

Equities

1 June 2011 | 20 pages

Decision Tree Stock Selection Models

June Updates

- **What's New** — We present the latest updates to our stock selection models for the technology, financial, health care, and consumer staples sectors. Last month, all four of our models outperformed their respective equal-weighted benchmarks.
- **Technology Sector** — Our stock selection model favors stocks with superior earnings revisions and relatively low valuations.
- **Financial Sector** — In our view, price reversal and profitability are the most significant factors in the selection of attractive financial stocks.
- **Health Care Sector** — Our health care model favors stocks with reasonable valuations, healthy profit margins, and positive earnings momentum.
- **Consumer Staples Sector** — Our model favors stocks that appear oversold or those with a reasonable valuation and good profitability.
- **Summary of Key Drivers** — Figure 1 shows the main stock selection drivers for the sectors with coverage.

Quantitative Analysis

Keith L Miller

+1-212-816-2285
keith.l.miller@citi.com

Hong Li

+1-212-816-1844
hong.li@citi.com

Peter Lo

+1-212-816-0379
peter.lo@citi.com

Figure 1. Summary of Key Stock Selection Drivers

| Sector | Primary Driver | Secondary Drivers |
|------------------|-------------------------------|--|
| Technology | Earnings Momentum | Profitability Momentum Valuation |
| Financial | Price Reversal | Profitability Momentum Profitability Earnings Surprise |
| Health Care | Valuation | Margin Earnings Momentum Earnings Surprise |
| Consumer Staples | Relative Strength Index (RSI) | Industry Relative Valuation Profitability |

Source: Citi Investment Research and Analysis

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Overview

Our research into quantitative sector-by-sector stock selection strategies began with the introduction of our technology stock selection model in November 1999. We have since expanded our coverage to include the financial, health care, and consumer staples sectors. The objective of our stock selection models is to improve on more traditional methods of stock screening. One of the most common approaches to quantitative investment management is to reduce an investable universe down to a manageable set of stocks that conform to a group of desired characteristics. Investment managers often use multiple screening techniques to better focus their research. Although most managers stop short of a pure quantitative process (i.e., invoking optimization and higher mathematics), many use some form of quantitative screening. However, these screens constrain criteria related to valuation, fundamental earnings performance, liquidity, and investment style.

While screening is helpful, it is by no means a complete or strictly scientific process. For example, some stocks may be excluded from consideration based on one criterion, while meeting the requirements for consideration based on many other criteria. Alternatively, multivariate approaches may weight factors and arrive at a summary ranking for each stock. In this instance, again, some stocks may be arbitrarily included (or excluded) because of an extreme reading based on one criterion, while other factors receive too little — or too much — weight. In truth, multivariate ranking systems tend to be ad hoc.

Our Methodology

Over the years, we have used advanced statistical techniques to improve on the often ad hoc nature of quantitative decision rules. One tool we have had success with is the decision tree model. The decision tree approach departs from tradition by determining the proper hierarchy and interaction of screening factors. Does a value criterion take priority over a momentum factor, or vice versa? Does value ever matter for some types of stocks, and, if so, how do the value factors interact with other criteria?

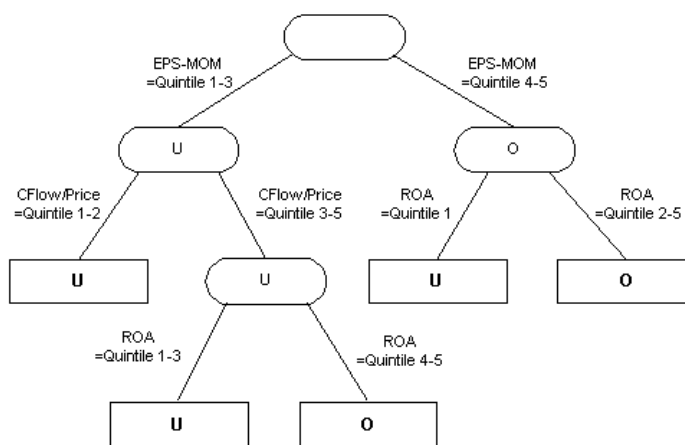
We have recently probed these higher-order considerations with our decision tree model for selecting stocks in the technology, financial, and health care sectors. For a detailed description of the methodology that lies behind these models, please see our report, “The Decision Tree Approach to Stock Selection,” *Journal of Portfolio Management*, vol. 27, fall 2000.

To briefly summarize, we analyzed a variety of stock selection criteria, including many estimate revision, valuation, profitability, and technical measures. Every month, we gather monthly data from 1993 to the most recent month for all the stocks in the relevant Russell 1000 sector. On a month-by-month basis, we rate stocks with above-median performance as “outperform” and those with below-median performance as “underperform.” In addition, we also rank by quintile the screening/predictor factors — i.e., stocks with the highest value with respect to a specific factor are given a score of 5, while stocks with the lowest value are given a score of 1. The decision tree algorithm then selects the most discriminating factors to form a tree structure that best identifies the outperformers and underperformers among the relevant universe of stocks. The resulting decision tree model is used to predict the next month’s outperformers and underperformers on an ex-ante basis.

Technology Sector Stock Selection

In Figure 2, we show our decision tree model for technology stock selection.

Figure 2. Technology Stock Selection Decision Tree



Key:
U : Underperformance
O : Outperformance

Definition of Terms:
EPS-MOM: 12-Week Change in Consensus Forecasted Earnings
ROA: % Change in ROA
CFlow/Price: Cash Flow to Price Ratio

Source: Citi Investment Research and Analysis

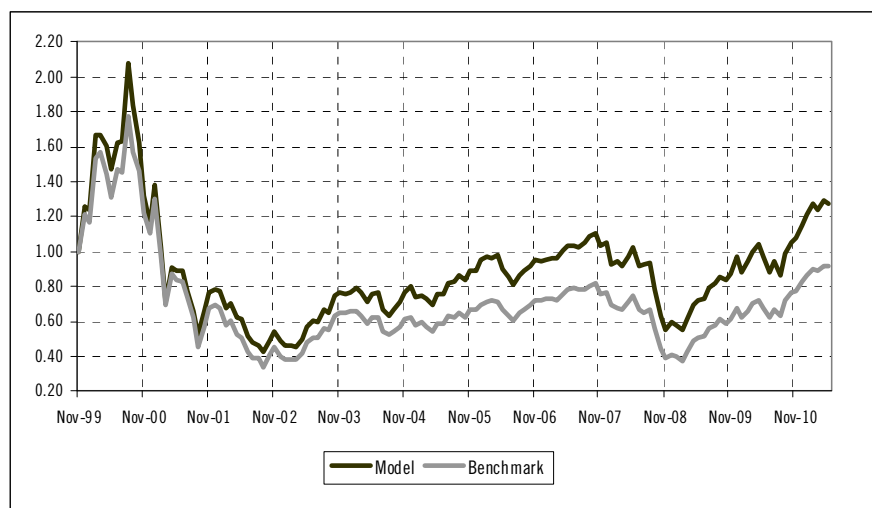
Our analysis suggests that, of these factors, the estimate revision trend is one of the most important criteria for predicting relative performance of technology stocks. Furthermore, this analysis indicates that momentum in profitability (i.e., return on assets) has incremental predictive power if conditioned on a positive earnings estimate revision trend or a relatively reasonable valuation. The most significant change in the model is a greater emphasis on a positive profitability trend in the final stock selection decision.

Latest Model Updates

Since the model's inception at the end of November 1999, equally weighted portfolios of our attractive technology stocks have outperformed equally weighted portfolios of the Russell 1000 Technology Index constituents in 79 of 138 months by an average of 0.25% per month. Our portfolio declined 1.17% from the close of April 29 to the close of May 31, while the benchmark declined 0.89% over the same period. Figure 3 shows the cumulative wealth index levels of our attractive technology stock portfolio and the equally weighted Russell 1000 Technology Index from the end of November 1999 to the end of May 31. Figure 4 shows a summary of the model's performance for the last 12 months.*

*Past performance does not guarantee future results. Returns are gross of management and transaction fees.

Figure 3. Cumulative Index Levels of Technology Portfolio and Benchmark



Source: Citi Investment Research and Analysis

Figure 4. Technology Sector Model: Last 12-Month Performance

| | Last 12-Month Performance | Last 12-Month Volatility | Information Ratio |
|----------------------------------|------------------------------|-----------------------------|-------------------|
| Model Attractive Stock Portfolio | 30.05% | 23.59% | 1.27 |
| Overall Universe | 31.91% | 19.85% | 1.61 |
| Model – Universe Spreads | -1.85% | 4.80% | -0.39 |

Source: Citi Investment Research and Analysis

At the end of each month, we update our list of technology stocks that are deemed attractive from our model's perspective. In Figure 5, we present the latest list of attractive technology stocks based on the stock selection model. This attractive list represents 46% of the universe of technology stocks.

Figure 5. Attractive Technology Stocks

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | Price (\$) (May 31) |
|--------|-------------------------|--|-------------|-----|------------------------|
| | | EPS-MOM | CFLOW-PRICE | ROA | |
| AVX | AVX CORP | 5 | - | 4 | 15.73 |
| ATVI | ACTIVISION BLIZZARD INC | 4 | - | 4 | 11.99 |
| AMD | ADVANCED MICRO DEVICES | 4 | - | 3 | 8.68 |
| ALTR | ALTERA CORP | 4 | - | 2 | 48.09 |
| ADI | ANALOG DEVICES INC | 5 | - | 4 | 41.17 |
| AAPL | APPLE INC | 5 | - | 5 | 347.83 |
| AMAT | APPLIED MATLS INC | 1 | 4 | 5 | 13.78 |
| ARW | ARROW ELECTRONICS INC | 5 | - | 4 | 44.63 |
| ATML | ATMEL CORP | 5 | - | 5 | 15.02 |
| ADSK | AUTODESK INC | 4 | - | 4 | 42.98 |
| AVT | AVNET INC | 5 | - | 3 | 36.20 |
| BRCM | BROADCOM CORP | 4 | - | 4 | 35.98 |
| BRCD | BROCADE COMMUNICATIONS | 5 | - | 2 | 6.67 |
| CTXS | CITRIX SYSTEMS INC | 4 | - | 2 | 87.62 |
| CCI | CROWN CASTLE INTL CORP | 5 | - | 4 | 41.41 |

Source: Citi Investment Research and Analysis

Figure 5. Attractive Technology Stocks (continued)

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | Price (\$) (May 31) |
|--------|-------------------------|--|-------------|-----|------------------------|
| | | EPS-MOM | CFLOW-PRICE | ROA | |
| CY | CYPRESS SEMICONDUCTOR | 5 | - | 5 | 23.42 |
| DELL | DELL INC | 5 | - | 4 | 16.08 |
| SATS | ECHOSTAR CORP | 5 | - | 5 | 33.69 |
| EQIX | EQUINIX INC | 4 | - | 2 | 101.40 |
| FCS | FAIRCHILD SEMICONDUCTOR | 4 | - | 5 | 18.04 |
| IACI | IAC INTERACTIVECORP | 5 | - | 5 | 36.78 |
| INFA | INFORMATICA CORP | 4 | - | 4 | 58.66 |
| INTC | INTEL CORP | 5 | - | 4 | 22.51 |
| IBM | INTL BUSINESS MACHINES | 3 | 4 | 4 | 168.93 |
| IRF | INTERNATIONAL RECTIFIER | 4 | - | 4 | 28.78 |
| JBL | JABIL CIRCUIT INC | 4 | - | 4 | 21.58 |
| KLAC | KLA-TENCOR CORP | 5 | - | 5 | 43.10 |
| LRCX | LAM RESEARCH CORP | 2 | 5 | 5 | 47.00 |
| LLTC | LINEAR TECHNOLOGY CO | 3 | 4 | 5 | 34.59 |
| MXIM | MAXIM INTEGRATED PRODS | 2 | 4 | 4 | 27.25 |
| MCRS | MICROS SYSTEMS INC | 4 | - | 3 | 51.06 |
| MCHP | MICROCHIP TECHNOLOGY | 2 | 3 | 4 | 39.53 |
| MSI | MOTOROLA SOLUTIONS INC | 5 | - | 3 | 47.87 |
| NTAP | NETAPP INC | 5 | - | 2 | 54.77 |
| NSR | NEUSTAR INC | 2 | 3 | 5 | 26.76 |
| NVLS | NOVELLUS SYSTEMS INC | 1 | 5 | 5 | 36.27 |
| ONNN | ON SEMICONDUCTOR CORP | 5 | - | 2 | 11.22 |
| ORCL | ORACLE CORP | 4 | - | 3 | 34.22 |
| PLCM | POLYCOM INC | 5 | - | 5 | 57.41 |
| QLGC | QLOGIC CORP | 2 | 5 | 5 | 16.18 |
| QCOM | QUALCOMM INC | 4 | - | 4 | 58.59 |
| RHT | RED HAT INC | 4 | - | 4 | 43.60 |
| ROVI | ROVI CORPORATION | 4 | - | 2 | 57.96 |
| SWKS | SKYWORKS SOLUTIONS INC | 4 | - | 5 | 25.47 |
| SLH | SOLERA HOLDINGS INC | 4 | - | 5 | 59.09 |
| TXN | TEXAS INSTRUMENTS INC | 1 | 3 | 4 | 35.30 |
| VSH | VISHAY INTERTECHNOLOGY | 3 | 5 | 5 | 15.87 |
| VMW | VMWARE INC | 5 | - | 4 | 97.32 |
| YHOO | YAHOO INC | 4 | - | 3 | 16.55 |

Source: Citi Investment Research and Analysis

Figure 6 shows the latest additions to our technology sector recommended list. A full history of changes to our portfolio is available upon request.

Figure 6. New Attractive Technology Stocks

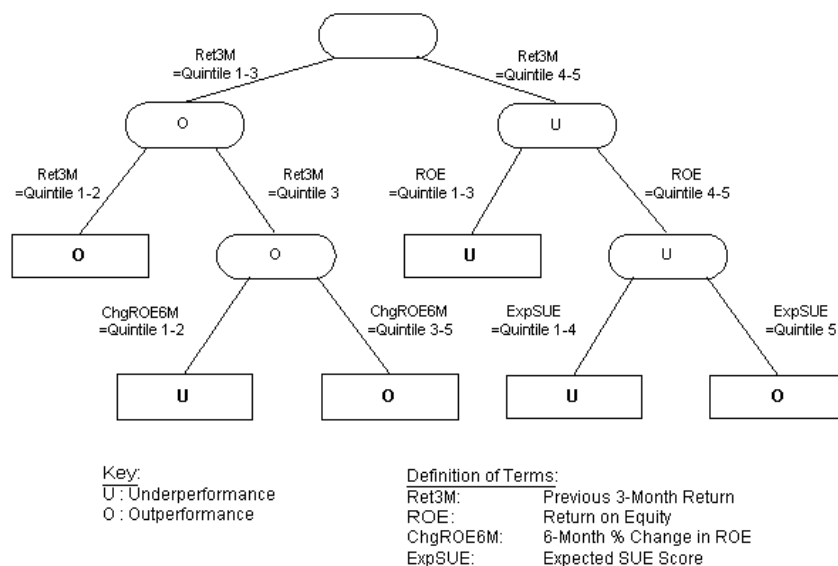
| Ticker | Company |
|---------------|-------------------------|
| ATVI | ACTIVISION BLIZZARD INC |
| ADSK | AUTODESK INC |
| AVT | AVNET INC |
| BRC | BROCADE COMMUNICATIONS |
| CCI | CROWN CASTLE INTL CORP |
| SATS | ECHOSTAR CORP |
| EQIX | EQUINIX INC |
| IBM | INTL BUSINESS MACHINES |
| IRF | INTERNATIONAL RECTIFIER |
| LRCX | LAM RESEARCH CORP |
| MXIM | MAXIM INTEGRATED PRODS |
| MCRS | MICROS SYSTEMS INC |
| MSI | MOTOROLA SOLUTIONS INC |
| NTAP | NETAPP INC |
| SWKS | SKYWORKS SOLUTIONS INC |
| SLH | SOLERA HOLDINGS INC |
| TXN | TEXAS INSTRUMENTS INC |

Source: Citi Investment Research and Analysis

Financial Sector Stock Selection

In Figure 7, we show our decision tree model for financial stock selection.

Figure 7. Financial Stock Selection Decision Tree



Source: Citi Investment Research and Analysis

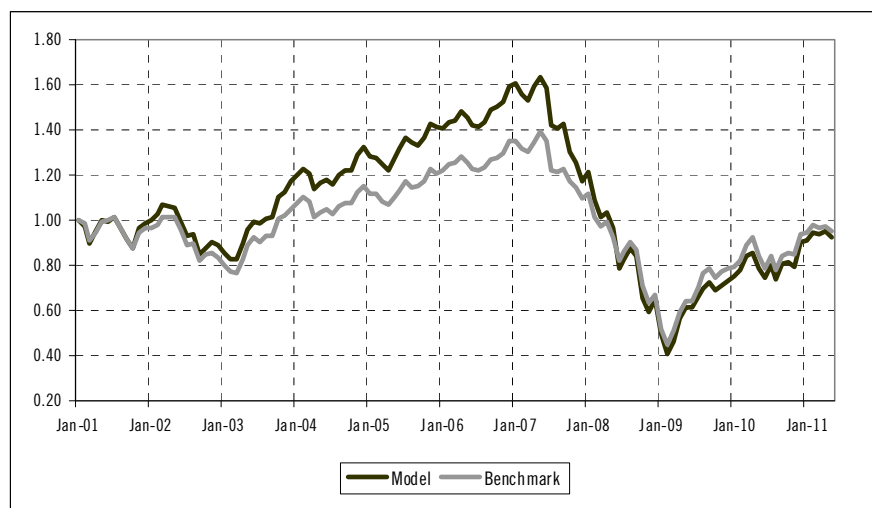
To briefly summarize, the decision tree analysis shows that stocks in the highest two quintiles in the previous three-month return have historically underperformed the overall universe, while stocks in the lowest three quintiles in the previous three-month return have historically outperformed. However, a further improvement in prediction significance can be achieved by screening for other variables. As shown in Figure 7, stocks with improving ROEs, or stocks with high ROEs and a high probability of positive earnings surprises (i.e., high expected standardized unexpected earnings [SUEs]), are most likely to outperform the overall financial universe.

Latest Model Updates

Since the model's inception at the end of January 2001, equally weighted portfolios of our attractive financial services stocks have outperformed equally weighted portfolios of the Russell 1000 Financial Services Index constituents in 74 of 124 months by an average of 0.04% per month. Our portfolio declined 2.53% from the close of April 29 to the close of May 31, while the benchmark declined 2.28% over the same period. Figure 8 shows the cumulative wealth index levels of our attractive financial services stock portfolio and the equally weighted Russell 1000 Financial Services Index from the end of January 2001 to the end of May 31. Figure 9 shows a summary of the model's performance for the last 12 months.

*Past performance does not guarantee future results. Returns are gross of management and transaction fees.

Figure 8. Cumulative Index Levels of Financial Portfolio and Benchmark



Source: Citi Investment Research and Analysis

Figure 9. Financial Sector Model: Last 12-Month Performance

| | Last 12-Month Performance | Last 12-Month Volatility | Information Ratio |
|----------------------------------|------------------------------|-----------------------------|-------------------|
| Model Attractive Stock Portfolio | 18.26% | 21.55% | 0.85 |
| Overall Universe | 13.99% | 18.55% | 0.75 |
| Model – Universe Spreads | 4.27% | 3.98% | 1.07 |

Source: Citi Investment Research and Analysis

In Figure 10, we present our list of attractive financial stocks based on our model's latest forecast. This attractive stock list represents 59% of the total universe of financial stocks.

Figure 10. Attractive Financial Stocks

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | | Price (\$) (May 31) |
|--------|--------------------------|--|----------|-----|--------|------------------------|
| | | Ret3M | ChgROE6M | ROE | ExpSue | |
| ADS | ALLIANCE DATA SYSTEMS | 5 | - | 5 | 5 | 93.93 |
| AFL | AFLAC INC | 1 | - | - | - | 47.79 |
| AHL | ASPEN INSURANCE HOLDINGS | 2 | - | - | - | 26.86 |
| AJG | GALLAGHER ARTHUR J & CO | 2 | - | - | - | 28.71 |
| ALL | ALLSTATE CORP | 3 | 4 | - | - | 31.38 |
| AMG | AFFILIATED MANAGERS GRP | 3 | 4 | - | - | 105.73 |
| AMP | AMERIPRISE FINANCIAL INC | 3 | 3 | - | - | 61.23 |
| AMTD | TD AMERITRADE HOLDING | 3 | 3 | - | - | 21.55 |
| ASBC | ASSOCIATED BANC CORP | 3 | 5 | - | - | 14.09 |
| AXS | AXIS CAPITAL HOLDINGS | 2 | - | - | - | 32.94 |
| BAC | BANK OF AMERICA CORP | 1 | - | - | - | 11.75 |
| BEN | FRANKLIN RESOURCES INC | 4 | - | 5 | 5 | 129.58 |
| BK | BANK OF NEW YORK MELLON | 2 | - | - | - | 28.11 |
| BPOP | POPULAR INC | 1 | - | - | - | 2.90 |
| BXS | BANCORPSOUTH INC | 1 | - | - | - | 12.84 |
| CFR | CULLEN FROST BANKERS | 3 | 3 | - | - | 58.24 |
| CINF | CINCINNATI FINANCIAL | 1 | - | - | - | 30.42 |
| CMA | COMERICA INC | 2 | - | - | - | 36.11 |

Source: Citi Investment Research and Analysis

Figure 10. Attractive Financial Stocks (continued)

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | | Price (\$) (May 31) |
|--------|--------------------------|--|----------|-----|--------|------------------------|
| | | Ret3M | ChgROE6M | ROE | ExpSue | |
| CME | CME GROUP INC | 2 | - | - | - | 285.76 |
| CSE | CAPITALSOURCE INC | 1 | - | - | - | 6.47 |
| CYN | CITY NATIONAL CORP | 3 | 4 | - | - | 56.33 |
| DFS | DISCOVER FINANCIAL SRVC | 5 | - | 5 | 5 | 23.84 |
| ENH | ENDURANCE SPECIALTY HLDG | 1 | - | - | - | 40.61 |
| ETFC | E TRADE FINANCIAL CORP | 3 | 5 | - | - | 15.81 |
| EWBC | EAST WEST BANCORP INC | 1 | - | - | - | 20.09 |
| FDS | FACTSET RESEARCH SYSTEMS | 5 | - | 5 | 5 | 110.86 |
| FHN | FIRST HORIZON NATL CORP | 1 | - | - | - | 10.51 |
| FII | FEDERATED INVESTORS INC | 2 | - | - | - | 25.63 |
| FITB | FIFTH THIRD BANCORP | 3 | 5 | - | - | 13.06 |
| FNF | FIDELITY NATIONAL FINL | 5 | - | 4 | 5 | 15.98 |
| FNFG | FIRST NIAGARA FINL GRP | 3 | 3 | - | - | 14.20 |
| FULT | FULTON FINANCIAL CORP | 3 | 3 | - | - | 11.14 |
| GHL | GREENHILL & CO INC | 1 | - | - | - | 55.66 |
| GNW | GENWORTH FINANCIAL INC | 1 | - | - | - | 11.11 |
| GS | GOLDMAN SACHS GROUP INC | 1 | - | - | - | 140.73 |
| HBAN | HUNTINGTON BANCSHARES | 3 | 5 | - | - | 6.60 |
| HCBK | HUDSON CITY BANCORP | 1 | - | - | - | 9.13 |
| HIG | HARTFORD FINL SVCS GRP | 2 | - | - | - | 26.65 |
| ICE | INTERCONTINENTALEXCHANGE | 1 | - | - | - | 120.65 |
| JNS | JANUS CAPITAL GROUP INC | 1 | - | - | - | 10.33 |
| JPM | JPMORGAN CHASE & CO | 2 | - | - | - | 43.24 |
| KEY | KEYCORP | 1 | - | - | - | 8.47 |
| L | LOEWS CORP | 3 | 3 | - | - | 42.02 |
| LM | LEGG MASON INC | 3 | 4 | - | - | 33.84 |
| LNC | LINCOLN NATIONAL CORP | 2 | - | - | - | 29.35 |
| LPS | LENDER PROCESSING SVCS | 1 | - | - | - | 26.58 |
| MA | MASTERCARD INC | 5 | - | 5 | 5 | 287.05 |
| MBI | MBIA INC | 1 | - | - | - | 8.80 |
| MET | METLIFE INC | 2 | - | - | - | 44.10 |
| MKL | MARKEL CORP | 3 | 3 | - | - | 413.67 |
| MS | MORGAN STANLEY | 1 | - | - | - | 24.16 |
| MTB | M & T BANK CORP | 3 | 4 | - | - | 88.30 |
| NDAQ | NASDAQ OMX GROUP INC | 1 | - | - | - | 25.52 |
| NTRS | NORTHERN TRUST CORP | 2 | - | - | - | 48.79 |
| NYB | NEW YORK CMNTY BANCORP | 2 | - | - | - | 16.20 |
| PFG | PRINCIPAL FINANCIAL GRP | 2 | - | - | - | 31.27 |
| PL | PROTECTIVE LIFE CORP | 1 | - | - | - | 24.14 |
| RF | REGIONS FINANCIAL CORP | 2 | - | - | - | 7.06 |
| RJF | RAYMOND JAMES FINANCIAL | 1 | - | - | - | 35.74 |
| SCHW | SCHWAB CHARLES CORP | 2 | - | - | - | 18.01 |
| SFG | STANCORP FINANCIAL GROUP | 2 | - | - | - | 43.18 |
| SNV | SYNOVUS FINANCIAL CORP | 2 | - | - | - | 2.38 |
| STI | SUNTRUST BANKS INC | 2 | - | - | - | 28.13 |
| TCB | TCF FINANCIAL CORP | 2 | - | - | - | 15.05 |
| TFSL | TFS FINL CORP | 2 | - | - | - | 10.25 |
| THG | HANOVER INSURANCE GROUP | 1 | - | - | - | 41.06 |
| TRH | TRANSATLANTIC HLDGS INC | 1 | - | - | - | 46.54 |
| TROW | PRICE T ROWE GROUP INC | 2 | - | - | - | 63.30 |
| UNM | UNUM GROUP | 3 | 3 | - | - | 26.31 |
| USB | US BANCORP | 2 | - | - | - | 25.60 |
| V | VISA INC | 5 | - | 4 | 5 | 81.06 |
| WDR | WADDELL & REED FINANCIAL | 2 | - | - | - | 38.60 |
| WFC | WELLS FARGO & CO | 1 | - | - | - | 28.37 |
| WFSL | WASHINGTON FED INC | 1 | - | - | - | 15.89 |
| WU | WESTERN UNION CO | 2 | - | - | - | 20.56 |

Source: Citi Investment Research and Analysis

Figure 11 shows the latest additions to our financial sector recommended list. A full history of changes to our portfolio is available upon request.

Figure 11. New Attractive Financial Stocks

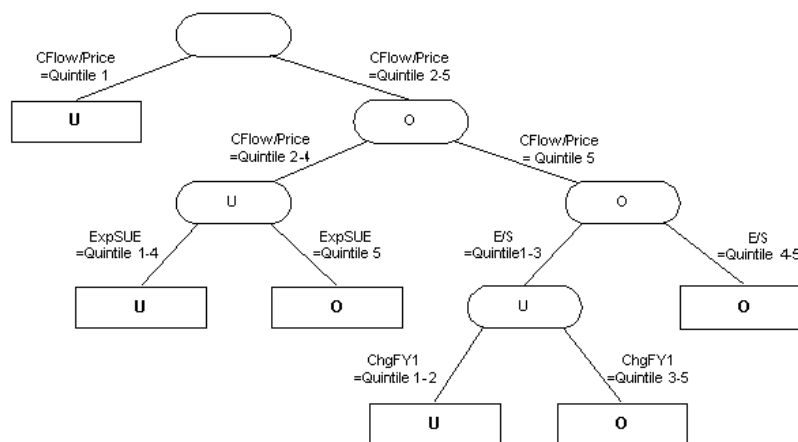
| Ticker | Company |
|--------|--------------------------|
| ADS | ALLIANCE DATA SYSTEMS |
| ALL | ALLSTATE CORP |
| AMG | AFFILIATED MANAGERS GRP |
| AMP | AMERIPRISE FINANCIAL INC |
| AMTD | TD AMERITRADE HOLDING |
| BPOP | POPULAR INC |
| CINF | CINCINNATI FINANCIAL |
| EWBC | EAST WEST BANCORP INC |
| FDS | FACTSET RESEARCH SYSTEMS |
| FULT | FULTON FINANCIAL CORP |
| HIG | HARTFORD FINL SVCS GRP |
| ICE | INTERCONTINENTALEXCHANGE |
| L | LOEWS CORP |
| LNC | LINCOLN NATIONAL CORP |
| LPS | LENDER PROCESSING SVCS |
| MA | MASTERCARD INC |
| MKL | MARKEL CORP |
| NDAQ | NASDAQ OMX GROUP INC |
| PFG | PRINCIPAL FINANCIAL GRP |
| PL | PROTECTIVE LIFE CORP |
| SCHW | SCHWAB CHARLES CORP |
| SNV | SYNOVUS FINANCIAL CORP |
| TCB | TCF FINANCIAL CORP |
| TFSL | TFS FINL CORP |
| UNM | UNUM GROUP |
| V | VISA INC |
| WDR | WADDELL & REED FINANCIAL |
| WU | WESTERN UNION CO |

Source: Citi Investment Research and Analysis

Health Care Sector Stock Selection

In Figure 12, we show the most recent update of our decision tree model for health care stock selection.

Figure 12. Health Care Stock Selection Decision Tree



Key:
U : Underperformance
O : Outperformance

Definition of Terms:
CFlow/Price: Industry relative cash flow to price ratio
ExpSUE: Forecasted Standardized Unexpected Earnings (SUES)
E/S: Earnings to sales ratio
ChgFY1: 4-week percent change in I/B/E/S FY1 earnings estimates

Source: Citi Investment Research and Analysis

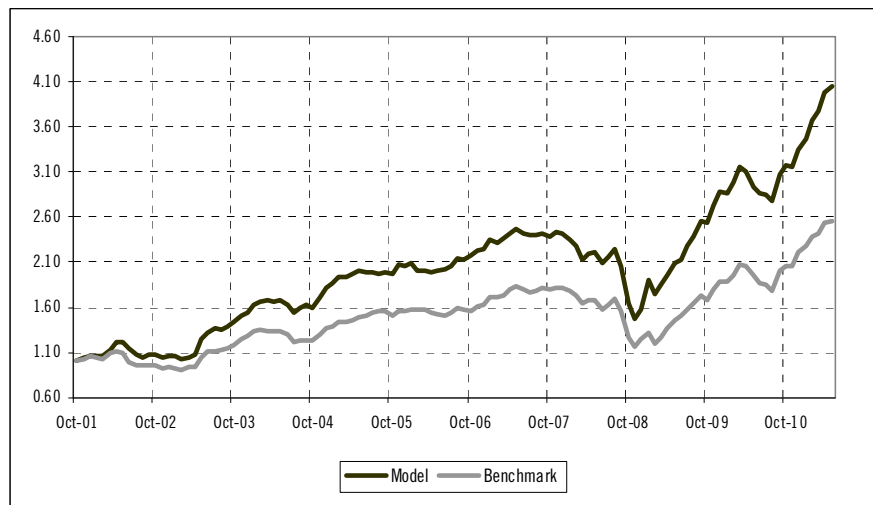
Starting at the highest level, the decision tree model immediately isolates the most expensive stocks (the lowest quintile in cash-flow-to-price ratios) and assigns these stocks the underperform classification. At the next level, the model further isolates the cheapest stocks (the highest quintile in cash-flow-to-price ratios). For these low-valued stocks, the model favors those with high profit margins (high earnings-to-sales ratios) or those with high earnings momentum. For those in the middle range of the valuation spectrum, the model favors stocks with the highest probability of positive earnings surprises (the highest expected SUEs quintile), as estimated by our earnings-surprise model discussed previously.

Latest Model Update

Since the model's inception at the end of October 2001, equally weighted portfolios of our attractive health care (excluding biotechnology stocks) have outperformed equally weighted portfolios of the Russell 1000 Health Care Index constituents in 67 of 115 months by an average of 0.43% per month. Our portfolio increased 1.79% from the close of April 29 to the close of May 31, while the benchmark increased 0.86% over the same period. Figure 13 shows the cumulative wealth index levels of our attractive health care ex-biotechnology stock portfolio and the equally weighted Russell 1000 Health Care Index from the end of October 2001 to the end of May 31. Figure 14 shows a summary of the model's performance for the last 12 months.*

*Past performance does not guarantee future results. Returns are gross of management and transaction fees.

Figure 13. Cumulative Index Levels of Health Care Portfolio and Benchmark



Source: Citi Investment Research and Analysis

Figure 14. Health Care Sector Model: Last 12-Month Performance

| | Last 12-Month Performance | Last 12-Month Volatility | Information Ratio |
|----------------------------------|---------------------------|--------------------------|-------------------|
| Model Attractive Stock Portfolio | 33.36% | 13.64% | 2.45 |
| Overall Universe | 28.39% | 15.91% | 1.78 |
| Model – Universe Spreads | 4.97% | 3.56% | 1.40 |

Source: Citi Investment Research and Analysis

In Figure 15, we present a list of attractive health care stocks based on our model's latest forecasts. The attractive health care stock list represents 27% of the total universe of health care stocks.

Figure 15. Attractive Health Care Stocks

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | | Price (\$) (May 31) |
|--------|--------------------------|--|--------|-----|--------|------------------------|
| | | CF/Price | ExpSue | E/S | ChgFY1 | |
| AET | AETNA INC | 4 | 5 | - | - | 43.68 |
| BIO | BIO-RAD LABORATORIES INC | 5 | - | 3 | 5 | 124.43 |
| BSX | BOSTON SCIENTIFIC CO | 4 | 5 | - | - | 7.18 |
| CI | CIGNA CORP | 5 | - | 3 | 5 | 49.89 |
| CAH | CARDINAL HEALTH INC | 3 | 5 | - | - | 45.42 |
| COO | COOPER COMPANIES INC | 4 | 5 | - | - | 74.91 |
| FRX | FOREST LABS INC | 4 | 5 | - | - | 36.02 |
| GPRO | GEN-PROBE INC | 2 | 5 | - | - | 81.79 |
| GILD | GILEAD SCIENCES INC | 5 | - | 5 | - | 41.74 |
| HMA | HEALTH MGMT ASSOC INC | 5 | - | 1 | 3 | 11.40 |
| HRC | HILL-ROM HOLDINGS INC | 4 | 5 | - | - | 45.64 |
| JNJ | JOHNSON & JOHNSON | 5 | - | 5 | - | 67.29 |
| LPNT | LIFEPOINT HOSPITALS | 5 | - | 2 | 4 | 42.00 |
| LLY | LILLY ELI & CO | 5 | - | 5 | - | 38.48 |
| MDT | MEDTRONIC INC | 5 | - | 5 | - | 40.70 |
| PKI | PERKINELMER INC | 5 | - | 3 | 5 | 27.69 |
| TECH | TECHNE CORP | 5 | - | 5 | - | 81.50 |
| UNH | UNITEDHEALTH GROUP INC | 3 | 5 | - | - | 48.95 |
| VAR | VARIAN MEDICAL SYSTEMS | 4 | 5 | - | - | 67.54 |
| ZMH | ZIMMER HOLDINGS INC | 2 | 5 | - | - | 67.76 |

Source: Citi Investment Research and Analysis

Figure 16 shows the latest additions to our health care recommended stocks list. A full history of changes to our portfolio is available upon request.

Figure 16. New Attractive Health Care Stocks

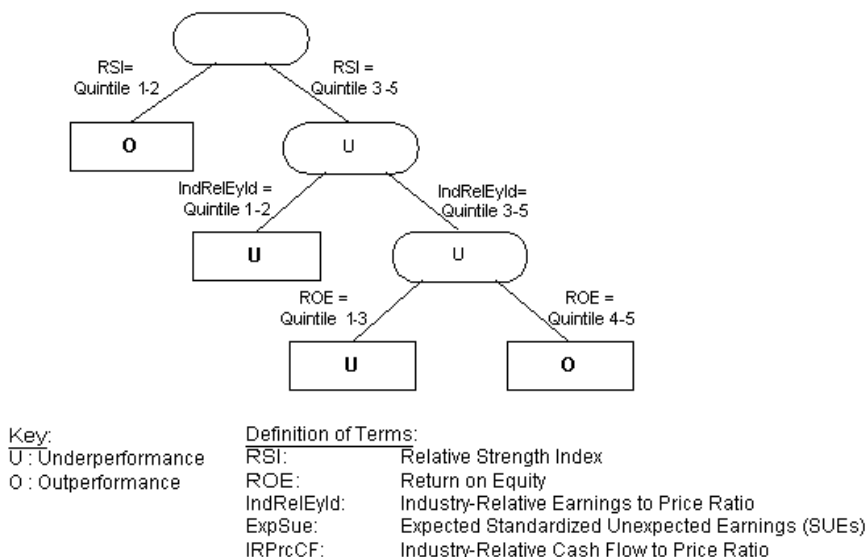
| Ticker | Company |
|--------|---------------------|
| CI | CIGNA CORP |
| GPRO | GEN-PROBE INC |
| GILD | GILEAD SCIENCES INC |
| JNJ | JOHNSON & JOHNSON |
| LPNT | LIFEPOINT HOSPITALS |
| PKI | PERKINELMER INC |
| TECH | TECHNE CORP |
| ZMH | ZIMMER HOLDINGS INC |

Source: Citi Investment Research and Analysis

Consumer Staples Sector Stock Selection

In Figure 17, we show the most recent update of our decision tree model for consumer staples stock selection.

Figure 17. Consumer Staples Stock Selection Decision Tree



Source: Citi Investment Research and Analysis

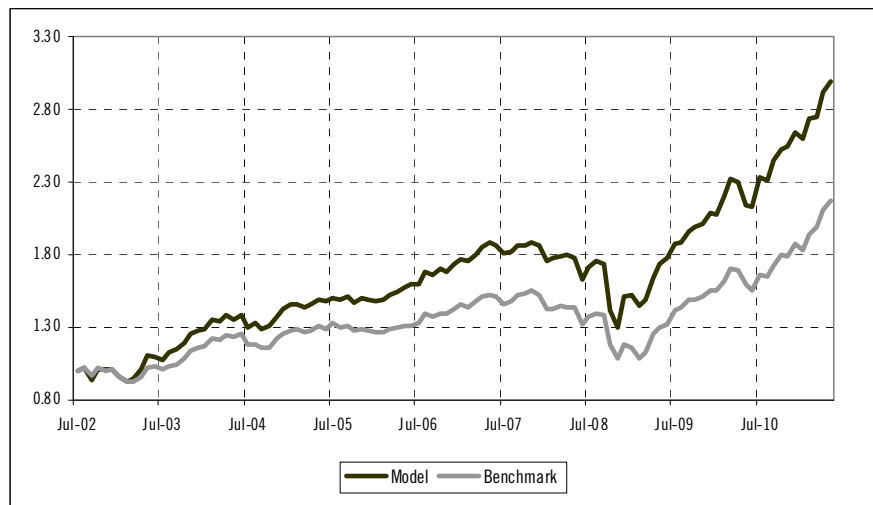
Starting at the highest level, the decision tree model determines that, on average, oversold consumer staples stocks (i.e., those in the lowest two quintiles of RSI) have a high probability of outperformance. For those stocks with RSIs in the top three quintiles, the model focuses on valuation and profitability to further isolate stocks that are likely to outperform. Specifically, the model favors stocks with reasonable to low valuations (stocks in the top three quintiles of industry-relative earnings-to-price ratios) and high profitability (top two quintiles of ROE).

Latest Model Updates

Since the model's inception at the end of July 2002, equally weighted portfolios of our attractive consumer staples stocks have outperformed equally weighted portfolios of the Russell 1000 Consumer Staples Index constituents in 67 out of 106 months by an average of 0.32% per month. Our portfolio increased 2.25% from the close of April 29 to the close of May 31, while the benchmark increased 3.22% over the same period. Figure 18 shows the cumulative wealth index levels of our attractive consumer staples stock portfolio and the equally weighted Russell 1000 Consumer Staples Index from the end of July 2002 to the end of May 31. Figure 19 shows a summary of the model's performance for the last 12 months.*

*Past performance does not guarantee future results. Returns are gross of management and transaction fees.

Figure 18. Cumulative Index Levels of Consumer Staples Portfolio and Benchmark



Source: Citi Investment Research and Analysis

Figure 19. Consumer Staples Sector Model: Last 12-Month Performance

| | Last 12-Month Performance | Last 12-Month Volatility | Information Ratio |
|----------------------------------|------------------------------|--------------------------|-------------------|
| Model Attractive Stock Portfolio | 34.42% | 12.07% | 2.85 |
| Overall Universe | 31.78% | 11.26% | 2.82 |
| Model – Universe Spreads | 2.64% | 4.62% | 0.57 |

Source: Citi Investment Research and Analysis

In Figure 20, we present a list of attractive consumer staples stocks based on our model's latest forecasts. The attractive consumer staples stock list represents 60% of the consumer staples stock universe.

Figure 20. Attractive Consumer Staples Stocks

| Ticker | Company | Quintile Ranks (1 = lowest, 5 = highest) | | | Price (\$) (May 31) |
|--------|--------------------------|--|------------|-----|------------------------|
| | | RSI | IndRelEyld | ROE | |
| MO | ALTRIA GROUP INC | 5 | 4 | 5 | 28.06 |
| ADM | ARCHER DANIELS MIDLAND | 1 | - | - | 32.41 |
| BF.B | BROWN FORMAN CORP | 2 | - | - | 72.48 |
| CPB | CAMPBELL SOUP CO | 1 | - | - | 34.75 |
| CEDC | CENTRAL EUROPEAN DISTRIB | 1 | - | - | 12.56 |
| CLX | CLOROX CO | 2 | - | - | 70.48 |
| KO | COCA COLA CO | 2 | - | - | 66.81 |
| CCE | COCA COLA ENTERPRISE | 3 | 5 | 5 | 28.89 |
| CL | COLGATE PALMOLIVE CO | 3 | 3 | 5 | 87.53 |
| CAG | CONAGRA FOODS INC | 2 | - | - | 25.43 |
| STZ | CONSTELLATION BRANDS | 2 | - | - | 21.96 |
| ENR | ENERGIZER HOLDINGS INC | 1 | - | - | 77.05 |
| GIS | GENERAL MILLS INC | 3 | 4 | 4 | 39.77 |
| K | KELLOGG CO | 3 | 3 | 5 | 56.99 |
| KMB | KIMBERLY CLARK CORP | 4 | 5 | 4 | 68.30 |
| LO | LORILLARD INC | 5 | 4 | 5 | 115.28 |
| MKC | MCCORMICK & CO INC | 3 | 3 | 4 | 50.19 |
| TAP | MOLSON COORS BREWING CO | 1 | - | - | 46.65 |
| PEP | PEPSICO INC | 2 | - | - | 71.12 |
| PM | PHILIP MORRIS INTL | 5 | 3 | 5 | 71.75 |
| PG | PROCTER & GAMBLE CO | 1 | - | - | 67.00 |
| SLE | SARA LEE CORP | 2 | - | - | 19.55 |
| SFD | SMITHFIELD FOODS INC | 1 | - | - | 20.95 |
| SY | SYSCO CORP | 1 | - | - | 32.21 |
| TSN | TYSON FOODS INC | 2 | - | - | 19.02 |
| WAG | WALGREEN CO | 1 | - | - | 43.63 |
| WFM | WHOLE FOODS MARKET INC | 2 | - | - | 61.16 |
| BG | BUNGE LIMITED | 1 | - | - | 74.45 |

Source: Citi Investment Research and Analysis

Figure 21 shows the latest additions to our consumer staples sector recommended list. A full history of changes to our portfolio is available upon request.

Figure 21. New Attractive Consumer Staples Stocks

| Ticker | Company |
|--------|------------------------|
| ADM | ARCHER DANIELS MIDLAND |
| CLX | CLOROX CO |
| CCE | COCA COLA ENTERPRISE |
| CAG | CONAGRA FOODS INC |
| LO | LORILLARD INC |
| PM | PHILIP MORRIS INTL |
| SLE | SARA LEE CORP |
| SFD | SMITHFIELD FOODS INC |
| WAG | WALGREEN CO |
| WFM | WHOLE FOODS MARKET INC |
| BG | BUNGE LIMITED |

Source: Citi Investment Research and Analysis

Appendix A-1

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| % of companies in each rating category that are investment banking clients | 25% | 20% | 19% | | | |
| Citi Investment Research & Analysis Quantitative Decision Tree Model Coverage | 47% | 0% | 53% | | | |
| % of companies in each rating category that are investment banking clients | 56% | 0% | 44% | | | |
| Citi Investment Research & Analysis Asia Quantitative Radar Screen Model Coverage | 20% | 60% | 20% | | | |
| % of companies in each rating category that are investment banking clients | 24% | 22% | 20% | | | |
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| % of companies in each rating category that are investment banking clients | 25% | 0% | 13% | | | |

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