



## Leasing: Playing the Winners Game



The essence of business success is playing a “winner’s game,” one in which great players determine the outcome with winning actions.

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## Playing to win: Using the power of predictive analytics for business success

Bear Stearns, Lehman Brothers, AIG, Merrill Lynch and others made headlines in the past year because they made bad business decisions that left them scrambling for capital, and it created an atmosphere in the United States verging on panic. These firms seemingly, and perhaps unknowingly, “bet the firm” on the riskiest borrowers who were leveraging assets that had just experienced an extreme increase in value. The failure of these firms triggered nationwide fallout when other firms also realized they could not value or understand their current exposure, much less their counterparty risk. And we all know the end of the story, consumers no longer trusted the decision making of these companies, and they saw a loss in their liquid assets as well as their credit markets.

How could these well-respected companies fall so far so fast? Their problems point to a lack of understanding of risk among senior leadership. Misunderstood correlations of perceived diversified risk, the unrecognized consequence of extreme levels of risk, and the misalignment of executive incentives each served as catalysts to trigger the financial collapse.

As credit, liquidity, trust and confidence problems spread into the general economy, everyone felt the pinch. Because business risks usually are correlated, the end result was a complete market downturn resulting from combinations of large exposure to engineered derivative products, inflated asset values, high leverage ratios, forced selling, and mark to market accounting. The consequences of being wrong proved disastrous. While each of these firms had substantial risk-management practices, the decision-makers surprisingly did not fully comprehend that if their investment allocation would offer a risk adjusted return. And more importantly, they didn't seem to understand the price of being wrong, or how wrong they had to be before the company was in danger.

***"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius - and a lot of courage - to move in the opposite direction."  
Albert Einstein***

Because financial systems are interwoven, the far-reaching implications of the current downturn have resulted in one of the most complicated environment for managers and investors in a generation. Any difficulty in understanding the current position increases the complexity in future plans. Outcomes are uncertain, but we can control the decisions we make today. Successful strategy is about defining and understanding the risks to actively shape the game you play, not just playing the game you find. In business, leadership must leverage information to obtain a risk adjusted return in time.

The essence of business success is playing a “winner’s game,” one in which great players determine the outcome with winning actions. Alternatively, in a “loser’s game,” the players’ outcome is subject to unforced errors, and average players depend on

chance. According to Ben Graham, “The market, in the long run, is a weighing machine, but in the short run is a voting machine.” Given we accept that markets are efficient over time, and we understand that there will be intermittent downturns and shocks to endure, the winner’s game in business is, in effect, a marathon. We are in it for the long haul. Sustainable greatness is achieved through using information to make appropriate decisions, including the proper assessment of risk allowing the enterprise to endure long enough to be right.

*“You will never do anything in this world without courage. It is the greatest quality of the mind next to honor.” Aristotle*

Businesses constantly operate under conditions of uncertainty such as changing customer preferences, new technologies, economic recessions, political upheavals, and other challenges. Even though we know this happens, the majority of business efforts are spent analyzing historical results with minimal effort predicting what the future holds. To make prudent decisions in a complex game, businesses must use information tools to make “deliberate decisions” to shape the future of business, and quantifying the amount of risk needed to take to obtain a given return.

Even though markets are efficient in the long run, it is dangerous to believe we know more about the future than we know about today; rather we should position our firms to endure by planning and preparing for gyrations and random but probable events. The future is a Gordian knot formed by countless interrelated decisions. The human element, combined with new technologies, creates a situation that is constantly evolving. Consequently, the range of outcomes widens as we attempt to look into the future. Since we cannot predict the future with certainty, the most careful long-term strategy is to make asset allocation decisions based on the potential consequences of a wrong allocation, thus creating a high level of confidence the firm will prosper over time.

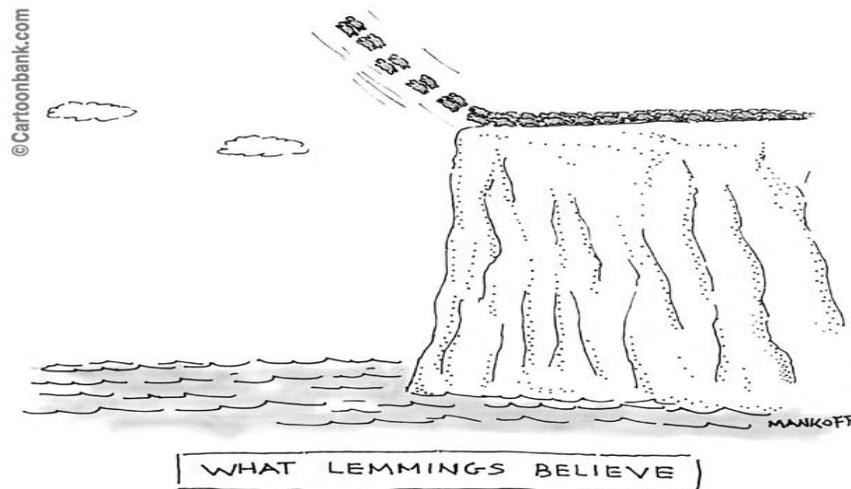
Essential to winning is forming a long-term strategy through the use of analytic and predictive modeling, taking into account not only internal information but also an analysis of external factors, which influence market demand. Analytic and predictive modeling is an art and a science that leverages advanced data mining and quantitative techniques to develop a “well-informed view of the future.” Modeling with variability helps to solve complex problems with large numbers of integrating variables, non-linear relationships, creating significant uncertainty of the outcome through the generation of multiple scenarios and combinations of events to determine a distribution of probable outcomes in a risk-free environment.

The more sophisticated the understanding of the business and the variables that influence outcomes over time, the more precise the model becomes. Unfortunately, no matter how hard we try, a forecast model represents a best guess at what is going to happen based upon what we can infer from the past and what we assume for the future. Models are mathematical tools whereas markets are organic and difficult to capture in equations. Thus, financial modelers must compromise by focusing on what they can best understand and work toward determining probable outcomes by overcoming human nature to find expected outcomes. Models are best regarded as a collection of

parallel, inanimate “thought universes” to explore and find contradictions.

***“Contradictions do not exist. Whenever you think you are facing a contradiction, check your premises. You will find that one of them is wrong.” – Ayn Rand***

In cyclical markets, good years typically don't follow great years; in fact, usually bad typically follows good. Staffing along with incentive decisions are typically based on an improvement over the past year's performance leading to forecasting growth from the mountaintop in years prior to a downturn. The impact of being wrong is especially severe in high fixed-cost enterprises. In these businesses, forecast demand, pricing, residual value, interest rates, fixed costs, competitors' actions and mistakes could be fatal.



## Sample Model

Managers are trying to make decisions today with the objective of obtaining a proper risk-adjusted return in investors in the future. Investors and banks have the ability to revisit their decisions on the results; however, this is not as easy for owners or managers.

Following is a model of a high fixed-cost business (rail-car leasing) with requisite requirements for long-term capital allocation decisions that are difficult or impossible to reverse. These decisions also are a major determinate of the success or failure of the enterprise. This type of enterprise typically produces low-profit margins, with return being dictated by scale, accuracy in predicting demand, tax shields from interest and depreciation expenses. It also is important to maintain bank covenants to keep borrowing costs low. As with many financial companies, the upside return is limited. In addition, points of inflection resulting from economic flaws can be ruinous to those who overcapitalize while representing substantial opportunity for those who position themselves to weather potential storms.

### Business Factors:

- Fleet decisions have to be made one year in advance
- Raw materials have a substantial impact on equipment pricing
- Interest rates are a key cost and indicator of demand
- Competitors – good and bad
- Once committed, decisions are costly or impossible to reverse
- Utilization rates are unknown
- Rental rates are unknown
- Investors require a rate of return to commit and leave capital committed
- Banks require coverage ratios are maintained
- To obtain the investors return – leverage is required
- Benefits from forecasting correctly – increased tax shields from interest and depreciation
- Costs of financial distress range from bankruptcy to failure
- The equipment has a useful life of 20 years. The key objective is to make asset allocations that keep the firm from transitioning into a “binary game” when the results are either survive or fail by positioning the firm to create a range of potential positive outcomes

## RESULTS

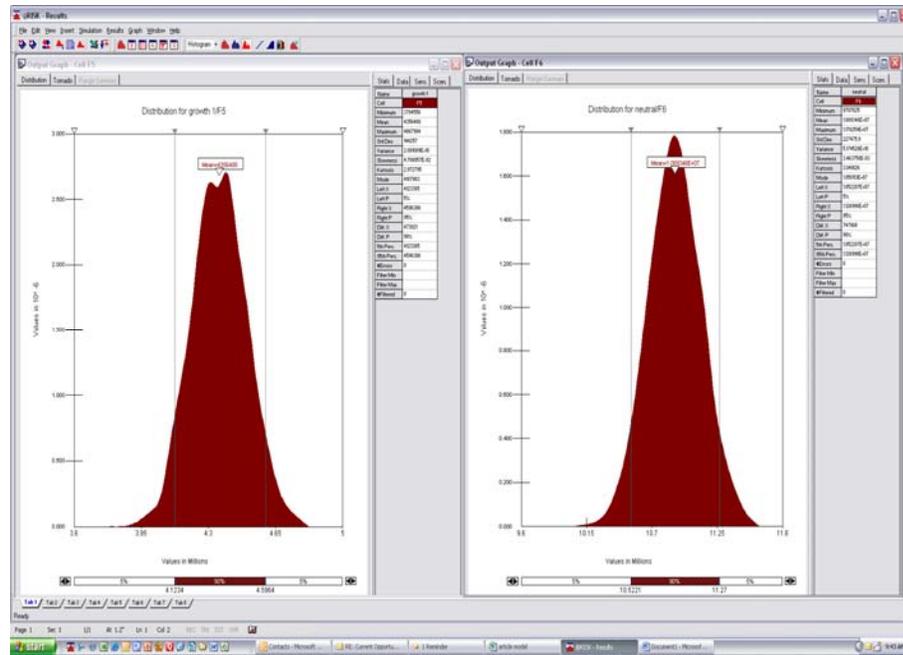
	2007		2008		2008
	No Growth	Growth	Forecast for Neutral	Forecast for Growth	Forecast for Growth "Alternate Universe"
Fleet Capacity	1,000	1,000	1,000	1,150	1,150
Unit cost / value	100,000	100,000	100,000	100,000	100,000
Fleet Value	100,000,000	100,000,000	100,000,000	115,000,000	115,000,000
Equity	30%	30%	30%	30%	30%
	30,000,000	30,000,000	30,000,000	34,500,000	34,500,000
Fleet Market Value	100,000,000	100,000,000	70,000,000	80,500,000	103,500,000
Utilization Rate	97%	97%	70%	61%	97%
Units Producing Revenue	970	970	700	700	1,116
Weighted Average Rate	30,000	30,000	27,000	27,000	30,000
Revenue	29,100,000	29,100,000	18,900,000	18,900,000	33,465,000
Fixed Cost	(10,000,000)	(10,000,000)	(10,000,000)	(11,500,000)	(11,500,000)
Variable Cost	(7,275,000)	(7,275,000)	(4,725,000)	(6,048,000)	(8,366,250)
CapX	-	(4,500,000)	-	-	-
Interest	(2,100,000)	(2,100,000)	(2,100,000)	(3,450,000)	(2,415,000)
<b>Net Income</b>	<b>9,725,000</b>	<b>5,225,000</b>	<b>2,075,000</b>	<b>(2,098,000)</b>	<b>11,183,750</b>
Coverage Ratio	5.63	3.49	1.99	0.39	5.63

*The year 2007 was a good year for the firm with utilization rates effectively at 100 percent, during many periods the firm was not able to meet demand, and at times management wished their fleet was 20 percent larger to meet demand. In January 2007 the firm projected 5 percent growth, this forecast was increased to "a conservative" 15 percent, given they already had demand for a 20 percent larger fleet. The market suffered a substantial decline in 2008 with demand for the firms units declining 30 percent, also resulting in lower rates and higher variable costs associated with storing excess inventory.*

*Illustrated above are the potential implications of planning for too much growth in a leveraged firm. I have illustrated two scenarios, Neutral (no additional units), and Growth (15 percent growth or 150 units). The bank requires a minimum coverage ratio of 2x (EBIDTA/Interest Expenses), and as we can see the firm will potentially struggle to cover interest in the growth scenario, potentially increasing cost of capital and/or forcing the business to liquidate into a very soft market.*

GROWTH

NEUTRAL



*The distribution of potential scenarios for growth provides on average positive returns. The left tail of distribution results represents potential forced liquidation risk scenarios. In the case of forced liquidation the all of the positive values in the distribution, and going into the future are lost.*

*Following is the sum of net incomes from periods 2009-2013:*

**2009 - 2013**

Growth 1	10,654,204
Neutral	31,228,320
Growth 0	-
Right on Growth	168,313,118

- *Growth 1 – is the most common result for being wrong and forecasting for growth, but surviving (no costs of bankruptcy included)*
- *Neutral – is the most common result for adding no additional capacity in 2008*
- *Growth 0 - The firm into a binary game and is forced into liquidation*
- *Right on Growth - outcomes over the same period if rates and utilization would have remained at high rates through 2008 (the alternative universe)*

## Summary

We all know risk is inherent in reward. Without uncertainty and the inevitability that forecasts will often be wrong, we cannot have free markets, free will or the ability to make choices that matter. But if we view uncertainty as an opportunity to take advantage of superior capabilities by leveraging intellect and data assets to gain a better understanding about what will happen to gain an edge over the competition, then we should treat it as an opportunity, but with care, consideration and attention to consequences.

*“You only have to do a very few things right in your life so long as you don’t do too many things wrong.” - Warren Buffett*

## Notes on model design

### Inputs

1. Identify goals – define the scope of the simulation and decisions to be addressed
2. Model design – understanding the problem domain – of relevant variables, their distributions and their inter-relationships
3. Collecting and analysis of information
4. Model variation – use statistical techniques and confidence intervals to analyze execution
5. Model execution – programming the design using statistical techniques and algorithms

### Outputs

1. Forecast of macroeconomic factors directly impacting the modeled business
2. Forecast of market demand
3. Forecast of competitors actions

“Top-down” modeling begins with a forecast of the macroeconomic factors to find out potential levels of future level of inflation, incomes, costs and interest rates with a focus on the specific markets or regions effecting the business to forecast of market demand for the company’s products or services and firm-specific and economic factors.

“Bottom up” modeling starts with an estimation of market demand for a company’s products or services to determine macroeconomic factors needed to be in place to drive the given or required level of demand.

To find out what Palmer Leasing can do for your company, contact us today.

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