

Ford's (F) Hidden Investments

The firm's profits are good, but they come at a steep price

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Key Takeaways

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- **To become a more effective investor, one should periodically reassess one's valuation assumptions versus unambiguous criteria.** This article models that process with an analysis of Ford.
- **Ford has been performing well operationally**, generating revenues within the range we projected in April 2014 and profits near our best-case projections.
- Despite its solid operational performance, **we are narrowing our fair value range and materially lowering our intrinsic value estimate for Ford based on a reassessment of the firm's investment spending.**
- **We provide a valuation post-mortem in this note.** Future notes will discuss possible option overlay investment strategies and the rationale behind ongoing investment in the company.

Introduction

One of the main goals of IOI training is to help people develop a sound framework for making decisions. The cornerstone of that framework is being able to assess valuation performance against unambiguous criteria – not what price the stock is trading at, but whether we have made accurate projections of key value drivers. Doing this requires us to:

- Monitor the performance of our investments' operations vis-à-vis our projections for key valuation drivers.
- Possess the insight to realize when our key valuation assumptions are right or wrong.
- Review valuation methodology and make corrections to our processes in order to limit future avoidable errors.

This article goes through each of these steps for IOI's small, unlevered investment in Ford Motor Co. ([E](#)), originally made in April, 2014. The good news is that our initial assessment of Ford's revenue growth and profitability was accurate. The bad news is that we failed to consider the cost to owners of Ford's strategy of offering loans to clients to spur product demand.

Changes to our model to rectify this oversight generates a much lower fair value estimate than we had calculated previously, and we no longer believe an investment in Ford to be particularly attractive from a risk / reward balance perspective. In addition to summarizing our observation about valuation drivers, we also look at the procedural and behavioral weaknesses that led to our previous overvaluation.

A wise person is someone who can learn from the mistakes of others; our hope is that you will be wise enough to learn from our missteps in Ford.

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Valuation Analysis

Revenues and Profits

The company has performed well – well within our projected revenue range and not far off the best-case assumptions for profitability we made in spring of 2014.

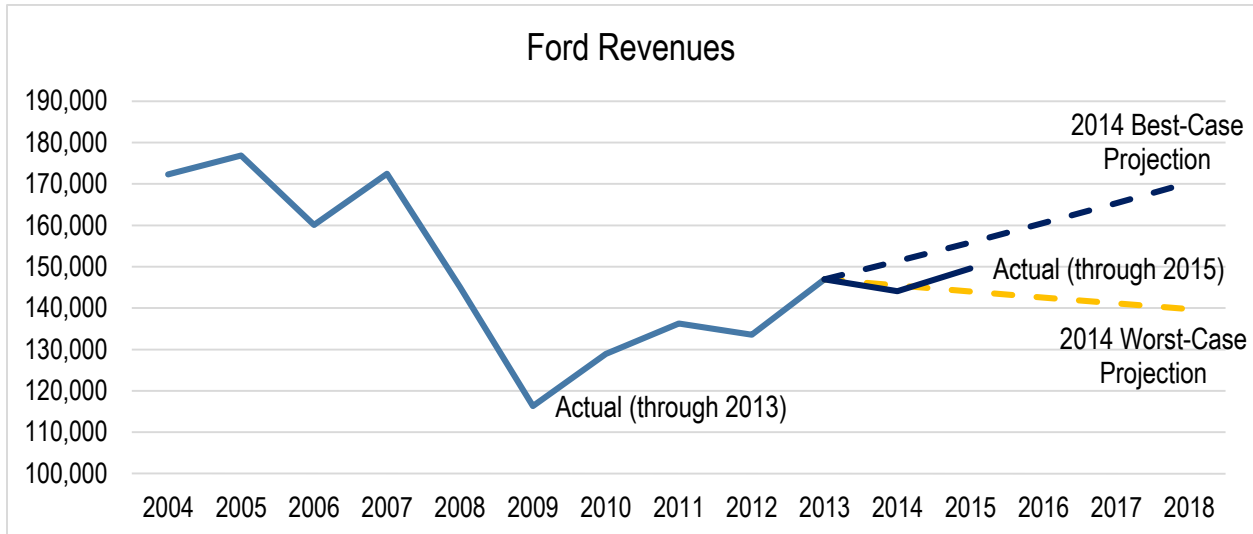


Figure 1. Source: Company Statements, IOI Analysis. 2014 actual revenues were slightly lower than our worst-case projection, but actual 2015 revenues are well within our projected range.

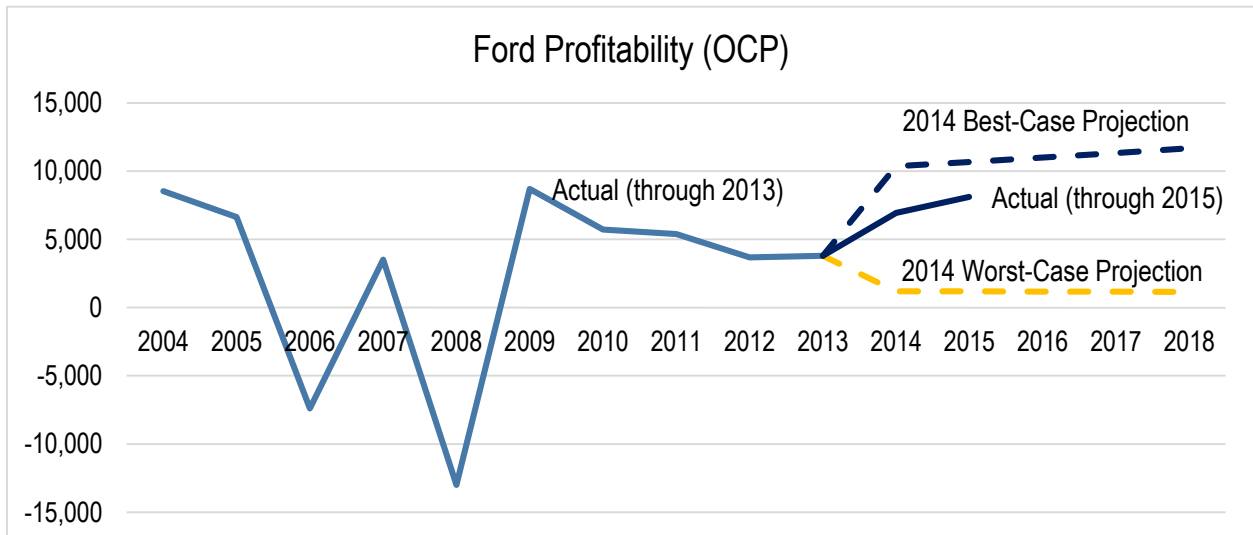


Figure 2. Source: Company Statements, IOI Analysis. Profitability is measured using IOI's preferred statistic, [Owners' Cash Profits \(OCP\)](#)

On these metrics, the company appears to be doing fine. However, as we discuss in our valuation training, we must value a company on the basis of Free Cash Flows to Owners (FCFO) rather than just on the basis of profitability.

To find FCFO given OCP, we must deduct cash spent on investing activities, which we call [Net Expansory Cash Flow](#). Our assumptions for Ford's Net Expansory Cash Flows were materially understated in our 2014 assessment for reasons we discuss in the next section.

Valuation Analysis

Investment Spending

We count investments as any expenditure designed to increase the growth of profitability in future years. Most analysts treat investment spending only as purchases of property, plant and equipment (PP&E), but as we discuss in our training sessions, looking at investments in this way presents a misleading picture of what a firm is actually spending to expand its business.

Our definition is broader and includes the purchases PP&E *over and above the amount required to maintain the firm as a going concern*, expenditures for the acquisition of companies, moneys loaned to or invested in JVs, and other expenditures which an owner would reasonably expect will increase future profit growth if successful.

Ford Credit's Effect on Investment Spending

Getting a clear picture of Ford's normalized investment level at the time of our 2014 analysis was complicated by two factors:

1. A multi-year series of asset divestments followed by modest expenditures in PP&E, and
2. Transactions related to Ford's Credit segment.

For our 2014 valuation, we spent a considerable amount of time considering the impact of asset acquisitions and divestments, but we failed to fully consider the effect Ford Credit had on the company's investment level.

Ford Credit's loans to customers boost demand for its products, so should be considered investments.

As we pointed out in our original analysis, over the past few decades, U.S. consumers have become less and less able to purchase automobiles thanks to a combination of stagnating middle-class incomes and steadily rising car prices. In order to stimulate demand, Ford and its competitors have increasingly relied upon leasing arrangements. Leases allow consumers to pay a modest per-month amount but still have access to the newest model cars.

In effect, Ford is loaning money to its customers to spur demand for its products, so is creating a financial outflow (the loans to customers) with the expectation of a boost in future profits. Considered from the standpoint of the definition above, these loans should clearly be considered elements of Ford's investment spending. We can see the proportion of cash flows these loans represent in the figure below.

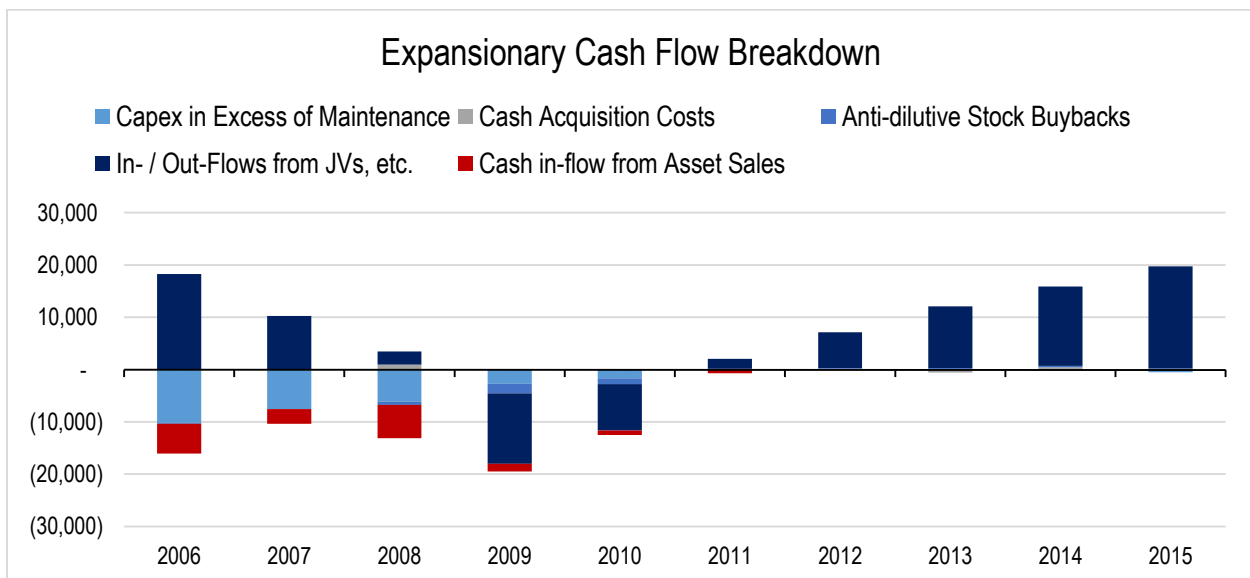


Figure 3. Source: Company Statements, IOI Analysis

Valuation Analysis

In the graph above, any number above the horizontal axis represents a cash outflow. Note the evidence of Ford's divestment program leading up to the financial crisis – the company was selling assets, so we see red columns denoting asset sales and light blue columns denoting cash *inflows* related to Capex in excess of Maintenance requirements. This simply means that the company's expenditures for PP&E undershot our estimates for maintenance capital expenditures. The company was divesting businesses and closing factories in an attempt to improve profitability and during the financial crisis, to remain solvent.

Note also that with the exception of 2009-2010, the company is making more loans to clients (labeled as "In- / Out-Flows from JVs, etc." and shown as dark blue columns) than it is receiving in payments – resulting in a net cash outflow. In essence, for the last few years, the company's only substantive investment to drive future profit growth comes in the form of loans to clients.

During 2009-2010, consumers were loath to buy cars even if automakers offered enormous incentives, so cash outflows to clients slowed. In these, the two worst years for auto sales in recent memory, Ford generated its highest free cash flows, thanks in large part to the fact that the company was not loaning money out to customers to help drive demand for its products.

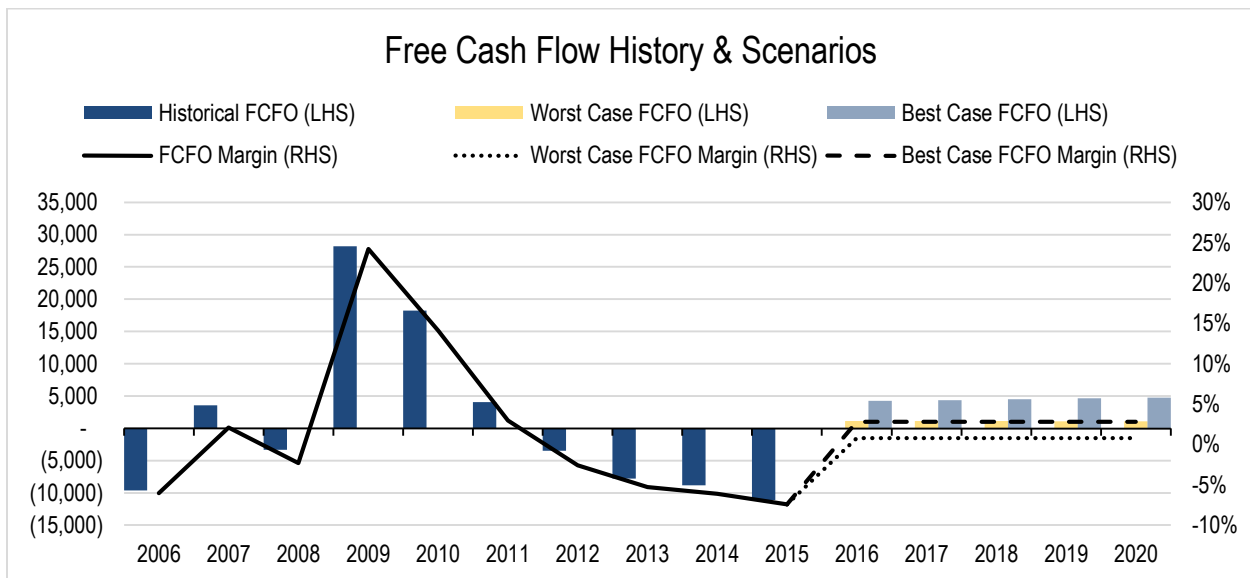


Figure 4. Source: Company Statements, IOI Analysis

In our original model, these loans to clients were not counted as investment spending, so the projected Free Cash Flow to Owners values in our original model were much higher than our present projections (shown above). We erred by not recognizing the economic substance of the consumer loans.

In the course of reanalyzing Ford, the realization that we had failed to consider the effect of loans to customers on the revenues of the company came as a disappointing shock to us. This is one of the items on the "Revenue Analysis Checklist" we encourage learners to use in our master classes, and the fact that we did not heed our own advice in this analysis was a surprise. We talk about possible reasons for this oversight in the Post Mortem section of this article.

This mistake led us to calculate an intrinsic value estimate much higher than the price at which the stock was trading (see figure on next page).

Valuation Analysis

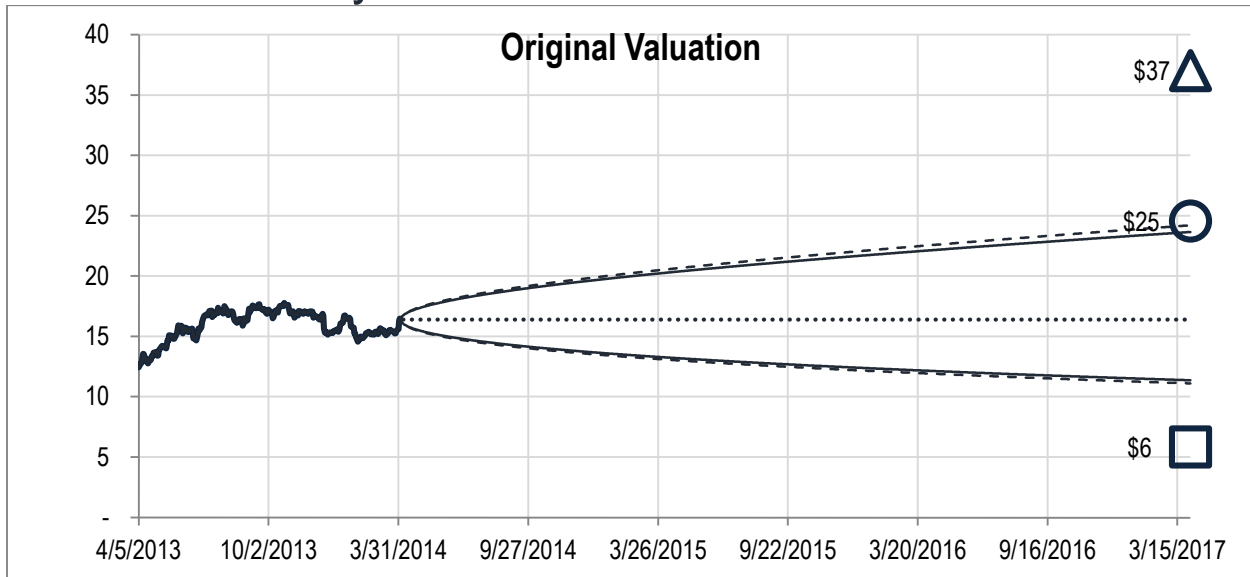


Figure 5. Source: YCharts, CBOE (pricing data), IOI Analysis (fair value estimates). Our best-case valuation scenario when this was published (4/2014) was \$37 per share and our worst-case estimate was \$6 per share. Our most-likely valuation scenario was \$25.

In contrast to our original estimate, our present fair value range is much lower – centered at \$11 per share, roughly its present market price. This valuation change is almost entirely based upon our assessment of client credit loans as a form of Ford’s “investment” policy.

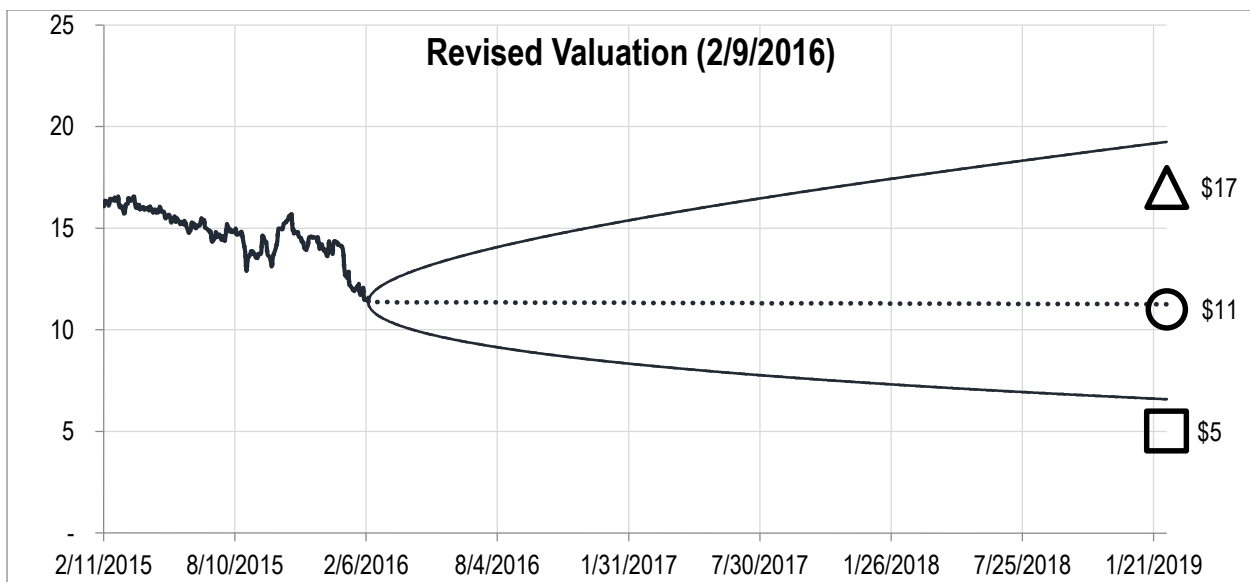


Figure 6. Source: YCharts, CBOE (pricing data), IOI Analysis (fair value estimates)

Figure 6 represents IOI’s simple valuation range for Ford. Our detailed valuation scenario analysis is shown in the figure below:

Valuation Analysis

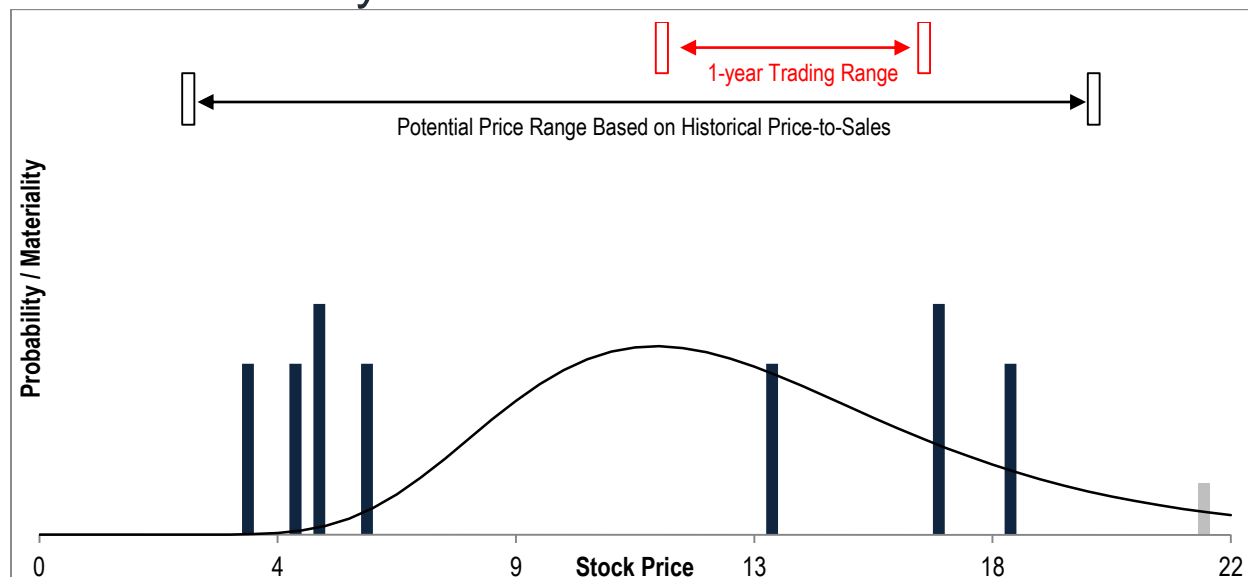


Figure 7. Source: YCharts, CBOE (pricing), IOI Analysis (valuation scenarios)

Each of the columns above represent a single valuation scenario. Blue columns are those that IOI considers possible, with the higher columns the scenarios we perceive as more likely. The sole gray column represents a valuation associated with an extremely unlikely set of operational assumptions.

All our valuation assumptions are based on three valuation drivers: near-term revenue growth, near-term profitability, and medium-term growth of cash flows. Each of our scenarios' assumptions are listed in the table below.

Case / Scenario	Value
PSR Implied Low	3
-2% 2% 0%	4
3% 2% 0%	5
* -2% 2% 8%	5
3% 2% 8%	6
252-day Low	11
-2% 7% 0%	14
252-day High	17
* 3% 7% 0%	17
-2% 7% 8%	18
PSR Implied High	20
3% 7% 8%	22

Higher valuation scenarios are all associated with high profitability conditions.

The row listed as “-2% | 2% | 0%” and associated with the value of \$4 can be translated as “The valuation scenario assuming 2% annual fall in revenues and 2% profit margin over the next five years followed by 0% cash flow growth for years 6-10.” (The asterisks to the left of two scenarios show what IOI believes are the most-likely best- and worst-case scenarios – these scenarios correspond to the tall blue columns in the figure above.)

Note that the scenarios yielding the highest valuation scenarios are associated with high-profitability scenarios, regardless of the value of the other two drivers. In figure 7, these are the valuation columns lying in the \$13 - \$18 range. Considering that the company has been performing well from a profitability perspective over the past several years and has recently announced several initiatives that we believe will help future profitability, we believe the

Valuation Analysis

high-profitability scenarios are relatively more likely.¹ We will discuss the implications of this observation in a later note regarding investment strategy.

Valuation Post Mortem

We look at several factors in this section, including procedural errors and behavioral weaknesses we made in the process of analyzing Ford that we plan to correct in future investment analyses.

Inexperience in analyzing manufacturers' captive finance arms and the decision to discount the importance of a weakening demand environment represent the root causes for our procedural failure.

Procedural Factors

The biggest issue leading to our overstated valuation estimate was clearly our mishandling of the cash in- and outflows resulting from Ford Credit. This was caused, in large part, by our experience in the Tech sector, in which we saw relatively fewer instances of a captive credit arm boosting sales of manufactured product. The work that we have done since on General Electric (GE) forced us to consider the impact of credit as a spur to product demand, but we failed to apply those lessons retroactively to our valuation of Ford. This failure is largely due to the fact that the Ford position was not a large or levered one – the investment of a material sum has a wonderful way of increasing mental concentration and vice versa.

Another factor which, in hindsight, was worrisome about our valuation process is that we ignored our own discomfort with our insight that Ford was competing in an industry with a soft and weakening demand environment, as detailed in our previous reports. It is our belief that the best directional investors focus more intently on demand environment than on other factors. Our original rationale for investing in Ford was that despite the weak demand environment, profitability was likely to increase, and this profitability would drive the market's reassessment of the company's value. In other words, we chose to discount the importance of the demand environment despite the fact that we believe this is the single most important element in the ability of a company to generate cash flows.

Our assessment of profitability was largely correct and the fact that our model correctly identified the enormous valuation uncertainty inherent in Ford's operations are two bright spots. The large valuation uncertainty (driven by Ford's operational and financial leverage), coupled with our uneasiness regarding the demand environment are the two factors which convinced us that any investment in Ford should be 1) unlevered, and 2) small. The decision to allocate a small amount of capital to this idea can be seen as a win.

We believe Anchoring and Herding biases negatively influenced our decision-making process.

Behavioral Factors

A former colleague of ours is a professional auto industry analyst and covers Ford. We know that he knows the auto business well, and respect his professional opinion. Our original fair value estimate corresponds closely to this analyst's fair value estimate at the time.

Thinking back on our valuation process, we think it is likely that because our initial fair value estimate was so close to our former colleague's, we did not feel the need to delve more deeply into the issues of demand weakness for autos and Ford's captive finance subsidiary.

This reaction is, we believe, a form of the behavioral bias known as anchoring – a pervasive bias in investing that we discuss in depth in our trainings. We were aware of our former colleague's valuation, so when our analysis yielded a similar value, we stopped questioning the analysis. We had, subconsciously, anchored ourselves to our colleague's valuation.

Another bias that may be at work is that known as "herding." It is psychologically comfortable for people to agree with others, especially when those others are recognized experts in some field. Our former colleague is an expert in his field, so we felt more comfortable in our valuation when it agreed with his.

Needless to say, we're incorporating these lessons into our future investing decision-making process with the aim of avoiding making these same mistakes in the future.

¹ This includes Ford's closing of its [Japanese and Indonesian operations](#) and [cost-cutting plans announced in Europe](#).