

ERM practices at Ford Motor

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Ford Motor (Ford) is one of the leading automobile manufacturers in the world. Ford has two broad business segments: Automotive and financial services. The automotive segment includes the designing, manufacturing and sale of a variety of cars, trucks, and Sport-Utility Vehicles (SUVs). The company's famous brands include Ford, Mercury, Lincoln, Jaguar, Mazda, Volvo, Land Rover, and Aston Martin. Ford also participates in the financial services industry through Ford Motor Credit Company and The Hertz Corporation. The Ford Motor Credit Company is the world's largest auto financing company. Ford offers credit services in over 300 locations around the world. Hertz offers rental services.

Ford's Risk Management Purpose Statement and Vision

To improve the business's ability to understand, manage, and mitigate global corporate risk in real time,

In such a way that we make better risk/return decisions and manage capital more efficiently,
So that shareholder value materializes and unforeseen risks do not.

Overview

The automotive market is highly competitive. The major players compete on the basis of product quality, advertising, promotion and price. Despite being a firm in strong financial health and rich with growth opportunities, Ford faces several risks. First, competition in the industry, often leads to price wars. In addition, the stagnant economic conditions facing America could lead to a decline in sales and leases in US and abroad as other economies begin to slow. A third risk facing Ford stems from its relationship with the United Auto Worker's union. In the past, striking workers have halted production at plants across the world. A fourth risk facing Ford results from litigation against the company. In the recent past, deaths caused by Ford's use of certain Firestone Tires resulted in lost sales, as well as a tarnished reputation. A fifth risk arises from defects and recalls of cars. Another risk Ford faces stems from government policies. Ford may have to undertake expensive projects in order to comply with any new government regulations.

Ford is exposed to various financial risks such as fluctuating interest rates, foreign exchange rates, and commodity prices. Ford takes various steps to deal with these market risks. For instance, to hedge against fluctuating interest rates, Ford uses swap contracts. To hedge its foreign currency risk, Ford uses a Value - At - Risk (VAR) analysis to evaluate its exposure

to fluctuations in exchange rates. The VAR analysis, calculates potential risk, within a 99% confidence level on firm commitment exposures, including the effect of foreign currency derivatives. To hedge commodity price risk, Ford enters into forward and option contracts. These include contracts on the various raw materials the company uses in the manufacture of automobiles. Ford employs derivative contracts for hedging purposes only.

Ford's risk management program recognizes the unpredictability of markets and seeks to reduce profit volatility. Ford monitors and manages these exposures as an integral part of its overall risk management program. This includes regular reports to a central management committee that oversees global risk management practices.

Ford in general and Ford Credit in particular maintain plans for sources of funding to ensure liquidity through any economic or business cycle. Ford's funding sources include commercial paper, term debt, sale of receivables through securitization transactions, committed lines of credit from major banks, and other sources.

Ford is also exposed to a variety of insurable risks, such as loss or damage to property, liability claims, and employee injury. Ford protects itself against these risks through a combination of self-insurance and the purchase of commercial insurance.

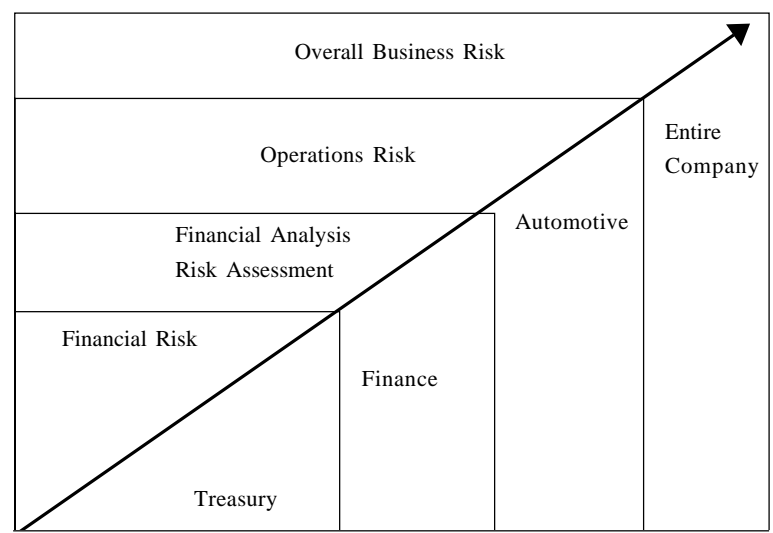
Ford Automotive

Foreign currency risk

Ford's Automotive sector undertakes various transactions denominated in foreign currencies. These include: Purchases and sales of finished vehicles and production parts, debt and other payables, subsidiary dividends, and investments in affiliates. These expenditures and receipts create exposures to changes in exchange rates.

Ford uses derivative instruments to hedge assets, liabilities and firm commitments denominated in foreign currencies. Ford's hedging policy is designed to reduce income volatility. Speculative actions are not permitted. Ford uses primarily instruments such as forward contracts, options and interest rate swaps. Ford uses VAR analysis to evaluate its exposure to changes in foreign currency exchange rates.

Evolution of Ford's Risk Management Scope and Risk Identification



A Monte Carlo simulation model is used to calculate changes in the value of currency derivative instruments (e.g., forwards and options) and all significant underlying exposures. The VAR analysis includes an 18-month exposure and derivative hedging horizon and a one-month holding period. The VAR analysis calculates the potential risk, within a 99% confidence level, on cross-border currency cash flow exposures, including the impact of foreign currency derivatives. (Translation exposures are not included in the VAR analysis). The model uses historical volatility and correlation estimates of the underlying assets to produce a large number of future price scenarios, which have a statistically lognormal distribution. Estimates of correlations and volatilities are drawn primarily from the RiskMetrics™ datasets.

Based on the company's overall currency exposure (including derivative positions) during 2001, the risk during 2001 to its pre-tax cash flow from currency movements was on average \$300 mn, with a high of \$350 mn and a low of \$275 mn. As on December 31, 2001, currency movements were projected to affect Ford's pre-tax cash flow over the next 18 months by less than \$275 mn, within a 99% confidence level. Compared with Ford's projection as on December 31, 2000, the 2001 VAR amount was approximately \$25 mn lower, primarily because of decreased currency exchange rate volatility.

Commodity price risk

Commodity price risk is the possibility of higher or lower costs due to changes in the prices of commodities, such as non-ferrous (e.g., aluminum) and precious metals (e.g., palladium, platinum and rhodium), ferrous alloys (e.g., steel), energy (e.g., natural gas) and plastics (e.g., polypropylene), which Ford uses in the production of motor vehicles. Ford uses derivative instruments to hedge the price risk associated with the purchase of those commodities that it can economically hedge. The fair value liability of such contracts, excluding the underlying exposures, as of December 31, 2001 and 2000 was approximately - \$259 mn and + \$56 mn, respectively. The potential change in the fair value of commodity forward and option contracts, assuming a 10% change in the underlying commodity price, was approximately \$267 mn and \$280 mn as on December 31, 2001 and 2000, respectively. This amount was exclusive of the offsetting impact of the price change Ford would experience in purchasing the underlying commodities.

In addition to these price-hedging activities, Ford tries to ensure that it has adequate supplies of raw materials used in the company's business

Ford's price-hedging policy is based on clearly defined guidelines. Speculative actions are not permitted. In 2001, Ford began to employ a VAR analysis, using historical volatilities, to evaluate its exposure to changes in commodity prices given its financial hedges, forward procurement and supply contracts on those commodities which it hedges.

Based on Ford's commodity exposure and related hedging activity, as on December 31, 2001, commodity price movements may affect its pre-tax cash flow over the next 12 months by up to \$167 mn, within a 99% confidence level. Over the last year the VAR measurements averaged \$339 mn, with a high of \$625 mn and a low of \$167 mn. These risk levels are substantially lower than they would otherwise be without hedging actions.

In addition to these price-hedging activities, Ford tries to ensure that it has adequate supplies of raw materials used in the company's business. These procurement activities utilize forward purchase contracts, long-term supply contracts and stockpiles.

Credit risk

Counterparty risk relates to the loss that Ford could incur if a counterparty defaulted on an investment or a derivative contract. Such exposures arise primarily in the context of investments in fixed-income products and derivative transactions undertaken for managing interest rate, currency and commodity risk. Ford establishes exposure limits for each counterparty to minimize risk and provides counterparty diversification. Exposure limits are established for both mark-to-market and future potential exposure, based on Ford's percent overall risk tolerance and ratings-based historical default probabilities. A Monte Carlo simulation technique is utilized to generate the potential exposure by tenor, within a 95% confidence level. Estimates of correlations and volatilities are drawn from RiskMetrics datasets.

Ford credit

Ford Credit is exposed to various risks in the normal course of its business activities:

- Operational risks—the possibility of errors relating to transaction processing and systems, actions that could result in compliance deficiencies with regulatory standards or fraud by own employees or outside persons.
- Credit risk—the possibility of loss from a customer's failure to make payments according to contract terms.
- Market risk—the possibility that changes in future market interest and currency exchange rates or prices will make Ford Credit's positions less valuable.
- Liquidity risk—the possibility of being unable to meet all current and future obligations in a timely manner.
- Residual risk—the possibility that the actual proceeds received by Ford Credit upon the sale of returned lease vehicles at lease termination will be lower than its internal forecast of residual values.

Ford establishes exposure limits for each counterparty to minimize risk and provides counterparty diversification.

Each form of risk is uniquely managed in the context of its contribution to Ford Credit's overall global risk. Business decisions are evaluated on a risk-adjusted basis and products are priced consistent with these risks.

Operational risks

Ford Credit operates in many locations. The company relies on the abilities of its employees and systems to process a large number of transactions. Improper operation of systems or improper employee actions could result in financial loss, regulatory action and damage to Ford's reputation. To address this risk, Ford Credit maintains internal control processes that identify transaction authorization requirements, safeguard assets from misuse or theft, and ensure the reliability of financial and other data. Ford Credit also maintains system controls to maintain the accuracy of information about its operations. These controls are designed to manage operational risk throughout Ford Credit's operations.

Residual risk

Ford Credit's lease contracts are written with vehicle lease-end values that approximate residual values published in the *Automotive Leasing Guide*. For financial reporting purposes, however, Ford Credit works out the expected residual values (net of costs) using a proprietary econometric model.

Changing attitudes to risk

Freeman Wood CRO of Ford Motor since 2000, joined Ford after 12 years that had taken him from the trading floor at the Chicago Board Options Exchange, through banking supervision at the Federal Reserve, to CIBC and lastly BNP Paribas, where he was head of market risk for the Americas. According to Wood, "My long-term vision involves a continual progression for the risk management function, starting with key financial and hazard risks and broadening it out to encompass operational and business risks – from business interruption and supply interruption, to competitive risk, brand risk, and execution risk."

Wood has been attempting to integrate Ford's existing risk management groups, which were operating separately at the time. Foreign exchange, interest rates, counter-party credit risk, commodities and corporate insurance are all now managed by the same team at Ford's headquarters in Dearborn, Michigan. "We transact billions of dollars of transactions in hundreds of countries, so the currency risks are significant. We've got a \$190 bn balance sheet at Ford Credit, so we've got big interest rate risk. We have a huge purchasing function and a lot of what they buy is raw materials, so we face huge commodity risks," says Wood. Under his stewardship, the risk function has tried to get closer to the businesses. Earlier, businesses would tell the risk team about their business, and the risk team would set up hedging programmes.

According to Wood, "When I got here, I thought we did a good job of managing risks that were identified for us or given to us, but we didn't get information back to the businesses to help them think about the way their decisions altered their risk profiles..." "Hedging is a temporary solution. If you don't structurally change your business, you'll always have the same risks on your balance sheet. What our group can do is identify how much risk a business unit has and from that, the business leaders can, hopefully, make better strategic decisions and structure their businesses going forward to reduce risk over time." Ford now has a global risk management committee, which meets on a monthly basis. This committee has replaced a more limited currency risk committee, who only met four times a year. The committee is considering issues that are fairly distant from its origins in foreign exchange risk. For example, business continuity planning has recently been brought to the global risk committee. The climate seems to be ripe for strengthening ERM initiatives at Ford. The company has suffered a steep fall in its share price from a high of \$31 in April last year, to below \$12 today.

The fall was started by Ford's decision to embark on the car industry's biggest-ever recall program, withdrawing 13 million tyres after they were linked to roll-over deaths in Ford Explorers. This decision cost the company \$2 bn and precipitated a highly publicized dispute with tyre manufacturer Firestone. Ford went on to report a loss of \$5.5 bn for 2001, and only managed to break a string of losing quarters last month when it announced second-quarter earnings of \$570 mn. One of the factors that contributed to Ford's losses last year was a \$1 bn write-off related to palladium, a precious metal that has become critical to the automotive industry because of its use in catalytic converters (according to US law, cars can't be sold without them).

Ford's purchasers decided to stockpile the metal by buying physical and forward contracts. However, palladium supply actually increased, and the price of the metal fell dramatically from \$1,100 per ounce at the start of last year, to \$350 in the autumn. The problem was compounded because of a technical breakthrough that reduced palladium requirement, while maintaining the same emissions standards. The \$1 bn charge was incurred when Ford decided that prices were not going to rise as quickly as they had fallen, and it would be forced to restate the worth of its excess stocks. According to Wood, "Continuing to infuse our businesses with a risk culture" is one of the biggest challenges the risk function faces. "It's not that it's not do-able, but just that it's a big company with a lot of different parts that move, and we need to show all these people the value of the information we can provide to them," he adds.

Ford is also seriously thinking of allocating capital against risk. At the moment, Ford, like most corporates, does not attempt to link risk and capital directly. But banks have embraced the approach enthusiastically. Wood feels that the same thinking could work equally well in the auto industry. Wood is in favour of using risk analysis to work out how much capital Ford needs. He would also like to see the principle of risk-adjusted return on capital being used as a performance metric. Wood admits that some of the biggest risks that the company faces, as the past 18 months have demonstrated, are not amenable to the same kind of analysis. "Our exposures are things like business interruption or competitive risk, or brand risk, or launch risk – a lot of things that are very difficult to quantify – so charging capital against them is also difficult."

Source: Duncan Wood, "Changing attitudes to risk," E Risk, August 2002.

The model uses historical experience and forward looking information such as new product plans, marketing programs and quality metrics. Any unfavorable difference between the customer contract lease-end value and Ford Credit's internal forecast is accrued and expensed as depreciation. Ford Credit reviews the depreciation rates on leased vehicles quarterly and adjusts them as needed to reflect changes in the projected residual values.

At lease termination, Ford Credit maximizes residual proceeds through the use of models to determine which geographic market would yield the highest resale value, net of transportation cost. Sometimes, lease extensions or early terminations are offered to take advantage of seasonal resale patterns.

Credit risk

Ford Credit extends consumer credit by purchasing retail vehicle installment sale and lease contracts from vehicle dealers. These contracts are divided into segments by credit risk tier, term and whether the vehicle financed or leased is new or used. Segment data are used to ensure that pricing and servicing procedures are commensurate with the risk associated with each contract. Ford Credit has behavioral models to assist in determining the best collection strategies. In general, collection procedures are designed to keep accounts current and to liquidate delinquent accounts. As a final step, after reasonable collection efforts have failed, vehicles are repossessed. However, collection efforts of any remaining balance continue until the account is paid in full or is determined to be uncollectible.

Ford Credit maximizes residual proceeds through the use of models to determine which geographic market would yield the highest resale value, net of transportation cost

Ford Credit also extends non-consumer loans, which include wholesale and other loans to dealers as well as automotive financing for commercial entities. Ford Credit requires dealers to submit monthly financial statements, perform periodic physical audits of vehicles and monitor inventory payoffs daily to detect adverse deviations from typical payoff patterns.

Financial risk

Ford Credit uses various financial instruments, particularly interest rate and currency swaps to manage market risk. Ford Credit does not engage in any trading, market-making or other speculative activities in the derivative markets.

Ford Credit mainly uses derivatives to eliminate mismatches between the terms of assets and liabilities. So changes in interest rates and exchange rates would have generally offsetting effects on the value of Ford Credit's financial assets and derivative instruments. Therefore, they would not be expected to have a material impact on Ford Credit's financial position. For instance, assuming an instantaneous increase of one percentage point in interest rates applied to all financial assets, debt and hedging instruments, Ford Credit's after-tax earnings would decline by \$66 mn over the ensuing 12-month period.

One of Ford Credit's major objectives is to maintain funding availability through any economic or business cycle. Ford Credit focuses on developing funding sources to support growth and refinancing of maturing debt. Ford Credit also issues debt that, on average, matures later than assets liquidate.

Global funding activities include direct and dealer-placed commercial paper, the placement of term debt with retail and institutional investors and public and private sale of receivables. Ford Credit's ability to raise funds at a competitive cost is linked to its debt ratings.

Ford's management closely monitors the amount of short-term funding and mix of short-term funding to total debt, the overall composition of total debt and the availability of committed credit facilities in relation to the level of outstanding short-term debt. Stress testing of Ford Credit's liquidity position is conducted periodically.

Conclusion

Despite all the initiatives launched to manage risk, Ford today is a company in trouble. CEO Bill Ford faces the daunting task of leading the company, out of the current scenario of declining sales and deteriorating market share. Only two years ago, Ford was the top automaker and was regarded as one of the best managed companies in the industry. Today, Ford faces plant closures, employee downsizing and other drastic cost cutting measures. Bill Ford has outlined dramatic cost cutting measures in the recently publicized Revitalization Plan aimed at trimming excess production and streamlining operations. But he has publicly acknowledged that just cutting costs will not be enough to turn Ford around. There are other initiatives that Ford is contemplating to help address the multitude of problems it faces.

Quality: Statistically, Ford makes the most unreliable vehicles out of all of the major automakers. The serious quality problem within the Ford product line is arguably the most critical factor in Ford's rapid fall from grace. Ford now possesses a line of vehicles that are synonymous with recalls and poor quality such as the Ford Explorer, Ford Focus and the Ford Escort. It is questionable whether or not it is better to try to change the image of these vehicles or whether Ford should launch a new product line, which showcases superior quality. Either option will take years and deeper pockets than Ford may have at this time.

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Reputation: Ford's reputation has suffered because of the highly publicized Firestone Tire debacle, class action lawsuits by Ford employees and the many other quality problems that have made the headlines in the last two years. Ford is trying to convey to customers that it is going back to the basics.

Bridgestone/Firestone: Ford is attempting to repair its relationship with Bridgestone/Firestone and trying to improve the image of the Ford brand and the Firestone brand. The class action lawsuit that looms over Ford and Bridgestone/Firestone keeps reminding consumers about the severity of the quality problems in the Firestone tires and the Ford Explorer. The lawsuit has the potential to be financially devastating to Ford as the number of litigants grows. Ford may try to offer smaller financial settlements to many of the litigants who did not suffer serious injuries.

New Products: Even if Ford manages to drastically improve its quality ratings it would still be left with a tired product line that needs an infusion of innovative cars that can compete with the Japanese and European product lines. Ford has developed a potential winner with the "Think" car that competes with smaller, fuel-efficient gas/electric hybrids that appeal to the environmentally friendly consumer. Ford needs to cut costs to become profitable again but it should continue to invest in the development of a new and innovative product line.

Ford does not have much time to complete all these tasks as the competition is fierce. 🌐

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