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The HOLT Investment Styles

Market Commentary 4 March 2015

HOLT Investment Strategy

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What is HOLT?
HOLT is a value-based, return on capital framework proprietary to Credit Suisse. HOLT provides an objective view of over 20,000 companies in 65 countries using a methodology that examines accounting information, converts it to cash and then values that cash, allowing investors to identify key drivers of value. HOLT uses this valuation and corporate performance framework to help institutional investors across the investment process, from idea generation and company analysis to portfolio construction and risk management.

HOLT key principles:
Examples of HOLT accounting adjustments include inflation, financing and capital structure decisions, depreciation methods, treatment of non-operating investments, R&D capitalization, special items, acquisition goodwill, pensions, stock compensation expense, and regional- and industry-specific conventions.

What are the HOLT Investment Styles?

The HOLT Investment Styles group companies into combinations of the three HOLT alpha factors: high or low Quality, strong or weak Momentum, and cheap or expensive Valuation. For example, the HOLT Best in Class style contains companies with top-ranking Quality, Momentum, and Valuation characteristics relative to their peer group.

HOLT's alpha factors attempt to answer the following:

- **Quality:** Is this a good company from an operational standpoint?
- **Momentum:** Is market sentiment strong?
- **Value:** Is the stock attractively priced?

For more information on the HOLT multifactor ranking model, see the HOLT Lens Scorecard primer.

On aggregate, firms in each style demonstrate similar return characteristics and have similar responses to the macroeconomic environment. Companies with at least one of the HOLT factors in the middle quintile tend to be market performers and are dubbed 'style neutral' stocks. Using HOLT's Investment Styles, an investor can position their portfolio to profit from the ever-changing market environment.

Exhibit 1: HOLT Style definitions

	Quality	Momentum	Valuation
Best in Class Most attractive stocks based on fundamentals	High	Strong	Cheap
Restructuring Cheap companies expected to improve	Low	Strong	Cheap
Contrarian Stocks pulling back despite strong fundamentals	High	Weak	Cheap
Quality at any Price Priced at premium to generate growth or cash	High	Strong	Expensive
Value Trap Classic deep value stocks	Low	Weak	Cheap
Momentum Trap Stocks trading on heightened expectations	Low	Strong	Expensive
Quality Trap Quality firms with stretched expectations	High	Weak	Expensive
Worst in Class Generally unattractive on fundamentals	Low	Weak	Expensive

Top 40%
Bottom 40%

Best in Class High Quality, Strong Momentum, and Cheap Valuation

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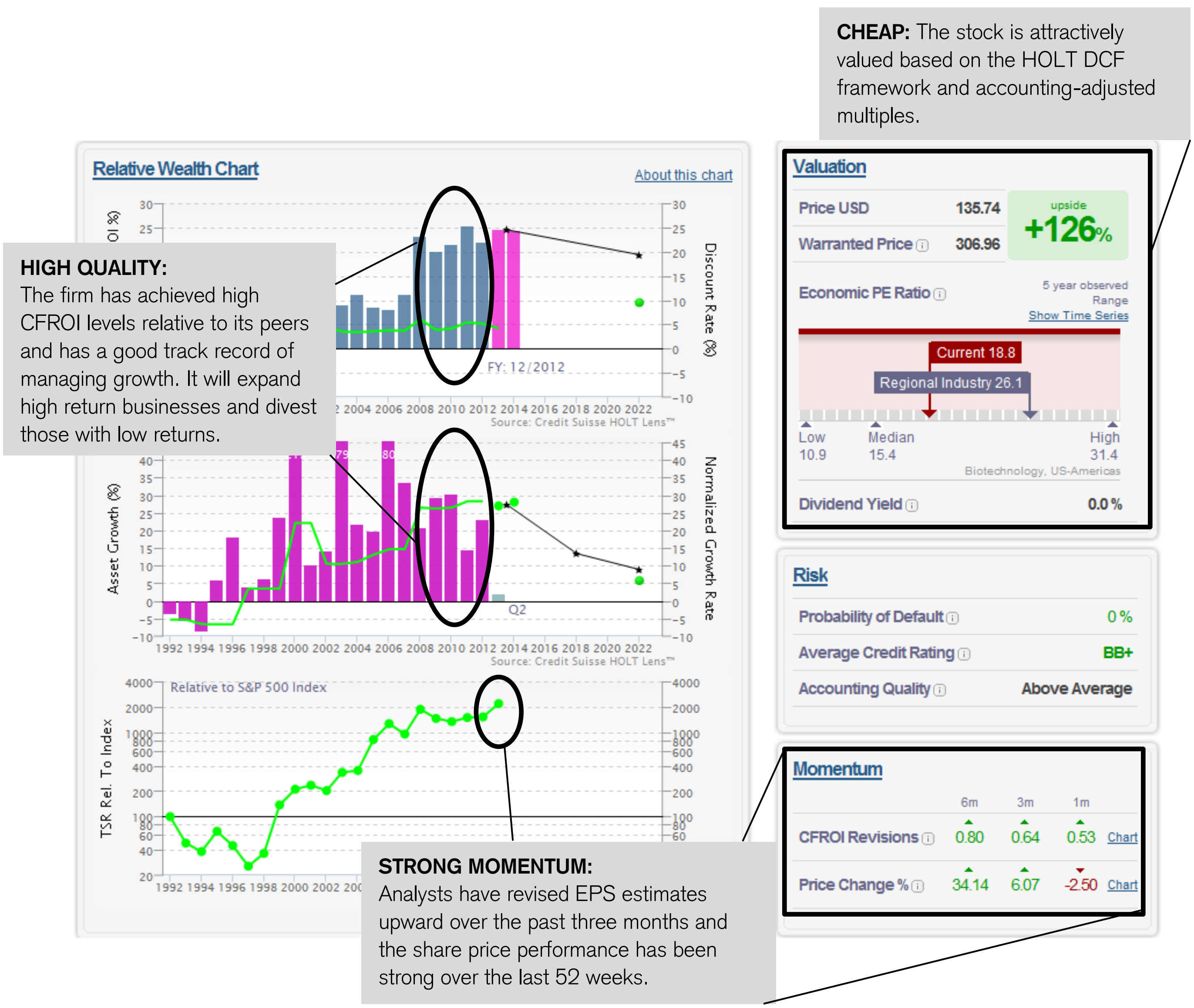
What makes a company Best in Class?

A Best in Class stock scores within the top 40% of its peers on Quality, Momentum, and Valuation. Because of their well-rounded fundamental profiles, Best in Class stocks tend to be the best performing HOLT style over the long term. These companies generate high returns on capital, or CFROI® (high Quality), have strong earnings and price sentiment (strong Momentum), and have attractive valuations on HOLT's DCF framework and accounting-adjusted multiples (attractive Valuation). Best in Class stocks can provide relief from factor rotations as they have attractive profiles on all three of HOLT's alpha factors.



Restructuring Low Quality, Strong Momentum, and Cheap Valuation

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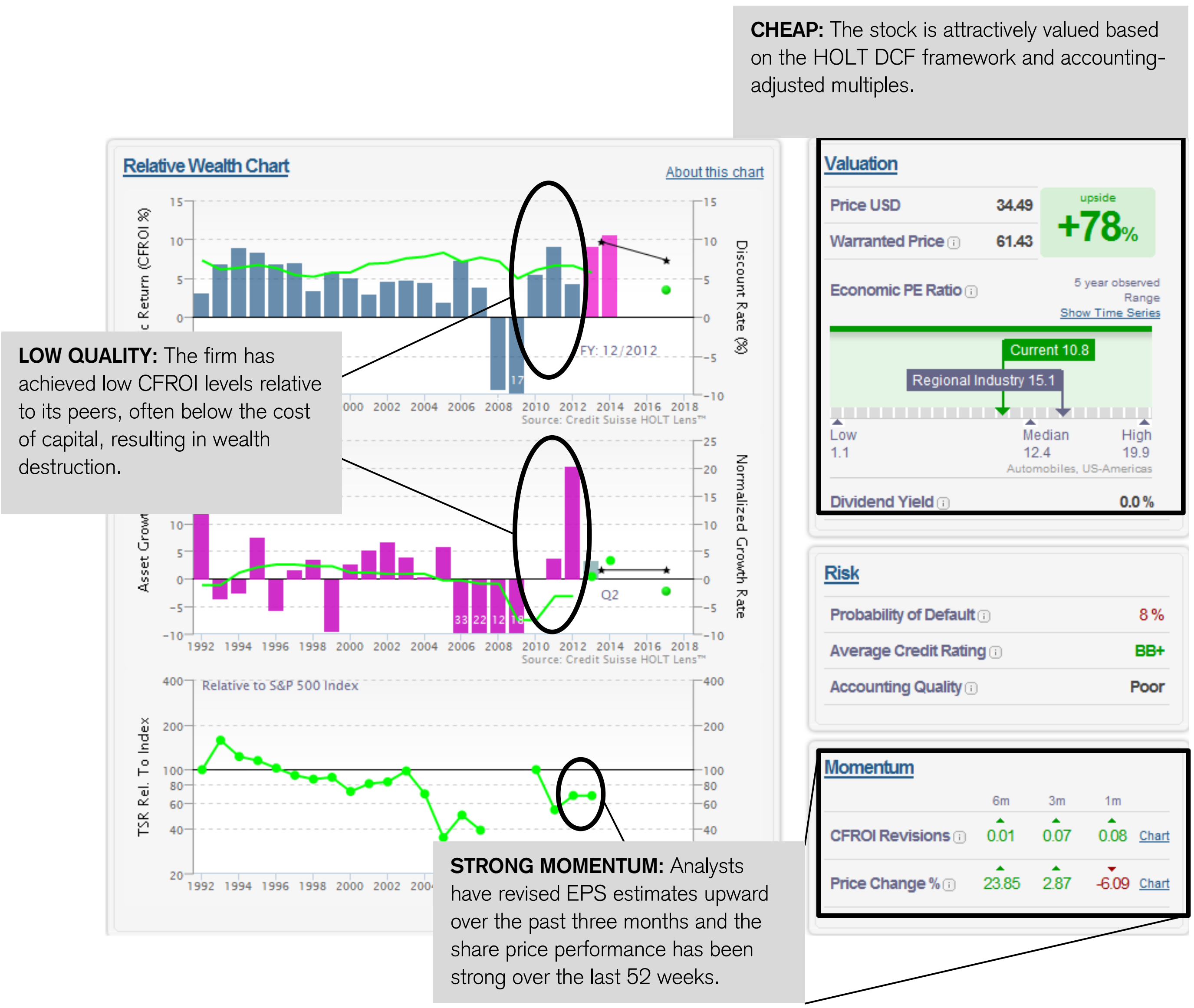
What makes a stock Restructuring?

A Restructuring stock scores poorly on Quality (bottom 40% of sector peers) but has strong Momentum signals (top 40% of sector) and attractive Valuation characteristics. Restructuring stocks generate low CFROI levels and have struggled to keep up with peers on shareholder wealth creation through returns on capital and growth. However, these firms have strong momentum signals and attractive valuations in the HOLT framework.



Contrarian **High Quality, Weak Momentum, and Cheap Valuation**

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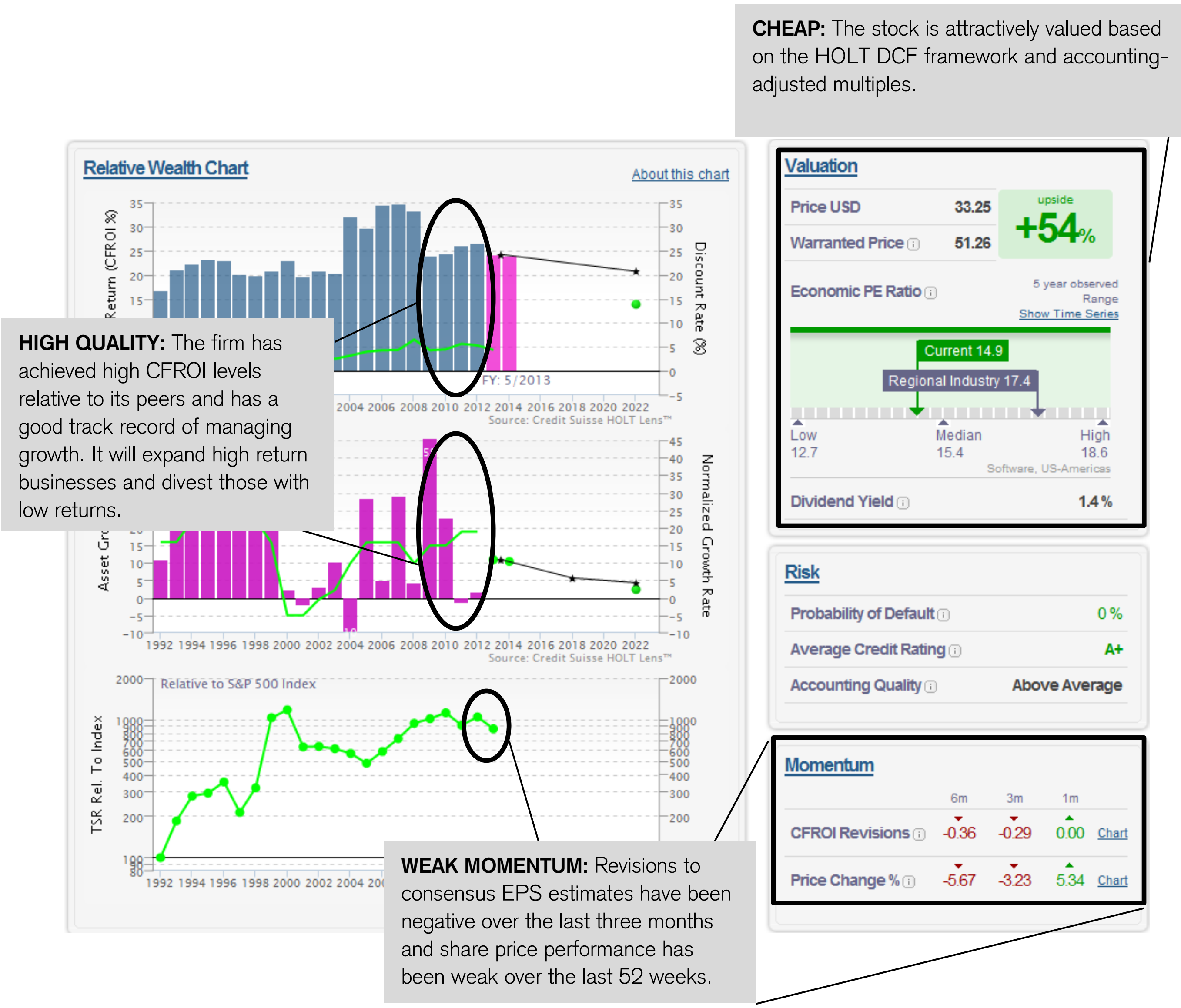
What makes a company Contrarian?

Contrarian stocks score well on Quality, indicating high CFROI levels and good track records of managing growth in invested capital. Despite their attractive valuation characteristics in HOLT, Contrarians have witnessed weak earnings sentiment and poor price performance relative to their peers.



Quality at Any Price High Quality, Strong Momentum, and Expensive Valuation

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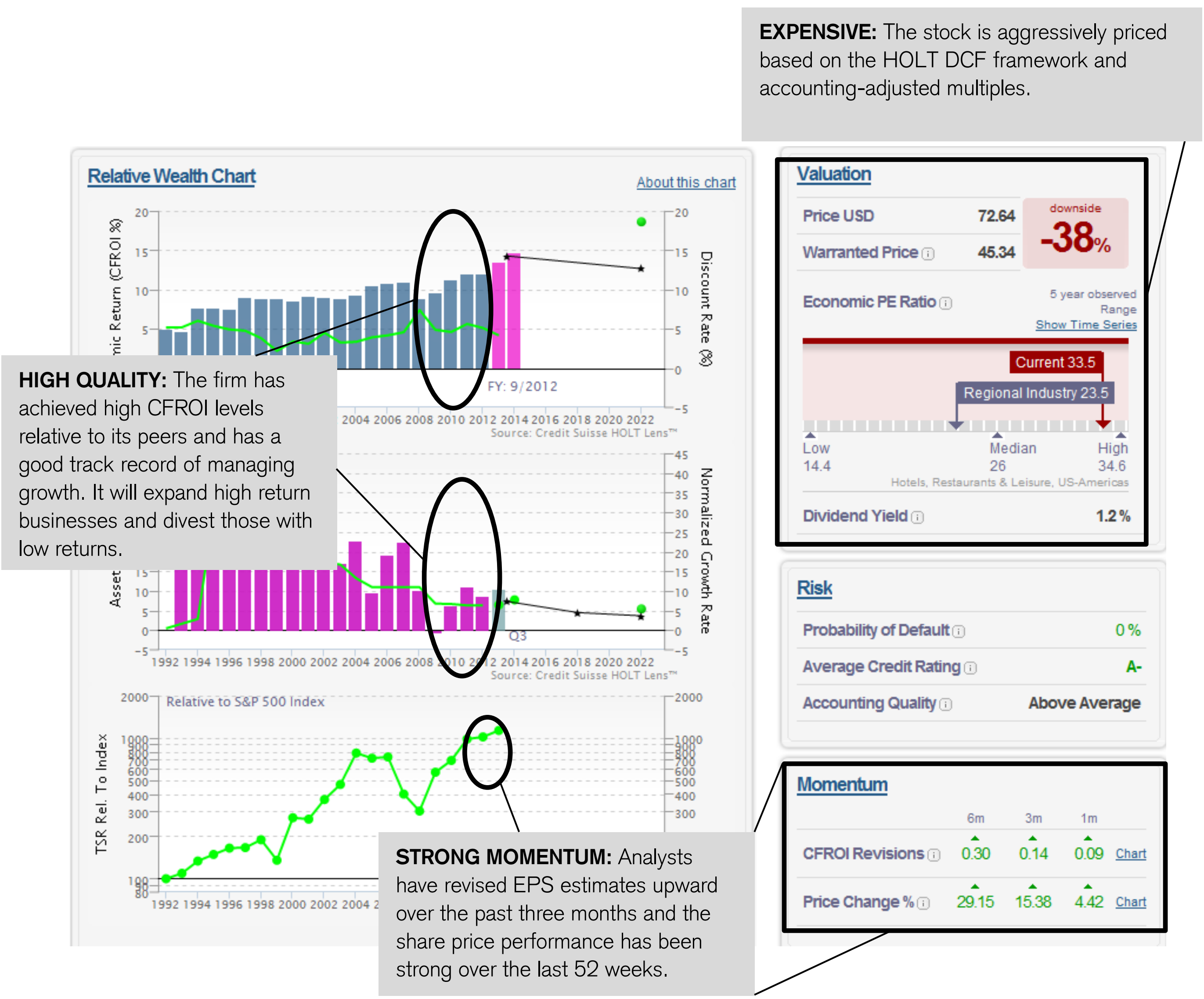
What makes a company Quality at any Price?

A Quality at any Price stock scores among the top 40% of its peers on Quality and Momentum but has unattractive Valuation characteristics in the HOLT DCF framework. These companies have profiles that resemble "growth" stocks, whereby they generate high cash flows and have strong earnings sentiment but demand aggressive valuations. Prior HOLT analysis has shown that over the long term, Quality at Any Price stocks tend to achieve the strongest rates of forward-looking growth on both earnings and revenue. These types of stocks perform well during market drawdowns, perhaps due to their high quality and strong momentum characteristics.



Value Trap Low Quality, Weak Momentum, and Cheap Valuation

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What Makes a Value Trap?

Value Traps have poor operational Quality and weak Momentum characteristics, but have attractive Valuations in the HOLT DCF framework relative to their sector peers. Companies with this quantitative profile resemble that of "deep value" stocks. Value Traps perform well after market drawdowns cease and stress abates. As a group their performance tends to be negatively correlated with Quality at Any Price stocks since their profiles across the three HOLT factors are mirror images (see page 1).

Momentum Trap Low Quality, Strong Momentum, and Expensive Valuation

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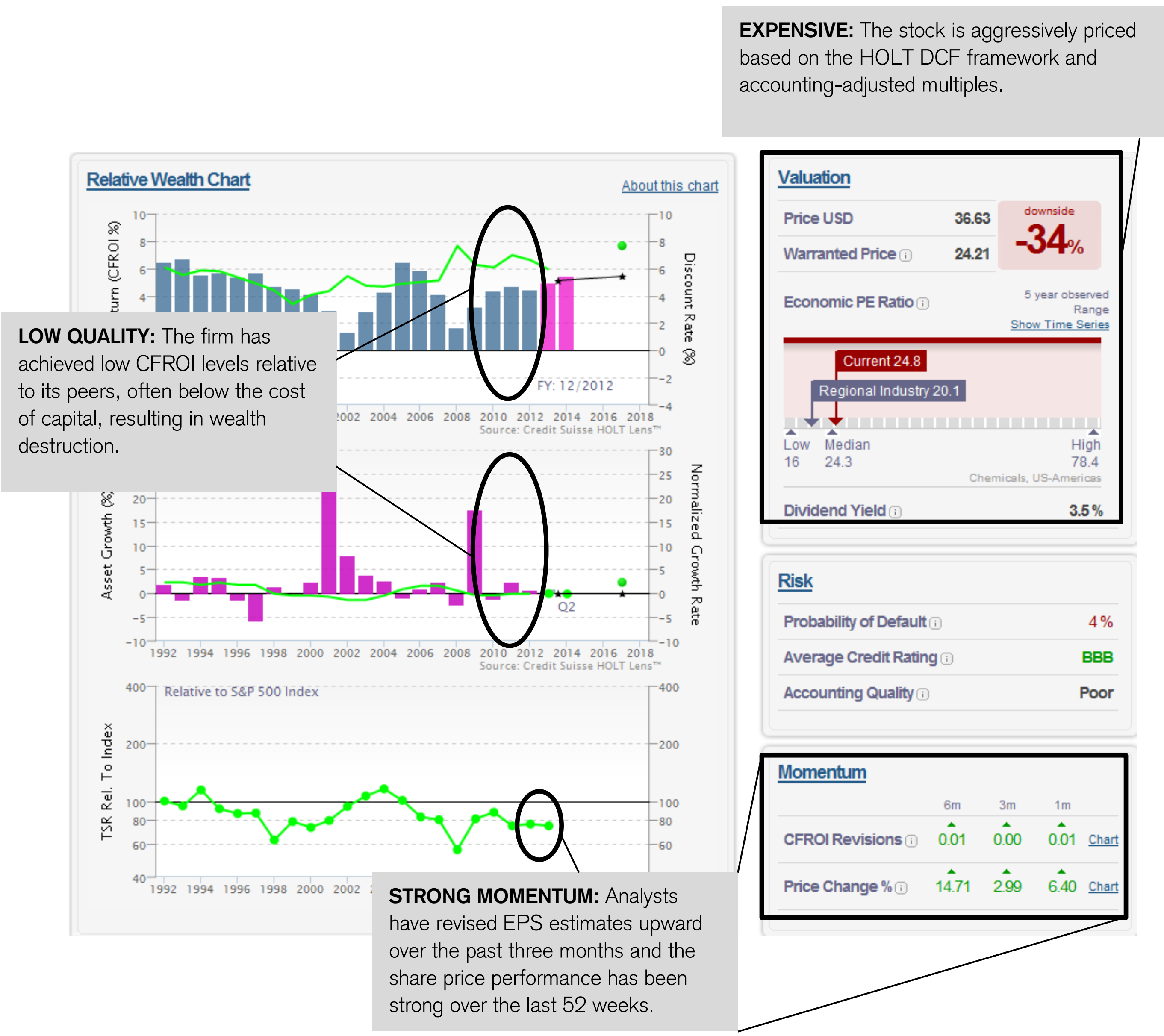
What makes a Momentum Trap?

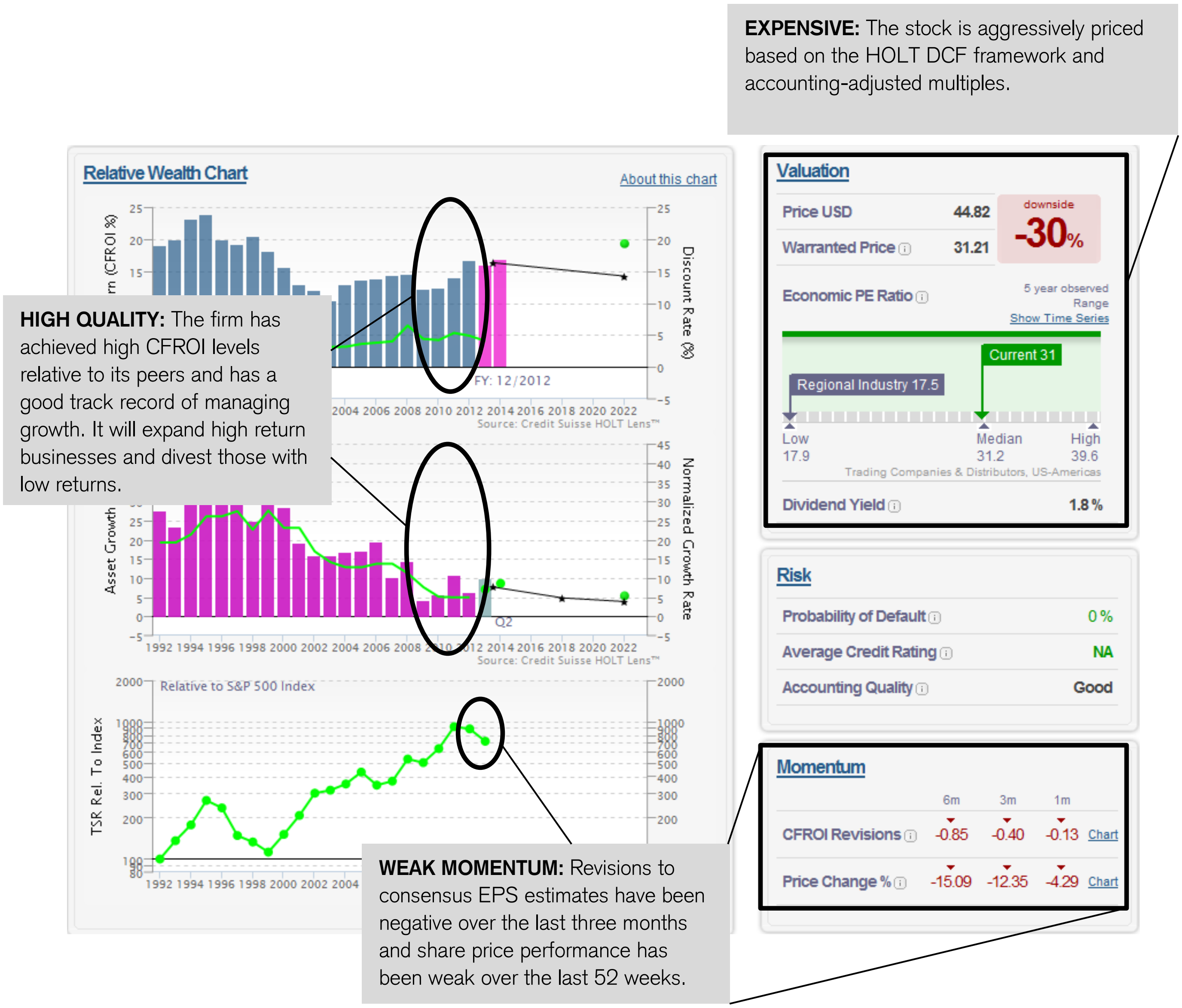
Momentum Traps score among the top 40% of its peers on Momentum but exhibit poor operational Quality characteristics and unattractive Valuations in HOLT's DCF framework. Momentum Traps are one of the worst performing HOLT styles historically as they generate low CFROI levels, have a weak track record of managing growth, but carry premium price tags relative to sector peers.



Quality Trap High Quality, Weak Momentum, and Expensive Valuation

What makes a Quality Trap?

Quality Traps generate high CFROI levels relative to sector peers and have a good track record of capital allocation. However, they have weak earnings and price sentiment and have aggressive valuations in the HOLT DCF framework. Quality Traps are one of the worst performing HOLT styles historically as high quality characteristics alone tend not to be enough to drive outperformance.



Worst In Class High Quality, Strong Momentum, and Cheap Valuation

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What makes a stock Worst in Class?

A Worst in Class stock scores within the bottom 40% of its peers on Quality, Momentum, and Valuation. Not surprisingly, Worst in Class stocks tend to be the worst performing HOLT style over the long term. These companies generate low returns on capital, have weak earnings and price sentiment, and have unattractive valuations on HOLT's DCF framework and accounting-adjusted multiples. Worst in Class stocks are the complete opposite of Best in Class stocks (see page 1), thus, they tend to be negatively correlated.

HOLT Factor Definitions

HOLT's alpha factors, explained: Quality, Momentum, and Value

Quality: This style focuses on a company's *track record* of generating cash and managing growth, *independent of future expectations*. Firms that score well will have achieved high CFROI levels and demonstrated the ability to grow profitable businesses, or the willingness to shrink bad ones.

- **CFROI® LFY (50%)** - The ratio of gross cash flow to gross investments translated into an internal rate of return recognizing the finite economic life of depreciating assets and the residual value of non-depreciating assets. CFROI calculated for the last reported fiscal year is used.
- **Managing for Value (30%)** - Managing for Value comprises the CFROI® - Discount Rate spread multiplied by the Real asset growth (inflation adjusted gross investments). The aim is to identify whether the company's growth is 'good' or sustainable growth. Growth into businesses that earn a CFROI above the firms cost of capital is value creating, while growth into negative spread businesses is value destructive.
- **Change in Value Creation (20%)** - Measures the improvement in 'economic profit' in the last reported year compared with the previous year. A positive value indicates that the company has either increased the CFROI spread over the discount rate, or grew into a positive spread business. Spread * Growth Rate less prior year Spread

Momentum: The momentum style is a gauge of market sentiment. Stocks that score well will have *forecasted* CFROI levels that are increasing from upward revisions in EPS estimates and will have positive price momentum.

- **CFROI® Key Momentum, 13-wk (60%)** - The CFROI® key momentum measures the improvement in forecasted CFROI® that follow any changes in underlying consensus EPS revisions.
- **Price Momentum (52-week, 1-month lag) (30%)** - Price Momentum (1 year) measures the percentage change in market value over past 52 weeks (on a one-month lag).
- **Daily Liquidity Average (10%)** - Daily Liquidity Average measures the number of shares traded for the last quarter divided by 63 trading days multiplied by the current week-end price, divided by market cap.

Valuation: The style evaluates the stock price warranted by the HOLT DCF framework, based on *forecasted* cash flows, relative to the stock's current market price. Does the stock look aggressively priced or cheap?

- **% Change to Best Price (50%)** - Percent to Best measures the difference between the HOLT default warranted price and the current market price of the stock. HOLT valuation allows for the direct comparison of firms across regions, sectors, and accounting standards by using an adjusted DCF model, incorporating different standardizing techniques to dispel the effect of accounting standards on valuation levels.
- **Economic P/E (30%)** - HOLT's version of a price-to-earnings ratio, measures firm value relative to the cash flow generated by all capital providers. Through normalizing the VCR by dividing by CFROI®, the factor becomes more comparable across companies and industries. Economic P/E = (Enterprise Value / Inflation Adjusted Net Assets) / CFROI
- **Value/Cost (10%)** - VCR is analogous to Price/Book, but with a number of adjustments that reduce volatility and better reflect the true firm value: Gross Investment includes inflation adjustments for old plant and inventory, capitalized R&D, and capitalized operating leases; HOLT Debt includes stock option claim, pension debt, preferred stock, and liabilities related to capitalized operating leases. VCR = (Market Value of Equity + Minority Interest + HOLT Debt) / Inflation Adjusted Net Assets
- **Dividend Yield (LTM Dividends Paid / Current Price) (10%)** – Last 12 months dividends paid, divided by the latest share price.

Efficacy of HOLT Styles

Simulation of historical performance

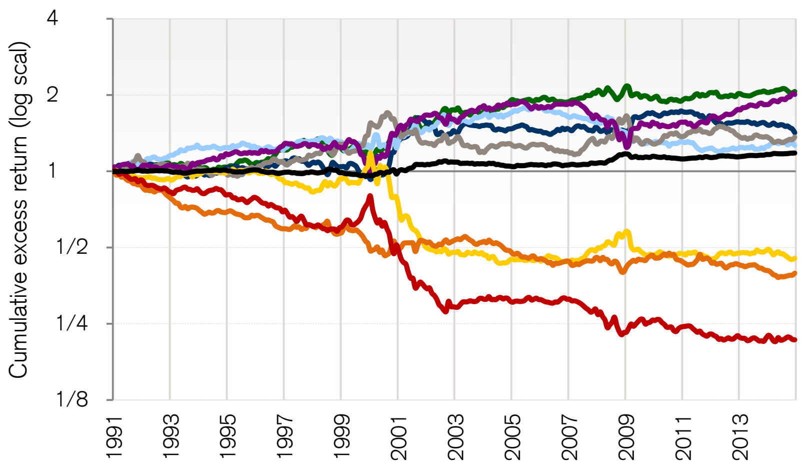
US Backtest Details:

Universe: Top 1000 USA companies from 12/31/1990 to 1/31/2015

Backtest: Equal Weight, Monthly Rebalance, Gross of Costs

Source: Credit Suisse HOLT, ClariFI

	Annualized Excess Return	Tracking Error	Information Ratio	Return
Best in Class	3.1%	6.4%	0.48	
Value Trap	3.0%	8.7%	0.34	
Contrarian	1.5%	7.0%	0.21	
Quality at Any Price	1.3%	8.4%	0.16	
Restructuring	1.0%	6.7%	0.15	
Unclassified	0.7%	2.1%	0.33	
Momentum Trap	-3.2%	9.5%	(0.34)	
Quality Trap	-3.8%	6.6%	(0.57)	
Worst in Class	-6.2%	8.8%	(0.70)	



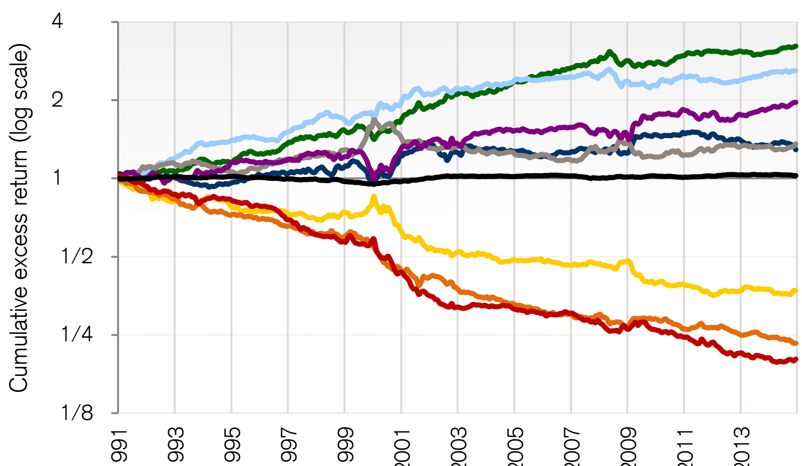
Global Backtest Details:

Universe: Top 1800 Global Companies from 12/31/1990 to 1/31/2015

Backtest: Equal Weight, Monthly Rebalance, Gross of Costs, Returns in USD

Source: Credit Suisse HOLT, ClariFI

	Annualized Excess Return	Tracking Error	Information Ratio	Return
Best in Class	5.0%	4.6%	1.08	
Restructuring	4.1%	5.1%	0.80	
Value Trap	2.8%	7.1%	0.40	
Quality at Any Price	1.3%	5.5%	0.23	
Contrarian	1.1%	5.8%	0.18	
Unclassified	0.1%	0.9%	0.11	
Momentum Trap	-4.1%	5.8%	(0.70)	
Quality Trap	-5.9%	4.6%	(1.28)	
Worst in Class	-6.4%	5.4%	(1.20)	



CREDIT SUISSE QUANTITATIVE & STRATEGY TEAMS

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