



# Yale SCHOOL OF MANAGEMENT

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### Investment thesis:

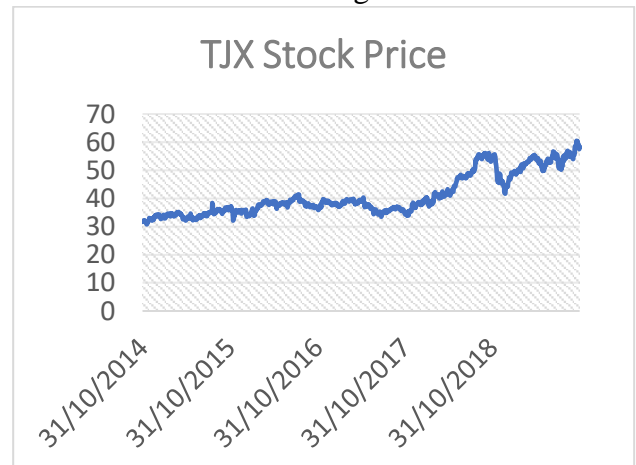
We are giving a hold recommendation for TJX Companies as our implied value for its stock is \$56.26, which would have it almost fairly valued with the current stock price at \$58.01 (3.01% slightly undervalued). We expect revenues to continue to grow, but at a slower pace. Due to our predictions for a weaker global macroeconomic environment, we have adjusted growth in revenues downwards by 1.5% for 2020. We believe this growth will continue to gradually slowdown as TJX Companies slowly start to reach its planned max capacity of around 6000 stores over the next 10 years.

Declines in leading global macroeconomic drivers for the apparel industry include the PMI manufacturing indexes and consumer confidence predicting contraction and consumer confidence is showing signs of an anomaly in sentiment. All locations where TJX Companies has stores are seeing these macroeconomic conditions deteriorate, with all these countries seeing falling PMI and consumer confidence figures. Also, recent employment of US-China trade tariffs will impose an annual cost of \$831 a year on the typical U.S. household. This is almost half of the average amount spent by U.S. households on apparel, which is \$1803. Global PMI manufacturing indices have ranked the apparel industry as the most likely to experience contraction out of all 18 industries surveyed and we, therefore, expect 2020 apparel revenues,

alone, to drop 2% as this is the average drop in revenues for firms ranked this low. We re-adjust revenue growth back up 0.5% to reflect their continued increases in revenue due to firm-specific factors. With recent strong growth in revenues (5.8%-2016, 7.2%-2017, 8.1%-2018 and now 8.7% in 2019) and TJX Companies plans to expand from 4300 to 6000 stores, we believe it's possible for them to maintain this internal growth.

Company Snapshot	
Price (as of 11/01/19)	\$58.01
52 Week Range	\$41.49-\$60.89
Market Cap	\$70.13B
Shares Outstanding	1.2B
Price Target	56.26
Beta	0.84
Implied WACC	4.20%
Enterprise Value	\$56.86B
Implied Equity Value	\$70.26B

Source for data: Bloomberg



Source for data: Bloomberg

## 1. Introduction and Company Overview

The TJX Companies, Inc. is the leading off-price apparel and home fashions retailer in the United States and worldwide. They have over 4,300 stores that offer a rapidly changing assortment of quality, fashionable, brand name and designer merchandise at prices generally 20% to 60% below full-price retailers' regular prices on comparable merchandise. Their stores are known for its value proposition of brand, fashion, price and quality. Their opportunistic buying strategies and flexible business model differentiate them from traditional retailers. Their four major divisions include Marmaxx, HomeGoods, TJX Canada and TJX International, as well as their e-commerce business. See below a brief overview of each division and its performance over the last three years.

### Marmaxx

Marmaxx, which includes T.J. Maxx and Marshalls, is collectively the largest off-price retailer in the United States with a total of 2,343 stores. Marmaxx brings in approximately 62% of TJX Companies revenues. They primarily differentiate T.J. Maxx and Marshalls through different product assortment, including an expanded assortment of fine jewellery and accessories and a high-end designer section called The Runway at T.J. Maxx. Marshalls also has a full line of footwear, a broader men's offering, and a junior's department called The Cube, as well as various in-store initiatives. See a list of all stores and their locations in table 14 in the appendix.

Net sales at Marmaxx in 2019 surpassed \$24 billion and achieved a 7% same-store sales growth, led by increases in customer traffic (up 5% on top of a 3% increase in 2018). Same-store sales were strong throughout all of America, with all stores seeing growth at least above 5%. Sales of its ecommerce business represented approximately 3% of sales.

<b>Marmaxx (In millions)</b>	<b>Fiscal year end Oct 2017</b>	<b>Fiscal year end October 2018</b>	<b>Fiscal year end October 2019</b>
Net Sales	\$21,246.00	\$22,491.10	<b>\$24,058.00</b>
Profit	\$2,995.00	\$2,949.40	<b>\$3,253.90</b>
Profit as a % of sales	14.10%	13.30%	<b>13.50%</b>
Increase in same store sales	5%	1%	<b>7%</b>
<b>Stores in operation at end of period</b>			
T.J Maxx	1,186	1,223	<b>1,252</b>
Marshalls	1,035	1,062	<b>1,091</b>
Sierra	12	27	<b>35</b>
Total	2,233	2,312	<b>2,378</b>

Table 1

Source for data: Bloomberg

### HomeGoods

HomeGoods is the leading off-price retailer of home fashion products in the US. Through its 749 stores, they offer an assortment of home products, including furniture, rugs, lighting, soft home, decorative accessories, tabletop and cookware as well as expanded pet, kids, and

gourmet food departments. In 2017 they launched HomeSense, which complements HomeGoods and they offer a differentiated mix of furniture offerings. See a list of all stores and their locations in table 14 in the appendix.

Net sales in HomeGoods in 2019 grew 13% and achieved a 4% same-store sales growth while opening 94 more stores, including 12 HomeSense stores. This was due to a 5% increase in customer traffic on top of a 4% increase in 2018. However, higher distribution centre costs and higher wage costs as well as costs in connection with investing in new stores, collectively reduced its margins by 1.1% in 2019.

<b>HomeGoods (In millions)</b>	<b>Fiscal year end October 2017</b>	<b>Fiscal year end October 2018</b>	<b>Fiscal year end October 2019</b>
Net Sales	\$4,404.60	\$5,116.30	<b>\$5,787.40</b>
Profit	\$613.80	\$674.50	<b>\$671.90</b>
Profit as a % of sales	13.90%	13.20%	<b>11.60%</b>
Increase in same store sales	6%	4%	<b>4%</b>
<b>Stores in operation at end of period</b>			
HomeGoods	579	667	<b>749</b>
HomeSense	-	4	<b>16</b>
Total	579	671	<b>765</b>

Table 2

Source for data: Bloomberg

## TJX Canada

The TJX Canada segment operates Winners, HomeSense and Marshalls chains in Canada through its 271 stores. Winners is the leading off-price apparel and home fashion retailer in Canada. TJX Canada is comparable to T.J. Maxx, with select offerings of fine jewellery, and The Runway, a designer section. HomeSense has 125 stores with a merchandise mix of home fashions like HomeGoods in the US. See a list of all stores and their locations in table 15 in the appendix.

Net sales in TJX Canada in 2019 grew 6.2% and achieved a 4% same-store sales growth, up due to a 5% increase in customer traffic. The increase in sales for 2019 represents a 2% negative impact from foreign currency translation. Factors for currency translation at TJX Companies have tended to balance out over time.

<b>TJX Canada (In millions)</b>	<b>Fiscal year end October 2017</b>	<b>Fiscal year end October 2018</b>	<b>Fiscal year end October 2019</b>
Net Sales	\$3,171.10	\$3,642.30	<b>\$3,869.80</b>
Profit	\$413.40	\$530.10	<b>\$551.60</b>
Profit as a % of sales	13%	14.60%	<b>14.30%</b>
Increase in same store sales	8%	5%	<b>4%</b>
<b>Stores in operation at end of period</b>			
Winners	255	264	<b>271</b>
HomeSense	106	117	<b>125</b>
Marshalls	57	73	<b>88</b>
Total	418	454	<b>484</b>

Table 3

Source for data: Bloomberg

## TJX International

The TJX International Segment operates the T.K. Maxx and HomeSense chains in Europe and the T.K. Maxx chain in Australia. T.K. Maxx is Europe's largest brick-and-mortar off-price retailer of apparel and home fashions. With 567 stores, T.K. Maxx operates in the U.K., Ireland, Germany, Poland, Austria and the Netherlands. Through its stores and its e-commerce website for the UK, tkmaxx.com, T.K. offers a merchandise mix similar to T.J. Maxx in the US. See a list of all stores and their locations in table 15 in the appendix.

Net sales in TJX International in 2019 grew 8% and achieved a same-stores sales growth of 3%, despite the challenging retail landscape in Europe. There was also a 1% positive impact from currency translation. E-commerce sales represent less than 3% of TJX International's net sales in 2019.

TJX International (In millions)	Fiscal year end October 2017	Fiscal year end October 2018	Fiscal year end October 2019
Net Sales	\$4,362.00	\$4,856.90	<b>\$5,257.80</b>
Profit	\$235.50	\$249.20	<b>\$285.80</b>
Profit as a % of sales	5.40%	5.10%	<b>5.40%</b>
Increase in same store sales	2%	2%	<b>3%</b>
<b>Stores in operation at end of period</b>			
T.K. Maxx	10,787	11,379	<b>11,693</b>
HomeSense	714	883	<b>1,029</b>
T.K. Maxx Australia	667	714	<b>814</b>
Total	12,168	12,976	<b>13,536</b>

Table 4

Source for data: Bloomberg

## E-Commerce business

TJX's E-commerce business is relatively small and revenues from this segment represent approximately 2% of its net sales. While this is quite small, it has seen significant growth with online sales increasing roughly 12% in 2019. In the US., tjmaxx.com, added new categories with well over a thousand new brands. Also, by the end of this year, TJX plans to launch its e-commerce business for Marshalls. Its strategy for Marshalls.com will be to offer a continued mix of differentiated off-price merchandise which should help drive Marshalls incremental sales up 5-10%.

### **3. Macroeconomic Drivers**

With TJX Companies being in a very cyclical industry, we partially used macroeconomic variables to predict future growth. The main way we did this was to try and predict future GDP growth, which tends to move similar to TJX's revenue growth. With approximately 62% of TJX Companies revenue coming from its Marmaxx segment in America, we first tried to predict future US GDP growth rates to closely mimic TJX's future revenue growth rate from its Marmaxx segment. To do this we analysed two major leading economic indicators in the US which have a strong relationship with TJX's future revenue growth: US ISM PMI (Institute for Supply Management, Purchasing Managers Index) Manufacturing Index and UMCSI (University of Michigan Consumer Sentiment Index).

Next, we will give a brief overview of each survey and how we use them to help predict the future trend in TJX Companies revenue.

#### **US ISM PMI Manufacturing Index**

This is a survey which is used to summarize whether market conditions are expected to expand, contract or stay neutral. Data from the most recent reports over the last year shows that future expectations have declined, with the last three readings below the 50-threshold level (August-49.1, September-47.8, October-48.3). It's also interesting to note that September's 2019 PMI figure was the lowest reading in the last decade. This is also the first time in the last decade with readings below 50 for 3 months in a row. This, to us, means that supply chain managers are very pessimistic and that future contraction in US manufacturing is very likely. The apparel industry is the top ranked industry predicted to see contraction this year, so this index predicts it to perform well below average. The report shows that, for the apparel industry, there is a continuation in new orders being contracted, decreases in production, reductions in employment, increases in inventories, and an increase in order back logs. Average future revenue declines for companies expected to contract, at below average rates, is 2%, which is the minimum affect we believe TJX Companies revenue growth will decline over the next two years.

The ISM PMI manufacturing index is also seen to have a very strong relationship with future GDP growth as seen in figure 1 below. With ISM PMI data starting to see declines this year, we predict contraction in future GDP growth rates, as well as a slight contraction in TJX's revenue growth. See, below, a graph of the relationship between PMI data and GDP growth rates 6 months later. We, therefore, have made sure that our predictions, related to this macroeconomic environment, for TJX's future revenue growth is that they will see a drop of 2% related to this factor. Further details on this can be seen in the financial analysis section of this report.

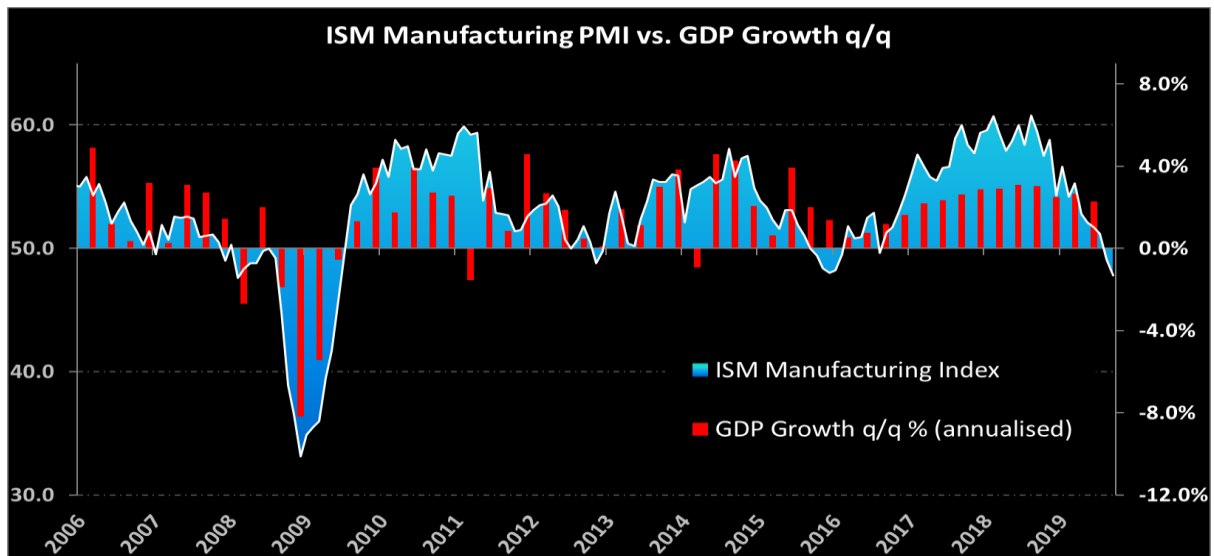


Figure 1

Source for data: Bloomberg

## UMCSI (University of Michigan Consumer Sentiment Index)

This is an indication of future developments in households' consumption plans. It is based on answers from a monthly survey of 5,000 households. The overall trend in Consumer Sentiment remains quite favourable but has shown signs of a slow erosion. Consumer Confidence in the United States averaged 86.59 Index Points from 1952 until 2019, so we are still a bit above average with recent readings at 93.2 for September and 96 for October. The survey indicates that consumers comments are currently more confident due to more favourable income trends, which in turn could lead to increased future purchases at stores like TJX who target customers from the lower to middle income brackets.

The UMCSI is also seen to have a very strong relationship with future GDP growth as can be seen in figure 2 on the next page. While consumer sentiment is quite high, it's currently not that close to the GDP growth rate. Therefore, we find it likely that Consumer confidence is likely to converge to levels closer to the GDP growth rate in the upcoming months. We believe the impact of US-China tariffs is the major fundamental reason consumer sentiment is likely to drop. The US president has recently moved tariffs on Chinese goods up to 25%, up from 10% previously. Ernie Herrman has said that he believes these new tariffs will hurt the firm's future profitability and that they could increase COGS as a portion of sales as much as 5%. This has been factored into our financial projections, which can be seen in the financial analysis section of this report. A portion of these tariffs were implemented in June, with the rest being employed this past August and September. The National Bureau of Economic Research estimates that higher tariffs will impose an annual cost of \$831 a year on the typical U.S. household. This is almost half of the average amount spent by U.S. households on apparel, which is \$1803. We, therefore, predict that consumers spending on apparel, on a relative basis, will likely drop 20-25%. This factor is reflected in our average revenue growth declines of 2% as ISM PMI surveyors have incorporated this into their answers for predictions of their future business environment.

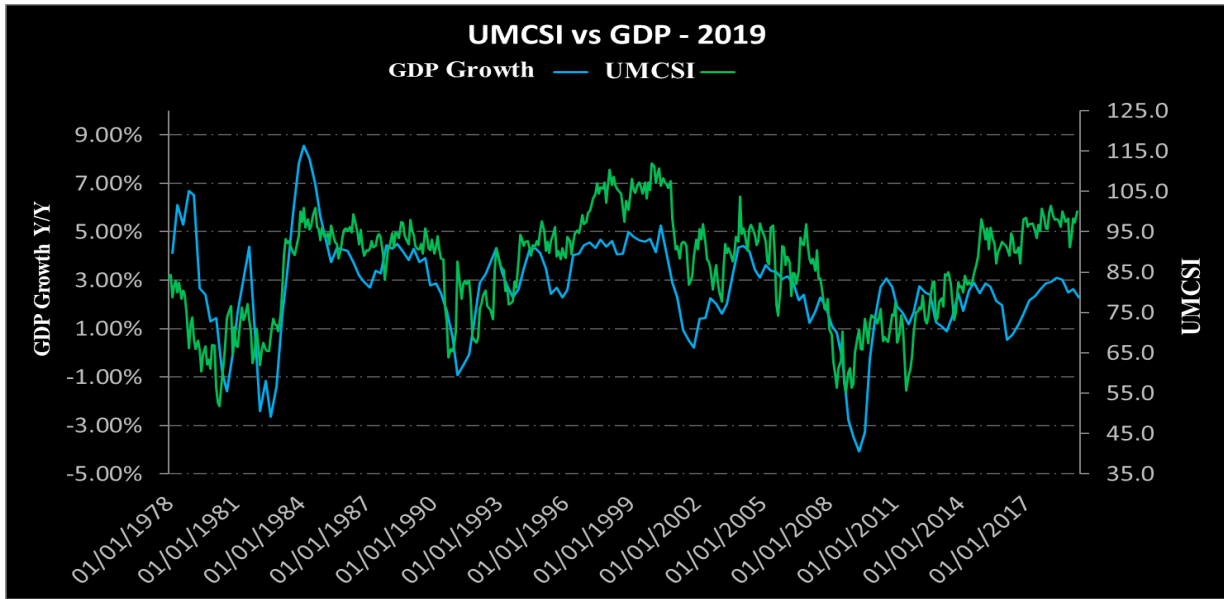


Figure 2

Source for data: Bloomberg

### Macroeconomic Conditions in International Locations

We then also analysed macroeconomic conditions in Canada, the UK, Ireland, Germany, Poland, Austria, The Netherlands and Australia as 38% of TJX Companies revenue comes from stores in these locations. Looking at PMI data in these nations we found no major differences to the US. This is likely due to the contagion effect where a contagion is referred to as the spread of an economic condition from one market or region to another. This can occur at both a domestic and international level. We, therefore, saw no need to alter our forecasts as per the analysis on the US economic conditions. See, in table 6 on the following page, how all of these countries have seen a contraction/slowdown in their outlook in future manufacturing conditions.

PMI	Canada	UK	Ireland	Germany	Poland	Austria	The Netherlands	Australia
Q1 2018	55.7	54.8	54.1	58.2	53.7	58	61.5	54.3
Q2 2018	57.1	54	56.6	55.9	54.2	56.6	60.1	55
Q3 2018	54.8	53.7	56.3	53.7	50.5	55	59.8	54
Q4 2018	53.6	54.3	54.5	51.5	47.6	53.9	57.2	54
Q1 2019	50.5	55.1	53.9	44.1	48.7	50	52.5	52
Q2 2019	49.2	48	49.8	45	48.4	47.5	50.7	52
Q3 2019	51	48.3	48.7	41.7	47.8	45.1	51.6	50.3

Table 6

Source for data: Bloomberg

We also analysed some of the consumer confidence measures in these countries and found no significant difference to the US. As you can see, in table 7 below, all these countries have seen a contraction/slowdown in consumer sentiment. These indices are not all measured in the same way, so we have left a brief description of each one in the appendix.

Consumer Confidence	Canada	UK	Ireland	Germany	Poland	Austria	The Netherlands	Australia
Q1 2018	55.8	-7	108.06	6.3	2.9	31	24	9.9
Q2 2018	56	-9	102.13	4.7	4	34.9	23	6.1
Q3 2018	57.05	-9	96.44	10.6	3.1	35	19	6.8
Q4 2018	54.17	-14	96.52	8.9	-1.8	32.8	9	2.9
Q1 2019	55.08	-13	93.14	7.9	4.7	29.8	-4	-0.2
Q2 2019	56.76	-13	90.9	13.6	7.5	29.5	0	2.2
Q3 2019	53	-12	75.3	23.8	7	27.1	-2	-0.3

Table 7

Source for data: Bloomberg

## 4. Financial Analysis

See, in table 8 on the following page, TJX Companies' income statement from 2017-2019 and our projections up until 2024. See, also, in table 9 on the following page, our underlying assumptions for each income statement variable. All figures are in hundreds of thousands. Our calculations assume that TJX's fiscal year ends at the end of October each year. As previously mentioned, we predict revenue growth to decline due to our predictions for a weaker upcoming macroeconomic environment. Overall, however, we expect TJX Companies to experience similar revenue growth. See specific details on why we believe this in the Revenue Drivers' section. We have calculated COGS on a relative basis as a portion of sales, and revised it upward 5% as foreseen by Ernie Harrman, due to implementation of the new US-China tariffs. We do not foresee any material changes in SG&A and depreciation & amortization as a portion of sales. Therefore, our projection period has kept them as the same portion of sales as the average from 2017 to 2019, at 18% and 2% respectively.

	Historical Period				Projection Period				
	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E
<b>Sales</b>	\$30,944.9	\$33,183.7	\$35,864.7	\$38,972.9	\$41,778.9	\$44,787.0	\$47,787.8	\$50,750.6	\$53,643.4
% growth	5.8%	7.2%	8.1%	8.7%	7.2%	7.2%	6.7%	6.2%	5.7%
Cost of Goods Sold	22,034.5	23,565.8	23,502.2	27,831.2	29,788.4	31,933.2	34,072.7	36,185.2	38,247.7
<b>Gross Profit</b>	<b>\$8,910.4</b>	<b>\$9,617.9</b>	<b>\$12,362.5</b>	<b>\$11,141.7</b>	<b>\$11,990.6</b>	<b>\$12,853.9</b>	<b>\$13,715.1</b>	<b>\$14,565.4</b>	<b>\$15,395.7</b>
% margin	28.8%	29.0%	34.5%	28.6%	28.7%	28.7%	28.7%	28.7%	28.7%
Selling, General & Administrative	5,205.7	5,768.5	6,375.1	6,923.6	7,520.2	8,061.7	8,601.8	9,135.1	9,655.8
<b>EBITDA</b>	<b>\$3,704.7</b>	<b>\$3,849.4</b>	<b>\$5,987.4</b>	<b>\$4,218.1</b>	<b>\$4,470.3</b>	<b>\$4,792.2</b>	<b>\$5,113.3</b>	<b>\$5,430.3</b>	<b>\$5,739.8</b>
% margin	12.0%	11.6%	16.7%	-	10.7%	10.7%	10.7%	10.7%	10.7%
Depreciation & Amortization	622.0	664.5	727.2	818.9	835.6	895.7	955.8	1,015.0	1,072.9
<b>EBIT</b>	<b>\$3,082.7</b>	<b>\$3,184.9</b>	<b>\$5,260.2</b>	<b>\$3,399.2</b>	<b>\$3,634.8</b>	<b>\$3,896.5</b>	<b>\$4,157.5</b>	<b>\$4,415.3</b>	<b>\$4,667.0</b>
% margin	10.0%	9.6%	14.7%	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Taxes	1,380.6	1,424.8	1,248.6	1,113.4	1,072.3	1,149.5	1,226.5	1,302.5	1,376.8
<b>EBIAT</b>	<b>\$1,702.1</b>	<b>\$1,760.1</b>	<b>\$4,011.6</b>	<b>\$2,285.8</b>	<b>\$2,562.5</b>	<b>\$2,747.0</b>	<b>\$2,931.1</b>	<b>\$3,112.8</b>	<b>\$3,290.2</b>

Table 8

Source for data: Bloomberg



Assumptions	Historical Period				Projection Period				
	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E
Sales (% growth)	6.8%	7.2%	8.1%	8.7%	7.2%	7.2%	7.8%	7.3%	6.8%
COGS (% sales)	71.2%	71.0%	65.5%	71.4%	71.3%	71.3%	71.3%	71.3%	71.3%
SG&A (% sales)	16.8%	17.4%	17.8%	17.8%	18.0%	18.0%	18.0%	18.0%	18.0%
Depreciation & Amortization (% sales)	2.0%	2.0%	2.0%	2.1%	2.0%	2.0%	2.0%	2.0%	2.0%

Table 9

Source for data: Bloomberg

## Revenue Drivers'

Consolidated net sales for fiscal year 2019 totalled \$38.97B, up almost 9% from 2018. Firstly, see below the percentage of its sales from each of its geographical locations. There has been no significant change in this trend so we believe TJX Companies internal future growth will be very similar across all its locations.

Revenue by Geography	2017	2018	2019
<b>United States</b>			
Northeast	24%	24%	23%
Midwest	12%	12%	13%
South (including Puerto Rico)	25%	25%	25%
West	16%	15%	15%
Subtotal	77%	76%	76%
<b>Canada</b>	10%	10%	10%
<b>Europe</b>	13%	13%	13%
<b>Australia</b>	Less than 1%	1%	1%
Total	100%	100%	100%

Table 10

Source for data: TJX 10K

As mentioned earlier, our predictions for the upcoming macroeconomic conditions in each of its locations is very similar, so we felt no need to make any specific adjustments for any location. We, therefore, first adjusted overall revenue growth for the next year down 2% and then readjusted it back up 0.5% to reflect that TJX Companies has continued to see stable growth over the last 5 years. We believe TJX Companies revenues will continue to grow despite our predictions for a weaker macroeconomic environment but at lower rates. TJX Companies is one of the few apparel retailers that has seen major increases in customer traffic (as described in section 1) and they are expanding rapidly with plans to increase their global store count from 4300 to approximately 6000. With such strong recent growth in revenues (5.8%-2016, 7.2%-2017, 8.1%-2018 and now 8.7% in 2019) we believe it's possible for them to maintain this for the foreseeable future. We have adjusted internal growth downwards by 0.5% each year from 2022 onwards as we believe TJX Companies revenue growth will start to move back down to more normal rates as it starts to get closer its projected max capacity of 6000 stores. We expect this to normalize in 8-10 years as TJX Companies reaches its proposed max capacity, and then expect a revenue growth rate very close to the average GDP growth rate between 2% and 5%.

## Cost Structure

Over the last year higher distribution centre costs and higher store wage costs as well as costs in connection with investing in more stores, collectively reduced segment margin by approximately 1.1 percentage points. We do not expect this to change as TJX Companies plans to open 65 new HomeGoods stores and 15 HomeSense stores in 2020, with similar plans for store openings in the years following also. No exact numbers have been placed on this yet but if TJX Companies continues to see solid financial performance as it has been, we foresee new store openings to continue at a similar pace. Therefore, for our Cost of Goods Sold, SG&A and D&A projections, we believe that it will be very similar to last year as they continue on a path of strong expansion, with planned new store openings across the globe.

## 5. Valuation

We have valued TJX Companies stock at \$56.26, leaving it slightly undervalued compared to its current stock price of \$58.01. This led to our hold recommendation as we believe the market is currently very close to valuing TJX Companies stock fairly. For our valuation we use the method of forecasted fundamentals. Our method has valued TJX Companies using a discounted cashflow model with our proxy for cashflow being Free Cash Flow (FCF). Free cash flow represents the cash a company generates after cash outflows to support operations and maintain its capital assets. Our economic rationale for using the method of forecasted fundamentals is that the value is equal to the present value of expected future cash flows at the appropriate risk-adjusted rate of return. See table 11 below for our FCF calculations in the past and our predictions up to 2024. Also see net working capital calculations and projections in table 16 in the appendix.

	Historical Period				Projection Period				
	2016	2017	2018	2019	2020E	2021E	2022E	2023E	2024E
<b>EBIAT</b>	\$1,702.1	\$1,760.1	\$4,011.6	\$2,285.8	\$2,562.5	\$2,747.0	\$2,931.1	\$3,112.8	3290.2173
Plus: Depreciation & Amortization	622.0	664.5	727.2	818.9	835.6	895.7	955.8	1,015.0	1072.8678
Less: Capital Expenditures	(1,361.6)	(1,327.3)	(1,434.6)	(1,558.9)	(1,671.2)	(1,791.5)	(1,911.5)	(2,030.0)	(2,145.7)
Less: Inc./(Dec.) in Net Working Capital					55.7	66.6	66.4	65.6	64.04974
<b>Unlevered Free Cash Flow</b>					\$1,782.7	\$1,917.9	\$2,041.7	\$2,163.4	2281.3993

Table 11

Source for data: Bloomberg

We then proceeded to run a discounted cash flow model with 2024 being our terminal year. TJX Companies' current stock price, as of November 1st, 2019, at \$58.01, and we have valued TJX Companies at \$56.26. This means its stock is undervalued by 3.01%, which led to our hold recommendation on TJX Companies' stock. See below and on the next page the calculations for our implied value:

					2020E	2021E	2022E	2023E	2024E
Unlevered Free Cash Flow					\$1,782.7	\$1,917.9	\$2,041.7	\$2,163.4	\$2,281.4
WACC	4.1%								
Discount Period					1.0	2.0	3.0	4.0	5.0
Discount Factor					0.96	0.92	0.89	0.85	0.82
<b>Present Value of Free Cash Flow</b>					<b>\$1,712.5</b>	<b>\$1,769.8</b>	<b>\$1,809.9</b>	<b>\$1,842.2</b>	<b>\$1,866.2</b>

Table 12

Source for data: Bloomberg

Enterprise Value		Implied Equity Value and Share Price	
Cumulative Present Value of FCF	\$9,000.4	Enterprise Value	\$51,021.7
<b>Terminal Value</b>		Less: Total Debt	11,300.0
Terminal Year EBITDA (2024E)	\$5,739.8	Less: Preferred Stock	-
Exit Multiple	8.95x	Less: Noncontrolling Interest	-
<b>Terminal Value</b>	<b>\$51,371.6</b>	Plus: Cash and Cash Equivalents	2,100.0
Discount Factor	0.82	<b>Implied Equity Value</b>	<b>\$64,421.7</b>
<b>Present Value of Terminal Value</b>	<b>\$42,021.3</b>	Fully Diluted Shares Outstanding	1,145.0
<i>% of Enterprise Value</i>	73.9%	<b>Implied Share Price</b>	<b>\$56.26</b>
<b>Enterprise Value</b>	<b>\$51,021.7</b>		

Table 13

Source for data: Bloomberg

### Description of important model inputs

- Present value of free cash flow: Free cash flow discounted at the firms WACC (weighted average cost of capital). We calculated TJX Companies' cumulative present value of FCF to be \$9,000.4.
- Fully diluted shares outstanding: The total number of common shares that will be outstanding and available to trade on the open market after all possible sources of conversion, including convertible bonds and employee stock options, are exercised. Fully diluted shares include not only those which are currently issued but also those that could be claimed through conversion. We felt that this would be a better representation than just total shares outstanding as although full dilution may not occur all at once, it indicates how many shares might be outstanding in the future, based on TJX Companies' current policy regarding conversions.
- Exit Multiple: The exit multiple used is the average apparel industry exit multiple (7.95) over the last 3 years, adjusted upwards by 1, to reflect TJX's better than average performance within the apparel industry.

- WACC: We calculated a WACC of 4.2% for TJX Companies, which would be considered a little lower than the average WACC of 5.5% usually used to value apparel firms over the last 3 years. See to the right our calculations and below a description of important factors:

- The *cost of debt* is the interest paid divided by the average level of debt for the last 3 years.
- The *tax rate* is the firm's average effective tax rate over the last 10 years.
- The *risk-free rate* we opted for is the US ten-year treasury yield which is currently at 1.80% as of November 1<sup>st</sup>, 2019. We believe this measure is a good barometer for the risk-free rate as we find it extremely unlikely that the US government will be unable to fulfil their obligations on these bonds.
- The *market risk premium* is the average market risk premium over the last 10 years adjusted upwards by 1.5% to reflect our future macroeconomic predictions.
- The *beta* used is the 3-year beta for TJX Companies stock.

<b>WACC Calculation</b>	
<b>Target Capital Structure</b>	
Debt-to-Total Capitalization	30.0%
Equity-to-Total Capitalization	70.0%
<b>Cost of Debt</b>	
Cost-of-Debt	2.6%
Tax Rate	29.5%
<b>After-tax Cost of Debt</b>	<b>1.9%</b>
<b>Cost of Equity</b>	
Risk-free Rate (1)	1.8%
Market Risk Premium (2)	4.1%
Beta	0.84
<b>Cost of Equity</b>	<b>5.2%</b>
<b>WACC</b>	<b>4.2%</b>

# Appendix

## Store Locations

United States					
	T.J. Maxx	Marshalls	HomeGoods	Homesense	Sierra
Alabama	25	6	6	—	—
Arizona	17	18	14	—	—
Arkansas	14	4	5	—	—
California	121	145	89	—	—
Colorado	17	11	10	—	5
Connecticut	28	24	18	—	1
Delaware	3	5	4	—	—
District of Columbia	4	4	—	—	—
Florida	95	94	67	—	—
Georgia	50	34	27	—	—
Hawaii	6	—	—	—	—
Idaho	7	2	2	—	1
Illinois	51	45	31	—	3
Indiana	23	14	8	—	—
Iowa	11	7	5	—	—
Kansas	9	6	7	—	—
Kentucky	16	5	5	—	—
Louisiana	15	12	8	—	—
Maine	9	3	3	—	—
Maryland	25	29	20	2	—
Massachusetts	52	57	37	4	2
Michigan	41	27	19	—	3
Minnesota	17	16	12	—	2
Mississippi	10	5	4	—	—
Missouri	19	17	10	—	—
Montana	6	—	1	—	—
Nebraska	5	4	4	—	1
Nevada	9	11	7	—	1
New Hampshire	16	10	10	—	1
New Jersey	40	51	42	4	2
New Mexico	5	4	2	—	—
New York	80	83	49	3	2
North Carolina	37	27	18	—	—
North Dakota	5	1	1	—	—
Ohio	47	35	22	—	1
Oklahoma	12	6	3	—	—
Oregon	12	9	8	—	3
Pennsylvania	51	40	32	2	—
Puerto Rico	8	21	6	—	—
Rhode Island	6	6	6	—	—
South Carolina	22	12	9	—	—
South Dakota	2	1	1	—	—
Tennessee	26	18	9	—	—
Texas	70	91	50	—	—
Utah	14	4	7	—	1
Vermont	5	1	1	—	1
Virginia	37	30	23	1	—
Washington	19	21	13	—	2
West Virginia	7	3	2	—	—
Wisconsin	23	11	12	—	1
Wyoming	3	1	—	—	2
Total Stores	1,252	1,091	749	16	35

Table 14

Source for data: TJX Companies 10K

## Canada

	Winners	HomeSense	Marshalls
Alberta	34	20	15
British Columbia	36	18	7
Manitoba	9	3	3
New Brunswick	4	3	2
Newfoundland	3	1	1
Nova Scotia	11	2	2
Ontario	118	55	42
Prince Edward Island	1	1	—
Quebec	49	19	14
Saskatchewan	6	3	2
Total Stores	271	125	88

## Europe

	T.K. Maxx	Homesense
United Kingdom	345	66
Republic of Ireland	26	2
Germany	131	—
Poland	43	—
Austria	12	—
The Netherlands	10	—
Total Stores	567	68

## Australia

	T.K. Maxx
Australian Capital Territory	2
New South Wales	15
Queensland	18
Victoria	9
Total Stores	44

Table 15

Source: TJX Companies 10K

### **Description of different global consumer confidence measures:**

- Canada: Calculated from a combination of responses to 11 survey questions. 0 indicates an extreme lack of confidence, 50 indicates neutrality and 100 indicates extreme confidence.
- UK: Measures the level of optimism consumers have about the performance of the economy in the next 12 months. Surveys 2000 consumers. Has averaged -9.07 index points over the last 38 years.
- Ireland: Survey covers a minimum of 1,100 households across all regions of the country. Assesses perceptions on the general economy over previous 12 months as well as expectations for the next 12 months. A value of 0 indicates an extreme lack of confidence, a value of 100 indicates neutrality and a value of 200 indicates an extreme confidence.
- Germany: Based on survey of 2000 individuals. Survey focuses on income expectations, buying propensity and savings. Value can vary between -100 and +100 with 0 representing the long-term average.
- Poland: Survey carried out with the use of a consumer tendency test. Indicator is an arithmetic mean of the evaluations of the previous and predicted (over the following 12 months) changes concerning the household's financial condition as well as the general economic situation of the country. May range from -100 to 100. Interpretation of numbers similar to German index.
- Austria: Arithmetic average of the balances (in percentage points) of responses on the general economic situation, the financial situation of households and their expectations concerning unemployment (with inverted sign) and savings, each for the next 12 months. Balances are seasonally adjusted.
- The Netherlands: Survey made over the phone with 1000 households. Questions consumers assessment on national economy and own financial situation for past 12 months and expectations for the coming 12 months. Values interpreted similar to German index.
- Australia: Surveys 1200 households. Reflects consumers evaluations of household financial situation over past 12 months and coming 12 months, anticipated economic conditions, and buying conditions for major household items. Index score above 100 indicates optimists outweigh pessimists.

## Net Working Capital Projections

	Historical Period				Projection Period				
	2016	2017	2018	2019	2020	2021	2022	2023	2024
Sales	\$30,944.9	\$33,183.7	\$35,864.7	\$38,972.9	\$41,778.9	\$44,787.0	\$47,787.8	\$50,750.6	\$53,643.4
Cost of Goods Sold	22,034.5	23,565.8	23,502.2	27,831.2	29,788.4	31,933.2	34,072.7	36,185.2	38,247.7
<b>Current Assets</b>									
Accounts Receivable	238.1	258.8	327.2	346.3	381.2	408.6	436.0	463.0	489.4
Inventories	3,695.1	3,645.0	4,187.2	4,579.0	4,909.0	5,262.5	5,615.1	5,963.2	6,303.1
Prepaid Expenses and Other	391.6	373.9	706.7	513.7	752.0	806.2	860.2	913.5	965.6
<b>Total Current Assets</b>	<b>\$4,324.8</b>	<b>\$4,277.7</b>	<b>\$5,221.1</b>	<b>\$5,439.0</b>	<b>\$6,042.2</b>	<b>\$6,477.2</b>	<b>\$6,911.2</b>	<b>\$7,339.7</b>	<b>\$7,758.1</b>
<b>Current Liabilities</b>									
Accounts Payable	2,859.0	2,981.8	3,185.5	3,468.2	3,917.4	4,199.4	4,480.8	4,758.6	5,029.8
Accrued Liabilities	655.9	750.9	697.1	824.1	835.6	895.7	955.8	1,015.0	1,072.9
Other Current Liabilities	1,543.3	1,775.9	1,940.0	2,016.0	2,214.3	2,373.7	2,532.8	2,689.8	2,843.1
<b>Total Current Liabilities</b>	<b>\$5,058.2</b>	<b>\$5,508.6</b>	<b>\$5,822.6</b>	<b>\$6,308.3</b>	<b>\$6,967.2</b>	<b>\$7,468.9</b>	<b>\$7,969.3</b>	<b>\$8,463.4</b>	<b>\$8,945.8</b>
<b>Net Working Capital</b>	<b>(\$733.4)</b>	<b>(\$1,230.9)</b>	<b>(\$601.5)</b>	<b>(\$869.3)</b>	<b>(\$925.0)</b>	<b>(\$991.6)</b>	<b>(\$1,058.1)</b>	<b>(\$1,123.7)</b>	<b>(\$1,187.7)</b>
% sales	(2.4%)	(3.7%)	(1.7%)	(2.2%)	(2.2%)	(2.2%)	(2.2%)	(2.2%)	(2.2%)
<b>(Increase) / Decrease in NWC</b>		<b>\$497.5</b>	<b>(\$629.4)</b>	<b>\$267.8</b>	<b>\$55.7</b>	<b>\$66.6</b>	<b>\$66.4</b>	<b>\$65.6</b>	<b>\$64.0</b>
<b>Assumptions</b>									
<b>Current Assets</b>									
Days Sales Outstanding	2.8	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Days Inventory Held	61.2	56.5	65.0	65.0	61.9	61.9	61.9	61.9	61.9
Prepays and Other CA (% of sales)	1.3%	1.1%	2.0%	2.0%	1.8%	1.8%	1.8%	1.8%	1.8%
<b>Current Liabilities</b>									
Days Payable Outstanding	47.4	46.2	49.5	49.5	48.0	48.0	48.0	48.0	48.0
Accrued Liabilities (% of sales)	2.1%	2.3%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%
Other Current Liabilities (% of sales)	5.0%	5.4%	5.4%	5.4%	5.3%	5.3%	5.3%	5.3%	5.3%

Table 16

Source for data: Bloomberg



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