

Recommendation	Underweight
Target (today's value)	\$11.10
Current Price	\$12.56
52 week range	\$11.02 - \$14.22

Automotive Manufacturing

The Ford Motor Company

Share Data	
Ticker:	F
Market Cap. (Billion):	\$49.75
Inside Ownership	1.2%
Inst. Ownership	56.1%
Beta	1.62
Dividend Yield	4.95%
Payout Ratio	29.9%
Cons. Long-Term Growth Rate	-0.4%



	'14	'15	'16	'17E	'18E
Sales (billions)					
Year	\$140.8	\$149.5	\$151.3	\$146.6	\$143.3
Gr %	-1.9%	3.8%	1.1%	-3.0%	-3.6%
Cons	-	-	-	\$150.2	\$146.7
EPS					
Year	\$0.31	\$1.86	\$1.80	\$1.62	\$1.43
Gr %	-77.0	490.3%	-3.0%	-10.3%	-11.5%
Cons	-	-	-	\$1.62	\$1.71

Summary: I give Ford an underweight rating with a target of \$11.10. The firm's shares are fairly valued based on relative and DCF analysis. However, heightened cyclical and industry risk have offset my optimism. Ford is highly dependent upon the U.S. auto market, which is peaking. In order to generate revenue growth, Ford will have to rely on international markets to outperform, which I view with pessimism.

Key Drivers:

- Consumer Preferences:** Consumers are demanding more utility vehicles and trucks due to favorable macroeconomic conditions. Ford performs well in this, as they have had the number 1 selling truck in the U.S. for 39 years.
- Balanced Product Mix:** Ford's product line up consists of a favorable balance between cars, utilities, and trucks. As a result, the firm is less susceptible to quick shift in demand.
- U.S. Market:** Over 70% of Ford's revenue is generated from the U.S. The strength of the U.S. market has positively impacted Ford over the last several years. However, there are many indications that this market is peaking and that growth will slow.
- Emerging Markets:** Ford started investing heavily in emerging markets in search of growth. However, these markets are still small portions of Ford's total revenue and significant growth doesn't seem to be feasible in the near future.

Ratio	'14	'15	'16	'17E	'18E
ROE (%)	4.8%	27.8%	23.8%	19.1%	15.1
Rel Industry	0.47	2.27	2.00	1.61	1.29
NPM (%)	0.9%	4.9%	4.7%	4.4%	4.0%
Rel Industry	0.23	1.19	0.94	0.73	0.66
A. T/O	0.70	0.69	0.66	0.59	0.57
ROA (%)	0.6%	3.4%	3.1%	3.0%	2.6%
Rel Industry	0.20	1.09	0.89	0.85	0.72
A/E	8.52	7.84	7.45	6.75	6.18

Valuation	'14	'15	'16	'17E
P/E	19.3	7.6	6.7	7.7
Rel Industry	1.83	0.68	0.65	0.81
P/S	0.4	0.3	0.3	0.4
P/B	2.5	1.9	1.5	1.3
P/CF	6.8	4.8	5.2	5.7
EV/EBITDA	6.2	3.9	2.9	3.2

Valuation: Using a relative valuation approach, Ford appears to be fairly valued in comparison to the automotive manufacturing industry. A combination of the approaches suggests that Ford is fairly valued, as the stock's value is about \$11.10 and the shares trade at \$12.56.

Performance	Stock	Industry
1 Month	2.8%	4.5%
3 Month	4.0%	1.6%
YTD	3.7%	0.5%
52-week	-10.6%	-2.0%
3-year	-6.7%	-2.2%

Risks: Threats to the business include declining U.S. light vehicle sales, increased competition, shifts in consumer preferences, increasing interest rates, and oil prices.

Company Overview

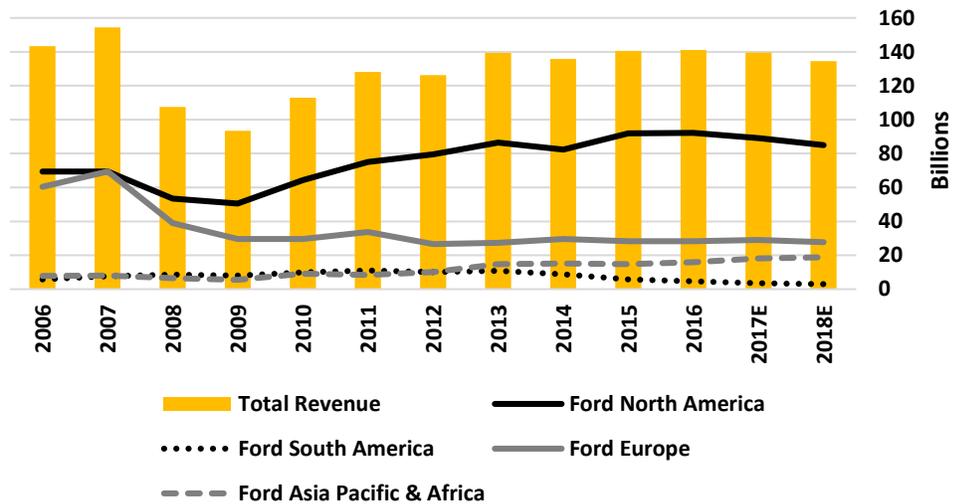
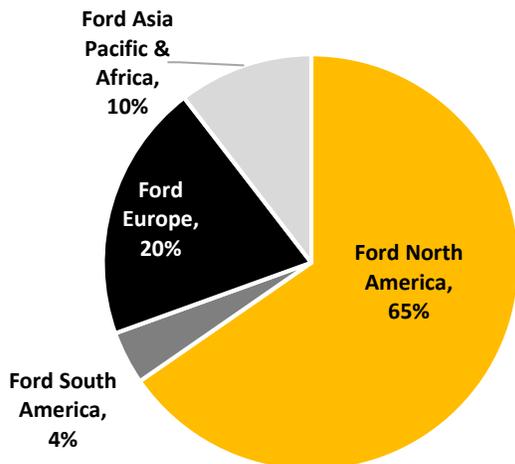
Management has recently started reallocating capital to emerging opportunities in electrification, autonomy, and mobility.

The Ford Motor Company (F), is an automotive and mobility company, with over 190,000 employees that design, manufacture, and distribute automobiles globally. The company manages two major automotive brands, Ford and Lincoln. With over 29 vehicle models, the Ford brand targets retail, commercial, and governmental buyers at multiple price points. Whereas, Lincoln, which consist of six vehicle models, competes in the luxury automotive market. Ford sells its vehicles, parts, and accessories through approximately 12,000 dealers worldwide. Additionally, Ford provides vehicle-related financing and leasing through Ford Credit.

Ford Motor Company generates revenue from the following two sectors, automotive and financial services. 94% of Ford’s revenue is attributable to the automotive sector through vehicle, parts, and accessory sales. Ford’s automotive business is further divided into the following four segments:

- North America: Ford North America, which includes the U.S., Canada, and Mexico, is the firm’s largest segment in terms of overall revenue. The U.S. is the largest contributor within the segment.
 - **Industry Volume:** In 2016, the U.S. market recorded volume of 17.55m units.
 - **Financial Success:** Revenue is up 1% YOY, pre-tax results are down 4% YOY
- Europe: Ford Europe is the second largest segment in terms of overall revenue. However, revenue has been steadily deteriorating for years.
 - **Financial Deterioration:** Revenue has declined 59% from 2007-2015
 - **Consumer Preference:** Smaller fuel efficient vehicles with low margins
- Asia Pacific & Africa: Ford Asia Pacific & Africa despite being the 3rd largest segment, has seen strong growth since the great recession of 2008. This growth has been mainly fueled by China’s increase in industry volume.
 - **Growth:** Revenue has increased 83% from 2009-2015, down 6.12% YOY
 - **Industry Volume:** In 2016, industry volume was 42.1m units, up 7.6% YOY
- South America: Ford South America is the smallest segment and has been deteriorating due to negative economic growth, high inflation, and currency weakness in the region.
 - **Industry Volume:** In 2016, industry volume was 3.7m units, down 12% YOY
 - **Financial Deterioration:** In 2016, revenue was down 17% YOY

Figures 1 and 2: Automotive revenue sources for F, year-end 2015 (left) and revenue history since 2006 (right)



Source: Company reports

Business/Industry Drivers

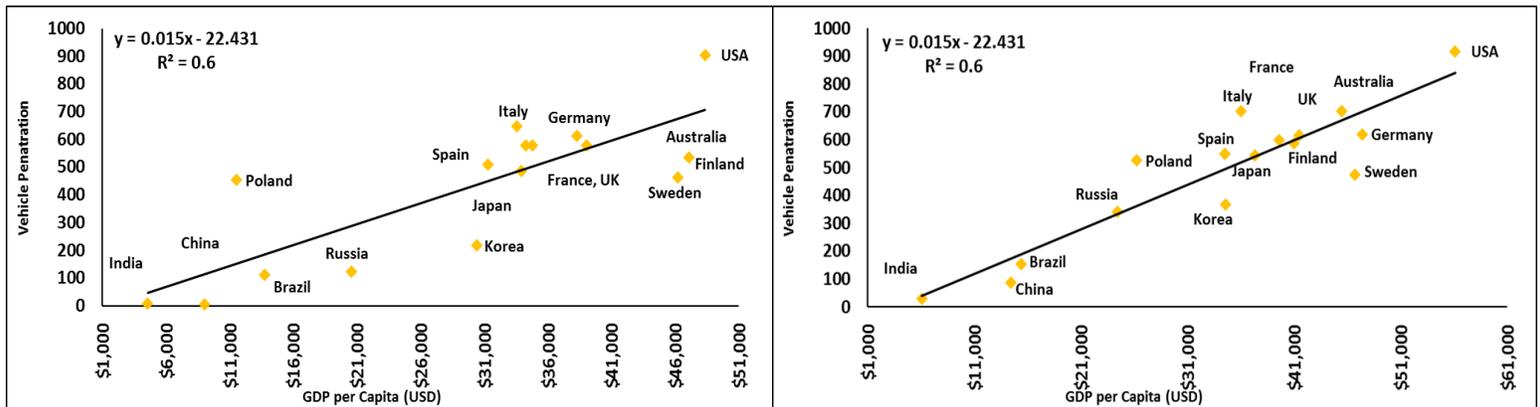
- 1) Global Macroeconomic Factors
- 2) Macroeconomic Factors in the United States
- 3) Pent-Up Demand in the United States
- 4) New Car Financing in the United States
- 5) Leasing Vehicles in the United States
- 6) Incentive Spending in the United States
- 7) Market and Product Analysis in the United States

Global Macroeconomic Factors

To anticipate operating performance, my analysis tracks the following macroeconomic data:

- **A ratio of vehicle penetration measured by number of vehicles per 1,000 and GDP per capita** - This ratio is used to analyze markets as being over or under penetrated.
- **Consumer confidence** - The relationship between LV sales and consumer confidence is strong in most emerging and established markets.
- **Unemployment** - LV sales and unemployment are traditionally inversely related. However, LV sales in emerging markets are less susceptible to relatively small movements in unemployment.

Figures 3 and 4: GDP per capita vs. vehicle penetration, 2010 (L) and GDP per capita vs. vehicle penetration, 2016 (R)



Source: Bloomberg, IMCP, BofA Merrill Lynch

Use the linear regression to determine which markets are over or under penetrated. Markets above the line are considered to be over penetrated. As a result, these markets are more sensitive to the business cycle.

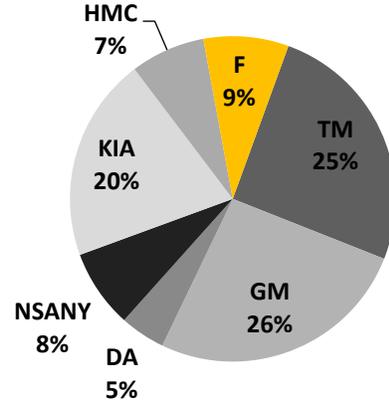
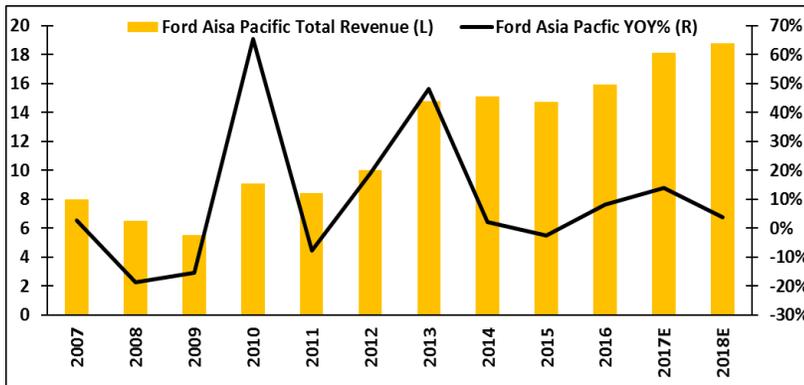
Historically, worldwide light vehicle sales have been largely concentrated in North America, specifically in the United States. However, emerging markets have begun to erode the North American market share's percentage of worldwide LV sales. North America now only accounts for 20% of global LV sales. This is significantly down from its peak of 35% in 2000. Despite the erosion, I still expect Ford to rely on the U.S. for its main source of profits.

Ford's revenues are highly dependent upon the U.S. market; approximately 70% of its revenue is derived there. I view this unfavorably because the U.S. is a highly penetrated market. Highly penetrated markets are more susceptible to the business cycle, adding uncertainty to Ford's earnings. To quantify my remarks, I compared GDP per capita to vehicle penetration in a variety of markets.

My analysis shows that GDP per capita and vehicle penetration are well correlated. I used this linear regression to explore the potential sales growth opportunities of global markets. Markets that are represented above the line, are considered to be over penetrated for their level of GDP per Capita and vice versa. As depicted in the regression, India and China are well below the regression line and offer large opportunities for new car sales.

Chinese Operations

Figures 5 and 6: Ford's Asia Pacific revenues, 2007-2018E in billions (L) and, market share by OEM in China 2016 (R)

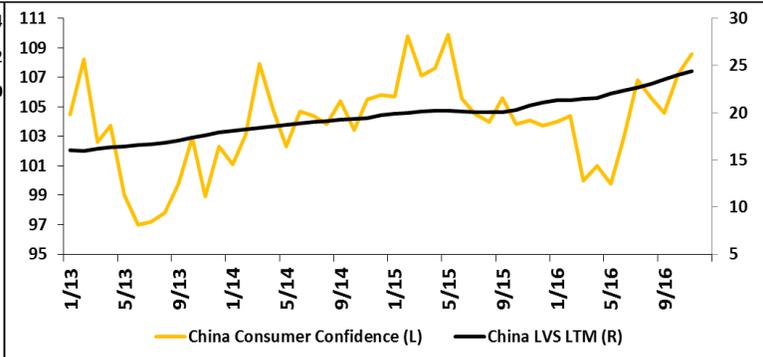
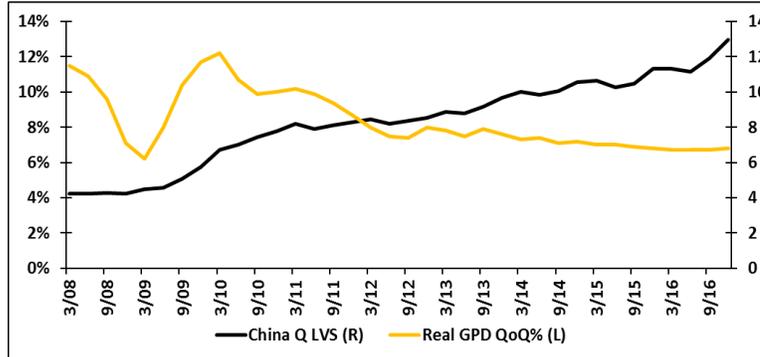


Source: Company reports

To become more competitive in the China, Ford must grow its market share.

Ford has started to capitalize on these opportunities, especially in China. However, these newly added ventures have only nominally contributed to total sales. For example, China only accounts for approximately 4.4% of Ford's growth. In 2016 Ford sold a record 1.27m units in China, which was a 14% increase YOY. However, 2016 operating margins in China decreased by 1% to 14.7%. Ford only commands 9% of the Chinese market, which is relatively small compared to its peers.

Figure 7: Chinese real GDP growth QoQ% vs. Q Chinese LVS in millions, 2008-2016 (L)
Figure 8: Chinese consumer confidence vs. Chinese LVS LTM in millions, 2013-2016 (R)



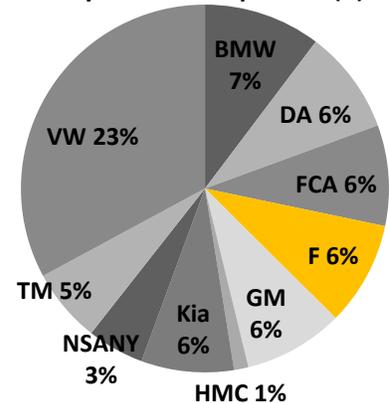
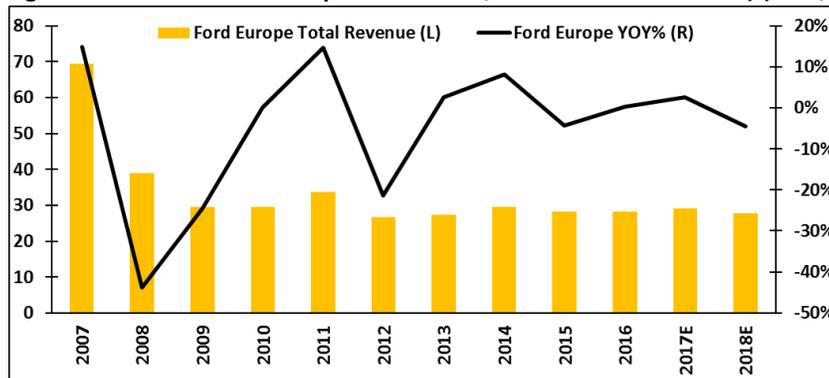
Source: Factset

Figures 7 and 8 illustrate how China's LVS are less sensitive to macroeconomic factors.

Ford's operations in China are still a major source of growth and earnings stability for the company, as this market is substantially less correlated with the business cycle. However, I view its Chinese operations with skepticism, as they are still small and unproven. Expansion has caused significant unexpected expenses, as was the case in 2014. Furthermore, Ford's management recently adjusted guidance for additional unexpected expenses due to global expansion.

European Operations

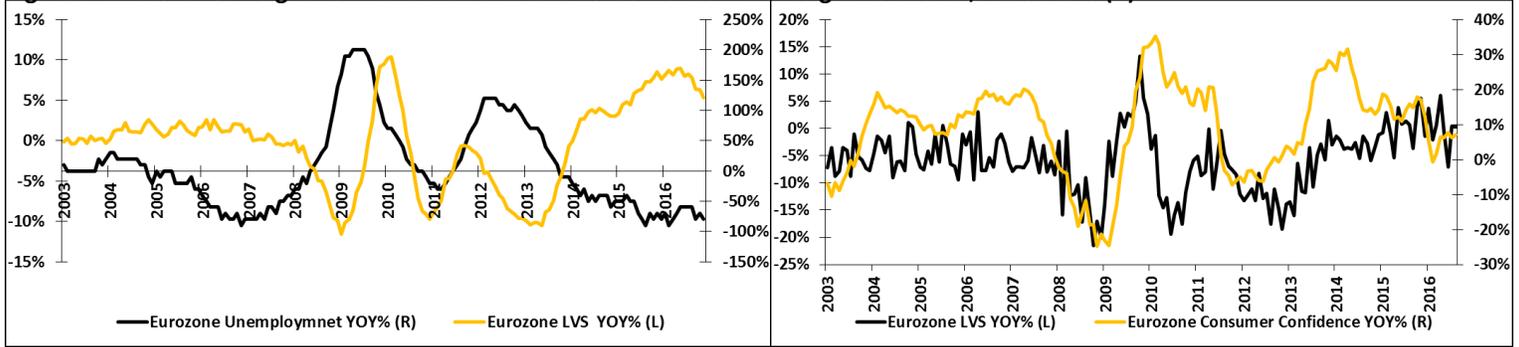
Figures 9 and 10: Ford's European revenues, 2007-2018E in billions (L) and, market share by OEM in Europe 2016 (R)



Source: Company reports

The European auto market is moderately fragmented with comparables commanding small portions of the market, with the exception of Volkswagen. Volkswagen dominates this region, commanding nearly 25% of the market. Furthermore, as depicted by my regression model, I considered the European market to be over penetrated and mature. This exemplifies the importance of tracking movements in consumer confidence, unemployment, and GDP in order to predict future operating success in this segment.

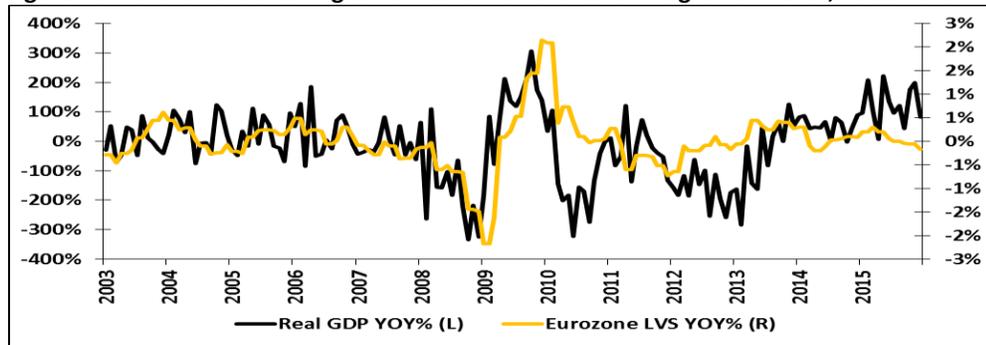
Figure 11: Eurozone unemployment growth YOY% vs. Eurozone LVS growth YOY, 2003-2016 (L)
Figure 12: Eurozone LVS growth YOY% vs. Eurozone consumer confidence growth YOY%, 2003-2016 (R)



Source: Factset

As of year-end, unemployment is down 80% YOY and consumer confidence is improving. I expect nominal to flat improvements in Ford’s European operations due to a small market share and consumer preference. Ford’s strength is selling trucks and utilities, which carry higher margins. However, European consumers prefer small and midsize cars. In 2015, 71% of LV sold were small and midsize cars. Due to Ford’s robust product mix, I expect it to be able to maintain its market share in Europe.

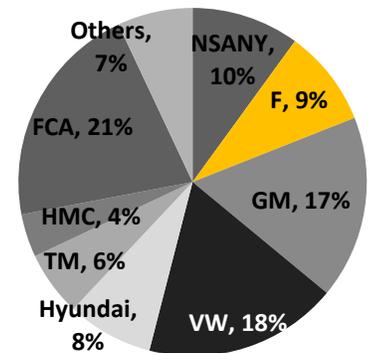
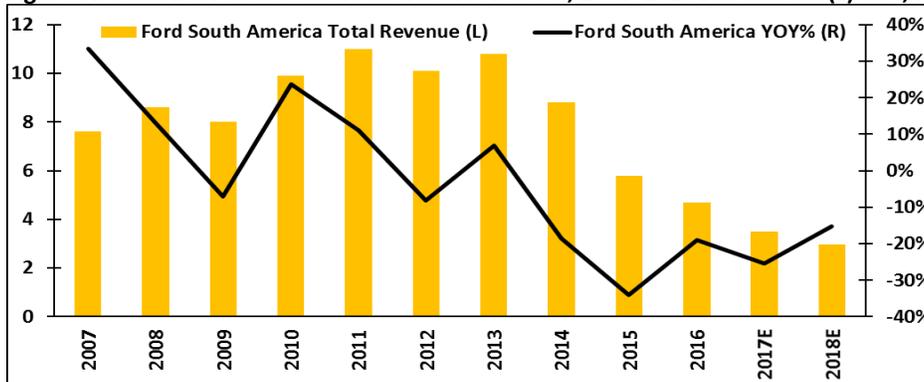
Figure 13: Eurozone real GDP growth YOY% vs. Eurozone LVS growth YOY%, 2003-2016



Source: Factset

South American Operations

Figures 14 and 15: Ford’s South American revenues, 2007-2018E in billions (L) and, market share by OEM in South America 2016 (R)

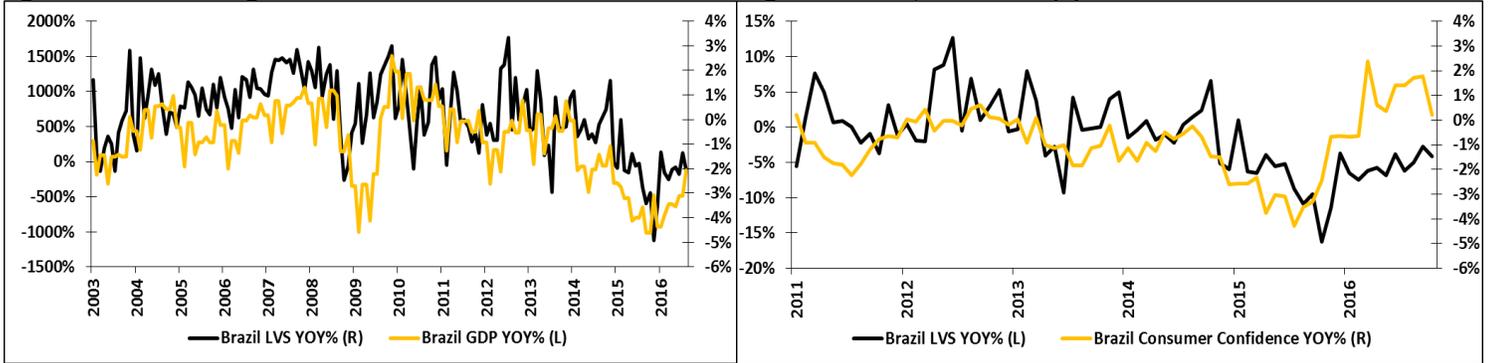


Source: Company reports

2016's (\$1.1B) loss **negatively** affected EPS by **0.28**. 2015's (\$832m) loss **negatively** affected EPS by **\$0.21**.

Ford's operations in South America have led to big losses due to negative economic growth, high inflation, and currency weakness in the region. Brazil's major recession caused Ford to lose \$832 million in 2015. Competitors in the region began cutting prices in an attempt to keep their operations afloat. Ford's management decided not to cut prices and instead let sales fall. As a result, Ford's market share fell 1% to 8.4% in the fourth quarter of 2015. In 2016, Ford's losses in the region totaled \$1.1 billion.

Figure 16: Brazil's LVS growth YOY% vs. Brazil's GDP growth YOY%, 2003-2016 (L)
 Figure 17: Brazil's LVS growth YOY% vs. Brazil's consumer confidence growth YOY%, 2011-2016 (R)

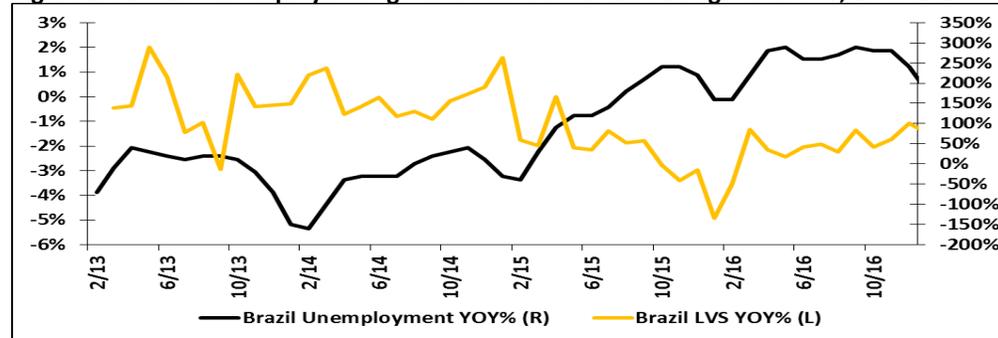


Source: Factset

Despite the large loss incurred, South American operations turned positive in the fourth quarter of 2016. All key metrics including: wholesales, revenue, market share, operating margin, and pre-tax results were up for the first time since the third quarter of 2013. Looking into 2017 and 2018, I expect South American operations to continue to be a losing proposition.

Brazil's government has taken unfavorable measures in an effort to protect its local auto manufacturing industry. High import tariffs and government regulations penalize foreign manufactures for not meeting specific requirements. I view the high political risk of the region to be damaging to Ford's ability to reach a profit.

Figure 18: Brazil's unemployment growth YOY% vs. Brazil's LVS growth YOY, 2003-2016



Source: Factset

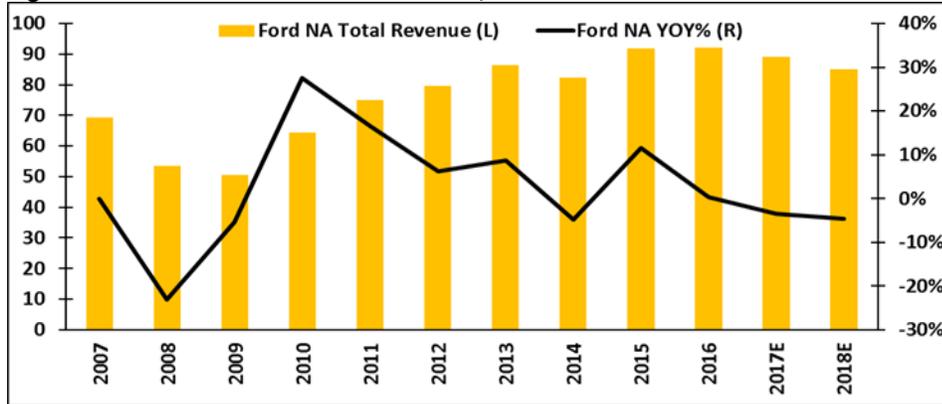
Macroeconomic Factors in the United States

In order to anticipate demand in the U.S. market I analyzed the following key macroeconomic data:

- **Consumer Confidence and GDP growth** - Positively correlated with LV sales
- **Unemployment** - Negatively correlated with LV sales
- **Housing Starts** – Positively correlated with LT sales, which is especially important for Ford

Is South American heading for a turn around? I expect only nominal improvements if any. Ford's operations in South America are exposed to unpredictable governments.

Figure 19: Ford's North American revenues, 2007-2018E in billions

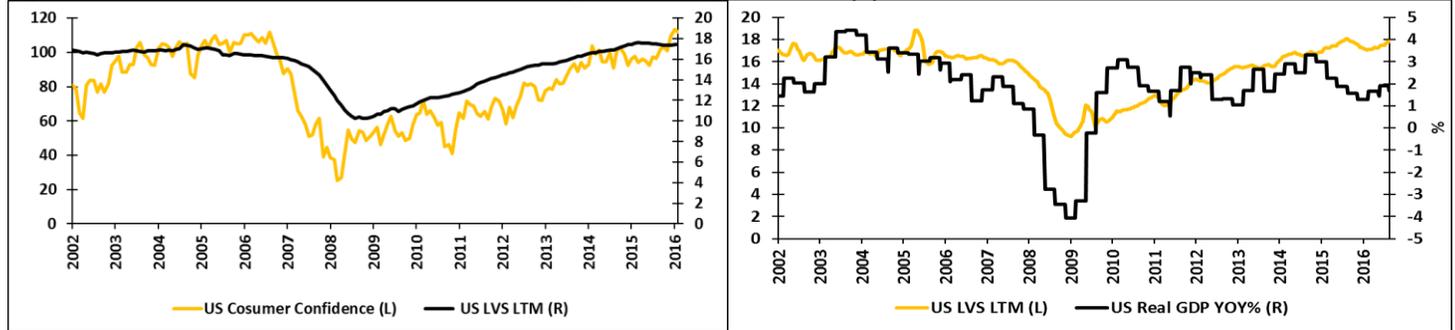


Source: Company reports

Ford's largest and most important market is the United States. In 2016 the U.S. accounted for approximately 70% of Ford's total revenue. Based on my regression analysis, the U.S. market is over penetrated and highly mature. However, since critical economic conditions started to improve, Ford has enjoyed record industry volumes in the U.S.

Figure 20: U.S. consumer confidence vs. U.S. LVS LTM in millions, 2002-2016 (L)

Figure 21: U.S LVS LTM in millions vs. U.S real GDP growth YOY%, 2002-2016 (R)

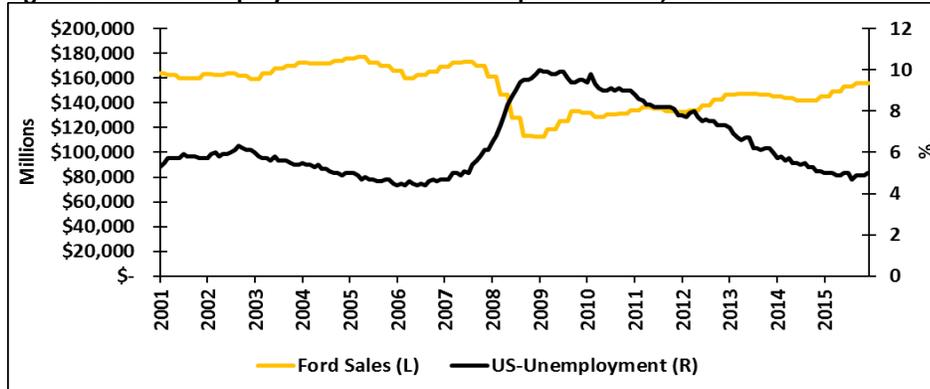


Source: Factset

Due to the market's maturity, automotive OEMs in the U.S. operate highly cyclical businesses that are significantly affected by basic macroeconomic factors. Vehicles are durable goods that are not typically replaced during unfavorable economic periods. This creates a lethal cycle for the general economy, which further hurts OEMs.

According to the Center for Automotive Research, the auto industry supports over 7 million private sector jobs in the United States. Additionally, the auto industry has historically contributed 3.0-3.5% of GDP. As a result, when demand for vehicles decline, production is cut back and unemployment rises. This clarifies why Ford's sales have a -0.87 correlation with the U.S. unemployment rate.

Figure 22: U.S. Unemployment vs. Ford's sales performance, 2001-2016



Source: Factset

Figures 23-24

Correlation .135
R-Squared .018
Correlation .051
R-Squared .003

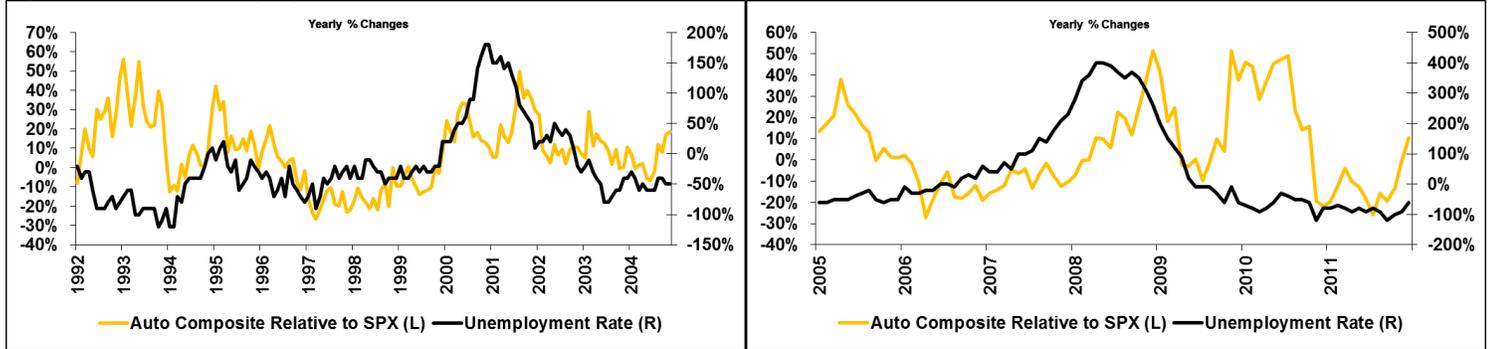
Figures 25-26

Correlation .328
R-Squared .108
Correlation .292
R-Squared .086

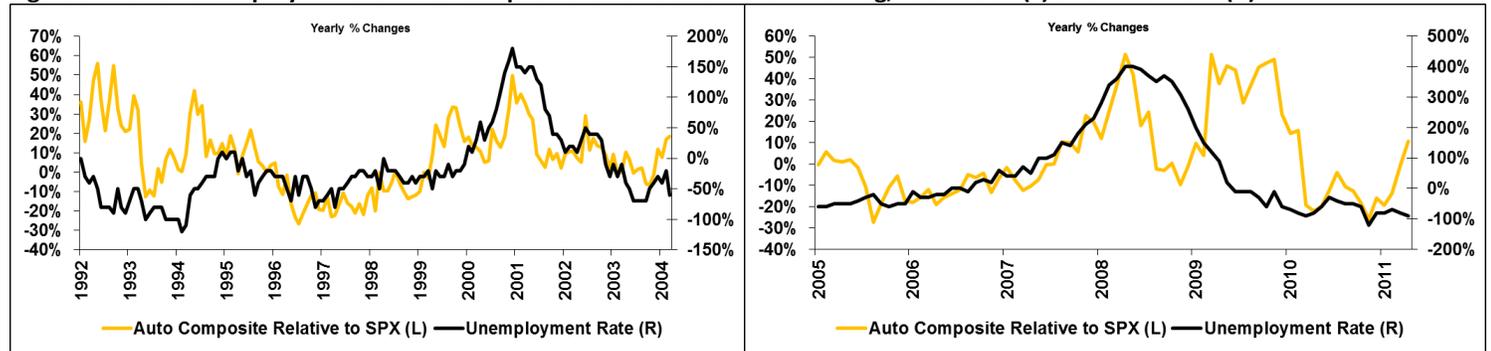
Figures on Pg. 8

However, this cycle works in the OEM’s favor during periods of recovery. Traditionally, durable goods are replaced, which increases the demand for new vehicles. As this pent-up demand is released, OEMs must hire new employees to meet the increasing demand. These newly employed individuals then also demand new vehicles.

Figures 23 & 24: Unemployment vs. Auto composite relative to SPX YOY, 1992-2005 (L) and 2005-2012 (R)



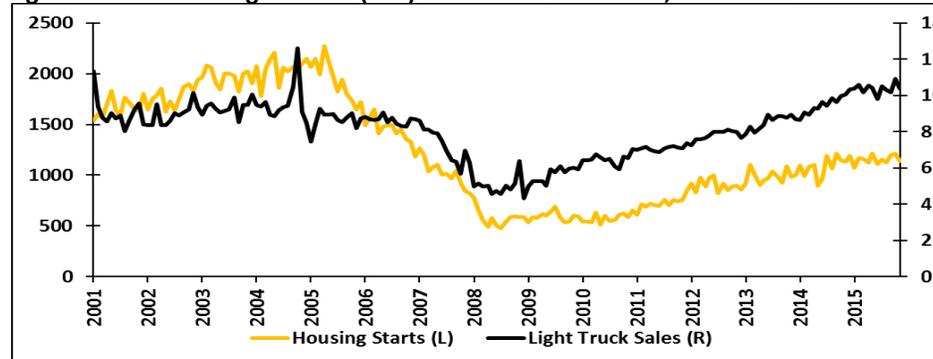
Figures 25 & 26: Unemployment vs. Auto composite relative to SPX YOY with lag, 1992-2005 (L) and 2005-2012 (R)



Source: Bloomberg, IMCP

The U.S. unemployment rate can also be used as a leading indicator of automotive stock performance, during periods of economic recession. I tested this theory for the following periods, the dot-com bubble between 2000 and 2001 and the financial crises in 2008. Finding the point at which unemployment peaks is crucial, as it is the most optimal point to be-long automotive stocks, like Ford. Entering at the optimal point offers maximum benefit from the cycle.

Figure 27: U.S. housing starts in (000) vs. U.S. LTS in millions, 2001-2015



Source: Factset

Consumer preference in the U.S. has recently switched from cars, to trucks and utility vehicles, which favors Ford’s strengths. In 2008, housing starts significantly declined as a result of the financial crisis. At the same time light truck sales slightly declined. I expect truck sales to always be less

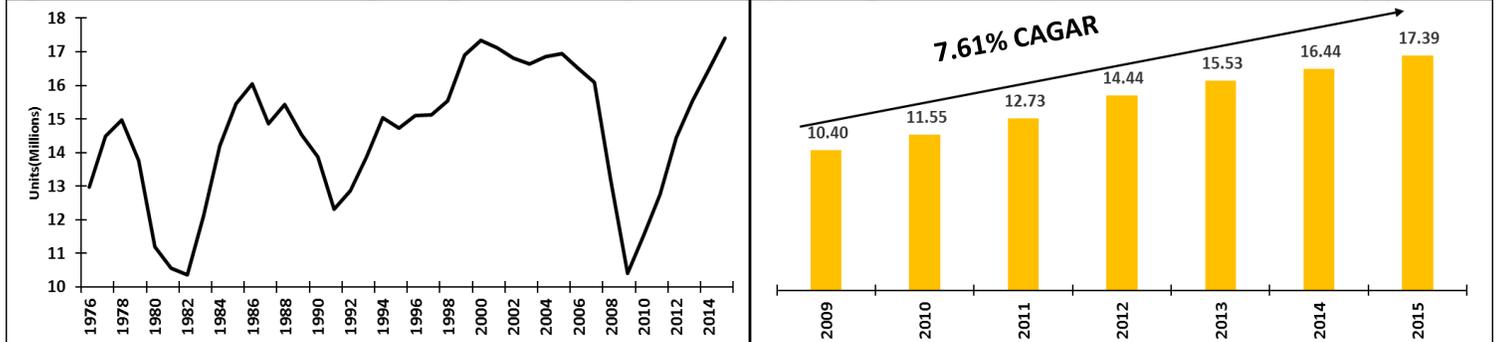
sensitive to economic conditions due to the loyalty of truck buyers. However, a strong housing market remains very important to Ford, as the F-Series has been the number one selling truck for 39 consecutive years.

Pent-Up Demand in the United States

Light vehicles sales, in term of units sold, have experienced relatively large declines since 2000; primarily as a result of the financial crises. Sales deteriorated 40% from 2000 to 2009, from a peak of 17.3m units in 2000, to a bottom of 10.4m units in 2009. However, since 2009, light vehicle sales have recovered in North America, especially in the United States. In 2015, the United States surpassed the peak year of 2000, with a record of 17.4m units sold.

The U.S. market is peaking at historic levels. Look for a moderately stronger 17' with a moderate decline in 18' and 19'.

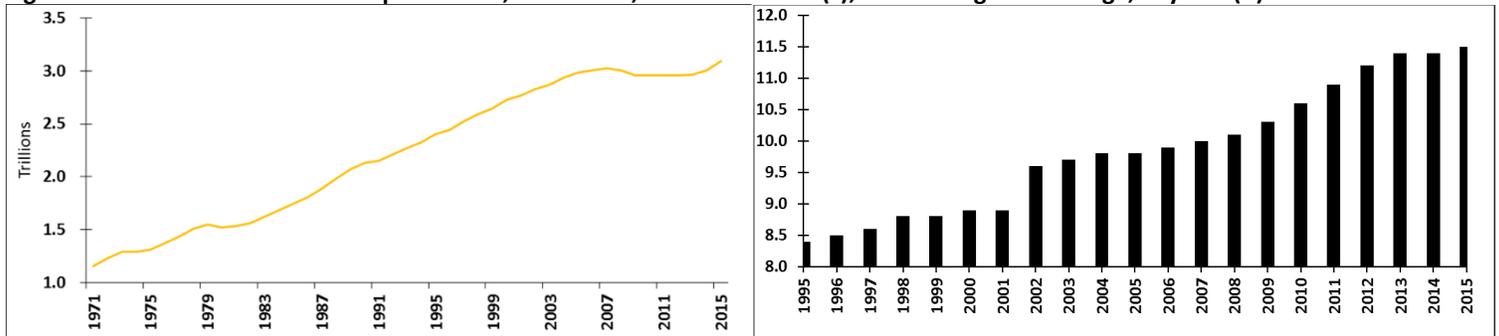
Figures 28 & 29: U.S. historical light weight vehicle sales, 1976-2015 (L), U.S. light vehicle sales, 2009-2015 units in millions (R)



Source: Federal Reserve Bank of St. Louis

The recent growth has many industry participants curious as to how much further the industry can grow. Despite consistent growth, there is still pent-up demand that has yet to be released. Total miles driven annually in the United States has grown, on average, 2.73%, between 1971 and 2007. However, from 2008 to 2013, total miles driven per annum, uncharacteristically declined. Additionally, the average age of a vehicle in the United States has reached 11.5 years, which is also higher than ever before.

Figured 30 & 31: U.S. miles driven per annum, 1971-2015, units in trillions (L), U.S. average vehicle age, in years (R)



Source: Federal Reserve Bank of St. Louis, U.S. DOT

The record 17.4m units in 2015 eclipses the former record in 2000 of 17.35m. Investors should be pessimistic about the quality of this volume.

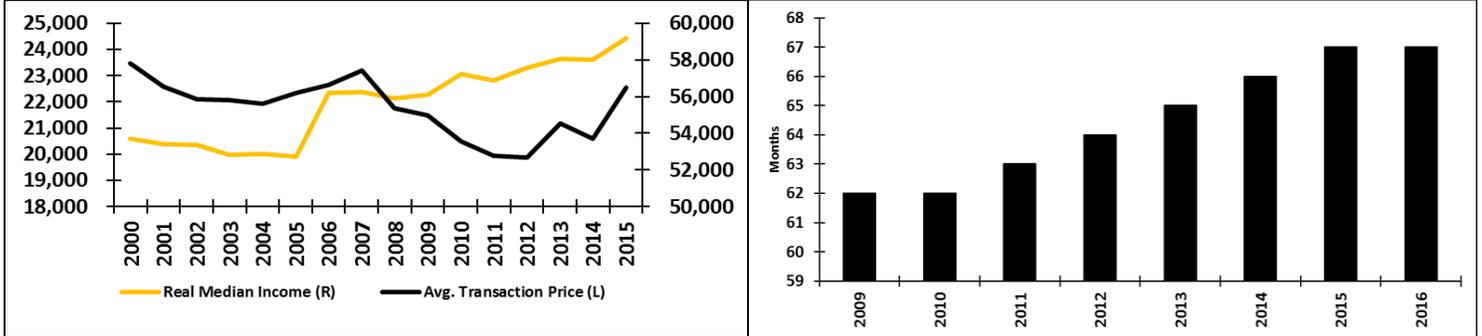
Individuals cut back on driving during the recession, as macroeconomic factors squeezed their disposable incomes. Fewer miles driven meant that vehicle replacement was not needed, resulting in an increased average vehicle age from 2008 to 2014. The recent resurgence of growth in miles driven per annum, combined with older vehicles, suggests that further growth is inevitable.

According to the U.S. Department of Highway Administration, the average American drives 13,476 miles per year. Considering the average age of a vehicle in the United States is 11.5 years old, the average vehicle has driven roughly 155,000 miles. Typically, mechanical failures become common after 150,000 miles. If replacement occurs at 175,000 miles, it can be implied that 17.6m vehicles were used up in 2015, as 3.09 trillion miles were driven.

New Car Financing in the United States

The real average transaction price in the automotive industry grew by 18.5% from 2000 to 2015. Simultaneously, real median incomes in the United States declined by 2.2%. In 2015, a vehicle accounted for 43% of the average median income. In 2016, the average transaction price rose 2.2% YOY, to \$33,781. A favorable macroeconomic environment that includes credit easing, low interest rates, and longer loan terms have offset the negative effects of rising transaction costs by keeping monthly payments low.

Figures 32 & 33: Real median income vs. Real avg. transaction price, 2000-2015 (L) and Average car loan term since 2009 (R)

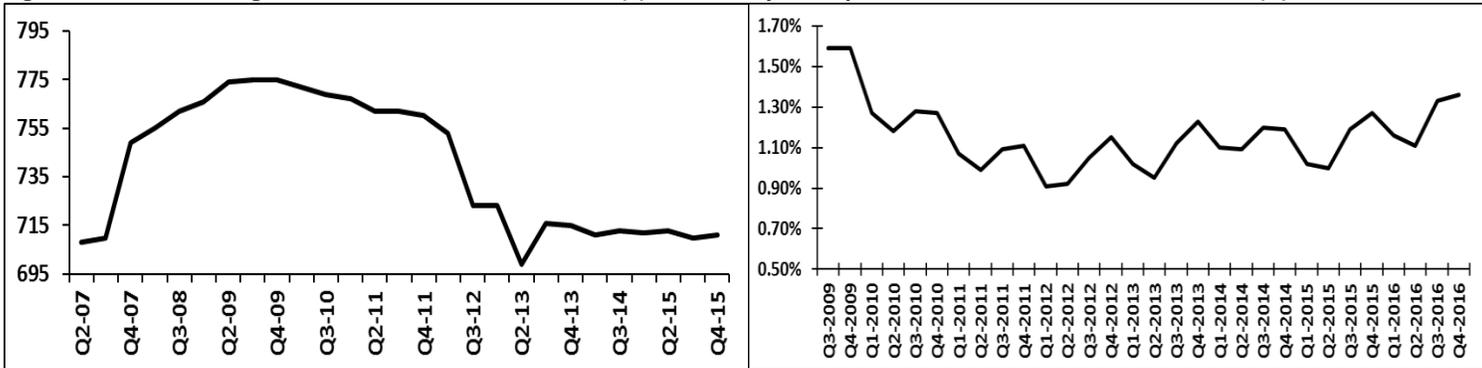


Source: Federal Reserve Bank of St. Louis

Source: Experian

The average loan term rose to 67 months in 2015. Additionally, 44% of financed vehicles were financed with abnormally long terms (61-72 months) and loan terms over 73 months have reached all-time highs at 16.3%. Currently available financing options are tremendously concerning for auto manufacturers and the industry as a whole. It is important to note that this industry is extremely short-sighted and is measured in volume, not necessarily profits. As we approach another record year, in terms of units, I am very pessimistic regarding the quality of the volume that is being generated. Longer loan terms can increase the odds of negative equity, which can hurt trade in values and ultimately new car sales. Adding negative equity to new car deals can push monthly payments to unaffordable levels. Significant changes in these variables could increase monthly payments and reduce new car sales

Figures 34 & 35: Average car loan FICO score since 2007 (L) and 60-day delinquencies on all auto loans, 2009-2016 (R)



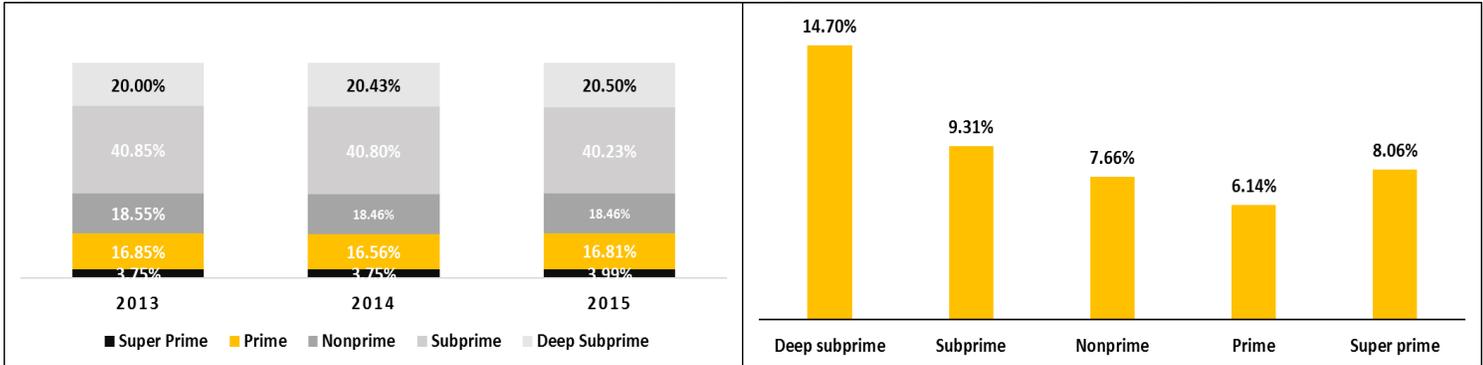
Source: Experian

Source: TransUnion

After the financial crisis, mortgage lenders have been required by law to verify that applicants can repay their debt, but car lenders do not have such an obligation.

If delinquencies continue to rise, credit agencies will have to reconsider their borrowing policies. A lot of the recent growth, for Ford and other manufacturers, has been directly related to the easing of credit. The market has greatly expanded by allowing lower credit customers access to new car loans. A tightening of credit could potentially push customers out of the market and volumes could suffer. In the fourth quarter of 2016, 60-day delinquencies on all auto loans increased 7.09% YOY to 1.36%. If this trend continues I expect sales volume to fall across the industry.

Figures 36 & 37: Risk distribution of auto loans, 2013-2015 (L) and YOY growth of auto loans by risk in 2015 (R)



Source: Experian

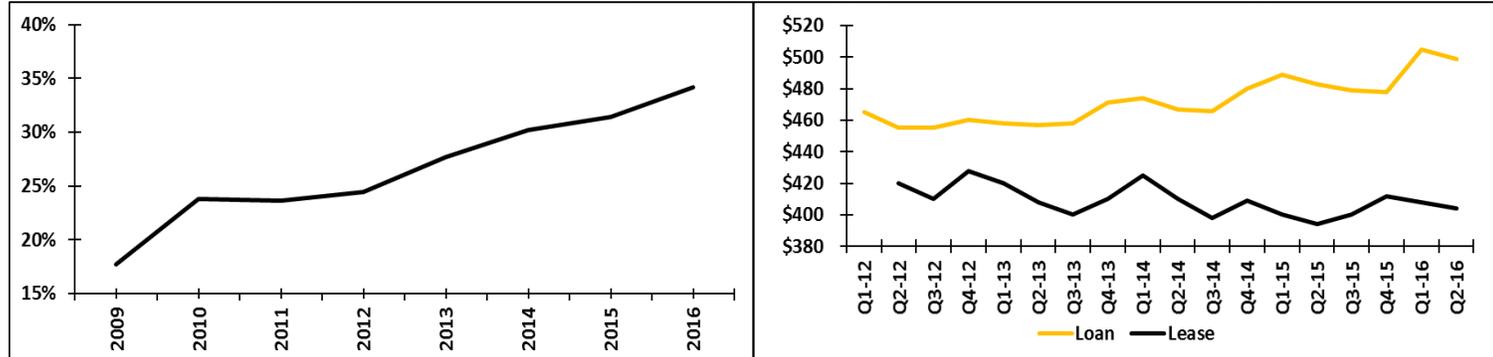
Leasing Vehicles in the United States

71.5% of lessees remain loyal to the brand, compared to 60.6% of those financing via conventional loans.

Lease penetration began increasing 2009 and reached over 30% in 2016. High transaction prices, as previously discussed, have made leasing an economically sound option.

Leasing provides consumers with higher priced vehicles for less money each month, as shown in Figure 39. Specifically, in 2016, consumers could save an average of \$100 per month by electing to lease rather than take out a loan to finance a car purchase (up \$36 YOY). Leasing remains a cheap alternative to purchasing, as long as residual values remain high. Traditionally, leased vehicles are returned back to the dealers after three years. These off-leased vehicles are then sold as certified pre-owned vehicles or are sold at auction in order to recover the remaining residual.

Figures 38 & 39: Industry lease penetration, 2009-2016 (L) and Avg. monthly payment: loan vs. lease, 2012-2016 (R)



Source: Bloomberg

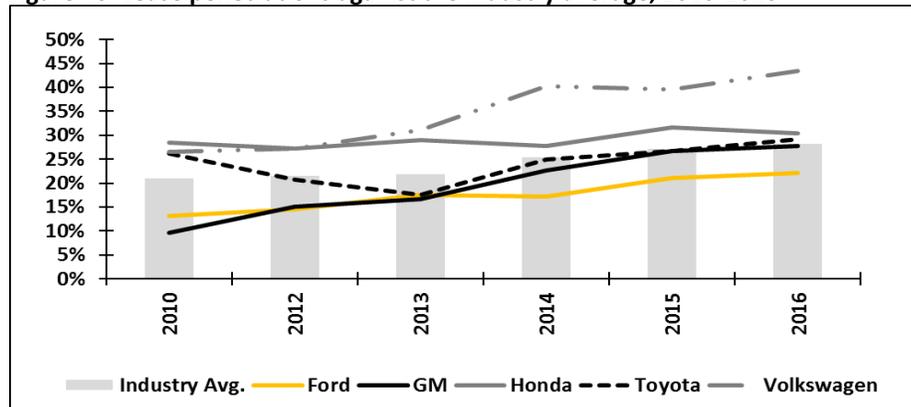
Source: Experian

Auto manufacturers that rely heavily on leases, take the vehicles back in 3 years and generally sell them for huge discounts.

Leasing carries stronger brand loyalty and reduces the volatility of new car sales. However, in order to keep leasing attractive, residual values must remain strong. This is a difficult battle because as leasing increases, manufacturers must fight the forces of supply and demand. An increase in supply of relatively new used vehicles could potentially apply downward pressure on residual values. As a result, the economic advantages of leasing could disappear.

Are the rising lease penetrations sustainable? I expect not.

Figure 40: Lease penetrations against the industry average, 2010-2016



Source: Bloomberg

This could be especially problematic to American OEMs, and especially Ford, as their success is highly dependent on the sales of SUVs and CUVs. These types of vehicles often carry higher prices and margins, making them prime candidates for leasing. However, SUV and CUV demand is also most sensitive to macroeconomic factors, such as oil, credit easing, and interest rates.

Figure 41: Lease offers comparison compact car segment, 2017 models

Compact Car	Transaction Price	Est. Residual Value	Depreciation	Interest	Lease Payment
Toyota Corolla	19,699	13,914	\$ 161	\$ 42	\$ 203
Volkswagen Golf	19,907	13,502	\$ 178	\$ 42	\$ 220
Honda Civic	18,677	11,962	\$ 187	\$ 38	\$ 225
Subaru Impreza	19,863	11,164	\$ 288	\$ 37	\$ 324
Chevy Cruze	19,819	9,458	\$ 298	\$ 34	\$ 332
Ford Focus	18,882	8,144	\$ 359	\$ 33	\$ 392
Dodge Dart	19,698	6,762	\$ 359	\$ 33	\$ 392

In 2016, the following brands had the best retained value:



TOYOTA SUBARU

Figure 42: Lease offers comparison utility SUV segment, 2017 models

Utility SUV	Transaction Price	Est. Residual Value	Depreciation	Interest	Lease Payment
Toyota RAV4	25,389	18,669	\$ 187	\$ 55	\$ 242
Subaru Outback	25,755	18,856	\$ 192	\$ 56	\$ 247
Honda CR-V	25,221	16,694	\$ 237	\$ 52	\$ 289
Volkswagen Tiguan	24,766	15,739	\$ 251	\$ 51	\$ 301
Chevy Equinox	25,050	15,778	\$ 258	\$ 51	\$ 309
Ford Escape	25,152	14,982	\$ 283	\$ 50	\$ 333
Jeep Cherokee	25,293	13,414	\$ 330	\$ 48	\$ 378

Historically, the three most-leased vehicles are the Honda Civic, Honda Accord, and the Toyota Camry.

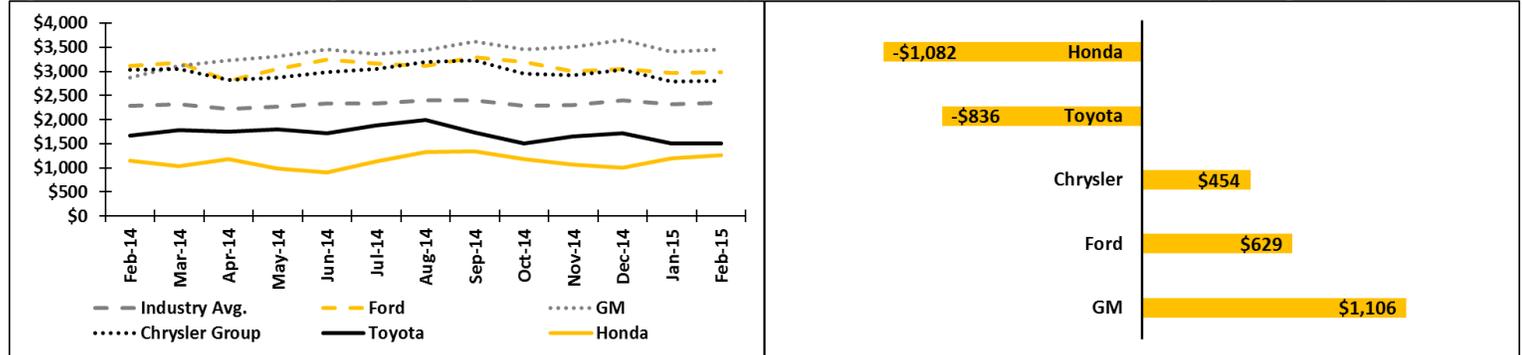
Source: ICMP, TrueCar, Graff Automotive, AutoNation

Foreign manufacturers are able to operate with higher than average lease penetrations because they manage their residuals. Foreign brands do this by not selling fleet vehicles (rentals) and keeping incentives low. As a result, without considering domestic incentives, leasing imports is typically cheaper which can be seen in figures 41 and 42.

Incentive Spending in the United States

Incentives are heavily utilized by American manufacturers in order to keep their products and lease offers competitive. Using incentives is a doubled-edged sword, as it creates a cycle that is nearly impossible to break. Over incentivizing vehicles undeniably helps maintain volume and market share, but it is a highly short-term strategy that negatively conditions consumers. Fords incentive spend has been historically been higher than the industry average.

Figures 43 & 44: OEMs' average incentive per vehicle, 2014-2015 (L), Total dollars of incentives above industry average, 2015 (R)

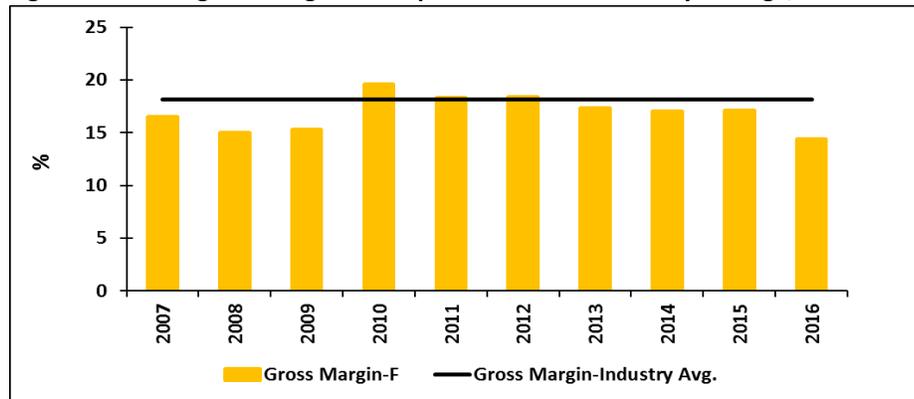


Source: Edmunds

Higher volumes due to incentives, sacrifices quality profit for quantity. Ford and the other domestic auto manufacturers rely too heavily on incentives.

Incentives put pressure on margins and generate low quality sales that artificially boost slumping volumes. Higher incentives create a push sales environment rather than a pull. As a result, the auto manufacturers create “pull-ahead” and drive customers to make purchases sooner than originally planned. This occurs because the consumer does not want to miss out on high incentives. Unfortunately, this strategy compresses volumes and creates highly volatile sales volumes, in which consumers only buy when incentives are high. Ford’s above average incentive spend explains their below industry gross margin.

Figure 45: Ford’s gross margin in comparison with the industry average, 2007-2016



Source: Factset

Market and Product Analysis in the United States

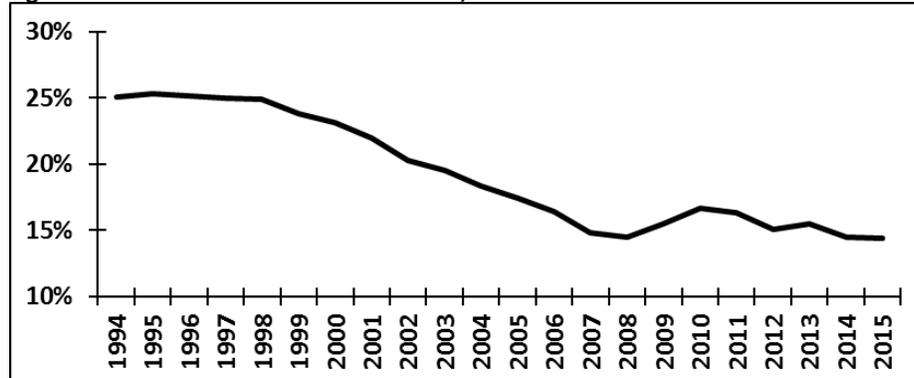
Foreign competitors are better equipped to compete in car segments. Ford is better equipped to compete in the utility and trucks segments.

Ford’s market share, in the United States, has been on the decline since the mid 1990’s. Specifically, Ford’s market share has declined more than 42% since 1994. Much of its share has been taken by Toyota and other foreign competitors. Referring back to Figures 41 and 42, foreign competitors have done a much better job at managing their residual values. Stronger residuals equate to more affordable lease payments, relative to Ford’s offers. Additionally, stronger residuals make it easier for the consumers to transfer out of older cars and into newer ones because of greater trade-in values. This loss of market share has been tough on Ford, especially through the recent financial crisis. During the financial crisis, the automotive industry saw a sharp spike in the demand for cars in the United States. It is important to note that foreign competitors have better offers in car segments. However, the playing fields in the utility and truck segments are more even.

The following are favorable macroeconomic conditions:

- Lower interest rates and oil prices
- Easing of credit
- Increasing consumer confidence and housing starts

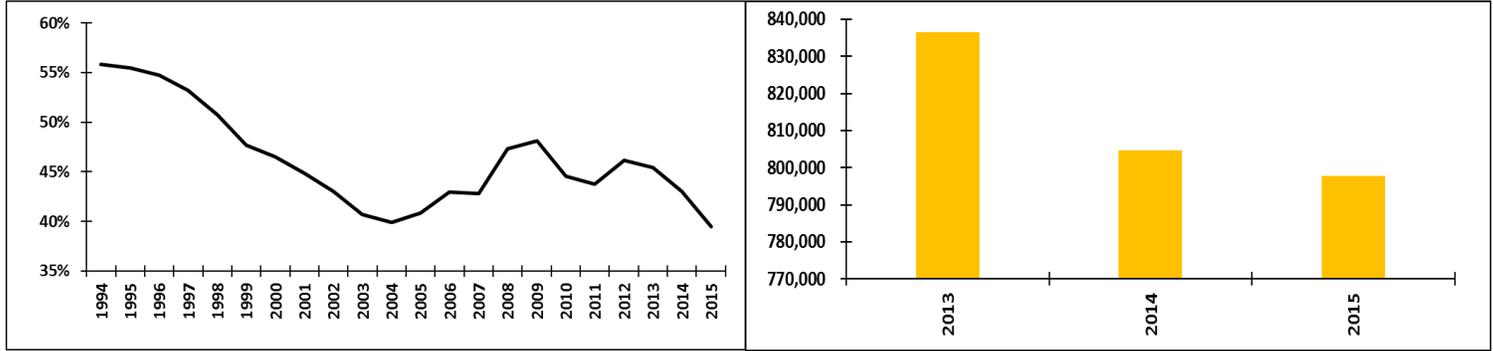
Figure 46: Ford’s market share in the U.S., 1994-2015



Source: Company reports

Consumer preference has changed. Less expensive more fuel efficient cars are taking a backseat to larger utility vehicles, such as SUVs, CUVs and trucks. This preference change has shifted demand to relatively more profitable larger utility vehicles and trucks. This trend has been particularly positive for Ford, as their F-Series pickup truck has been the number one selling pick-up for 39 years straight. Ford’s car volume has been continuously declining since 2013. In 2013, cars were 34% of Ford’s total volume. In 2016 this figure dropped to 31%.

Figures 47 & 48: % of cars sold of total light vehicles in the U.S., 1994-2015 (L), Ford’s total car sales, 2013-2015 (R)



Source: Company Reports

The resurgence of the smaller truck market further points to the U.S. market moving further away from cars.

In 2016, the U.S. market saw a strong decline in the car segment, as it was down 8.4% YOY. Simultaneously, the utility SUV and CUV segment was up 6.8%. Large SUVs saw the greatest growth YOY at 20.9%. I anticipate this trend to continue as utility vehicles offer a better driving experience and more flexibility, making them more practical and preferred by consumers. This trend will only be threatened if the cost of ownership becomes too overbearing.

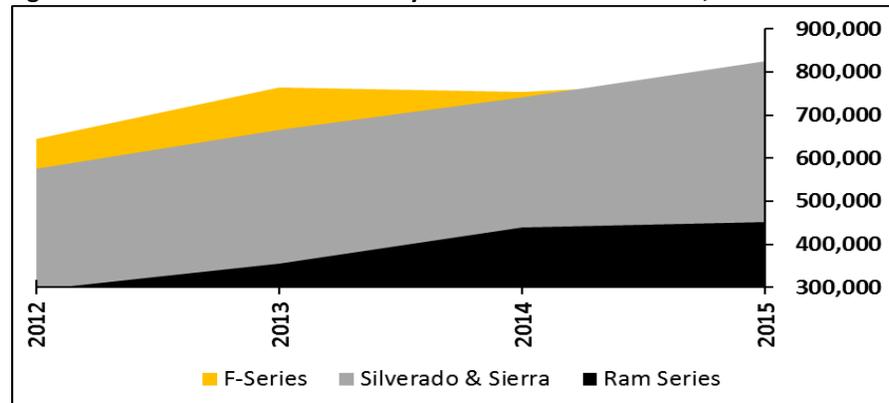
In 2016, the U.S. market saw a strong decline in cars, the segment was down 8.4% YOY. Simultaneously, the utility SUV and cross-over vehicle segment was up 6.8%. Large SUVs saw the greatest growth YOY at 20.9%. I look for this trend to continue as utility vehicles offer a better driving experience and more flexibility, making them more practical and preferred by consumers. This trend will only be threatened if the cost of ownership becomes too overbearing.

The United States has the largest pickup truck market in the world. Currently, Ford commands a 18% market share, which ranks them second behind GM with 20%. In 2015, Ford’s truck segment saw an increase of 9%. In contrast, Chevy saw 22% growth in trucks, while Fiat Chrysler saw only 5% growth.

The durability of the aluminum F-150 is concerning as many truck buyers demand durability.

Ford’s all the new aluminum F-150 has come under criticism as the bed of the truck is not as durable as the 2016 Chevy Silverado. Despite, the criticism the F-150 is still America’s top selling vehicle, selling 733,287 units through November of 2016 (212,683 more units than Chevy Silverado). The 2016, high-strength steel, Silverado was up 13.36% in 2015. It is currently behind the F-150 in units sold for 2016.

Figure 49: Ford’s VS GM and Fiat Chrysler truck sales in the U.S., 2012-2015



Source: Company Reports

Chevy’s growth in trucks can be attributed to their new 2015 Colorado pickup, which sold 84,430 units, beating analyst expectations. The Colorado competes in the midsize pickup segment which brings nostalgia, considering this segment was dumped by auto manufacturers in the mid to late 2000’s. Mid-sized trucks, like the Colorado, are a ploy to combat fast rising transaction prices that may have pushed consumers out of the traditional truck market. GM in combination with their GMC brand usually outsells Ford in midsize pickups. However, in the second quarter of 2016, GM came in second, this could indicate that midsize trucks are cannibalizing the full-sized pickup. Ford has their own midsize truck in their pipeline, the Ranger. The Ford Ranger should be hitting dealers as earlier as 2019.

Figure 50: Ford’s estimated product pipeline, 2017-2020

2017E	2018E	2019E	2020E
F-Series Super Duty-Large Picku	Ford Expedition-Large SUV	Lincoln Aviator-Large Lux CU	Ford EcoSport-Mid CUV
Lincoln Continental-Sedan	Lincoln Navigator-Large Lux S	Ford Explorer-Large CUV	Ford F-150-Large Pickup
Ford GT- Coupe	Lincoln MKA-Sedan	Ford Escape- Mid CUV	Ford Transit Connect-Va
	Lincoln-MKM-Coupe	Lincoln MKC-Small Lux CUV	Ford Bronco-Mid SUV
	Ford Focus-Sedan	Ford C-Max-Small SUV	Lincoln MKZ-Sedan
	Ford Fiesta-Sedan & Hatchba	Ford Ranger-Midsize Pickup	
		Ford Taurus-Sedan	
		Ford Fusion-Sedan	
11% of Volume Replaced	14% of Volume Replaced	35% of Volume Replaced	26% of Volume Replaced

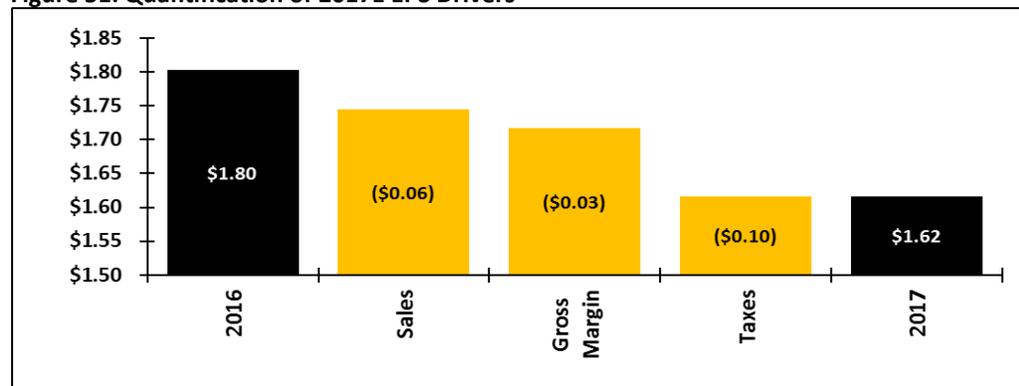
Source: BofA Merrill Lynch Global Research

Ford’s product mix is robust and evenly distributed between cars, utilities, and trucks. I view this favorably, as shifts in economic conditions could shift consumer demand between the different segments. In comparison, Fiat Chrysler is heavily dependent on utilities and trucks. The elimination of their two cars, the Dodge Dart and the Chrysler 200, leave them highly susceptible to shifts in demand. I do not find Ford to have this level of susceptibility, and I believe they are well positioned if macroeconomic conditions shift. Ford’s current pipeline, even though slanted more towards utilities and trucks, still keeps the firm’s offerings balanced.

Financial Analysis

Figure 51 illustrates the major 2017 financial drivers of the Ford Motor company. My research suggests Ford’s EPS will slightly decrease in 2017 to \$ 1.62. A 2% decrease in sales, due to a peaking U.S. market, will lower EPS by \$0.06. Ford’s gross margin will tighten in 2017, as downward pressure is applied due to overproduction and expenditures in emerging markets. Gross margin will decrease EPS by \$0.03. Taxes will increase to 33% from 28%, as Ford’s temporary 5% sales tax in China will increase to 10%. Even though Ford’s operations in China are a small percentage of its revenue, it is its major source of growth. Threats of more taxes from the Chinese government have been airing after the Trump presidential win. For 2017, I predict taxes will decrease EPS by \$0.10.

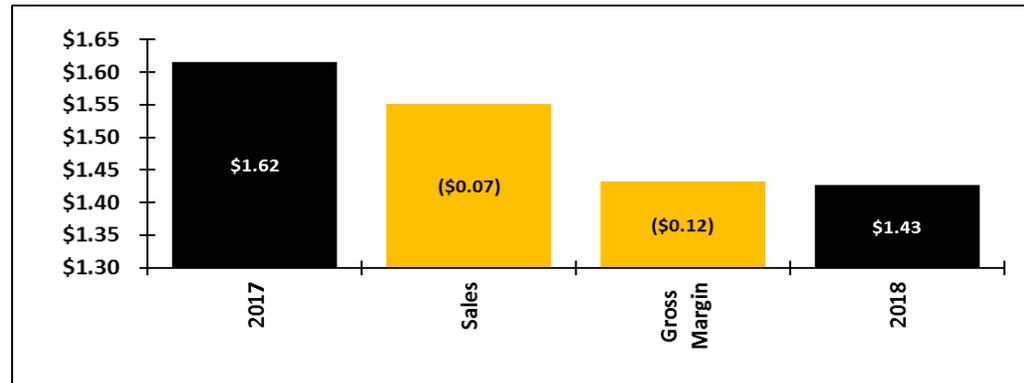
Figure 51: Quantification of 2017E EPS Drivers



Source: Company Reports, IMCP

Figure 52 illustrates the main 2018 financial drivers of the Ford Motor company. My research suggests Ford’s EPS will further decrease in 2018 to \$1.43. A decrease in sales due to a falling industry volume will be responsible for a decrease in EPS of \$0.07. Ford’s gross margin will continue to be pressured, as Ford continues its push into autonomous driving and global expansion. Preventive measures will likely lag, and I expect Ford’s gross margin to decrease EPS by \$0.12

Figure 52: Quantification of 2018E EPS Drivers



Source: Company Reports, IMCP

Review of EPS Estimates

Figure 53 highlights my 2017 and 2018 EPS estimates for the Ford Motor Company. My estimate for 2017 is in-line with consensus. However, my estimate for 2018 significantly differs from consensus in a bearish way. I mainly differ from consensus on the outlook of light vehicle sales in the United States. Ford is heavily dependent upon the U.S. market, as over 70% of its revenue is derived there. My research has led me to be very cautious in regards to the automotive industry, as I believe it is entering the later innings of its cycle.

Figure 53: EPS estimates vs. consensus

	FY 2017E	FY2018E
Consensus	\$1.62	\$1.71
Estimates	\$1.62	\$1.43

Source: Factset, IMCP

Against consensus, I expect light vehicle sales in the U.S. to decline in 2018 by 2%. Additionally, I anticipate that along with decreasing industry volume, rate hikes from the Fed will cause large automotive dealers to stop holding excess inventory. As a result, I anticipate Ford’s automotive revenue in North America to be down 2.6%. Trump’s recent presidential win also leaves me to be pessimistic about growth in China. I am concerned with anti-American movements by the Chinese public and government in response to Trump’s tough stance on China.

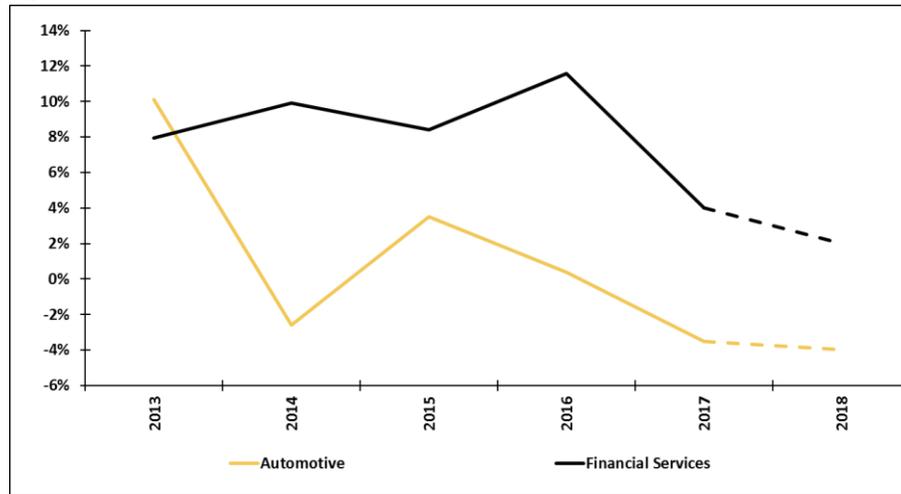
Review of Total Sales

Ford’s sales have found support in the \$140B-\$150B range. I look for this trend to continue moving forward, as I expect growth to decline in 2017 and 2018. In 2017, total sales will be \$146.6B. 92.9% of this will be attributable to automotive sales, while 7.1% will be from financial services. Ford credit will have growth of 4%, automotive sales will decline by 3.5%, and in total the firm will have negative growth of 3.0%.

In 2018, total sales will be \$143.3B. 92.5% of this will be attributable to automotive sales, while 7.5% will be from financial services. Ford credit will have a positive growth of 2%, automotive sales will have a negative growth of 4%, and in total the firm will have a negative growth of 3.6%.

Due to current low rates dealers are profiting off of dealer floor plan. Large dealer’s like AutoNation will stop holding excess inventory (reduce ordering as rates rise).

Figure 54: Ford's total sales YOY, 2012-2018



Source: Company Reports, IMCP

My total sales estimate for 2017e is in line with consensus. However, my FY 2018e is more bearish than consensus. As previously mentioned, my view differs because I believe the U.S. market will begin to cool off from record highs.

Figure 55: Total Sales estimates vs. consensus

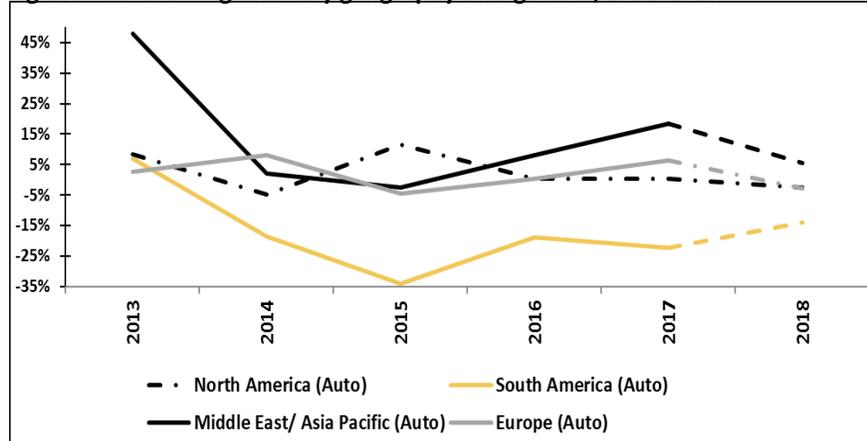
	FY 2017E	FY2018E
Consensus	150.2B	146.7B
Estimates	146.6B	143.3B

Source: Factset, IMCP

Review of Operating Segments

Ford enjoyed record industry volumes in North America, particularly in the U.S. where light vehicles sales broke a record with 17.4m units. In 2016, the industry continued to release pent-up demand, with a volume of approximately 17.3m units. Despite the industry's strong 16', Ford experienced a nominal decline in units, down 0.06%. Ford's total revenue was up 1.1% YOY in spite of the decline. Consumer preference for utilities and trucks, and Ford Credit kept growth positive. Refer to Appendix 3 for a detailed analysis of Ford's operating segments.

Figure 56: Ford's segments by geography YOY growth, 2012-2018



Source: Company Reports, IMCP

Ford's European operations have improved since 2012. Industry volume in Europe was up 4.2% in 2016 and is up 7.5% since 2012. Ford has capitalized on these improvements. Its market share is up 10.5% since 2012, and the firm now commands 7.7% of the European market. I expect mild but slow improvements for the European segment in 2017 and into 2018. The market is mainly dominated by Volkswagen, which commands 23% of the market.

Ford's Middle East and Asia Pacific segment has seen the most growth since 2012. In 2016, the segment was up 8.2% YOY. Much of the segment's growth is attributable to China. I expect much of Ford's growth to come from China, but as previously mentioned, I am bearish compared to consensus. Local brands in China have significantly out-performed joint ventures like Ford. Local brands were up 22% in 2015, while joint ventures were down 1%. Ford commands 4.7% of the Chinese market. With estimated industry volumes exceeding 25m light vehicles, China could drive 1.17 million units a year for Ford.

5-Step DuPont Analysis

Ford's ROE was above industry average in 2012 and 2013. However, in 2014 because of high costs due to expansion and product development, ROE fell 91% to 4.8%. In 2015 and 2016, ROE returned to above industry average. I expect ROE to decrease. DuPont analysis for Ford reveals that ROE is making a material shift in nearly every line item. Negative shifts in interest, operating margin, asset turns, taxes, and leverage will contribute to the decrease in ROE for the 2017 and 2018 fiscal years.

Figure 57: Ford's ROE breakdown, 2013-2018E

ROE	2013	2014	2015	2016	2017E	2018E
5-stage						
EBIT / sales	10.7%	2.1%	6.8%	7.2%	7.1%	6.6%
Sales / avg assets	0.75	0.70	0.69	0.66	0.61	0.58
EBT / EBIT	91.7%	40.7%	101.5%	92.4%	92.0%	90.7%
Net income / EBT	83.2%	99.8%	71.9%	71.4%	67.0%	67.0%
ROA	6.1%	0.6%	3.4%	3.1%	2.7%	2.3%
Avg assets / avg equity	9.23	8.07	8.16	7.64	7.13	6.61
ROE	56.4%	4.8%	27.8%	23.8%	19.1%	15.3%

Source: Company Reports, IMCP

Free Cash Flow

Figure 58: Ford's Free cash flow breakdown, 2013-2018E

Free Cash Flow	2013	2014	2015	2016	2017E	2018E
NOPAT	\$13,025	\$3,021	\$7,262	\$7,739	\$6,974	\$6,251
Growth	98.9%	-76.8%	140.4%	6.6%	-9.9%	-10.4%
NWC*	35,024	36,622	47,476	49,845	52,483	55,410
Net fixed assets	70,441	76,776	79,455	85,386	90,494	94,867
Total net operating capital	\$105,465	\$113,398	\$126,931	\$135,231	\$142,977	\$150,277
Growth	3.9%	7.5%	11.9%	6.5%	5.7%	5.1%
- Change in NOWC	(2,299)	1,598	10,854	2,369	2,638	2,927
- Change in NFA	6,209	6,335	2,679	5,931	5,108	4,373
FCFF	\$9,115	-\$4,912	-\$6,271	-\$561	-\$772	-\$1,050
Growth		-153.9%	27.7%	-91.1%	37.7%	36.0%
- After-tax interest expense	1,079	1,791	(109)	586	559	573
+ Net new ST and LT debt	9,630	4,483	13,683	4,370	3,500	3,500
FCFE	\$17,666	-\$2,220	\$7,521	\$3,223	\$2,169	\$1,878
Growth		-112.6%	-438.8%	-57.1%	-32.7%	-13.5%

Source: Company Reports, IMCP

NWC* -- excludes cash.

NOPAT has been increasing since 2013, with the exception of 2014. In 2014, NOPAT decreased 76.8% due to higher costs, lower volumes and unexpected setbacks. The higher costs were largely due to new product developments, like the F-Series pick-up and global expansion. In both 2015 and 2016, NOPAT experienced increases, particularly a 140% increase in 2015. The growth in NOPAT can be attributable to record years, in terms of industry volume, in the U.S.

I do not expect this trend to continue moving forward in 2017 and 2018. I estimate that NOPAT will decrease 9.9% in 2017 and 10.5% in 2018. As a result, I estimate that FCF in 2017 and 2018 will decline. I forecast FCF to be \$-772m in 2017 and \$-1,050m in 2018. My forecast is based on my belief that the U.S. market hit its peak 2016, and is now on the decline. However, I expect the firm to continue growing capital at approximately at 5.6%. This further exacerbates the FCF decline

Valuation

Ford was valued using multiples and a 3-stage discounting cash flow model. Based on multiples, the stock is slightly below its competitors’ averages but this is deserved. On a DCF basis, the stock is worth \$11.7, which is significantly lower than its current price of \$12.56. I place 70% weight on the DCF framework, which values the stock at \$11.7 and 30% weight on trading history valuation, which values the stock at \$9.6. As a result, the target price is \$11.1

Trading History

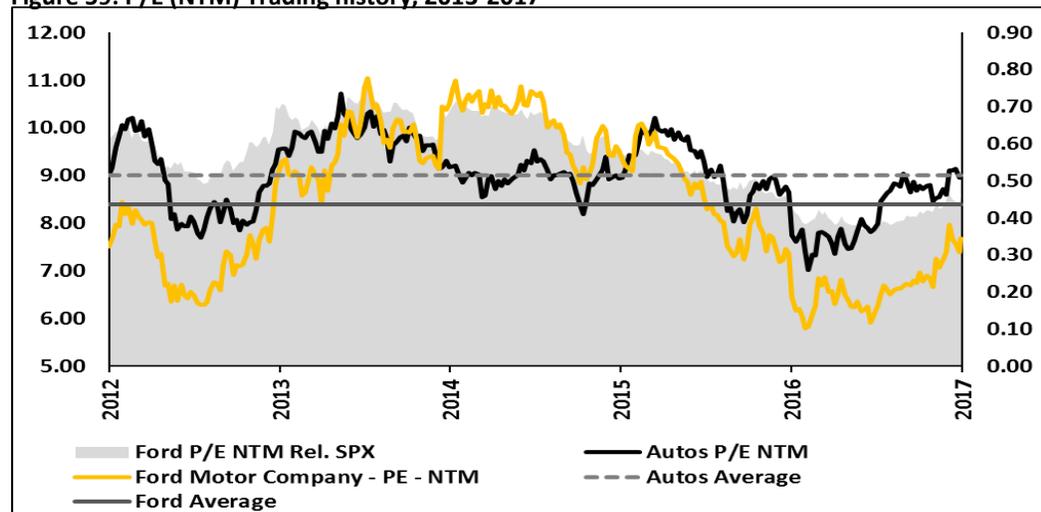
Figure 37 shows how Ford’s P/E NTM compares with the auto industry’s P/E NTM for the past 5 years. In 2013, Ford was trading at its 5-year high relative to the S&P 500. This was during a period of P/E growth for the whole auto industry. Since then, Ford and its peers have experienced declining P/E’s mainly due to expectations that earnings in the industry have reached their highs.

Ford typically trades at a P/E lower than its peers because it carries significantly more debt. As Ford is currently expanding globally, growth is something to consider. However, I am very pessimistic as I don’t expect these opportunities to generate growth in the near future. The peer group currently has an average D/E ratio of 1, Ford operates at a ratio 3 times the industry average.

Ford’s EBITDA/Interest Expense in 2015 was 14.25, which gives it plenty of coverage. However, due to auto manufacturing’s high operating leverage, another recession could significantly eat away at this coverage. I expect that the economy will go through another business cycle before any amount of significant growth is realized from global expansion.

Breaking down P/E, (P/E = Payout/k-g), I expect that an increase in k, due to high amounts of financial leverage, will overshadow any increases in g. As a result, I think Ford’s P/E will continue to fall with the auto industry and trade below the average.

Figure 59: P/E (NTM) Trading history, 2013-2017



Source: Factset

Assuming the firm maintains a 7.7 NTM P/E at the end of 2017, it should trade at \$11.0 by the end of the year.

- $7.7 * 2017 \text{ EPS of } 1.43 = \11.0

Discounting \$11.0 back to today at a 14.2% cost of equity (explained in Discounted Cash Flow section) yields a price of \$9.6.

Figure 60: Ford's Current and 5-Year Avg. P/E, P/S, P/B

	P/E	P/S	P/B
Current	7.66X	.33X	1.61X
5-Year Avg.	9.42X	.39X	2.55X

Source: Factset

Relative Valuation

Excluding Volkswagen, Figure 61 shows that Ford is currently trading at a price to earnings multiple lower than the industry average (TTM P/E 6.2 vs. 8.4). This is reflective of the market expecting a long term negative growth of 0.4% vs. a positive growth of 10.2% for the industry. Negative growth is likely due to Ford's overreliance on the U.S. market, which is currently peaking. Price to sales in 2016 approached its 5-year average of 0.39. The firm's P/S is currently slightly lower than its peer group, which is a reflection of its relatively lower operating margin compared to its peers.

Figure 61: Ford's Comp Sheet

Ticker	Name	Current Price	Market Value	Price Change						Earnings Growth						Beta	LT Debt/Equity	S&P Rating	LTM Dividend		
				1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	LTG	NTM	2015	2016	2017	2018				Pst 5yr	Yield	Payout
F	FORD MOTOR CO	\$12.56	\$49,912	2.3	(0.2)	10.7	3.5	9.6	3.5	-0.4	-18.7%	66.4%	-8.8%	-6.8%	4.3%	3.0%	1.37	285.7%	B	4.85%	29.9%
TM	TOYOTA MOTOR CORP	\$115.12	\$187,818	0.5	(2.9)	1.7	4.6	0.1	(1.8)	5.6	-7.7%	4.8%	7.4%	-19.2%	15.9%	32.1%	0.70	53.1%		2.90%	28.5%
GM	GENERAL MOTORS CO	\$36.33	\$55,379	1.7	3.4	16.9	20.1	25.6	4.3	16.1	-33.5%	64.6%	19.9%	-2.7%	0.9%	0.9%	1.64	120.1%		4.15%	17.3%
FCAU	FIAT CHRYSLER AUTOMOBILES NV	\$11.03	\$16,854	1.2	15.5	62.4	66.6	66.3	20.9	17.9	67.1%	87.7%	38.5%	17.8%	13.1%		1.82	172.7%		0.10%	
NSANY	NISSAN MOTOR CO LTD	\$20.03	\$39,129	1.2	0.5	(0.9)	4.5	5.1	(0.6)	7.9	25.8%	2.8%	14.3%	17.8%	13.9%	2.9%	1.12	97.4%		1.66%	15.5%
005380-KR	HYUNDAI MOTOR CO	\$119.82	\$32,190	1.1	(10.1)	0.7	4.2	6.6	(5.8)	4.2	42.2%	-17.5%	-19.4%	22.9%	6.7%	-7.7%	1.33	101.5%		2.87%	21.1%
HMC	HONDA MOTOR CO LTD	\$31.06	\$55,979	2.8	4.9	9.4	9.7	16.6	6.4	20.3	15.9%	-20.1%	-34.3%	62.3%	12.8%	-14.5%	1.05	53.3%		2.45%	
Average			\$62,466	1.5	1.6	14.4	16.2	18.6	3.8	10.2	13.0%	27.0%	2.5%	13.1%	9.6%	2.8%	1.29	126.3%		2.71%	22.5%
Median			\$49,912	1.2	0.5	9.4	4.6	9.6	3.5	7.9	15.9%	4.8%	7.4%	17.8%	12.8%	1.9%	1.33	101.5%		2.87%	21.1%
SPX	S&P 500 INDEX	\$2,297		0.7	1.8	10.0	6.2	20.1	2.6			7.7%	1.2%	7.6%	12.4%						

Ticker	Website	2016		P/E							2016			EV/		P/CF		Sales Growth			Book
		ROE	P/B	2014	2015	2016	TTM	NTM	2017	2018	NPM	P/S	OM	ROIC	EBIT	Current	5-yr	NTM	STM	Pst 5yr	Equity
F	http://www.ford.com	22.6%	1.61	13.4	7.3	6.9	6.2	7.7	7.7	7.3	4.6%	0.33	5.2%	6.6%	21.7			-7.6%	6.1%	3.0%	\$7.78
TM	http://www.toyota.co.jp	11.4%	1.07	11.5	10.7	9.5	9.8	10.6	11.6	10.0	8.2%	0.76	8.7%	8.3%	12.8	5.5	6.6	-1.5%	5.5%	1.1%	\$107.80
GM	http://www.gm.com	20.2%	1.22	11.4	6.8	5.8	4.2	6.3	6.2	6.1	5.6%	0.34	6.5%	12.9%	11.3	3.2	4.5	-3.4%	3.7%	2.4%	\$29.81
FCAU	http://www.fcagroup.com	11.3%	0.73	11.8	7.6	5.4	8.4	5.0	5.5	4.9	2.2%	0.14			1.6			1.6%		13.3%	\$15.02
NSANY	http://www.nissan.co.jp	9.9%	0.95	10.0	11.7	9.7	9.4	7.5	8.2	7.2	4.0%	0.39	6.4%	5.9%	14.5	3.3	3.3	2.8%	6.1%	-0.4%	\$21.03
005380-KR		8.0%	0.58	6.2	6.2	7.4	7.3	5.2	5.9	5.6	5.5%	0.40	5.5%	4.3%		4.5	4.1	5.0%		3.8%	\$205.84
HMC	http://www.honda.co.jp	4.6%	0.89	9.7	13.2	18.4	13.2	11.4	12.0	10.7	2.4%	0.46	4.6%	3.1%	22.4	5.0	5.6	-1.2%	6.1%	2.9%	\$34.75
Average		12.6%	1.01	10.6	9.1	9.0	8.4	7.7	8.2	7.4	4.6%	0.40	6.2%	6.8%	16.5	3.9	4.8	-0.6%	5.5%	3.7%	
Median		11.3%	0.95	11.4	7.6	7.4	8.4	7.5	7.7	7.2	4.6%	0.39	6.0%	6.3%	14.5	3.9	4.5	-1.2%	6.1%	2.9%	
spx	S&P 500 INDEX			19.0	17.5	19.0			18.1	16.1											

Source: Factset

I created a composite ranking based on one valuation and three fundamental metrics. Since each metric has a different scale, all factors were converted to a percentage of the maximum value. Figure 62 shows each metric used and its weight in the composite. The fundamental metrics including 1/Beta, 1/ (LTD/Equity), and net profit margin are equally weighted. Figure 63 is a

regression based on the fundamental and the weighted valuation metrics. Based on the regression of the line in Figure 63, Ford appears to be overvalued based on its fundamentals.

Figure 62: Composite valuation, percentage of the maximum

Ticker	Name	Fundamental Percent of Range			Valuation Percent of Range
		1/ Beta	1/(LTD/ Equity)	2016 NPM	P/S
F	FORD MOTOR CO	20%	0%	40%	30%
TM	TOYOTA MOTOR CORP	100%	100%	100%	100%
GM	GENERAL MOTORS CO	7%	31%	57%	31%
FCAU	FIAT CHRYSLER AUTOMOBILES NV	0%	15%	0%	0%
NSANY	NISSAN MOTOR CO LTD	39%	44%	30%	39%
005380-KR	HYUNDAI MOTOR CO	23%	41%	55%	41%
HMC	HONDA MOTOR CO LTD	45%	100%	3%	51%

Source: Factset, IMCP

Figure 63: Composite relative valuation

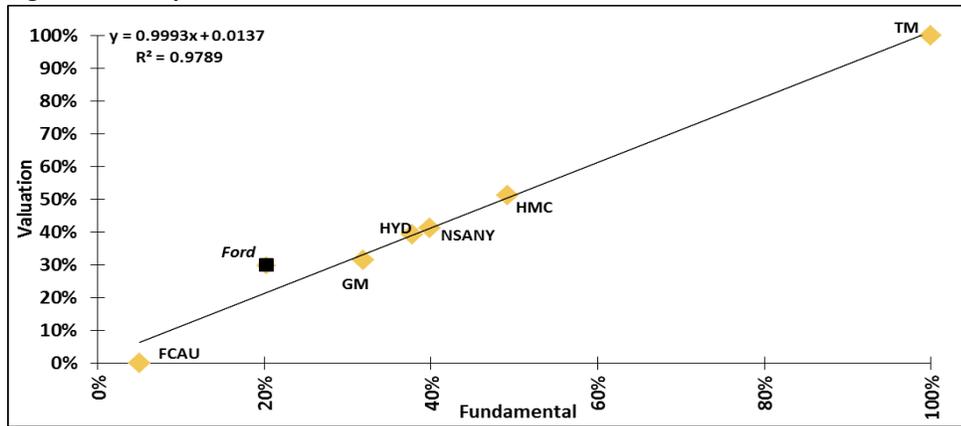
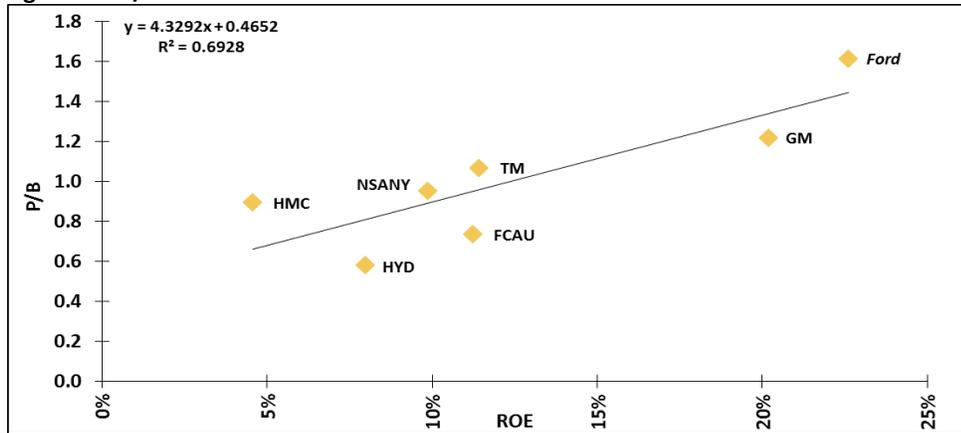


Figure 64 displays a more thorough analysis of P/B and ROE. The calculated R-squared of the regression indicates that over 69% of a sampled firm's P/B is explained by its ROE. Ford has the highest P/B and ROE of the peer grouping and according to this measure it is overvalued.

- Estimate P/B – 2016 ROE (23.8%*4.3292) +.4652 = 1.50
- P/B is currently at 1.61 so Ford is overvalued by 7.3%

Figure 64: P/B vs. ROE



Source: Factset, IMCP

Discounted Cash Flow Analysis

A three stage discounted cash flow model was also used to value Ford.

For the purpose of this analysis, the company's cost of equity was calculated to be 14.2% using the Capital Asset Pricing Model. The underlying assumptions used in calculating this rate are as follows:

- The risk free rate, as represented by the ten-year Treasury bond yield, is 2.27%.
- A ten-year beta of 1.54 was utilized, since the company has a higher risk than the market as it is much more cyclical than the average firm.
- A long term market rate of return of 10% was assumed, since historically, the market has generated an annual return of about 10%.

Given the above assumptions, the cost of equity is 14.2% ($2.27 + 1.54 (10.0 - 2.27)$).

Stage One - The model's first stage simply discounts fiscal years 2017 and 2018 free cash flow to equity (FCFE). These per share cash flows are forecasted to be \$0.55 and 0.47, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of 0.84 per share. Thus, stage one of this discounted cash flow analysis contributes \$0.84 to value.

Stage Two - Stage two of the model focuses on fiscal years 2019 to 2023. During this period, FCFE is calculated based on revenue growth, NOPAT margin and capital growth assumptions. The resulting cash flows are then discounted using the company's 14.2% cost of equity. I assume a constant 1.0% sales growth from 2019-2023. The ratio of NWC to sales will decrease by 0.08 in 2019, 0.07 in 2020, and 0.05 per year from 2021-2023. NFA turnover will fall 0.03 per year, as a result of revenue increases and global expansion. Also, the NOPAT margin is expected to slightly increase from 2019-2023.

Figure 65: FCFE and discounted FCFE, 2017-2021

	2017	2018	2019	2020	2021	2022	2023
FCFE	\$0.55	\$0.47	\$1.63	\$1.68	\$1.79	\$1.79	\$1.78
Discounted FCFE	\$0.48	\$0.36	\$1.10	\$0.99	\$0.92	\$0.81	\$0.70

Added together, these discounted cash flows total \$4.52

Stage Three – Net income for the years 2019 – 2023 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from \$1.43 in 2018 to \$1.70 in 2023.

Figure 66: EPS estimates, 2017-2021

	2017	2018	2019	2020	2021	2022	2023
EPS	\$1.62	\$1.43	\$1.48	\$1.53	\$1.59	\$1.64	\$1.70

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. For the purpose of this analysis, I used a terminal P/E of 9.50 which may seem slightly high, but it is at a large discount to the market and near its five-year average. In the short-term, I expect the P/E to fall due to increased risk and slower growth. However, I expect that by early 2020 Ford will begin to show signs of promising growth due to global expansion and autonomous driving. The growth potential will cause the stock to trade above its current P/E.

Given the assumed terminal earnings per share of \$1.70 and a price to earnings ratio of 9.5, a terminal value of \$16.13 per share is calculated. Using the 14.2% cost of equity, this number is discounted back to a present value of \$6.38.

Total Present Value – Given the above assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of \$11.74 is calculated (0.84 + 4.52 + 6.38). Given F’s current price of \$12.56, this model indicates that the stock is slightly overvalued.

Figure 67: 3-Stage DCF Model (Base Case)

Cost of equity								
Market return	10.0%							
- Risk free rate	2.27%							
= Market risk premium	7.7%							
* Beta	1.54							
= Stock risk premium	11.9%							
r = r_f + stock RP	14.2%							
				Terminal year P/E				
				2016			9.50	
		Year						
		1	2	3	4	5	6	7
		First Stage			Second Stage			
Cash flows		2017	2018	2019	2020	2021	2022	2023
Sales Growth		-3.0%	-3.6%	1.0%	1.0%	1.0%	1.0%	1.0%
NOPAT / S		4.8%	4.4%	4.5%	4.7%	4.8%	4.9%	5.0%
S / NWC		2.79	2.55	2.47	2.40	2.35	2.30	2.25
S / NFA (EOY)		1.62	1.49	1.46	1.43	1.40	1.37	1.34
S / IC (EOY)		1.03	0.94	0.92	0.90	0.88	0.86	0.84
ROIC (EOY)		4.9%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
ROIC (BOY)		4.4%	4.4%	4.3%	4.3%	4.3%	4.3%	4.3%
Share Growth			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sales		\$146,600	\$141,352	\$142,765	\$144,193	\$145,635	\$147,091	\$148,562
NOPAT		\$6,974	\$6,251	\$6,478	\$6,710	\$6,945	\$7,185	\$7,428
Growth			-10.4%	3.6%	3.6%	3.5%	3.4%	3.4%
- Change in NWC		2638	2927	2390	2281	1892	1980	2075
NWC or NOWC EOY		52483	55410	57800	60080	61972	63953	66028
Growth NWC			5.6%	4.3%	3.9%	3.1%	3.2%	3.2%
- Chg NFA		5108	4373	2917	3050	3191	3341	3501
NFA EOY		90,494	94,867	97,784	100,834	104,025	107,366	110,867
Growth NFA			4.8%	3.1%	3.1%	3.2%	3.2%	3.3%
Total inv in op cap		7746	7300	5307	5330	5083	5321	5576
Total net op cap		142977	150277	155584	160915	165997	171318	176895
FCFF		(\$772)	(\$1,050)	\$1,171	\$1,379	\$1,862	\$1,863	\$1,852
% of sales		-0.5%	-0.7%	0.8%	1.0%	1.3%	1.3%	1.2%
Growth			36.0%	-211.5%	17.8%	35.0%	0.0%	-0.6%
- Interest (1-tax rate)		559	573	596	620	643	666	690
Growth			2.5%	4.1%	3.9%	3.8%	3.6%	3.5%
+ Net new debt		3500	3500	5900	5900	5900	5900	5900
Debt		140724	144224	150124	156024	161924	167824	173724
Debt / tot net op capital		98.4%	96.0%	96.5%	97.0%	97.5%	98.0%	98.2%
FCFE w/ debt		\$2,169	\$1,878	\$6,475	\$6,660	\$7,119	\$7,097	\$7,062
% of sales		1.5%	1.3%	4.5%	4.6%	4.9%	4.8%	4.8%
Growth			-13.5%	244.8%	2.9%	6.9%	-0.3%	-0.5%
/ No Shares		3969.0	3969.0	3,969.0	3,969.0	3,969.0	3,969.0	3,969.0
FCFE		\$0.55	\$0.47	\$1.63	\$1.68	\$1.79	\$1.79	\$1.78
Discounted FCFE		\$0.48	\$0.36	\$1.10	\$0.99	\$0.92	\$0.81	\$0.70
Terminal value P/E								
Net income		\$6,417	\$5,680	\$5,882	\$6,090	\$6,302	\$6,518	\$6,738
% of sales		4.4%	4.0%	4.1%	4.2%	4.3%	4.4%	4.5%
EPS		\$1.62	\$1.43	\$1.48	\$1.53	\$1.59	\$1.64	\$1.70
Growth			-11.5%	3.6%	3.5%	3.5%	3.4%	3.4%
Terminal P/E								
* Terminal EPS								
Terminal value								
* Discount factor								
Discounted terminal value								
First stage	\$0.84	Present value of first 2 year cash flow						
Second stage	\$4.52	Present value of year 3-7 cash flow						
Third stage	\$6.38	Present value of terminal value P/E						
Value (P/E)	\$11.74	= value at beg of fiscal yr 2017						

Source: IMCP

Scenario Analysis

Bull Scenario (Best Case)

For a bull scenario I assume Ford’s terminal year P/E will trade at 11.00 with constant sales growth of 6.5% from 2019-2023. To justify this high growth, I assume the U.S. market will continue to grow setting new highs in light vehicle sales. I also assume expansion in market share in emerging markets, especially China. Furthermore, I assume margins will expand because of utility and truck sales. As a result, Ford’s NOPAT will increase, on average, by 17% YOY from 2019-2023. Finally, I assume S/NWC will remain fixed at 2.55. I leave all other variables constant, as in my base case on page 23.

Total Present Value – Given the above bull assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of \$16.04 is calculated (0.84 + 0.91 + 14.29). Given F’s current price of \$12.56, this bull scenario model indicates that the stock is undervalued

Figure 68: Bull scenario 3-Stage DCF Model

Cost of equity								
Market return	10.0%							
- Risk free rate	2.27%							
= Market risk premium	7.7%							
* Beta	1.54							
= Stock risk premium	11.9%							
r = r_f + stock RP	14.2%							
		Terminal year P/E						
		2016 11.00						
		Year						
		1	2	3	4	5	6	7
		First Stage			Second Stage			
		2017	2018	2019	2020	2021	2022	2023
Cash flows								
Sales Growth		-3.0%	-3.6%	6.5%	6.5%	6.5%	6.5%	6.5%
NOPAT / S		4.8%	4.4%	4.9%	5.3%	5.9%	6.5%	7.1%
S / NWC		2.79	2.55	2.55	2.55	2.55	2.55	2.55
S / NFA (EOY)		1.62	1.49	1.46	1.43	1.40	1.37	1.34
S / IC (EOY)		1.03	0.94	0.93	0.92	0.90	0.89	0.88
ROIC (EOY)		4.9%	4.2%	4.5%	4.9%	5.3%	5.7%	6.2%
ROIC (BOY)			4.4%	4.9%	5.3%	5.7%	6.2%	6.7%
Share Growth			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sales		\$146,600	\$141,352	\$150,540	\$160,325	\$170,746	\$181,844	\$193,664
NOPAT		\$6,974	\$6,251	\$7,316	\$8,561	\$10,023	\$11,729	\$13,731
Growth			-10.4%	17.0%	17.0%	17.1%	17.0%	17.1%
- Change in NWC		2638	2927	3625	3837	4087	4352	4635
NWC or NOWC EOY		52483	55410	59035	62872	66959	71311	75947
Growth NWC			5.6%	6.5%	6.5%	6.5%	6.5%	6.5%
- Chg NFA		5108	4373	8242	9006	9846	10772	11792
NFA EOY		90,494	94,867	103,109	112,115	121,961	132,733	144,525
Growth NFA			4.8%	8.7%	8.7%	8.8%	8.8%	8.9%
Total inv in op cap		7746	7300	11868	12843	13933	15124	16428
Total net op cap		142977	150277	162144	174988	188920	204044	220472
FCFF		(\$772)	(\$1,050)	(\$4,551)	(\$4,282)	(\$3,910)	(\$3,395)	(\$2,697)
% of sales		-0.5%	-0.7%	-3.0%	-2.7%	-2.3%	-1.9%	-1.4%
Growth			36.0%	333.6%	-5.9%	-8.7%	-13.2%	-20.6%
- Interest (1-tax rate)		559	573	596	620	643	666	690
Growth			2.5%	4.1%	3.9%	3.8%	3.6%	3.5%
+ Net new debt		3500	3500	5900	5900	5900	5900	5900
Debt		140724	144224	150124	156024	161924	167824	173724
Debt / tot net op capital		98.4%	96.0%	92.6%	89.2%	85.7%	82.2%	78.8%
FCFE w/ debt		\$2,169	\$1,878	\$752	\$999	\$1,347	\$1,838	\$2,513
% of sales		1.5%	1.3%	0.5%	0.6%	0.8%	1.0%	1.3%
Growth			-13.5%	-59.9%	32.7%	34.9%	36.5%	36.7%
/ No Shares		3969.0	3969.0	3,969.0	3,969.0	3,969.0	3,969.0	3,969.0
FCFE		\$0.55	\$0.47	\$0.19	\$0.25	\$0.34	\$0.46	\$0.63
Discounted FCFE		\$0.48	\$0.36	\$0.13	\$0.15	\$0.17	\$0.21	\$0.25
Third Stage								
Terminal value P/E								
Net income		\$6,417	\$5,680	\$6,720	\$7,942	\$9,380	\$11,062	\$13,041
% of sales		4.4%	4.0%	4.5%	5.0%	5.5%	6.1%	6.7%
EPS		\$1.62	\$1.43	\$1.69	\$2.00	\$2.36	\$2.79	\$3.29
Growth			-11.5%	18.3%	18.2%	18.1%	17.9%	17.9%
Terminal P/E								11.00
* Terminal EPS								\$3.29
Terminal value								\$36.14
* Discount factor								0.40
Discounted terminal value								\$14.29
Summary								
First stage	\$0.84	Present value of first 2 year cash flow						
Second stage	\$0.91	Present value of year 3-7 cash flow						
Third stage	\$14.29	Present value of terminal value P/E						
Value (P/E)	\$16.04	= value at beg of fiscal yr 2017						

Source: IMCP

Bear Scenario (Worst Case)

My bear scenario will assume that Ford’s terminal P/E will trade much lower at 8.00 with constant negative sales growth of 0.5%. To justify the low sales growth, I assume the U.S. market’s light vehicle sales will experience large declines. I also assume expansion in emerging markets will generate little to no growth. Furthermore, I assume Ford’s margins will contract, as consumer preference reverts back to cars, for which foreign competitors have better offers. As a result, Ford’s NOPAT will decrease, on average, by 17% YOY from 2019-2023. Finally, I assume S/NWC will remain fixed at 2.55. I leave all other variables constant, as in my base case on page 23.

Total Present Value – Given the above bear assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of \$6.36 is calculated (0.84 + 4.11 + 1.41). Given F’s current price of \$12.56, this bull scenario model indicates that the stock is overvalued.

Figure 69: Bear scenario 3-Stage DCF Model

Cost of equity								
Market return	10.0%							
- Risk free rate	2.27%							
= Market risk premium	7.7%							
* Beta	1.54							
= Stock risk premium	11.9%							
r = r_f + stock RP	14.2%							
				Terminal year P/E				
				2016	8.00			
		Year						
		1	2	3	4	5	6	7
		First Stage		Second Stage				
		2017	2018	2019	2020	2021	2022	2023
Cash flows								
Sales Growth		-3.0%	-3.6%	0.5%	0.5%	0.5%	0.5%	0.5%
NOPAT / S		4.8%	4.4%	3.7%	3.0%	2.5%	2.1%	1.7%
S / NWC		2.79	2.55	2.55	2.55	2.55	2.55	2.55
S / NFA (EOY)		1.62	1.49	1.46	1.43	1.40	1.37	1.34
S / IC (EOY)		1.03	0.94	0.93	0.92	0.90	0.89	0.88
ROIC (EOY)		4.9%	4.2%	3.4%	2.8%	2.2%	1.8%	1.5%
ROIC (BOY)			4.4%	3.5%	2.8%	2.3%	1.9%	1.5%
Share Growth			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sales		\$146,600	\$141,352	\$142,058	\$142,769	\$143,483	\$144,200	\$144,921
NOPAT		\$6,974	\$6,251	\$5,185	\$4,297	\$3,568	\$2,960	\$2,458
Growth			-10.4%	-17.0%	-17.1%	-17.0%	-17.0%	-17.0%
- Change in NWC		2638	2927	299	279	280	281	283
NWC or NOWCO EOY		52483	55410	55709	55988	56268	56549	56832
Growth NWC			5.6%	0.5%	0.5%	0.5%	0.5%	0.5%
- Chg NFA		5108	4373	2433	2538	2649	2768	2895
NFA EOY		90,494	94,867	97,300	99,838	102,488	105,255	108,150
Growth NFA			4.8%	2.6%	2.6%	2.7%	2.7%	2.8%
Total inv in op cap		7746	7300	2733	2817	2929	3049	3177
Total net op cap		142977	150277	153010	155826	158755	161805	164982
FCFF		(\$772)	(\$1,050)	\$2,452	\$1,481	\$639	(\$89)	(\$719)
% of sales		-0.5%	-0.7%	1.7%	1.0%	0.4%	-0.1%	-0.5%
Growth			36.0%	-33.7%	-39.6%	-56.8%	-113.9%	709.9%
- Interest (1-tax rate)		559	573	596	620	643	666	690
Growth			2.5%	4.1%	3.9%	3.8%	3.6%	3.5%
+ Net new debt		3500	3500	5900	5900	5900	5900	5900
Debt		140724	144224	150124	156024	161924	167824	173724
Debt / tot net op capital		98.4%	96.0%	98.1%	100.1%	102.0%	103.7%	105.3%
FCFE w/ debt		\$2,169	\$1,878	\$7,756	\$6,761	\$5,896	\$5,145	\$4,491
% of sales		1.5%	1.3%	5.5%	4.7%	4.1%	3.6%	3.1%
Growth			-13.5%	313.1%	-12.8%	-12.8%	-12.7%	-12.7%
/ No Shares		3969.0	3969.0	3,969.0	3,969.0	3,969.0	3,969.0	3,969.0
FCFE		\$0.55	\$0.47	\$1.95	\$1.70	\$1.49	\$1.30	\$1.13
Discounted FCFE		\$0.48	\$0.36	\$1.31	\$1.00	\$0.77	\$0.59	\$0.45
		Third Stage						
Terminal value P/E								
Net income		\$6,417	\$5,680	\$4,589	\$3,678	\$2,925	\$2,294	\$1,768
% of sales		4.4%	4.0%	3.2%	2.6%	2.0%	1.6%	1.2%
EPS		\$1.62	\$1.43	\$1.16	\$0.93	\$0.74	\$0.58	\$0.45
Growth			-11.5%	-19.2%	-19.9%	-20.5%	-21.6%	-22.9%
Terminal P/E								8.00
* Terminal EPS								\$0.45
Terminal value								\$3.56
* Discount factor								0.40
Discounted terminal value								\$1.41
		Summary						
First stage	\$0.84	Present value of first 2 year cash flow						
Second stage	\$4.11	Present value of year 3-7 cash flow						
Third stage	\$1.41	Present value of terminal value P/E						
Value (P/E)	\$6.36	= value at beg of fiscal yr 2017						

Source: IMCP

Business Risks

Although I have many reasons to be optimistic about Ford, there are several good reasons why I find the stock to be fairly priced, at only a dollar above its 52-week low:

Decline in industry volume, particularly in the United States:

Due to Ford's high operating and financial leverage, small changes in industry sales volumes can have substantial effects on the firm's cash flow, profitability, and ultimately earnings. If industry volumes were to fall like they did in 2008 and 2009 during the financial crisis, Ford's financial condition would be substantially affected.

Market shifts away from sales of larger, more profitable vehicles, especially in the United States:

A shift in consumer preferences away from larger, more profitable vehicles could result in an immediate and substantial negative impact on the firm's financial condition.

Decline in Ford's market share or failure to achieve growth:

To capitalize on economies of scale and grow market share, Ford must grow market share in fast-growing emerging markets, particularly in China. Any significant decrease in market share in emerging markets or mature markets could have an adverse effect on Ford's financial condition.

An increase in or continued volatility of fuel prices, or reduced availability of fuel:

Increases in fuel prices, particularly in the United States, could result in weakening demand for larger more profitable utility vehicles and trucks; while also increasing the demand for less profitable smaller vehicles. As a result, a spike in fuel prices could have a negative impact on the firm's profitability and financial condition.

Appendix 1: Income Statement

Income Statement	2013	2014	2015	2016	2017E	2018E
Sales	\$146,917	\$144,077	\$149,548	\$151,134	\$146,600	\$141,352
Direct costs	120,190	125,025	124,031	124,528	120,945	117,322
Gross Margin	26,727	19,052	25,517	26,606	25,655	24,030
SG&A, R&D, and other	11,058	16,021	15,416	15,756	15,246	14,701
EBIT	15,669	3,031	10,101	10,850	10,409	9,329
Interest	1,298	1,797	(151)	822	834	855
EBT	14,371	1,234	10,252	10,028	9,575	8,474
Taxes	2,425	4	2,881	2,875	3,160	2,797
Income	11,946	1,230	7,371	7,153	6,415	5,678
Other	(7)	(1)	(2)	(2)	(2)	(2)
Net income	11,953	1,231	7,373	7,155	6,417	5,680
Basic Shares	3,935	3,912	3,969	3,969	3,969	3,969
EPS	\$3.04	\$0.31	\$1.86	\$1.80	\$1.62	\$1.43
DPS	\$0.40	\$0.50	\$0.60	\$0.60	\$0.60	\$0.60

Appendix 2: Balance Sheet

Capital	2013	2014	2015	2016	2017E	2018E
Cash	14,468	10,757	14,272	13,340	13,131	12,631
Operating assets ex cash	95,017	100,689	110,294	115,412	117,427	117,322
Operating assets	109,485	111,446	124,566	128,752	130,558	129,953
Operating liabilities	59,993	64,067	62,818	65,567	64,944	61,912
NOWC	49,492	47,379	61,748	63,185	65,614	68,041
NOWC ex cash (NWC)	35,024	36,622	47,476	49,845	52,483	55,410
NFA	70,441	76,776	79,455	85,386	90,494	94,867
<i>Invested capital</i>	<i>\$119,933</i>	<i>\$124,155</i>	<i>\$141,203</i>	<i>\$148,571</i>	<i>\$156,108</i>	<i>\$162,908</i>
Marketable securities	22,100	20,393	20,904	20,825	20,825	20,825
<i>Total assets</i>	<i>\$202,026</i>	<i>\$208,615</i>	<i>\$224,925</i>	<i>\$234,963</i>	<i>\$241,877</i>	<i>\$245,645</i>
Short-term and long-term debt	\$114,688	\$119,171	\$132,854	\$137,224	\$140,724	\$144,224
Other liabilities	929	912	596	673	673	673
Debt/equity-like securities	-	-	-	-	-	-
Equity	26,416	24,465	28,657	31,499	35,536	38,836
<i>Total supplied capital</i>	<i>\$142,033</i>	<i>\$144,548</i>	<i>\$162,107</i>	<i>\$169,396</i>	<i>\$176,933</i>	<i>\$183,733</i>
<i>Total liabilities and equity</i>	<i>\$202,026</i>	<i>\$208,615</i>	<i>\$224,925</i>	<i>\$234,963</i>	<i>\$241,877</i>	<i>\$245,645</i>

Appendix 3: Sales Forecast

Sales							
Items	Dec-12	Dec-13	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18
Sales	133,559	\$146,917	\$144,077	\$149,548	\$151,134	146,597	\$141,359
Growth		10.0%	-1.9%	3.8%	1.1%	-3.0%	-3.6%
Automotive	126,567	139,369	135,782	140,556	141,100	136,162	130,715
Growth		10.1%	-2.6%	3.5%	0.4%	-3.5%	-4.0%
% of sales	94.8%	94.9%	94.2%	94.0%	93.4%	92.9%	92.5%
Financial Services	6,992	7,548	8,295	8,992	10,034	10,435	10,644
Growth		8.0%	9.9%	8.4%	11.6%	4.0%	2.0%
% of sales	5.2%	5.1%	5.8%	6.0%	6.6%	7.1%	7.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
North America (Auto)	79,900	86,500	82,400	91,900	92,200	89,050	84,965
Growth		8.3%	-4.7%	11.5%	0.3%	-3.4%	-4.6%
% of sales	63.1%	62.1%	60.7%	65.4%	65.3%	65.4%	65.0%
Units Sold (NA)	2,568	2,834	2,805	2,947	2,928	2,929	2,953
Growth		10.4%	-1.0%	5.1%	-0.6%	0.0%	0.8%
Units Sold (Canda)	281	283	288	285	290	293	290
Growth		0.7%	1.8%	-1.0%	1.8%	1.0%	-1.0%
Unit Sold (Mexico)	83	91	77	93	90	89	87
Growth		9.6%	-15.4%	20.8%	-3.2%	-1.0%	-2.0%
Units Sold (US)	2,204	2,460	2,440	2,569	2,548	2,547	2,576
Growth		11.6%	-0.8%	5.3%	-0.8%	0.0%	1.1%
Ford Cars (US)	747	826	794	788	684	639	624
Growth		10.5%	-3.8%	-0.8%	-13.2%	-6.5%	-2.4%
Fiesta	57	71	63	64	49	44	46
Growth		25.2%	-11.1%	2.0%	-24.2%	-10.0%	5.0%
Focus	246	235	220	202	170	164	173
Growth		-4.6%	-6.4%	-7.8%	-16.3%	-3.0%	5.0%
C-MAX	13	35	28	22	19	17	15
Growth		164.6%	-21.6%	-21.1%	-12.5%	-12.5%	-12.0%
Fusion	241	295	307	300	271	254	244
Growth		22.4%	3.9%	-2.2%	-9.8%	-6.0%	-4.0%
Taurus	66	69	52	39	34	32	28
Growth		4.5%	-24.1%	-25.5%	-11.9%	-8.0%	-12.0%
Mustang	83	77	83	122	105	93	83
Growth		-7.0%	7.1%	48.1%	-13.9%	-12.0%	-10.0%
MKZ	28	32	34	31	31	31	32
Growth		15.4%	5.1%	-9.1%	0.6%	1.0%	0.5%
MKS	13	11	8	7	5	4	3
Growth		-13.8%	-24.4%	-15.7%	-27.5%	-20.0%	-21.0%
Ford Utilities (US)	654	706	725	779	806	794	801
Growth		8.0%	2.7%	7.5%	3.5%	-1.5%	1.0%
Escape	261	296	306	306	308	305	302
Growth		13.4%	3.5%	0.1%	0.6%	-1.0%	-1.0%
Edge	128	129	109	124	132	135	137
Growth		0.9%	-15.7%	14.0%	6.5%	2.0%	2.0%
Flex	28	26	24	20	21	21	21
Growth		-8.0%	-8.2%	-17.8%	8.7%	-2.0%	-0.5%
Explorer	158	178	189	224	216	214	218
Growth		12.6%	6.2%	18.5%	-3.7%	-1.0%	2.0%
Expedition	38	38	45	41	59	50	52
Growth		0.8%	16.4%	-7.1%	41.6%	-15.0%	4.0%
MKC	-	-	13	25	25	26	26
Growth		0.0%	100.0%	88.0%	2.8%	1.0%	0.5%
MXK	25	24	24	22	30	31	31
Growth		-4.8%	0.3%	-7.8%	37.2%	1.0%	2.0%
MKT	7	6	5	5	4	4	4
Growth		-15.2%	-20.2%	-2.2%	-19.5%	-3.0%	-4.5%
Navigator	8	9	10	12	11	9	10
Growth		2.9%	21.1%	14.7%	-12.1%	-10.0%	10.0%
Ford Trucks (US)	803	928	921	1,002	1,058	1,114	1,151
Growth		15.6%	-0.8%	8.8%	5.6%	5.3%	3.3%
F-Series	645	763	754	780	818	855	889
Growth		18.3%	-1.3%	3.5%	4.9%	4.5%	4.0%
E-Series	122	125	103	51	53	55	56
Growth		2.4%	-17.6%	-50.8%	4.7%	4.0%	1.0%
Transit	-	-	20	119	143	164	167
Growth		0.0%	100.0%	478.8%	20.3%	15.0%	2.0%
Transit Connect	35	40	43	52	44	40	38
Growth		12.7%	8.8%	20.9%	-15.9%	-10.0%	-4.0%
Heavy Trucks	7	9	10	10	15	17	17
Growth		21.3%	10.9%	4.7%	49.0%	10.0%	3.0%
Industry Volume (US)	14,300	15,500	16,400	17,400	17,300	17,127	16,784
Growth		8.4%	5.8%	6.1%	-0.6%	-1.0%	-2.0%
Industry Volume (Canda)	1,700	1,800	1,900	1,900	2,000	2,040	2,060
Growth		5.9%	5.6%	0.0%	5.3%	2.0%	1.0%
Industry Volume (Mexico)	1,000	1,100	1,200	1,400	1,600	1,680	1,730
Growth		10.0%	9.1%	16.7%	14.3%	5.0%	3.0%
Industry Volume (NA)	17,000	18,400	19,500	20,700	20,900	20,847	20,575
Growth		8.2%	6.0%	6.2%	1.0%	-0.3%	-1.3%
Price/Unit (NA)	31.11	30.52	29.37	31.18	31.48	30.40	28.77
Growth		-1.9%	-3.8%	6.2%	1.0%	-3.4%	-5.3%
Mkt Share (US)	15.41%	15.87%	14.88%	14.77%	14.73%	14.87%	15.35%
Growth		3.0%	-6.2%	-0.8%	-0.2%	1.0%	3.2%
Mkt Share (NA)	15.11%	15.40%	14.39%	14.24%	14.01%	14.05%	14.35%
Growth		2.0%	-6.6%	-1.0%	-1.6%	0.3%	2.1%

South America (Auto)	10,100	10,800	8,800	5,800	4,700	3,518	2,969
Growth		6.9%	-18.5%	-34.1%	-19.0%	-25.1%	-15.6%
% of sales	8.0%	7.7%	6.5%	4.1%	3.3%	2.4%	2.1%
Units Sold	498	538	463	381	315	312	309
Growth		8.0%	-13.9%	-17.7%	-17.3%	-1.0%	-1.0%
Industry Volume	5,900	5,900	5,900	4,200	3,600	3,528	3,457
Growth		0.0%	0.0%	-28.8%	-14.3%	-2.0%	-2.0%
Price/Unit	20.28	20.07	19.01	15.22	14.92	11.28	9.62
Growth		-1.0%	-5.3%	-19.9%	-2.0%	-24.4%	-14.8%
Mkt Share	8.44%	9.12%	7.85%	9.07%	8.75%	8.84%	8.93%
Growth		8.0%	-13.9%	15.6%	-3.5%	1.0%	1.0%
Europe (Auto)	26,600	27,300	29,500	28,200	28,300	29,026	27,706
Growth		2.6%	8.1%	-4.4%	0.4%	2.6%	-4.5%
% of sales	21.0%	19.6%	21.7%	20.1%	20.1%	19.8%	19.6%
Units Sold	1,295	1,317	1,387	1,530	1,539	1,585	1,633
Growth		1.7%	5.3%	10.3%	0.6%	3.0%	3.0%
Industry Volume	18,600	18,300	18,600	19,200	20,000	20,400	20,808
Growth		-1.6%	1.6%	3.2%	4.2%	2.0%	2.0%
Price/Unit	20.54	20.73	21.27	18.43	18.39	18.31	16.96
Growth		0.9%	2.6%	-13.3%	-0.2%	-0.4%	-7.3%
Mkt Share	6.96%	7.20%	7.46%	7.97%	7.70%	7.77%	7.85%
Growth		3.4%	3.6%	6.9%	-3.4%	1.0%	1.0%
Middle East/ Asia Pacific (Auto)	10,000	14,800	15,100	14,700	15,900	18,178	18,801
Growth		48.0%	2.0%	-2.6%	8.2%	14.3%	3.4%
% of sales	7.9%	10.6%	11.1%	10.5%	11.3%	12.4%	13.3%
Units Sold	1,182	1,469	1,631	1,651	1,691	1,776	1,857
Growth		24.3%	11.0%	1.2%	2.4%	5.0%	4.5%
Industry Volume	38,800	41,700	43,800	43,800	45,200	47,008	48,888
Growth		7.5%	5.0%	0.0%	3.2%	4.0%	4.0%
Price/Unit	8.46	10.07	9.26	8.90	9.40	10.23	10.13
Growth		19.1%	-8.1%	-3.8%	5.6%	8.8%	-1.0%
Mkt Share	3.05%	3.52%	3.72%	3.77%	3.74%	3.78%	3.80%
Growth		15.6%	5.7%	1.2%	-0.7%	1.0%	0.5%

Appendix 4: Sales Forecast

Ratios	2013	2014	2015	2016	2017E	2018E
Profitability						
Gross margin	18.2%	13.2%	17.1%	17.6%	17.5%	17.0%
Operating (EBIT) margin	10.7%	2.1%	6.8%	7.2%	7.1%	6.6%
Net profit margin	8.1%	0.9%	4.9%	4.7%	4.4%	4.0%
Activity						
NFA (gross) turnover	2.18	1.96	1.91	1.83	1.67	1.53
Total asset turnover	0.75	0.70	0.69	0.66	0.61	0.58
Liquidity						
Op asset / op liab	1.82	1.74	1.98	1.96	2.01	2.10
NOWC Percent of sales	29.5%	33.6%	36.5%	41.3%	43.9%	47.3%
Solvency						
Debt to assets	56.8%	57.1%	59.1%	58.4%	58.2%	58.7%
Debt to equity	434.2%	487.1%	463.6%	435.6%	396.0%	371.4%
Other liab to assets	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%
Total debt to assets	57.2%	57.6%	59.3%	58.7%	58.5%	59.0%
Total liabilities to assets	86.9%	88.3%	87.3%	86.6%	85.3%	84.2%
Debt to EBIT	7.32	39.32	13.15	12.65	13.52	15.46
EBIT/interest	12.07	1.69	(66.89)	13.20	12.48	10.91
Debt to total net op capital	95.6%	96.0%	94.1%	92.4%	90.1%	88.5%
ROIC						
NOPAT to sales	8.9%	2.1%	4.9%	5.1%	4.8%	4.4%
Sales to IC	1.33	1.18	1.13	1.04	0.96	0.89
Total	11.8%	2.5%	5.5%	5.3%	4.6%	3.9%
Total using EOY IC	10.9%	2.4%	5.1%	5.2%	4.5%	3.8%

Appendix 5: 3-Stage DCF Model

Cost of equity								
Market return	10.0%							
- Risk free rate	2.27%							
= Market risk premium	7.7%							
* Beta	1.54							
= Stock risk premium	11.9%							
r = r_f + stock RP	14.2%							
	Terminal year P/E							
							2016	9.50
	Year							
	1	2	3	4	5	6	7	
	First Stage			Second Stage				
Cash flows	2017	2018	2019	2020	2021	2022	2023	
<i>Sales Growth</i>	-3.0%	-3.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
<i>NOPAT / S</i>	4.8%	4.4%	4.5%	4.7%	4.8%	4.9%	5.0%	
<i>S / NWC</i>	2.79	2.55	2.47	2.40	2.35	2.30	2.25	
<i>S / NFA (EOY)</i>	1.62	1.49	1.46	1.43	1.40	1.37	1.34	
<i>S / IC (EOY)</i>	1.03	0.94	0.92	0.90	0.88	0.86	0.84	
<i>ROIC (EOY)</i>	4.9%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	
<i>ROIC (BOY)</i>		4.4%	4.3%	4.3%	4.3%	4.3%	4.3%	
<i>Share Growth</i>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Sales	\$146,600	\$141,352	\$142,765	\$144,193	\$145,635	\$147,091	\$148,562	
NOPAT	\$6,974	\$6,251	\$6,478	\$6,710	\$6,945	\$7,185	\$7,428	
<i>Growth</i>		-10.4%	3.6%	3.6%	3.5%	3.4%	3.4%	
- Change in NWC	2638	2927	2390	2281	1892	1980	2075	
<i>NWC or NOWC EOY</i>	52483	55410	57800	60080	61972	63953	66028	
<i>Growth NWC</i>		5.6%	4.3%	3.9%	3.1%	3.2%	3.2%	
- Chg NFA	5108	4373	2917	3050	3191	3341	3501	
<i>NFA EOY</i>	90,494	94,867	97,784	100,834	104,025	107,366	110,867	
<i>Growth NFA</i>		4.8%	3.1%	3.1%	3.2%	3.2%	3.3%	
Total inv in op cap	7746	7300	5307	5330	5083	5321	5576	
Total net op cap	142977	150277	155584	160915	165997	171318	176895	
FCFF	(\$772)	(\$1,050)	\$1,171	\$1,379	\$1,862	\$1,863	\$1,852	
<i>% of sales</i>	-0.5%	-0.7%	0.8%	1.0%	1.3%	1.3%	1.2%	
<i>Growth</i>		36.0%	-211.5%	17.8%	35.0%	0.0%	-0.6%	
- Interest (1-tax rate)	559	573	596	620	643	666	690	
<i>Growth</i>		2.5%	4.1%	3.9%	3.8%	3.6%	3.5%	
+ Net new debt	3500	3500	5900	5900	5900	5900	5900	
Debt	140724	144224	150124	156024	161924	167824	173724	
<i>Debt / tot net op capital</i>	98.4%	96.0%	96.5%	97.0%	97.5%	98.0%	98.2%	
FCFE w/ debt	\$2,169	\$1,878	\$6,475	\$6,660	\$7,119	\$7,097	\$7,062	
<i>% of sales</i>	1.5%	1.3%	4.5%	4.6%	4.9%	4.8%	4.8%	
<i>Growth</i>		-13.5%	244.8%	2.9%	6.9%	-0.3%	-0.5%	
/ No Shares	3969.0	3969.0	3,969.0	3,969.0	3,969.0	3,969.0	3,969.0	
FCFE	\$0.55	\$0.47	\$1.63	\$1.68	\$1.79	\$1.79	\$1.78	
Discounted FCFE	\$0.48	\$0.36	\$1.10	\$0.99	\$0.92	\$0.81	\$0.70	
Terminal value P/E								
Net income	\$6,417	\$5,680	\$5,882	\$6,090	\$6,302	\$6,518	\$6,738	
<i>% of sales</i>	4.4%	4.0%	4.1%	4.2%	4.3%	4.4%	4.5%	
EPS	\$1.62	\$1.43	\$1.48	\$1.53	\$1.59	\$1.64	\$1.70	
<i>Growth</i>		-11.5%	3.6%	3.5%	3.5%	3.4%	3.4%	
Terminal P/E							9.50	
* Terminal EPS							\$1.70	
Terminal value							\$16.13	
* Discount factor							0.40	
Discounted terminal value							\$6.38	
First stage	\$0.84	Present value of first 2 year cash flow						
Second stage	\$4.52	Present value of year 3-7 cash flow						
Third stage	\$6.38	Present value of terminal value P/E						
Value (P/E)	\$11.74	= value at beg of fiscal yr					2017	

Appendix 6: Porter’s 5 Forces

Threat of New Entrants - Moderate

Vehicle manufacturing is a very capital intensive business, but barriers to entry are not as high as in the past. Tech companies with excess cash, such as Apple and Google, pose a great threat to the existing automotive manufactures. Additionally, international OEMs are attempting to enter the United States’ market, particularly from India and China.

Threat of Substitutes - High

There are many different automotive brands to choose from when purchasing a vehicle. Increasing urbanization rates have increased the popularity of public and mass transit, both of which are cheaper alternatives.

Supplier Power - Moderate

Automotive manufactures are becoming more reliant on suppliers, as they grow in international markets, and more focused on establishing brand recognition and dealer networks. As a result, most parts are supplied from relatively few suppliers.

Buyer Power - Low

Automotive dealerships have no influence on the wholesale price of a vehicle. However, dealerships maintain the ability to decide when and what vehicles they order from the manufacture. Yet the manufacture maintains the right to control the quantities of each model sold to its dealerships.

Intensity of Competition - Very High

The industry is already full of strong competition, making it nearly impossible to gain a competitive advantage over another manufacturer. GM is Ford’s greatest competitor in the U.S. market.

Appendix 7: SWOT Analysis

Strengths	Weaknesses
Brand reputation #1 selling truck for 34 years Balanced product mix	Highly dependent on truck and SUV sales 99% of hourly workers are unionized Stock is highly dependent on macroeconomic factors
Opportunities	Threats
Leasing Low oil prices Expansion in China	High competition High oil prices Currency exchange rates