

intelligent
OPTION INVESTOR

Signal Digest

Separating the signal from the noise in the financial markets

Growth is Slowing

Erik's Monthly Commentary

US equity markets recovered from the shock of the Brexit vote after what must have been a few days of exceedingly good ratings for CNBC and Fox Business. After all was said and done, the S&P 500 index closed the month of July at just under a record level.

We view equity markets as levered bets on the growth of the underlying economy. Corporate profit growth trends toward the nominal growth of GDP. Most companies have a debt/equity ratio higher than one, so if an investor owns a broad selection of equities, his or her wealth should increase at the same pace of the economy multiplied by the debt/equity ratio. Since the mid-1920s, U.S. GDP has increased at around 6% per year on a nominal basis and the average leverage ratio has been 1.6. By our reasoning, we would expect equity returns to fall in the 10% range and indeed, that is what they have been historically.

Brexit is warning of the structural weaknesses of the EU. Chinese banks bloated with bad debt is a warning of structural weakness in the PRC. Stagnating middle-class incomes and the attendant protectionist populism in the US is a sign of structural weakness here. Economic growth slows in the face of structural weakness. We have already adjusted our assumptions down for long-term growth in our equity models, and will take a hard look at our near- and mid-term growth assumptions as well.

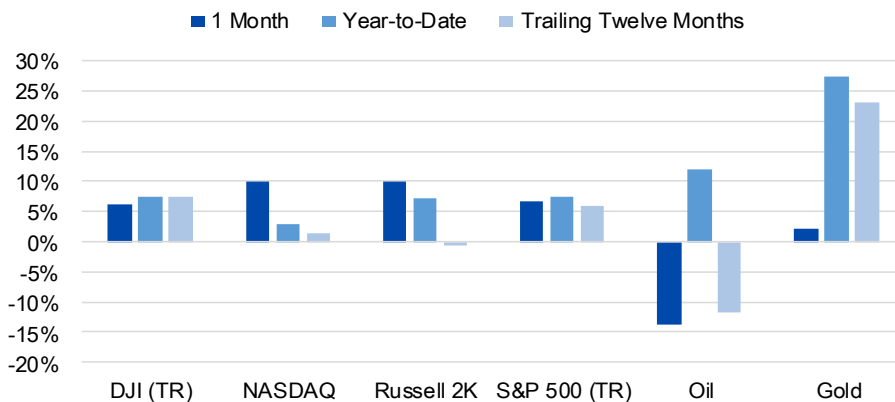
Inside this issue

- Investment Philosophy2
- July Bond Replacements..... 3
- Review of June's BRs5
- Coverage Summary6
- Education Corner8
- The Death of Autos 12
- Reimagining Grocery..... 14
- Guide to IOI Graphics..... 19
- WFM Valuation.....23
- KR Valuation.....25

Key points

- The world is slowing—time to reduce growth expectations.
- Bond replacement investments did very well in July!
- Your grandchildren won't know how to drive.
- Your grandchildren may never push a shopping cart.
- IOI was ahead of the curve on our bearish call on Whole Foods Markets.

Asset Price Returns



Investment Philosophy

Price vs. Value

In the short-term, we believe that a company's intrinsic value often differs from its stock price for various reasons. Many of these reasons involve behavioral biases and structural factors that teach in detail about in our IOI 101 course. Investing successfully means spotting times when a company's stock price differs the most from its intrinsic value and putting an appropriate amount of capital at risk to profit when that gap closes. This process usually requires patience and is often contrary to "common wisdom." As such, it is not always the easiest thing to do emotionally, but watching the process work out time after time builds confidence.

Valuation Drivers

The axiom that forms the basis for our work is that the intrinsic value of a firm is the sum of the cash flows that the firm will generate on behalf of its owners over its economic life. The process of generating cash flows is simple. A company must 1) generate revenues, 2) convert some portion of revenues to profits, 3) and invest some portion of profits in projects that will allow the firm to grow in the future. All our analyses hone in on these key valuation drivers. Our valuations focus on cash flow creation in the short-term and cash flow growth in the medium- and long-term, and we discount future cash flows using a common discount rate yardstick. Our IOI 102 Course goes into detail about how to analyze these drivers and our thinking behind discount rates.

Uncertainty vs. Risk

Companies are enormously complex and are subject to complex and random occurrences in the environment in which they operate. As such, we believe every estimation of value has a degree of uncertainty and all our valuations are described in terms of a range from worst-case to best-case. Our IOI 102 course goes into detail about how to make best- and worst-case assumptions of each of the valuation drivers that combine to generate a valuation range, and also

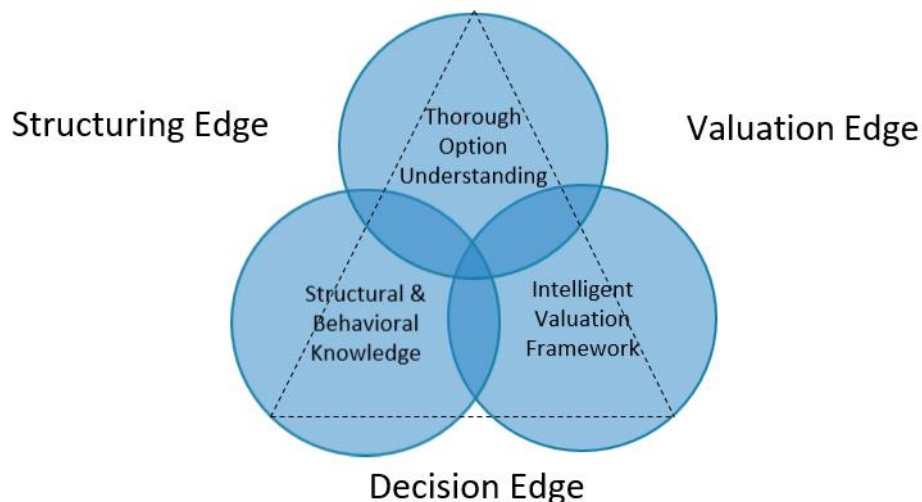
discusses how using a valuation range helps guard against some of the behavioral biases we cover in IOI 101. Uncertainty may be high but risk low if there is a large enough difference between the stock's price and its valuation range.

Investment Strategy

We view all investments as an opportunity to gain or accept exposure to the operations of an underlying company. Stock investors must always simultaneously gain and accept exposures as a matched pair (e.g., if you want to gain from a company's upside potential, you must also accept downside risk). Options allow investors the flexibility of deciding whether to gain or accept exposure without having to simultaneously do the other. Given this extra flexibility, our investment structures sometimes involve using options or incorporating them into a stock position. We conceive of investing in terms of a "balanced meal." Our meat and potatoes is always a position in the underlying stock. We add flavor to the meat and potatoes using no- or low-leverage option strategies. Sometimes, we have a spicy hors d'oeuvres of a more highly levered option strategy, but those are few and far between. We teach in detail about options and how to measure and manage leverage in our IOI 103 Course.



"To invest successfully over a lifetime does not require a stratospheric IQ, unusual business insights, or inside information. What's needed is a sound intellectual framework for making decisions and the ability to keep emotions from corroding that framework." – Warren Buffett



Covered Calls¹

Ticker	Stock Name	Industry	Portfolio Weight (%) ²	Market Price ³	Reported Price ⁴	Px/Rptd Px ⁵	Contract ⁶	Days ⁷	Dividend	ATM Call ⁸	Call Px ⁹	EBP-Call	Diff from Avg Px-Call ¹⁰	% Ret-Call ¹¹	Ann%-Call ¹²
ALXN	Alexion Pharmaceuticals	Biotechnology	1.57	129.78	116.76	1.11	NOV 18 '16	112	-	135.00	8.10	121.68	4.2%	10.9%	40.3%
BIIB	Biogen	Biotechnology	2.39	288.35	241.82	1.19	OCT 21 '16	84	-	290.00	17.10	271.25	12.2%	6.9%	33.7%
EXC	Exelon	Utilities - Diversified	1.96	36.59	36.36	1.01	OCT 21 '16	84	0.32	37.00	1.10	35.17	-3.3%	5.2%	24.6%
GOOGL	Alphabet	Internet Content & Information	2.33	761.97	692.11	1.10	OCT 21 '16	84	-	770.00	32.30	729.67	5.4%	5.5%	26.3%
MET	MetLife	Insurance - Life	1.61	43.18	39.83	1.08	OCT 21 '16	84	0.40	42.50	2.24	40.54	1.8%	4.8%	22.8%
MOS	Mosaic	Agricultural Inputs	1.06	28.88	26.18	1.10	DEC 16 '16	140	0.28	28.00	2.24	26.37	0.7%	6.2%	17.0%
MYL	Mylan	Drug Manufacturers - Specialty & Generic	1.16	46.93	43.24	1.09	OCT 21 '16	84	-	47.50	2.66	44.27	2.4%	7.3%	35.8%
PRGO	Perrigo Co	Drug Manufacturers - Specialty & Generic	1.63	91.34	90.67	1.01	NOV 18 '16	112	0.15	95.00	5.30	85.90	-5.3%	10.6%	38.9%
RL	Ralph Lauren	Apparel Manufacturing	1.71	99.25	89.62	1.11	OCT 21 '16	84	0.50	100.00	4.10	94.65	5.6%	5.7%	27.0%
RLGY	Realogy Holdings	Real Estate Services	1.95	30.62	29.02	1.06	DEC 16 '16	140	-	30.00	2.35	28.27	-2.6%	6.1%	16.7%

Cash-Secured Puts

Ticker	Stock Name	Industry	Portfolio Weight (%) ²	Market Price ³	Reported Price ⁴	Px/Rptd Px ⁵	Contract ⁶	Days ⁷	Dividend	ATM Put ⁸	Put Px ⁹	EBP-Put	Diff from Avg Px-Put ¹⁰	% Ret-Put ¹¹	Ann%-Put ¹²
ALXN	Alexion Pharmaceuticals	Biotechnology	1.57	129.78	116.76	1.11	NOV 18 '16	112	-	135.00	11.90	123.10	5.4%	9.7%	35.1%
BIIB	Biogen	Biotechnology	2.39	288.35	241.82	1.19	OCT 21 '16	84	-	295.00	20.20	274.80	13.6%	7.4%	36.1%
EXC	Exelon	Utilities - Diversified	1.96	36.59	36.36	1.01	OCT 21 '16	84	0.32	37.00	1.75	35.25	-3.1%	5.0%	23.4%
GOOGL	Alphabet	Internet Content & Information	2.33	761.97	692.11	1.10	OCT 21 '16	84	-	770.00	35.70	734.30	6.1%	4.9%	22.9%
MET	MetLife	Insurance - Life	1.61	43.18	39.83	1.08	OCT 21 '16	84	0.40	42.50	1.92	40.58	1.9%	4.7%	22.2%
MOS	Mosaic	Agricultural Inputs	1.06	28.88	26.18	1.10	DEC 16 '16	140	0.28	28.00	2.92	25.08	-4.2%	11.6%	33.3%
MYL	Mylan	Drug Manufacturers - Specialty & Generic	1.16	46.93	43.24	1.09	OCT 21 '16	84	-	47.50	3.30	44.20	2.2%	7.5%	36.7%
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RLGY	Realogy Holdings	Real Estate Services	1.95	30.62	29.02	1.06	DEC 16 '16	140	-	30.00	1.90	28.10	-3.2%	6.8%	18.6%

See Key and Notes on Next Page

July 2016 Covered Call Corner

[ClearBridge Value Trust](#) | \$2.2 billion portfolio value

This month, we screen for attractive “bond replacement” investment candidates using new holdings of the ClearBridge Value Trust ([LMVTX](#)), managed until 2012 by the famous Bill Miller and now by Sam Peters and Jean Yu.

We have selected the stocks that this fund reported purchasing in the second quarter of 2016 (the latest period for which data was available) and have limited the list based on two criteria:

1. Stocks listed represented more than 1% of the portfolio's value
2. Stocks listed had been bought by the fund in the reported quarter

These conditions were to screen for the stocks in which the managers had demonstrated the most confidence (by portfolio weight) and about which they had made an active decision to invest. We are using these portfolio managers' actions as an indication of undervaluation.

Morningstar's report on this fund may be found [here](#), and a prospectus for the fund may be found [here](#).

Key for Covered Call Corner Screen

Highlighted options did not trade on day when data taken. Bid price shown.

Notes for Covered Call Corner Screen

1. Covered calls and cash-secured short puts are equivalent from a risk perspective. Returns may differ slightly, but will generally be roughly equivalent.
2. This is the percentage weight in the highlighted manager's portfolio.
3. This is the market price of the stock when the data for this screen was drawn.
4. This is the price at which the manager reported transacting in the shares (institutional managers must report holdings and transactions once a quarter in a “13-F Report” to the Securities and Exchange Commission).
5. Ratio of the market price to the average price of the security during the quarter covered by the 13-F Report. The further the number is below 1, the lower of a price you are getting versus the portfolio manager's price.
6. We screen on contracts that are closest to three months to expiration.
7. Days to expiration when data was drawn.
8. We choose the option strike price whose dollar delta is closest to 0.50 (-0.50 for put options).
9. Bid price for the option as of the day the data was drawn. We use the bid because we are selling options.
10. This is the percentage difference between the effective buy price for the stock were the option to expire In-the-Money and the average price of the stock during the quarter as reported in the 13-F. A negative number means the effective buy price is lower than the price at which the manager probably bought the stock.
11. This is the maximum period return on a covered call, assuming the stock price is above the strike at the option's expiration. This is your maximum possible win. Your maximum possible loss is 100% of your Effective Buy Price.
12. This is the maximum return percentage on the bond replacement investments, normalized across options through an annualization calculation. If the covered call has a higher annualized return than the cash-secured short put, we use a **bold green font** and vice versa.

Results from June Covered Call Corner

Ticker	Stock Name	Industry	Old Stock Price ¹	Stock Price Now	Pct Change ²	ATM Put ³	Contract ⁴	Old Put Px ⁵	Put Px Now ⁶	Pct. Prem. Realized ⁷	Period Return ⁸	Implied Annual Return ⁹
MSFT	Microsoft Corp.	Software - Infrastructure	51.17	55.90	9%	52.50	SEP 16 '16	2.71	0.43	84%	4.3%	77.7%
XYL	Xylem Inc.	Diversified Industrials	44.65	47.90	7%	45.00	OCT 21 '16	2.10	1.15	45%	2.1%	32.6%
TRMB	Trimble Navigation Ltd.	Scientific & Technical Instruments	24.36	26.52	9%	25.00	NOV 18 '16	2.15	1.55	28%	2.4%	37.8%
QCOM	QUALCOMM Inc.	Communication Equipment	53.57	62.47	17%	52.50	SEP 16 '16	2.24	0.10	96%	4.1%	71.6%
CFG	Citizens Financial Group Inc.	Banks - Regional - US	19.98	22.55	13%	20.00	OCT 21 '16	1.30	0.45	65%	4.3%	75.5%
VRNT	Verint Systems Inc.	Software - Application	33.13	35.40	7%	35.00	SEP 16 '16	2.95	1.60	46%	3.9%	66.8%
SYF	Synchrony Financial	Credit Services	25.28	28.00	11%	26.00	SEP 16 '16	1.75	0.45	74%	5.0%	93.4%
CELG	Celgene Corp.	Biotechnology	98.63	110.86	12%	100.00	OCT 21 '16	6.05	2.07	66%	4.0%	69.5%
RYN	Rayonier Inc.	Lumber & Wood Production	26.24	27.07	3%	25.00	NOV 18 '16	0.85	0.75	12%	0.4%	5.5%
OAK	Oaktree Capital Group LLC Cl A	Asset Management	44.76	45.98	3%	45.00	OCT 21 '16	2.35	1.85	21%	1.1%	16.1%
Average ¹⁰											3.2%	52.1%

¹ Stock price when original Covered Call Corner was published

² Percent change between old stock price and recent

³ The At-the-Money strike price as published in the original Covered Call Corner

⁴ Option contract highlighted in the original Covered Call Corner

⁵ Price of the put option contract (Bid or Closing price) shown in the original Covered Call Corner

⁶ Price of the put option contract (Ask or Closing price) as of update

⁷ For positive values, this is the amount of original option premium whose value has already been realized. For negative values, this is the degree to which the present price of the put option exceeds the original selling price.

⁸ This is the return of the investment over the period from original publication to this update. Return = Realized Premium / Strike Price – 1

⁹ Annualization of the Period Return column

¹⁰ This is the arithmetic average of the above return values. Unless positions are equally weighted by notional amount, an investor will have generated a different return from the one shown here

Research Coverage Summary

Company ¹	FV Range ²	Recent Price	Uncertainty & Opinion ³	Conviction ⁴	Notes
Oracle (ORCL)	49 43 37	41.04	Medium Bullish	High	Oldest IOI recommendation, made in mid-2013 at \$30. Presently largest levered position for IOI, but as the stock has moved toward FV, we are looking to reduce to an unlevered position.
General Electric (GE)	43 36 29	31.14	Medium Bullish	High	Originally made in late-2014 at \$26. Reduced leverage when price moved to \$30. Reconsidering revenue growth rates in light of Brexit, etc. and may lower worst-case valuation estimate.
Interactive Brokers (IBKR)	48 33 18	34.84	High Neutral	N/A	Demand environment uncertainty makes us less confident about forecasting its revenue growth. Profitability very high, but until we understand demand trends, we will not recommend position.
ARI Network Systems (ARIS)	12 5 2	5.12	High Neutral	N/A	Small-cap software company with large profit uncertainty. New mgmt. is turning the co. profitable but leverage on the business is likely low.
IBM (IBM)	185 170 155	160.62	Medium Bullish	High	Original recommendation for a bond replacement strategy, but stock price fall led to a larger, unlevered position. Restructuring scares mkt, but we believe co. is on the right track.
Wal-Mart (WMT)	79 69 59	72.97	Low Neutral	N/A	Original recommendation for a bond replacement which expired In-the-Money. Closed an unlevered position as the stock ran up to our FV.
The Gap (GPS)	48 41 30	25.79	High Bullish	N/A	Original recommendation for a speculative long call. Stock price cratered after that and call expired worthless. Have not refreshed valuation since.
Whole Foods Markets (WFM)	35 28 21	30.48	Medium Bearish	Low	First bearish bond replacement investment of 2016 successful. Second bearish investment in process but so far successful.
Ford (F)	17 11 5	12.66	High Neutral	Low	Originally made in mid-2014 at \$16. High uncertainty and high operational and financial leverage at co. encouraged small, unlevered position. Lowered FV in late-2015.
National Oilwell Varco (NOV)	71 38 5	32.35	Very High Neutral	Low	Exposure to offshore drilling makes value highly dependent on oil price. We recommended speculative "strangle" (long call + long put) but have not invested personally.
Union Pacific (UNP)	84 69 53	93.05	Medium Bearish	Low	Co. is clearly overvalued, but this is likely due to mkt's understanding that government supports co. as an instrument of industrial policy. No conviction about a bearish position yet.
Apple (AAPL)	174 151 128	104.21	High Bullish	High	We are less bullish than the valuation range suggests. We worry that co. will not invest its profits wisely, hereby cutting medium-term growth. Recommended bond replacement investment.
Procter & Gamble (PG)	94 76 57	85.59	Low Neutral	High	Co. is undergoing a major transformation. To us, it looks like mkt is pricing in this transformation working out very well and stock is trading at high end of range we think is most likely.
Kroger (KR)	46 33 20	34.19	Medium Neutral	N/A	We are more bullish than the valuation range suggests. Worst-case valuation implies contraction in profits in medium term. Co. looks well positioned to succeed in changing grocery environment.

See Notes on next page

Coverage Table Notes

1. We order the companies by IOI coverage from oldest to most recent.
2. Best-case valuation uses green numbers and worst-case, red. The middle number is the weighted average of the best- and worst-case or is a value close to that average that we consider most likely. A recent price of the stock is in the next column over for comparison.
3. "Uncertainty" means valuation uncertainty. This is based upon the interplay of the three key valuation drivers. An uncertain valuation does not have to be risky if the market price of the stock is far enough away from the range as a whole. "Opinion" is meant to designate what our view on the company was when our first research and / or strategy was published. "Neutral" means that we did not recommend an investment in the stock when we initiated coverage.
4. Conviction is a subjective measure of the investment strategy published and is meant to give an indication of relative position sizing. If our original research did not result in a recommendation, the Conviction rating is "N/A".

The Essence of Intelligent Option Investing

One of the wonderful things about options is their great flexibility.

For a stock investor to enjoy a gain from an increase in the price of a stock, he or she must buy the stock and accept the risk that the stock price might fall.

We can picture the risk and reward exposure of an investor who buys a stock in the following way:

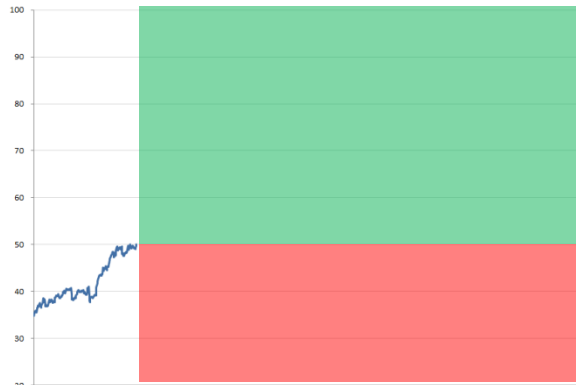


Figure 1

The blue line in figure 1 represents a stock's historic price movement. Here, we are assuming that an investor buys a stock at the current price—\$50 per share in this case—and must accept exposure to the stock's downside risk in order to gain exposure to the stock's upside potential. The shaded regions are what we call **ranges of exposure**. A stock investor is always exposed to both upside and downside ranges of exposure.

In contrast, an option investor has the flexibility of separating a stock's upside potential from its downside risk.

This means an option investor can pick and choose precisely the exposure he or she wants to gain or accept.

For instance, an option investor might choose to gain exposure to a range starting at the \$60 mark—\$10 above the stock's present price—for a period of two years:

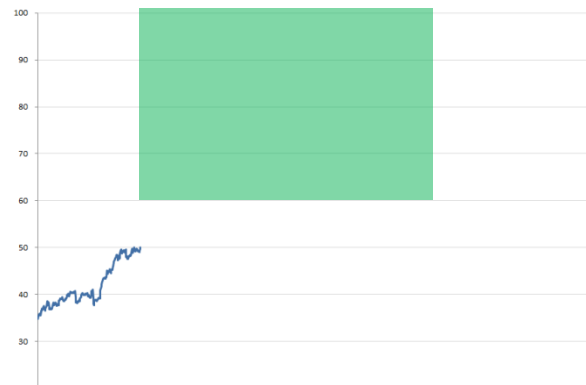


Figure 2

In order to gain exposure to the directionality of a stock, an investor must pay an up-front fee, called a **premium**.

An option investor might also choose to accept exposure to a stock's directionality. For example, one might accept exposure under a price of \$40 per share for a period of six months:



Figure 3

When an investor agrees to accept exposure, he or she receives premium. The amount of the premium paid or received varies due to market factors. These factors are discussed fully in [The Intelligent Option Investor](#).

Looking at these images, the wonderful **flexibility** of options comes through loud and clear, as does their inherent **directionality**. These are two of the reasons that make options such attractive investment tools for value investors.

Value investors know that stock prices reflect the economic value that the companies underlying the stock will create for its owners over time.

The Intelligent Option Investor lays out a sound intellectual framework for estimating a company's

The Essence of Intelligent Option Investing

value. Given the great complexity of economies and large companies, we recommend conceiving of and calculating a company's value as a range rather than a single-point estimate. This range is based on best- and worst- case estimates of three fundamental drivers of value.



Figure 4

When the both the upper and lower boundaries of the valuation range (represented by a triangle and a square, respectively) are well above the present price of a stock, as in figure 4, an investor has a chance to invest profitably with relatively low risk. This investment is sometimes said to have a wide **margin of safety**.

As the valuation range gets closer to the present price of the stock, the margin of safety of the investment shrinks, making the risk / reward equation tilt more toward the risk side.

Sometimes, the valuation range can be very wide, as is shown in figure 5.



Figure 5

In cases like this, when the lower boundary of the valuation range lies below, and the upper boundary of the valuation range lies above the present stock price, a stock investor must decide if he or she wants to

accept the risk of loss in order to gain access to the stock's upside potential.

However, thanks to the flexibility inherent in options, an intelligent option investor can gain exposure to both downside and upside potential:

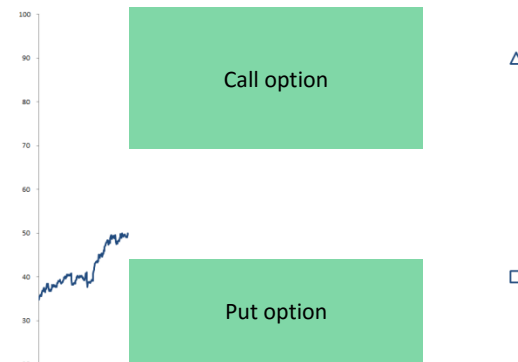


Figure 6

Figure 6 shows an investment colorfully called a "straddle," in which an option investor gains exposure to both downside and upside potential by buying a put option and a call option, respectively.

This may or may not be a sensible strategy, depending on the price of the two options. Paying too much for flexibility is as bad as not having the flexibility in the first place.

Clearly, we need to develop a sense for what is a good price for an option.

Prices of options are determined using mathematical models. The first and most influential of these was developed by three academics--Fisher Black, Myron Scholes, and Robert Merton—and is called the Black-Scholes-Merton model (BSM).

The BSM is used to determine option prices, but at its heart is a prediction of the future price range of a stock.

You can learn more about how the BSM's prediction process works by reading *The Intelligent Option Investor*, but in brief, the BSM formulas always generates predictions that conform to the same sort of cone-shaped region:

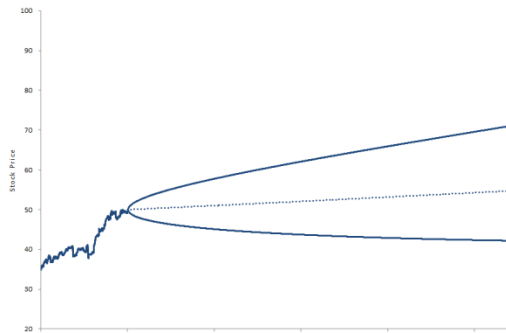


Figure 7

The BSM cone in figure 7 shows what the BSM considers the most likely future price of this stock to be around \$55 (shown by the lighter straight line) and predicts that the price will most likely be between about \$42 and \$71 (shown by the lower and upper lines of the cone, respectively).

Once the equation calculates this cone, finding a price for an option is easy.

The greater the area of the range of exposure is contained within the BSM cone, the more expensive the option. For example, the option with a range of exposure shown in figure 8...

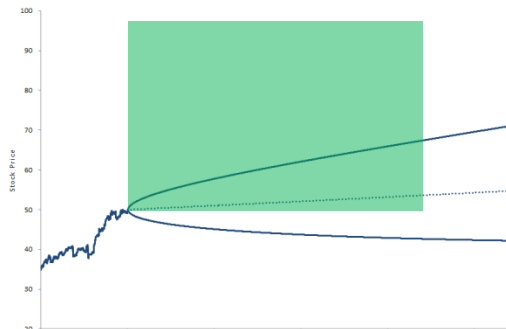


Figure 8

...will be more expensive than the option in figure 9. This is simply because the area of the range of exposure within the BSM cone in figure 8 is greater than the area of the range of exposure lying with the BSM cone in figure 9.

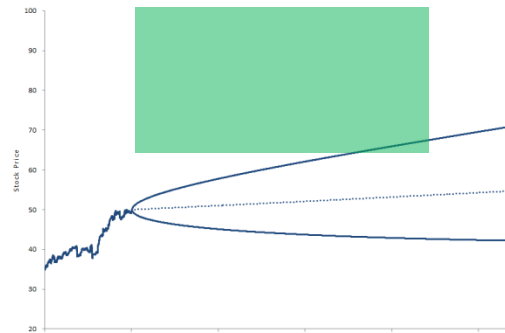


Figure 9

Now that we understand the basic principles behind option pricing, the question still remains as to whether the options are fairly priced or not. To answer that question, we need to compare our fundamental valuation range to the BSM cone's prediction range.

Again, there is a simple rule to follow. We just need to compare our best and worst-case valuations to the upper and lower part of the BSM cone.

This is the essence of **Intelligent Option Investing**.

The essence of intelligent option investing involves three steps.

- Understanding the value of a company and its stock.
- Comparing this value to the prediction made by the option market.
- Picking an option strategy that will tilt the balance of risk and reward in the intelligent investor's favor.

Graphically, the first two steps can be represented as in figure 10:

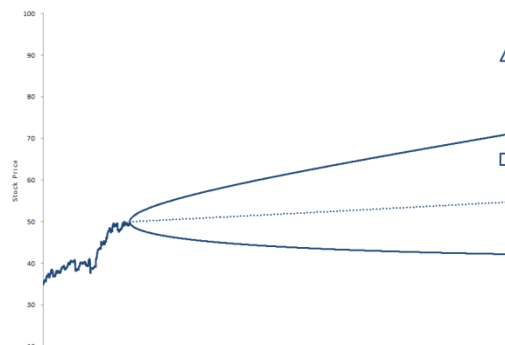


Figure 10

We have used a sound theoretical framework to find a best-case value of \$90 per share and a worst case value of \$65 per share. That is shown in figure 10 by the triangle and square, respectively.

The Essence of Intelligent Option Investing

Next, we read the option pricing screens and found that the BSM's prediction for the price of this same stock ranged between around \$71 and \$42, respectively.

Because our best-case valuation is much higher than the BSM's high-side prediction, we know that call options (which allow an investor exposure to a stock's upside potential) is undervalued.

Conversely, because our worst-case valuation is much higher than the BSM's low-side prediction, we know that the put options (which allow an investor exposure to a stock's downside potential) is overvalued.

And any value investor knows that it is best to buy something that is undervalued and sell something that is overvalued. This means, we should sell a range of exposure to the downside and buy a range of exposure to the upside.

Indeed, this is the third step of intelligent option investing and in this case, it can be represented like this:

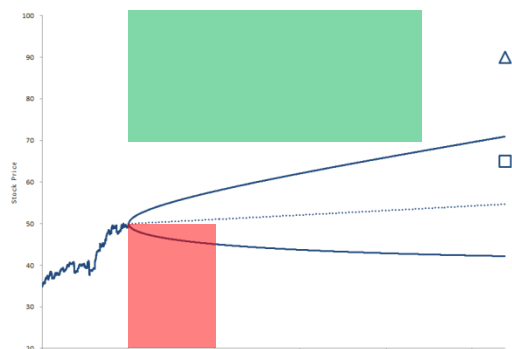


Figure 11

The above option investment, which we call a "Diagonal" in *The Intelligent Option Investor*, allows for an extremely low-cost way to invest in the upside potential of a company.

In our book, we go into more detail regarding how to choose the right option for a given situation, how to effectively combine option and stock positions for maximum benefit and minimum risk, and how to measure and manage leverage in a portfolio containing stocks, options, and cash.

With this explanation, though, you have a taste of what it means to be an intelligent option investor!



IOI's 100-Series Course. Institutional Caliber Investment Training for Organizations and Individuals

IOI 101: Behavioral Biases and Structural Market Factors

Learn to better manage yourself and know your competition. Understand how pros view the markets and why. Learn how to guard against making investing mistakes and to take advantage of others' mistakes.

IOI 102: Valuation

Learn IOI's stepwise framework for how to value a company by focusing on the 3 key factors that dictate long term value creation. Understand how to analyze financial statements and where "snakes" and "lottery tickets" lie. A deep dive into "price" vs. "value".

IOI 103: Option Market Fundamentals and Hybrid Strategies

Demystify the options markets and learn how options can reduce risk and improve returns. Discover how to uncover and invest in mis-priced opportunities by through hybrid investment strategies.

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Breaking News: Automakers' Revenues to be Cut in Half



Most people rely on expert opinion to make investment decisions. But the essence of being a good investor involves thinking through things carefully and making your own assessments. After taking [a close look at Apple](#) (AAPL) and its presumptive investments in the automotive field, [this Bloomberg article](#) regarding the confluence of Tech and Autos caught my eye.

The article's centerpiece is an infographic showing investments, partnerships, and personnel shifts between Tech firms and Automakers and provides a good high-level perspective on the evolving landscape.

While the infographic was good, my eye was caught on this quote discussing a consultant's assessment of the future of the auto industry.

McKinsey estimates that rideshare and onboard-data services could generate an additional \$1.5 trillion of annual automotive revenue by 2030, adding to the \$5.2 trillion from traditional car sales and services.

The people that work at McKinsey are geniuses. It would be easy to read their assessment and take it for the gospel truth. But to me, the idea that automakers would gain revenue from a shift to rideshare is laughable.

By my back-of-the-envelope calculations, automaker revenues will fall by roughly a half over the time mentioned in this report, thanks to a paradigm shift in the business of getting from point A to point B. This shift will be characterized by the gradual replacement of autos with atus /ah-tooZ/ - "automatic transport units."

Being able to assess the demand environment for a company is the first essential step in making an intelligent valuation of a firm. Let's walk through our assessment step-by-step and see if our argument rings true with you.

Auto Spending is Unsustainable

Operating a personal car can scarcely be justified on economic grounds. Another quote from the Bloomberg article admirably underscores this contention:

It costs an average of \$8,558 per year to own a car in the U.S., but each vehicle is used just 4 percent of the time.

Let's do a quick, back-of-the-envelope calculation meant to give a sense for what this \$8,558 figure means to Americans.

The U.S. Census Bureau estimates that the average household income in this country is around [\\$52,000 per year](#). Note that this is a pre-tax figure, and assuming an adjusted tax rate of 15%, that implies post-tax, take-home pay of \$44,200. Further assuming that one-third of pre-tax salary is spent on housing and is non-discretionary, the average household has around \$27,000 left over after paying taxes and housing payments.

Using this logic, on a percentage basis, \$8,558 per year works out to around 32% of discretionary spending. In other words, just under one-third of most people's discretionary income stream is directed at an asset that is used only 4% of the time!

One-third of most people's discretionary income stream is directed at an asset that is used only 4% of the time!

If you ran a manufacturing company, would you commit to sinking one-third of your after-tax profits into a factory that you anticipated would have [an average capacity utilization of 4%](#)? If you did commit to this arrangement, how long would it take before the first class-action shareholder lawsuit was filed?

Where are We Going?

In the not-too-distant future, automakers (atmakers) will no longer sell to individuals through dealership networks. Instead, they will mainly sell directly to companies like Lyft and Uber, which will put these atus into service under their own brand names. They will also likely sell to "transportation capacity brokers" a kind of company that does not yet exist, but which will rent out peak-time transportation capacity to Lyft and Uber. A few atus will be ordered directly off the Internet (somewhere out there, the Michael Dell of the atu world may or may not be toddling around in diapers today), but the big-volume sales will be through the first two channels.

How many atus will be needed in this scenario?

An initial, off-the-cuff estimate would be that total atu units would be about half that of total auto units. Right now, Americans own two autos on average per household; we'll see this drop to around 1.0 atu per household within forty years, even without taking into consideration changes in custom and habit. (We already take an Uber ride with another person - the driver - so sharing a ride with a non-driver is not such a huge shift. Uber and Lyft will charge us less for shared rides and give us the option to share or not when we call for a pick-up.)

High-speed Internet service and a generation of people used to online social interactions will make commuting to most white collar jobs much less necessary, a social change that will ease peak atu demand during "rush hours." My 18-year old son meets his friends in person one time for every ten times he meets them online. Once he and his cohort are making managerial decisions, the pointless time expenditure of 45 minutes one-way to attend a one-hour meeting will be avoided in about the same proportion.

Over the last twelve months, Ford (F) has generated [\\$153 billion in revenues](#) and generated [\\$18 billion of Owners' Cash Profits](#). In the atu world we have envisioned here, it is easy to imagine the company generating \$5 billion of OCP on \$77 billion in revenues. Revenues will drop due to falling unit volumes, profitability will drop as maker-customer negotiating dynamics change and inter-atu differentiation drops.

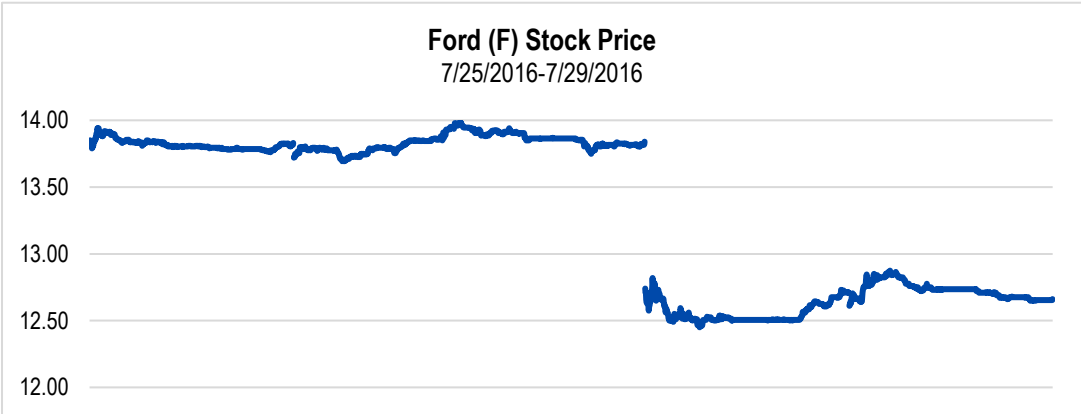
Presumably, Ford will need to continue spending on capital projects in the atu-future, and it will do so out of its lowered profitability. The cash left over after making these expenditures is its "free cash flow" and the value of a firm is the sum of its free cash flows over time.

So if we are right about an atu future for automakers like Ford, the value of these companies is vastly overstated at present market prices.

Don't take my word for it – work through the steps for yourself. There are only a few drivers of value and these drivers are visible to anyone who takes the time to look at them.



Epilogue: We originally published this article on July 7 and received several comments all to the effect of "You don't know what you're talking about!" On 7/28, Ford reported quarterly earnings and fell in value by about 10%. The root cause of the fall was management's comments about a weak demand environment. We believe this trend is due to continue.



Are You Investing in Grocery? You Should Be!

“No one makes money in grocery” is a pretty common investor rule-of-thumb. Margins are razor thin, even more so than in other areas of retail. Focus must be 110% on operations and wringing every last point of return out of each dollar spent (a good mindset for any business operator, honestly). The industry is relatively mature and we know the key players.

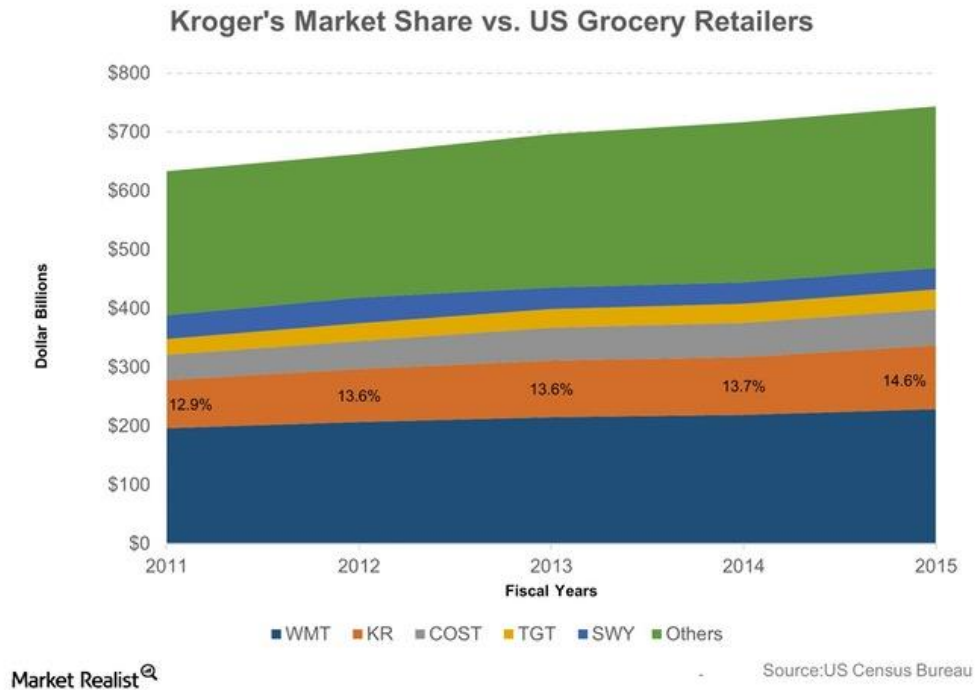


Figure 1. Source: U.S. Census Bureau via Market Realist

However, even though the names on the graph may be familiar, like much of the retailing industry, grocery is undergoing a series of dramatic changes as people's lifestyles and attitudes have evolved over the last 5-10 years. The pace and impact of these changes will make for some real winners and losers in the grocery business battleground and those kind of outcomes make for good investment opportunities - particularly when no one else is paying attention.

Grocery is undergoing a series of dramatic changes as people's lifestyles and attitudes have evolved...

Here we lay out the cultural trends and resulting grocery insights that will make or break investments in the grocery space in the coming 5-7 years.

There are four core lifestyle trends that are impacting how we think about grocery shopping from the top down. Grocers that see and understand these cultural shifts will be well positioned to capture excess returns from them. In all cases, consumers are willing to pay more to have these needs met.

1. An attitude of "My time must be spent on things that add value to me" is pervasive across demographic boundaries.
2. The idea of "I want to be healthier and have a better sense of overall wellness" is also pervasive across demographic boundaries.
3. Grocery shopping isn't the sole domain of married, stay-at-home moms anymore.
4. The Internet is redefining our relationship with buying all manner of products in terms of both product information and the outlets used for purchase.

Are You Investing in Grocery? You Should Be!

None of the above cultural dynamics should be a surprise. These trends have been in place for some time, but they have had a dramatic impact on how we, as consumers, think about food and, as a result on the “food supply” business in total.

How These Trends Affect Grocery

Demand for fresh, natural and organic foods has exploded. In fact, the explosion of this need has given rise to entire new categories of food, food suppliers and grocery entrants. However, value remains a key consideration for the vast majority of food shoppers, including in this growing subcategory. Just look at the launch of Whole Foods’ “365 Marketplace” store concept in 2015-16 for clear evidence of this.

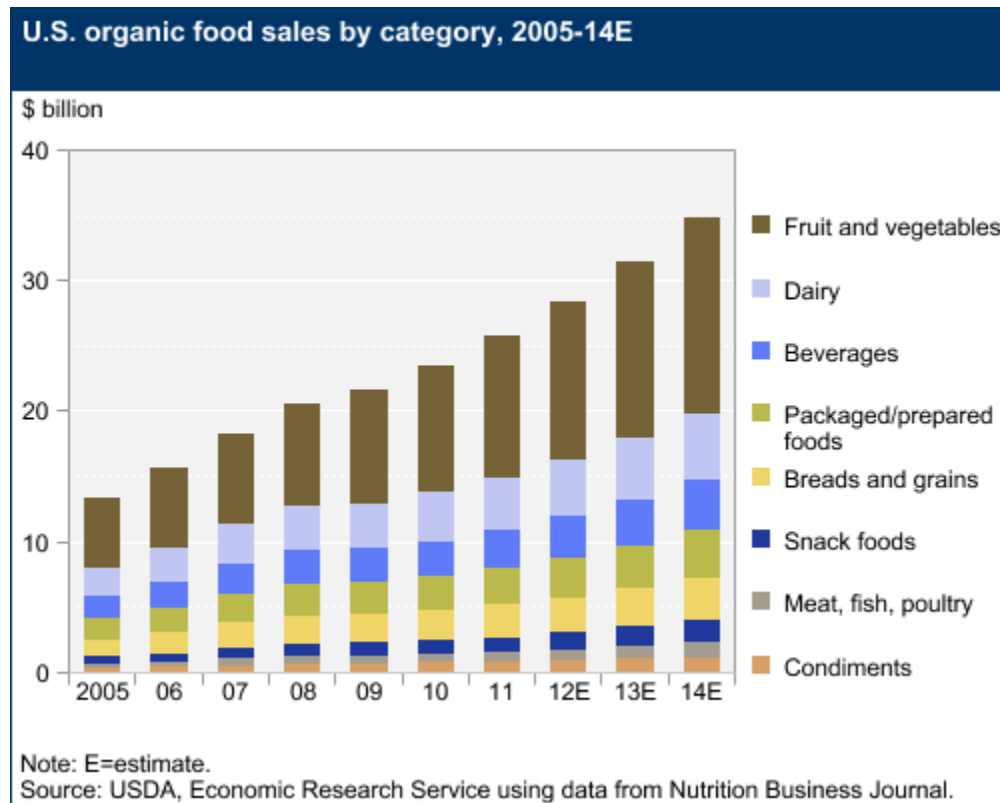


Figure 2. Source: USDA

Food itself is a source of entertainment. While we have seen this in the restaurant industry for decades, this consumer requirement is now entering the grocery space and even our own homes. Consumers continue to use food as a core element supporting the family dynamic and a source of bonding. The stories behind the food’s source - from the supplier to the preparer(s) - are core to the entertainment value.

Food supply must meet varied needs on the continuum spanning value-add and convenience. There are consumers that love to go to the grocery store and there are consumers who would prefer to never set foot in one. The former love the inclusion of food theater and the latter love the concept of online ordering and delivery.

Men are a growing segment of grocery shoppers and food preparers. Men shop differently. Additionally, men are often assuming this job voluntarily because they enjoy food and the end result of cooking further emphasizing the importance of the shopping experience. Men are less likely to spend as much time in stores and are less likely to be driven by or use coupons.

Check out the US Grocery Shopping Trends infographic on the following page from the Food Marketers Association. You will see all these core trends represented.

Top U.S. Grocery Shopping Trends

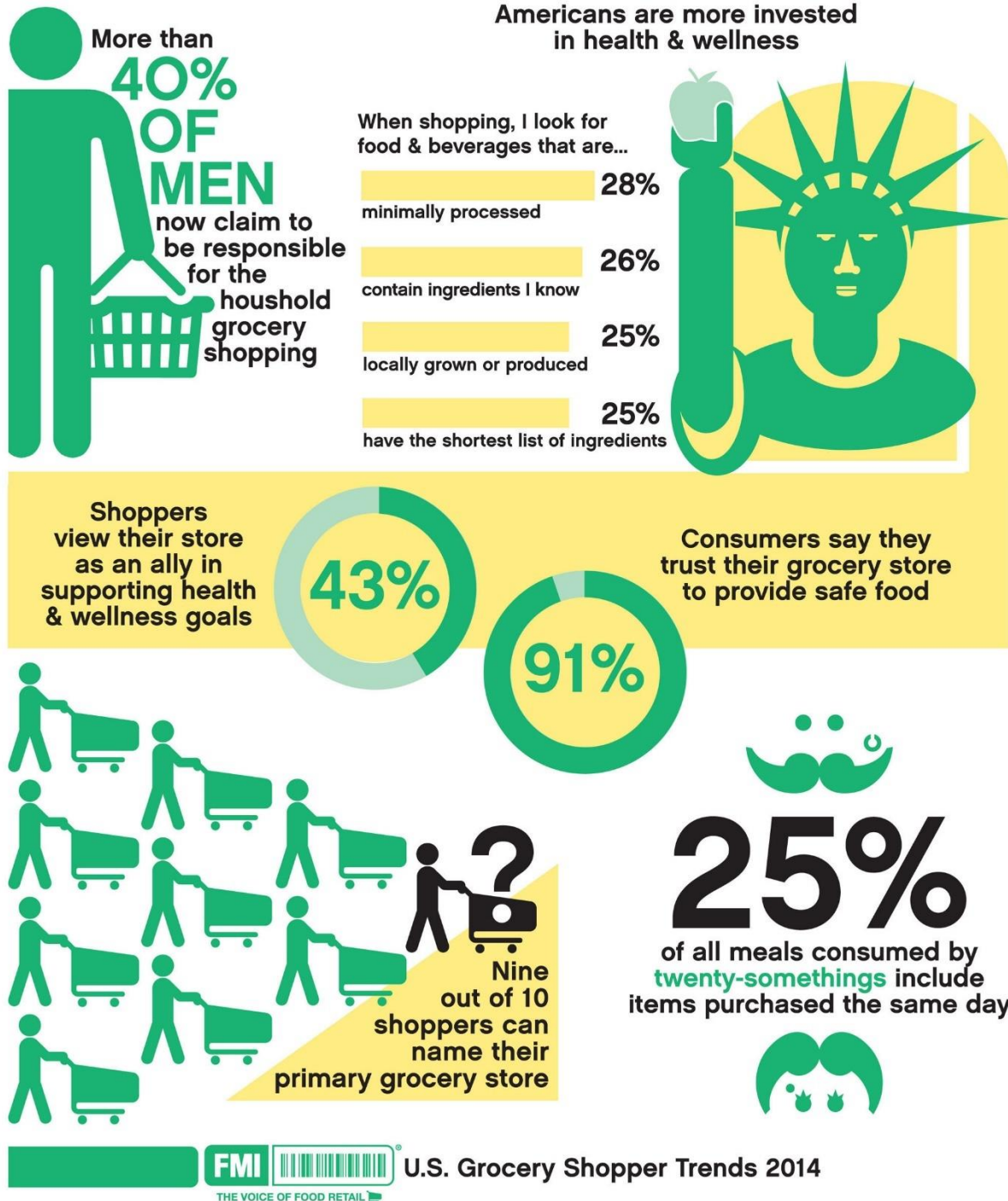


Figure 3. Source: FMI

Are You Investing in Grocery? You Should Be!

The Future of the Grocery Business

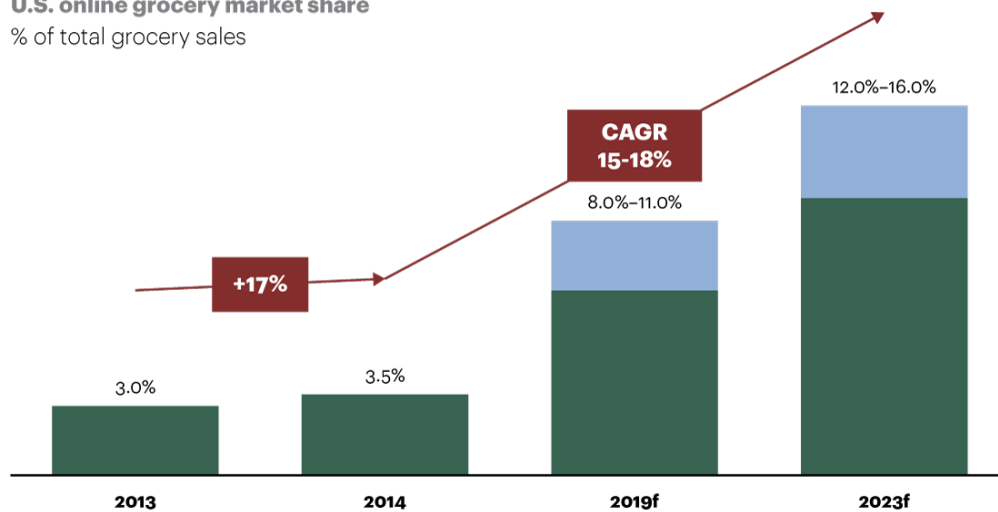
Based on these changing consumer needs, what will the best grocers of tomorrow do well? What will those entities “look like”? How are these consumer needs showing up in the best stores of today? Here are four things that will be required for food supplier success in the future.

Quality prepared food(s) / “Grocerants” will be a key source of improved margins and customer acquisition and retention. Local markets have taken advantage of this growing trend for years. Major players like Wegman’s in the Northeast have made their reputation on it. The need is ubiquitous and so grocers are beginning to adapt to meet it. There is more room margin expansion as well as the opportunity to create relationships over food items people and families love.

Online ordering and fulfillment will add value for consumers while creating a stickier customer-supplier relationship through technology enabled ordering and recommendation platforms. Retailers should be able to command some pricing flexibility and margin out of charging for picking and delivery.

The online share of the U.S. grocery market is growing rapidly

U.S. online grocery market share
% of total grocery sales



Sources: Packaged Facts; Brick Meets Click; A.T. Kearney analysis

Figure 4. Source: A.T. Kearney Report

Are You Investing in Grocery? You Should Be!

Alternative food supply formats will be smartly consolidated to drive value out from supply chains. The list of new offerings in the food supply space is almost endless; WFM 365, Peapod, AmazonFresh, Blue Apron, Fresh Thyme Markets, Plated, etc. In India, the local version of Uber has launched a food delivery service! The chart below shows how alternative format food suppliers are growing materially. While we expect this trend to continue driven by innovation and consumer need, we also expect some consolidation in order to leverage food supply chains.

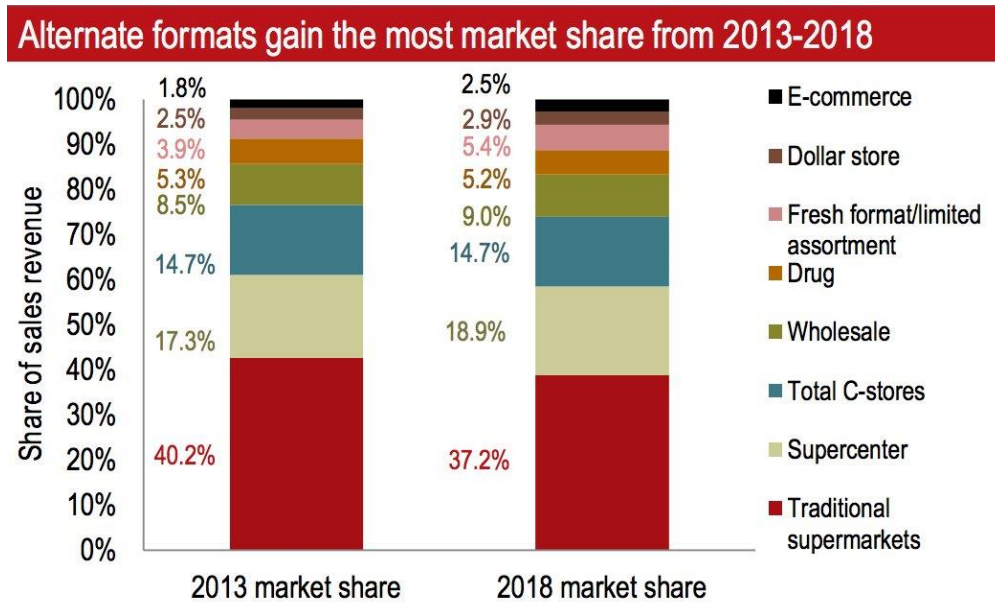


Figure 5. Source: Willard Bishop 2014

Grocery will remain a very local business at the operations level. This is both in terms of creatively leveraging “attractive” food suppliers as well as having a product offering mix that best meets the needs of the consumers each store is serving. Much of that will depend on a site’s specific location relative to suppliers and customer demographics.

Given these changes in food supply needs among consumers, we expect the grocery business to evolve materially into something that doesn’t look much like what we know grocery to be historically. Imagine Kroger expanding home delivery and including “Blue Apron” type offerings in their mix? Will we keep going to grocery stores or can we learn to rely on pickers in giant warehouses? In that model, are grocery stores just places where we can purchase or order quality prepared foods for family meals? In the end, we cannot know. What this does tell us is that it will be an industry ripe with investment opportunities. Innovation and reinvention will be core requirements for success.



In addition to this article, we published an IOI ChartBook on Whole Foods Markets (included in this digest), an IOI ChartBook on competitor Kroger, and several other articles related to the supermarket industry and the consumer staples sector. These articles, as well as live learning calls, videos, and valuation models are available at

www.IntelligentOptionInvestor.com

Understanding the demand environment for a company is the single most important factor for success as a long-term directional investor. Our IOI 100-Series Course teaches you how to confidently estimate the value of a company and competently structure an investment in it. Learn more at

www.IntelligentOptionInvestor.com

Guide to IOI Graphics and Tables



An enormous amount of information can be gleaned from our graphic representations if you understand how to read them

Originally Published: February 16, 2016

Key Takeaways

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- This document details how to read and get information from IOI's graphics. We cover the **BSM Cone Graph**, the **Complex Valuation Range Graph**, and the **Valuation vs. Market Table**.
- We also discuss our preference for the Price-to-Sales Ratio (PS Ratio) as a gauge of market risk.

Introduction

IOI's visual representation of investments and valuations are striking, unique and, once mastered, very informative. This paper details three distinctive graphical representations we publish with IOI Tear Sheets, ChartBooks, and other reports.

You will note several mentions of the "PS Ratio" (Price-to-Sales) ratio and this is the primary multiple we use to assess market risk. Ranges based on the PS Ratio on are charts multiply historical price-to-sales ratios by the average of IOI's short-term revenue projections. The lower boundary is usually the lowest decile or quartile PS Ratio value multiplied by the average of our worst-case short-term revenue projections; the upper boundary is usually the highest decile or quartile PS Ratio value multiplied by the average of our best-case short-term revenue projections. We define "short-term" as our "Explicit" valuation period – usually years 1-5 in the future.

Our valuations are based on our proprietary analytical methods, detailed in *The Intelligent Option Investor*, and use unique (and uniquely effective) measures like "Owners' Cash Profit" and "Free Cash Flow to Owners" rather than traditional measures like "EBITDA" or "free cash flow." The only traditional measure for which we forecast best- and worst-case scenarios is revenues. Because we are forecasting revenues, we rely on the price-to-sales ratio.

While some investors may be more comfortable thinking about PE Ratios, we believe PS ratios offer a clearer, more consistent view of a company over time. Earnings and its derivatives (e.g., "operating earnings," EBITDA, etc.) can be manipulated by management through accounting gimmicks. Sales are also subject to issues of [revenue recognition](#), but is generally less susceptible to accounting tricks.

BSM Cone Graph

This is the quintessential IOI graph showing a simple valuation range compared to the option market's implied future price range for a stock.

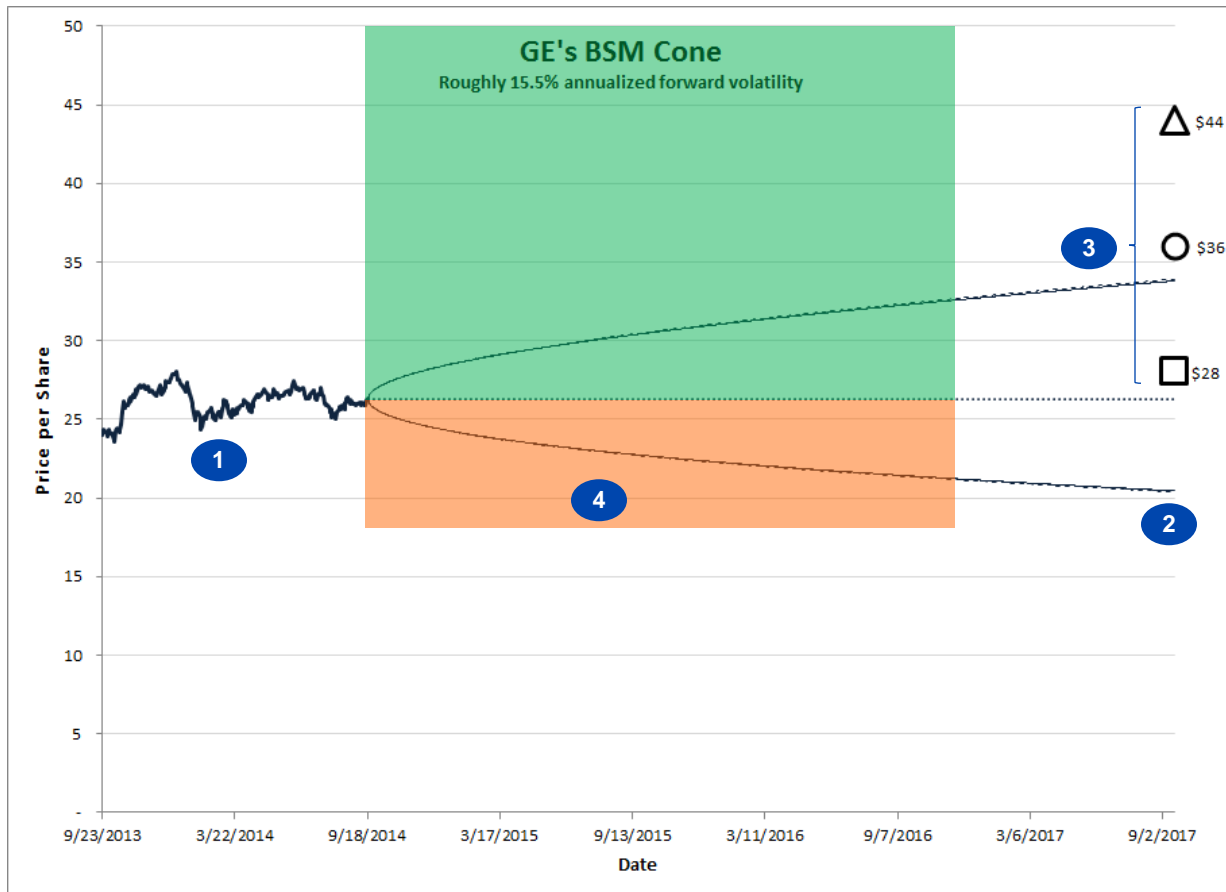


Figure 1. Source: Company Statements, IOI Analysis and Projections

It shows the following elements:

- 1) Historical price of the underlying stock over the past year of trading.
- 2) Conical section¹ indicating the option market's expectations for the future price of the stock (termed the "BSM Cone" in *The Intelligent Option Investor*).
- 3) Best, worst, and most likely case valuations based on IOI's fundamental analysis of the company.
- 4) Shaded region showing the area of exposure for the option strategy. Green shading signifies gaining exposure through purchase of a contract; red shading signifies accepting exposure through the sale of a contract; gray shading indicates a cancellation of exposure. A two-toned, orange-and-green exposure, as shown above, indicates the purchase of an ITM option.

We will also sometimes show a break-even line. For bullish strategies, we will use the term "Effective Buy Price (EBP)" and for bearish ones, "Effective Sell Price (ESP)". For strategies that mix bullish and bearish elements, we use "Break-Even Price (BEP)".

¹ In this diagram, you may be able to make out two conical sections. The outer cone, with the dotted line, represents the "ask vol" and the solid line the "bid vol." The fact that the dotted line is outside of the solid one indicates that the ask price is higher than the bid price, and means that the range of possible stock price outcomes as seen by sellers is wider than that seen by buyers.

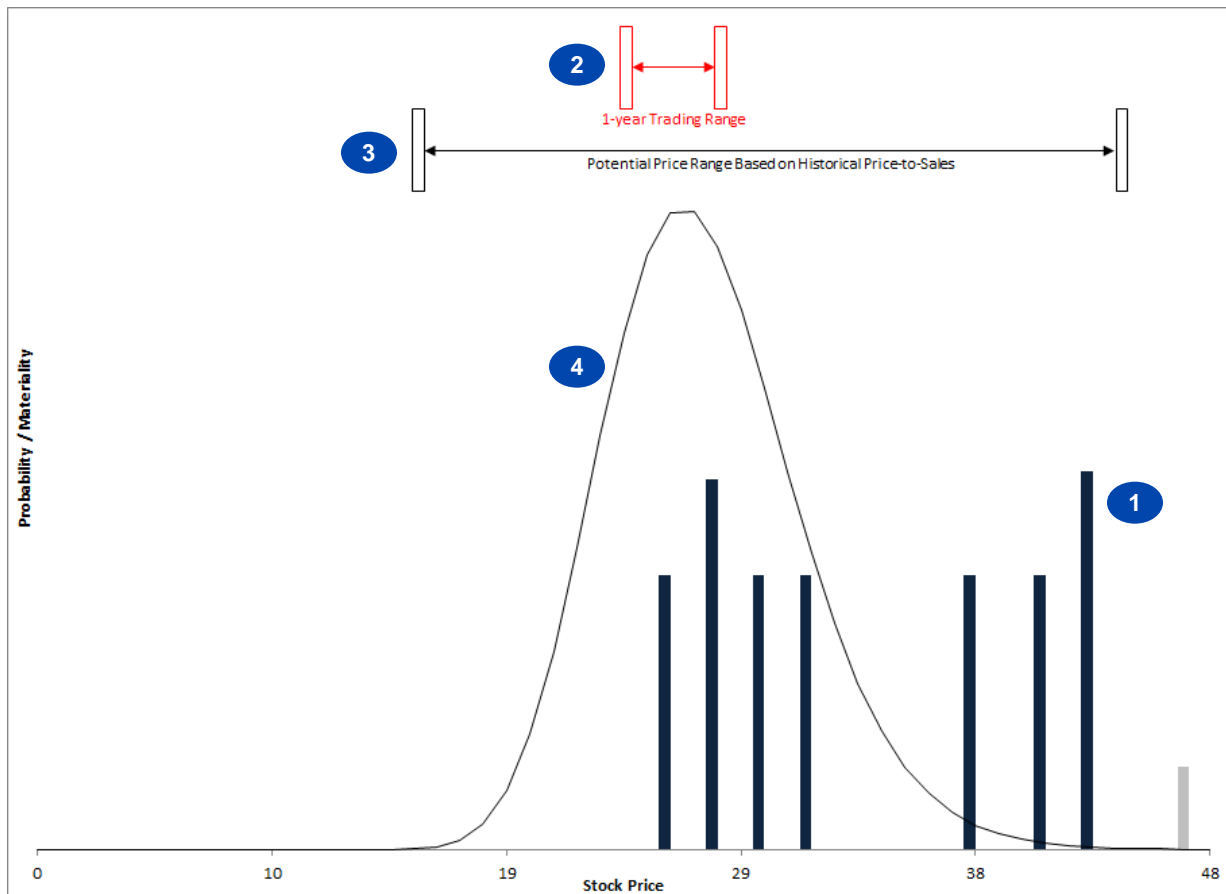
Guide to IOI Graphics and Tables

The theory behind the BSM cone and the representation of options' ranges of exposure is explained in Part I of *The Intelligent Option Investor*, chapters 1-2. Technical details regarding how BSM cones may be created using market data are explained in detail in chapter 7.

An investor has an edge when the market price of a stock is significantly different than its intrinsic value range or when the range foreseen by the option market is much wider or narrower than that of its intrinsic value range. In the above example, the option market's range of outcomes is much wider than what we believe the uncertainty of the firm is on a fundamental basis.

Complex Valuation Range Graph

This graph shows a complex valuation range that shows each of the maximum of eight valuation scenarios for a company and compares their location to the probability distribution as implied by the options market.



This graph shows the relationships between four valuation / market elements:

- 1) IOI valuation scenarios (dark blue and gray columns)
- 2) High- and low price range for the stock over the last year (red bars)
- 3) Stock price range implied by overlaying historical price-to-sales ratios (PSR) on IOI's best and worst case revenue scenarios.
- 4) Option market's probability distribution (curved line)

All scenarios IOI considers as having a material chance of occurring are shaded in blue; all scenarios IOI considers as not having a material chance of occurring are shaded in gray and the height of the bar is relatively low. The most likely scenario or scenarios (associated with values of \$28 and \$44 here) are identified by being the tallest blue bars on the graph.

Guide to IOI Graphics and Tables

The height of the bars is not meant to show a proportional difference in probability of occurrence. Gray bars will be shortest; material valuation will be taller; IOI's most likely valuation scenarios will be tallest. The tallest columns correspond to the best- and worst-case valuations in the BSM Cone graph.

The curve shows the price range considered most likely by the option market. For a lognormal curve, the point on the curve representing the "expected" value lies a bit to the right of the peak of the curve. As such, by looking at the purple curve, you can see the range of stock prices that the option market considered most likely when these data were drawn. This curve represents the BSM Cone in profile view.

Valuation vs. Market Table

The table shows the numerical values of the IOI valuation scenarios, the high and low stock prices, and the stock prices implied by the PSR. We often overlay it over the Complex Valuation Range Graph.

Case / Scenario	Value
PSR Implied Low	15
252-day Low	24
1% 12% 5%	26
* 1% 12% 7%	28
252-day High	28
5% 12% 5%	30
5% 12% 7%	32
1% 17% 5%	39
1% 17% 7%	42
PSR Implied High	44
* 5% 17% 5%	45
5% 17% 7%	48

IOI valuation scenarios are identified according to the following convention:

Near-term Revenue Growth | Near-term Profitability | Medium-term FCF growth

Taking this into consideration, we can translate the entry listed as "5% | 12% | 5%" as identifying the scenario assuming 5% year-over-year revenue growth and 12% profitability (as measured by OCP) for the stage one valuation period and an 5% growth in free cash flows to owners in the stage two valuation period.



IOI Valuation Summary – Whole Foods Markets (WFM)

The future may be organic, but this pioneer will struggle

Originally Published: July 14, 2016

Three Things You Should Know About Whole Foods

For information, please contact:

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- **Whole Foods' first mover advantages in the organic grocery space are gone.**

Organic food used to be a niche category, and Whole Foods was the undisputed king of that niche. Part of the secret to its success was the relationship it had with organic suppliers, which made it an almost unique supplier of these items at scale. However, the agricultural community has realized how many profits can be harvested from the trend toward organic items, and the acreage of cropland dedicated to organic production has expanded. This has allowed mainstream competitors (such as Kroger, Wal-Mart, and Target) to develop supply chain relationships and offer organic products in their stores. There are still excess profits to be found in the organic food world, but more and more of these will be soaked up by competitors that have greater scale and reach than Whole Foods, in our opinion.

- **Whole Foods' biggest weakness and threat deals with network dynamics.**

If Whole Foods' network becomes too dense, its stores will cannibalize each other's sales. If Whole Foods' network remains as dispersed as it is today, there is room for competitors to offer customers organic products more conveniently due to the competitors' much denser networks. How many mainstream grocery stores offering organic tomatoes would you pass up for the privilege to buy organic tomatoes from Whole Foods?

- **Network problems will likely cause the firm to be less profitable in the future.**

To correct its network difficulties, Whole Foods must do at least two things: 1) it must expand its network in ways that will cause as little cannibalization as possible and 2) it must convince consumers that its organic offerings are superior to competitors'. The firm is embarking on the first strategy with its economy-priced 365 chain – smaller footprint stores designed to attract younger, less-affluent shoppers and compete with the likes of Trader Joe's. It is embarking on the second strategy by making its first forays into traditional marketing, after relying upon word-of-mouth for its entire existence. Needless to say, both of these initiatives cost money. Increased marketing expense is the first thing owners are likely to notice, but longer term, the expense of maintaining a large network of ageing stores will likely also decrease profitability as viewed through the lens of IOI's preferred measure – [Owners Cash Profits \(OCP\)](#).

This is a summary from a detailed, 9-page valuation report available to IOI Members.

[Please contact us](#) for a summary report.

Valuation Waterfall

Revenue Growth

Our best-case revenue assumptions imply that same-store sales losses can be slowed, such that revenue from newly opened stores drives growth. Our worst-case assumption suggests that competitors' offerings will continue to eat away at Whole Foods' same store sales growth and those losses will offset new store growth.

Profitability

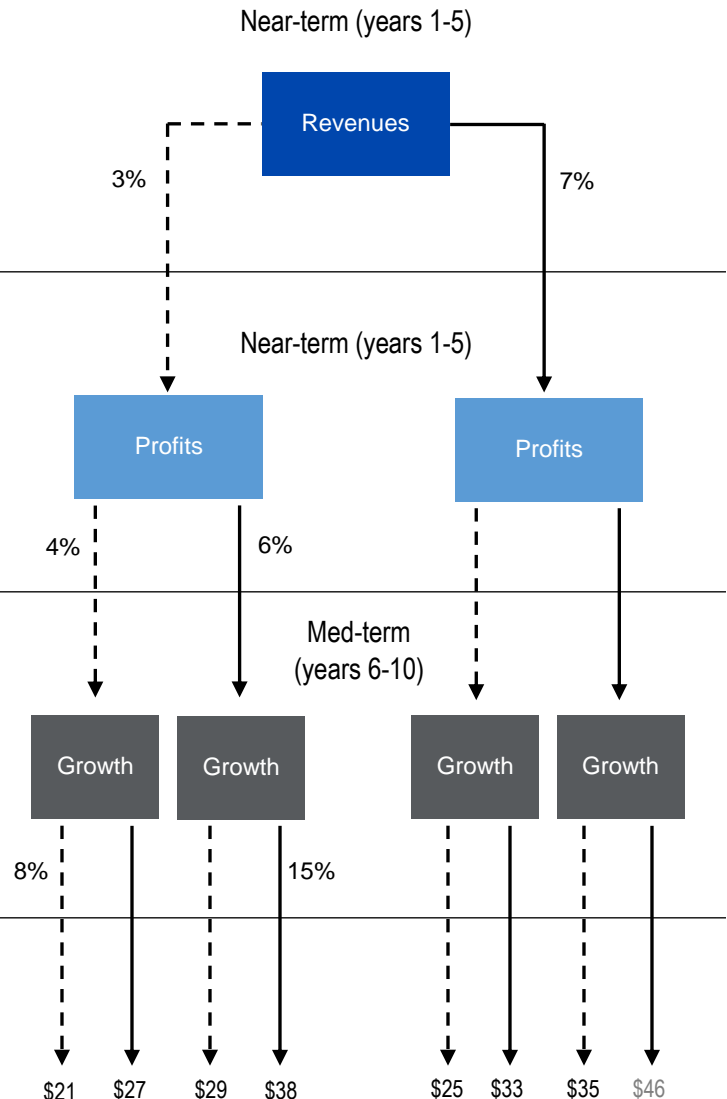
Maintaining recent high levels of profitability (in the 6%+ range) will be difficult, in our opinion, but not impossible. Perhaps the restaurant supply business and high-profit deli sales will offset the cost of marketing mentioned in this report. We believe the lower, worst-case profitability is more likely, given the strength of Whole Foods' competitors.

Medium-Term Cash Flow Growth

A 15% best-case medium-term cash flow growth is difficult to imagine, but some combination of cost cutting and secular industry growth may contribute to it becoming a reality. Eight percent growth of medium-term cash flows implies cost-cutting combined with a more affluent society willing to spend more on premium grocery items.

Fair Value Range

Our fair value range extends from \$21 to \$38 / share and excludes the best-best-best case fair value of \$46 / share. We think that organic food will continue to be a profitable and rapidly growing segment in the grocery business, but do not believe that Whole Foods' dominance can continue given its stronger, more entrenched mainstream competitors.



Methodology

IOI analyses focus on three main valuation drivers: revenue growth, profitability, and medium-term cash flow growth. We estimate a best- and worst-case scenario for each of these drivers resulting in a total of $2^3 = 8$ fair value scenarios based on discounted cash flow methodology. Profitability is measured by Owners' Cash Profit (OCP) margin. We use a discount rate of 10% for large capitalization stocks.

A wide spread of lowest and highest fair values indicates a firm whose value is uncertain. Risk depends on the stock price's relationship to the valuation range.

Best-case scenarios are represented with a solid line; worst-case scenarios, with a dotted one.



IOI Valuation Summary – Kroger (KR)

The grocery landscape is in the midst of a sea change and Kroger is well-positioned to weather it

Originally Published: July 26, 2016

Three Things You Should Know About Kroger

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- **The grocery world is changing faster than you imagine.**

While you may not think of groceries as a dynamic industry, there is good reason to believe that a generation from now, the grocery business will look substantially different from the way it does now. Kroger's recent acquisitions and business strategy look to provide it a strong position in a world where the lines between fast casual restaurant and grocery store are blurred and in which a significant portion of the population uses a WiFi connection rather than a shopping cart to buy bread and eggs.

- **Kroger's profitability is shooting up.**

Looking at traditional measures like gross margin IOI's preferred measure of profit – [Owners Cash Profits \(OCP\)](#), Kroger is steadily converting a higher proportion of its revenues to profits. This rise in profitability likely has several root causes – it's shift to more profitable business lines such as organic and prepared foods, its fine tuning of its organic food supply chain to generate more profits from its own line of organic generics, and what appears to be a trend of more efficient working capital management. You might think that a boost in profit margin from 2% to 3% is no big deal, but it is the same percentage change as if a company generating 10% margins suddenly started generating profits of 15%.

- **Kroger has spent heavily on investments and will continue to have to do so.**

In a changing environment, a company has to spend in order to stay ahead of the competition. We have seen an uptick in acquisition activity at Kroger and think there are more acquisitions to come. While the high level of investment spending does mean less cash available to the firm's owners, we believe Kroger's investments will pay off with a much stronger competitive position long-term. Also, Kroger's scale allows it a much larger pool of profits out of which to invest than a competitor like Whole Foods Markets (WFM), a company on which [we have also reported](#) and in which we have a bearish position. If Kroger and Whole Foods were both sitting at a poker table, Kroger would have a mountain of chips in front of it while Whole Foods would be rubbing its remaining chips together nervously.

This is a summary from a detailed, 9-page valuation report available to IOI Members.
[Please contact us](#) for a summary report.

Valuation Waterfall

Revenue Growth

We see Kroger's growth being driven by its acquisitions, it's fuel sales, and by picking up increasing share of prepared food and organic sales from competitors with less dense retail networks.

Profitability (OCP Margin)

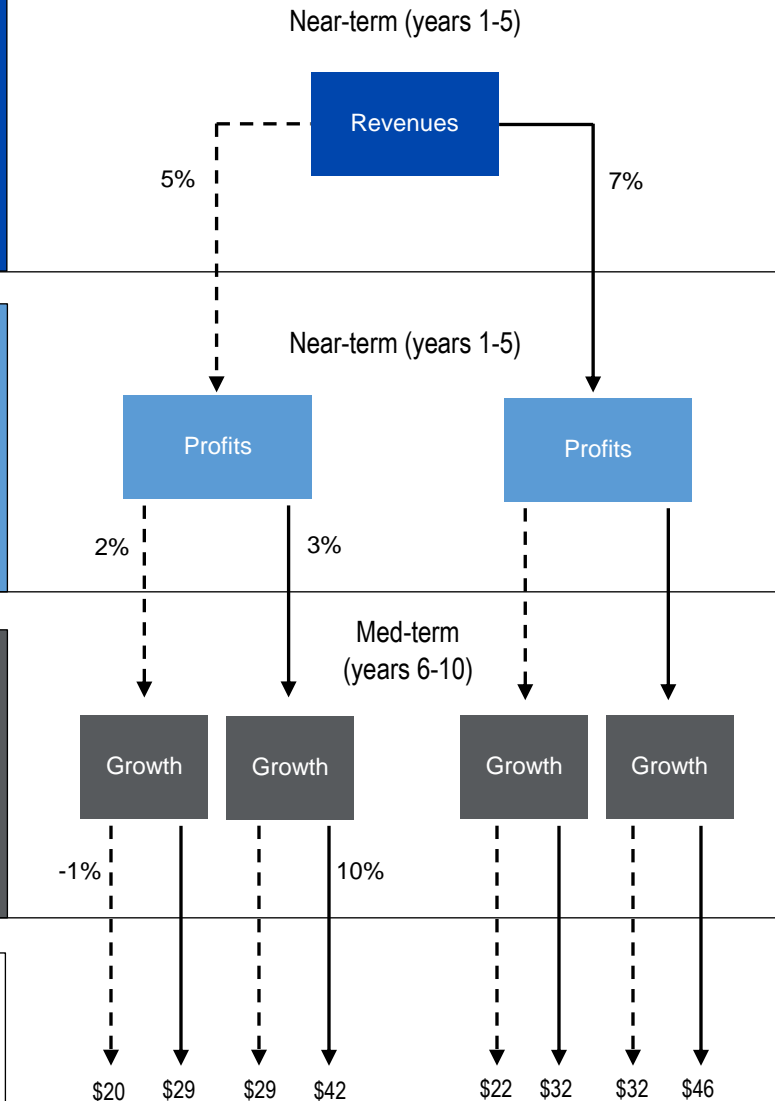
The firm has been doing a good job of converting revenues to profits and even our worst-case profitability assumption is higher than Kroger's historical average OCP margin. A deflationary environment near-term would likely pull profitability down, but we think Kroger's emphasis on higher margin business will at least partially offset this negative if it were to occur.

Medium-Term Cash Flow Growth

Supermarkets are notoriously competitive businesses. If, in the medium-term, a strong, market-share hungry competitor emerges (e.g., Amazon), Kroger's profits may suffer. As such, we cannot rule out a drop in profitability in the medium-term. Best-case, Kroger will stay ahead of the curve and continue to expand profits and cash flows as it has historically.

Fair Value Range

Kroger's valuation hinges on its ability to maintain profit levels in both the near- and medium-term. The difference between 2% OCP margin and 3% doesn't seem large, but indeed it is a 50% increase from the perspective of the former and a 33% decrease from the perspective of the latter. From what we can see at present, this firm is roughly fairly valued. We would be strong buyers at \$20 / share.



Methodology

IOI analyses focus on three main valuation drivers: revenue growth, profitability, and medium-term cash flow growth. We estimate a best- and worst-case scenario for each of these drivers resulting in a total of $2^3 = 8$ fair value scenarios based on discounted cash flow methodology. Profitability is measured by Owners' Cash Profit (OCP) margin. We use a discount rate of 10% for large capitalization stocks.

A wide spread of lowest and highest fair values indicates a firm whose value is uncertain. Risk depends on the stock price's relationship to the valuation range.

Best-case scenarios are represented with a solid line; worst-case scenarios, with a dotted one.



IOI Investor Services, LLC

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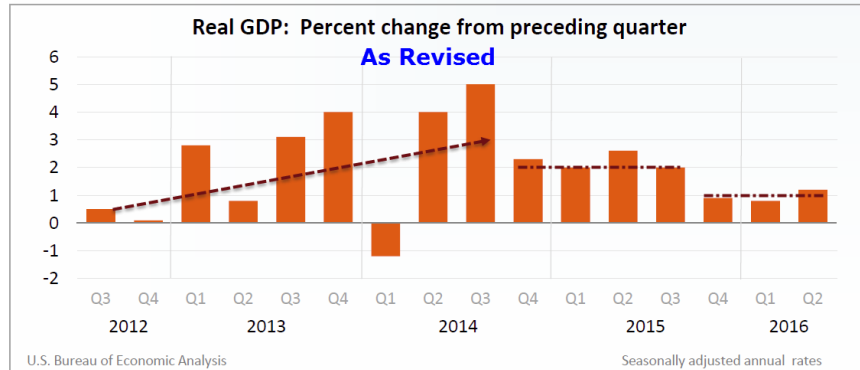
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The Last Word

Indeed, congruent with our view regarding slowing growth in the US, at the end of July, the Bureau of Economic Analysis released revised GDP data for the past several years. A chart of the revised values is shown in the image below. Sorting through the structural issues mentioned at the beginning of this report will take time—the issues leading to the Great Depression took 15 years and a World War to sort through. Hopefully, sorting through the present malaise will be briefer and less tumultuous.



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