors: convenience stores, discounters, social stores

Valuation impact: possible outflow of consumers

Mitigant: it is necessary to have a clear idea of the intentions of public authorities in relation to the development of society and the means by which the state intends to implement its policy. You can find business opportunities if you know: what programs the various party structures are trying to implement; what changes in legislation and legal regulation are possible as a result of the adoption of new laws and regulations governing economic processes. As the retail company operates globally, global political factors greatly influence tesco's performance. These include tax rates, legislation and, of course, the stability of the country in which it operates. Due to the ongoing financial instability around the world, many governments are encouraging retailers to create jobs for the local population. As tesco plays its role in creating job opportunities, it also in turn increases the demand for its products and diversifies its workforce.

Economic risks:

1. leaving the market for small retailers

Valuation impact: an increase in the end-user market, a decrease in the professional buyer market.

2. Strengthening competitors: convenience stores, discounters, social stores

Valuation impact: possible outflow of end users

3. inflation growth

Valuation impact: increased demand for durable goods, purchases of durable goods

4. Dynamics of exchange rates

Valuation impact: decreased demand for imported goods

5. deficiency of working capital

Valuation impact: presumably a forced reduction in inventory, curtailment of credit programs, refusal of suppliers that do not provide deferrals

Mitigant: These factors are a major concern for tesco as they are likely to influence costs, demand, margins and prices. One of the most influential factors in the economy is high unemployment, which reduces effective demand for many goods, negatively affecting the demand for the production of such goods.

These economic factors are largely outside the control of the company, but their impact on performance and marketing can be profound. While international business continues to grow and is expected to contribute more to tesco's profits over the next few years, the company remains highly dependent on the UK market. As such, tesco will be hit hard by any slowdown in the UK food market and will be exposed to market concentration risks.

Social risks:

1. decrease in real incomes of the population

Valuation impact: discrepancy between traditional assortment and changing demand structure

2. the decline in real incomes of the middle class

Valuation impact: a shift in demand towards shopping in economy class stores to the detriment of quality and service issues

Mitigant: Current trends indicate that UK customers have shifted towards "one-stop" and "mass" shopping due to various social changes. Thus, tesco has increased the number of non-food items available for sale.

Demographic changes such as an aging population, an increase in the number of women employed and a decline in home cooking mean that UK retailers are also focusing on value-added products and services. In addition, the current focus is on increasing the share of proprietary brands in the business structure, supply chain and other operational improvements that can reduce business costs. National retailers are increasingly reticent about new suppliers (clarke, bennison and guy, 1994; datamonitor, 2003).

The type of goods and services demanded by consumers is a function of their social conditioning and the attitudes and beliefs arising from it. Consumers are becoming more and more aware of health problems and their attitudes towards food are constantly changing. One example of adapting tesco's product portfolio is to meet the increased demand for organic products. The company was also the first to allow customers to pay by check and cash at the checkout.

Technological risks:

1. the widespread adoption of retail automation tools

Valuation impact: Automated retailers gain a cost advantage hence price competition from other retailers

Mitigant: Technology is a critical macro-environment variable that has influenced the development of many tesco products. New technologies benefit both customers and the company: customer satisfaction rises as products are readily available, services can become more personalized, and purchases can be more convenient. The launch of the Effective Consumer Response (ecr) initiative has provided a shift that is now evident in food supply chain management. Tesco stores use the following technologies:

The introduction of electronic point of sale (epos), electronic money transfer systems (eftpos) and electronic scanners has significantly increased the efficiency of distribution and storage activities, with needs communicated to the supplier in near real time (finch, 2004).

Appendix A: Five-year Record

	2016	2017	2018 (restated) ^(a)	2019 (restated) ^(b)	2020 ^(c)
Financial statistics (£m)					
Sales ^Δ					
UK & ROI	37 189	37 692	38 656	44 883	45 752
Central Europe	5 268	5 977	6 343	6 030	5 332
Asia	4 447	5 186	4 947	4 873	5 218
Tesco Bank	955	1 012	1 047	1 097	1 068
Group sales^(e)	47 859	49 867	50 993	56 883	57 370
Revenue					
UK & ROI	43 080	43 524	44 914	51 643	52 898
Central Europe	5 451	6 195	6 585	6 298	5 576
Asia	4 447	5 186	4 947	4 873	5 218
Tesco Bank	955	1 012	1 047	1 097	1 068
Group revenue	53 933	55 917	57 493	63 911	64 760
Operating profit/(loss) before exceptional items and amortisation of acquired intangibles^{Δ(e)}					
UK & ROI	503	803	1 059	1 868	2 230
Central Europe	102	58	119	221	156
Asia	218	262	299	319	426
Tesco Bank	162	157	169	199	193
Group operating profit/(loss) before exceptional items and amortisation of acquired intangibles^{Δ(e)}	985	1 280	1 646	2 607	3 005
Operating profit margin before exceptional items and amortisation of acquired intangibles^Δ	1.8%	2.3%	2.9%	4.1%	4.6%
Operating profit/(loss)					
UK & ROI	597	519	1 205	1 949	1 944
Central Europe	111	190	212	279	85
Asia	203	231	277	252	415
Tesco Bank	161	77	145	169	74
Group operating profit/(loss)	1 072	1 017	1 839	2 649	2 518
Share of post-tax profits/(losses) of joint ventures and associates	(21)	(107)	(6)	32	18
Net finance costs	(849)	(765)	(533)	(1 064)	(1 221)
Profit/(loss) before tax	202	145	1 300	1 617	1 315
Taxation	54	(87)	(306)	(347)	(380)
Profit/(loss) for the year from continuing operations	256	58	994	(1 270)	935
Discontinued operations	(127)	(112)	216	-	38
Profit/(loss) for the year	129	(54)	1 210	1 270	973
Attributable to:					
Owners of the parent	138	(40)	1 208	1 272	971
Non-controlling interests	(9)	(14)	2	(2)	2
Profit before tax, exceptional items and amortisation of acquired intangibles, net pension finance costs and fair value remeasurements of financial instruments^{Δ(e)}	509	781	1 284	1 806	2 276
Other financial statistics					
Group retail statistics					
Number of stores ^(f)	6 733	6 809	7 033	6 993	7 005
Total sales area ('000 sq. ft.) ^(f)	91 195	89 041	92 983	91 298	87 552
Average employees	475 399	464 520	448 988	464 505	423 092
Average full-time equivalent employees (FTE)	351 289	342 770	327 916	321 490	293 963
UK & ROI Retail statistics					
Number of stores ^(f)	3 743	3 739	3 952	3 961	3 968
Total sales area ('000 sq. ft.) ^(f)	45 253	43 610	42 032	50 521	50 401
Average full-time equivalent employees (FTE)	225 378	218 522	210 312	223 542	210 768

Revenue (exc. fuel) (per FTE – £)	165 007	172 486	183 804	200 781	217 073
Weekly revenue (exc. fuel) (per sq. ft. – £)	15.68	16.31	17.36	18.65	17.11

Appendix B: Group Income Statement

		53 weeks ended 29 Feb. 20		
	Notes	Before exceptional items and amortisation of acquired intangibles £m	Exceptional items and amortisation of acquired intangibles (Note 4) £m	Total £m
Continuing operations				
Revenue	2	64 760	–	64 760
Cost of sales		(59 871)	(309)	(60 180)
Gross profit/(loss)		4 889	(309)	4 580
Administrative expenses		(1 884)	(178)	(2 062)
Operating profit/(loss)		3 005	(487)	2 518
Share of post-tax profits/(losses) of joint ventures and associates	14	26	(8)	18
Finance income	5	23	–	23
Finance costs	5	(1 093)	(151)	(1 244)
Profit/(loss) before tax		1 961	(646)	1 315
Taxation	6	(433)	53	(380)
Profit/(loss) for the year from continuing operations		1 528	(593)	935
Discontinued operations				
Profit/(loss) for the year from discontinued operations	7	-	38	38
Profit/(loss) for the year		1 528	(555)	973
Attributable to:				
Owners of the parent		1 526	(555)	971
Non-controlling interests		2	–	2
		1 528	(555)	973

Appendix C: Group Balance Sheet

	Notes	29 February 2020 £m	23 February 2019 (*restated) £m	25 February 2018 (*restated) £m
Non-current assets				
Goodwill and other intangible assets	10	6 119	6 264	2 661
Property, plant and equipment	11	19 234	19 186	18 712
Right of use assets	12	6 874	7 713	7 527
Investment property	13	26	36	100
Investments in joint ventures and associates	14	307	602	597
Financial assets at fair value through other comprehensive income	16	866	979	860
Trade and other receivables	18	166	243	217
Loans and advances to customers and banks	19	4 171	7 868	6 885
Derivative financial instruments	25	1 083	1 178	1 117
Deferred tax assets	6	292	251	401
		39 138	44 320	39 077
Current assets				

Financial assets at fair value through other comprehensive income	16	202	67	68
Inventories	17	2 433	2 617	2 264
Trade and other receivables	18	1 396	1 550	1 415
Loans and advances to customers and banks	19	4 280	4 882	4 637
Derivative financial instruments	25	63	52	27
Current tax assets		21	6	12
Short-term investments	20	1 076	390	1 029
Cash and cash equivalents	20	3 408	2 916	4 059
		12 879	12 480	13 511
Assets classified as held for sale	7	285	98	149
		13 164	12 578	13 660
Current liabilities				
Trade and other payables	21	-8 922	-9 131	-8 773
Borrowings	23	-1 490	-1 563	-1 467
Lease liabilities	12	(598)	(646)	(712)
Derivative financial instruments	25	(61)	(250)	(69)
Customer deposits and deposits from banks	26	-6 377	-8 832	-7 812
Current tax liabilities		(324)	(325)	(335)
Provisions	27	(155)	(226)	(416)
		-17 927	-20 973	-19 584
Net current liabilities		-4 763	-8 395	-5 924
Non-current liabilities				
Trade and other payables	21	(170)	(365)	(364)
Borrowings	23	-6 005	-5 580	-7 032
Lease liabilities	12	-8 968	-9 859	-9 560
Derivative financial instruments	25	(887)	(389)	(594)
Customer deposits and deposits from banks	26	-1 830	-3 296	-2 972
Post-employment benefit obligations	29	-3 085	-2 808	-3 282
Deferred tax liabilities	6	(40)	(49)	(82)
Provisions	27	(137)	(147)	(129)
		-21 122	-22 493	-24 015
Net assets		13 253	13 432	9 138
Equity				
Share capital	30	490	490	410
Share premium		5 165	5 165	5 107
All other reserves		3 658	3 770	717
Retained earnings		3 962	4 031	2 926
Equity attributable to owners of the parent		13 275	13 456	9 160
Non-controlling interests		(22)	(24)	(22)
Total equity		13 253	13 432	9 138

Appendix D: Monte Carlo Simulation

```
import pandas_datareader.data as web
import pandas as pd
import datetime as dt
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import style

style.use('ggplot')
```

```

start = dt.datetime(2017, 1, 3)
end = dt.datetime(2021, 5, 21)
ticker = 'TSCO'
prices = web.DataReader(ticker, 'yahoo', start, end) ['Close']
returns = prices.pct_change()

last_price = prices[-1]

# Number of Simulations
num_simulations = 100000
num_days = 365

simulation_df = pd.DataFrame()

for x in range(num_simulations):
    count = 0
    daily_vol = returns.std()
    # print(daily_vol)
    price_series = []

    price = last_price * (1 + np.random.normal(0, daily_vol))
    price_series.append(price)

    for y in range(num_days):
        if count == 365:
            break
        price = price_series[count] * (1 + np.random.normal(0, daily_vol))
        price_series.append(price)
        count += 1
    simulation_df[x] = price_series
    arr = list(price_series)
    with open('MC_all.txt', 'a') as f:
        for item in arr:
            f.write("%s\n" % item)
    print(arr)

fig = plt.figure()
fig.suptitle(f'Monte Carlo Simulation: {ticker}')
plt.plot(simulation_df)
plt.axhline(y=last_price, color='r', linestyle='-')
plt.xlabel('Day')
plt.ylabel('Price')
plt.show()

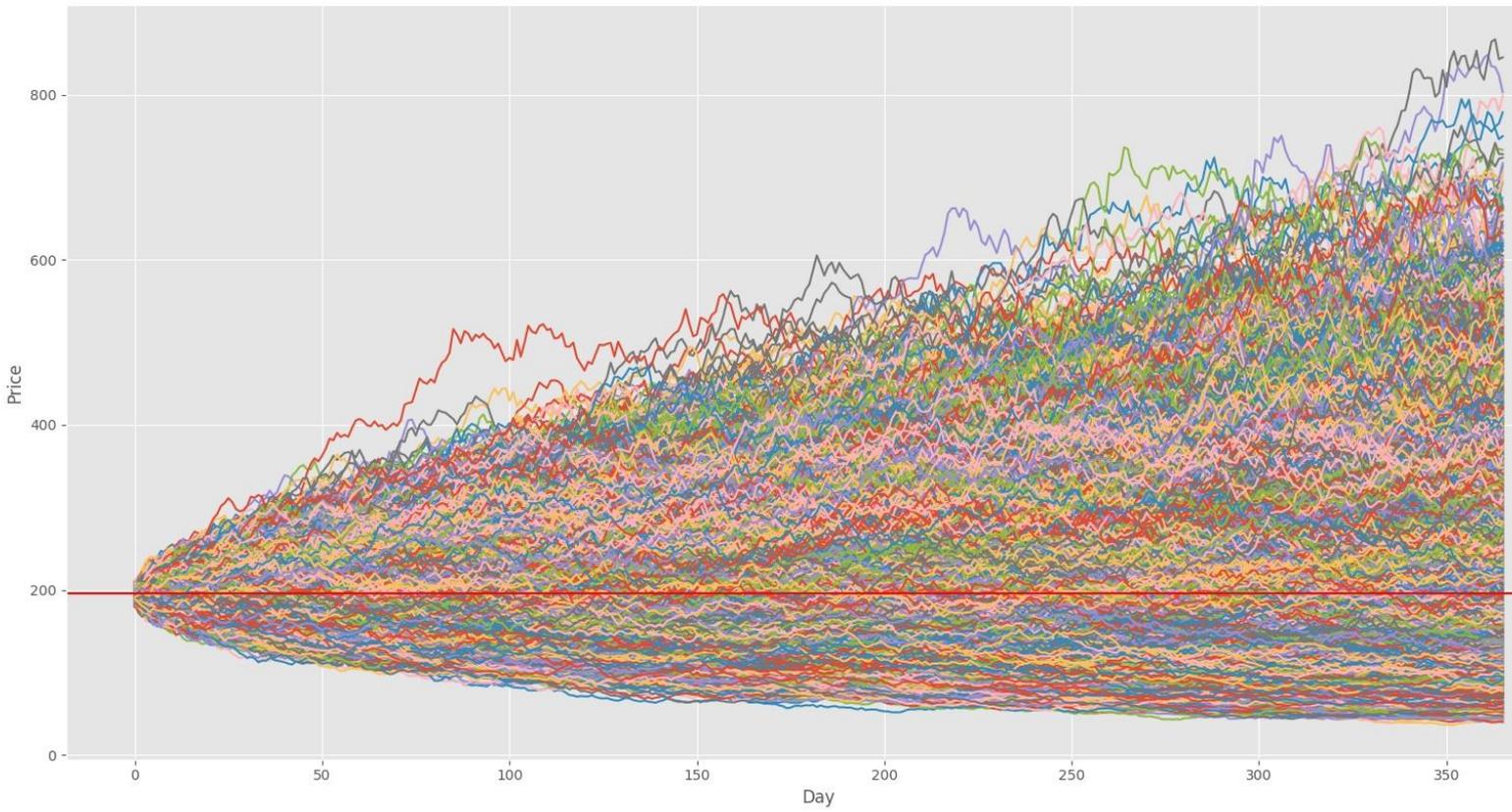
```

Stock price	Density	x - mean	S0	sigma
188.66	0.000000	-6.78	200	0.18
311.38	0.000000	115.94		
231.58	0.000000	36.14		
180.30	0.000000	-15.14	Mean	STD
188.66	0.000000	-6.77	195.43	0.0214098

The screenshot shows an Excel spreadsheet with a formula bar containing `=LOGNORM.DIST(B2;F6;G6;FALSE)`. Below the formula bar is a table with columns B through G. The table contains the following data:

B	C	D	E	F	G
Stock price	Density	x - mean		S0	sigma
188.66	FALSE)	-6.78		200	0.18
311.38	0.000000	115.94			

Monte Carlo Simulation: TSCO



Normal Distribution of the Monte Carlo Simulation: TSCO

