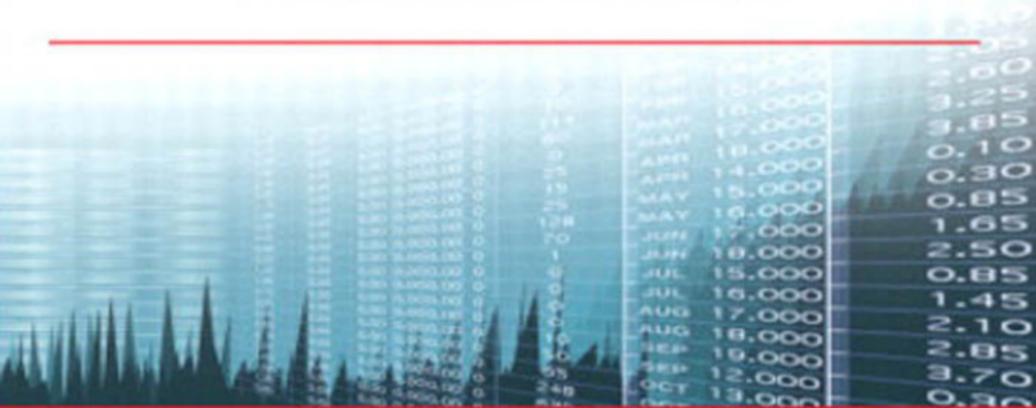


MICROSOFT® EXCEL® FOR STOCK AND OPTION TRADERS

BUILD YOUR OWN ANALYTICAL TOOLS
FOR HIGHER RETURNS



J E F F A U G E N

AUTHOR OF *THE VOLATILITY EDGE IN OPTIONS TRADING*

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Publishing as FT Press
Upper Saddle River, New Jersey 07458

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Printed in the United States of America

First Printing April 2011

ISBN-10: 0-13-713182-8

ISBN-13: 978-0-13-713182-2

Pearson Education LTD.

Pearson Education Australia PTY, Limited.

Pearson Education Singapore, Pte. Ltd.

Pearson Education North Asia, Ltd.

Pearson Education Canada, Ltd.

Pearson Educación de México, S.A. de C.V.

Pearson Education—Japan

Pearson Education Malaysia, Pte. Ltd.

Library of Congress Cataloging-in-Publication Data

Augen, Jeffrey.

Microsoft Excel for stock and option traders : build your own analytical tools for higher returns / Jeffrey Augen.

p. cm.

ISBN 978-0-13-713182-2 (hbk. : alk. paper)

1. Investment analysis—Computer programs. 2. Investment analysis—Mathematical models. 3. Microsoft Excel (Computer file) I. Title.

HG4515.5.A94 2011

332.640285'554—dc22

2011003034

*To Lisa, who changed everything when she said:
“Why don’t you just calculate the integral between
those two points and chart the value as
it changes over time?”*

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Contents

<i>Preface</i>	1
<i>Chapter 1 Introduction—The Value of Information</i>	7
The Struggle for a Statistical Edge.....	7
Fingerprinting the Market	12
Graphical Approaches to Discovering Price-Change Relationships	20
Focusing on a Statistical Anomaly.....	25
Capitalizing on Rare Events	53
Predicting Corrections	54
Brief Time Frames	57
Summary	58
Further Reading	59
Endnotes	60
<i>Chapter 2 The Basics</i>	63
Spreadsheet Versus Database.....	63
Managing Date Formats	65
Aligning Records by Date	69
Decimal Date Conversion	91
Volatility Calculations	94
Descriptive Ratios	108
Creating Summary Tables	116
Discovering Statistical Correlations.....	128
Creating Trendlines	147

Summary	149
Further Reading	151
Endnotes	152
<i>Chapter 3 Advanced Topics</i>	153
Introduction	153
Time Frames	155
Building and Testing a Model	158
Sample Results	178
<i>Index</i>	187

Acknowledgments

I would like to thank the team that helped pull the book together. First must be Jim Boyd, who encouraged me to continue the project and always seems willing to explore new areas and concepts. This book would never have made it to print without advice and direction from Jim. Once again it was my pleasure to work with Betsy Harris, who always does a terrific job turning a rough manuscript into a polished, production-quality book. In that regard, I must also thank Cheri Clark, who carefully read every word and made corrections that put the finishing touch on the work. Finally, I'd like to acknowledge the important contributions of a friend—Robert Birnbaum. Over the past several months, Robert has helped shape my thinking about the statistical relevance of trends—ideas which surfaced in some of the key examples and continue to weigh heavily in my own investing.

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About the Author

Jeff Augen, currently a private investor and writer, has spent more than a decade building a unique intellectual property portfolio of databases, algorithms, and associated software for technical analysis of derivatives prices. His work, which includes more than a million lines of computer code, is particularly focused on the identification of subtle anomalies and price distortions.

Augen has a 25-year history in information technology. As cofounding executive of IBM's Life Sciences Computing business, he defined a growth strategy that resulted in \$1.2 billion of new revenue and managed a large portfolio of venture capital investments. From 2002 to 2005, Augen was President and CEO of TurboWorx Inc., a technical computing software company founded by the chairman of the Department of Computer Science at Yale University. His books include *Trading Realities*, *Day Trading Options*, *Trading Options at Expiration*, *The Option Trader's Workbook*, and *The Volatility Edge in Options Trading*. He currently teaches option trading classes at the New York Institute of Finance and writes a weekly column for *Stocks, Futures and Options* magazine.

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Preface

In August 2010, Cisco stock (ticker: CSCO) hovered just a few cents below \$25. Several analysts identified the stock as a strong buy. They pointed to the rising demand for network infrastructure that, among other things, was being driven by explosive growth in online video gaming and Internet television. Cisco, they believed, would continue to dominate the consumer market while benefiting from a weak dollar and low manufacturing costs. They must have been wrong because the stock fell 15% when earnings were released on August 11. The price continued to decline until August 31, when it bottomed out at \$19—24% below its previous high. About the time that everyone had given up and turned bearish, the stock began to rally. On November 10 the price was, once again, back up to \$24.50. Then came another earnings report and another sharp decline. The price immediately fell 16% and continued plunging until, on December 3, it once again bottomed out at \$19. These bizarre dynamics played out a third time, with the stock rallying steadily to \$22 on February 9, 2011, before falling back to \$18.92 the very

next day after earnings were released—another 14% decline. Figure P.1 displays Cisco closing prices from June 1, 2010, to February 11, 2011.



FIGURE P.1 *CSCO closing prices June 1, 2010 to February 11, 2011.*

Wild unpredictability doesn't seem to discourage speculators because the trading volume for Cisco remains shockingly high. Moreover, the number of investors who bet on the direction of the stock seems to peak just before and after earnings—the most dangerous times of all. For example, the trading volume climbed above 125 million shares on February 9, 2011 (before earnings), and skyrocketed to 560 million shares the next day after the numbers were released. Each of the previously outlined events was accompanied by a similar pattern of extremely high volume the day before earnings were announced and even higher volume the day after.

Who would trade this completely unpredictable stock? Why does the volume soar at the most dangerous times when anything seems possible? More importantly, why do analysts believe that they know enough to make predictions? The answers are simple. Analysts can make all the predictions they want because it's not their money that ends up being lost, and speculators always believe they can find a bargain. As a group, investors tend to be arrogant. They typically believe that they have unique insights and that these insights give them an advantage over the market. One of the most common mistakes is relying on traditional off-the-shelf technical indicators that often prove to be even less reliable than fundamental analysis. The Cisco story represents one of the best examples of the problem.

Various technical indicators signaled that the stock would continue to rally just before each of the sharp declines displayed in Figure P.1. They were clearly wrong. Moreover, technical indicators cannot be valid if the underlying trend being analyzed is statistically insignificant. Yet technical analysts routinely talk about moving-average crosses, momentum, or relative strength, without any reference to the statistical strength of the underlying trend being studied. We can compile the relevant statistics for any stock in just a few seconds by loading the information into a spreadsheet and applying Excel's *r*-squared function. Not surprisingly, the test reveals that most trends appearing on stock charts have very low statistical significance. For Cisco, a relatively weak *r*-squared value of 0.7 is achieved less than 30% of the time using a 10-day sliding window. Highly significant trends with *r*-squared values above 0.9 occur with a frequency less than 5%. Table P.1 displays *r*-squared data for 2 years of Cisco stock.

TABLE P.1 *Compiled r-squared values for Cisco stock February 2009 to February 2011. Calculations span a 10-day sliding window.*

	rsq>.9	rsq>.8	rsq>.7	rsq>.6	rsq>.5
Days	24	96	146	189	238
Percent	4.8%	19.4%	29.5%	38.2%	48.1%

The table is divided into columns that reveal the number and percentage of days appearing in trends with minimum r-squared values listed in the column headings. In some sense the data represents a dose of reality. It is common, for example, to hear a technical analyst turn bullish because the 50-day moving average has crossed above the 200-day moving average. However, it is unlikely that you will ever hear the same analyst report the r-squared value of the current trendline. Fortunately, however, most good trading platforms have an r-squared function that can display on a chart, and the data can be exported to a spreadsheet where more detailed analysis can be used to study different length windows and combinations of indicators. This kind of analysis can be used to validate, invalidate, or tune combinations of indicators and give investors an edge against the market. In today's complex computer-driven markets, this kind of analysis can make the difference between winning and losing.

Modern trading platforms always include sophisticated tools for back-testing indicators and strategies. But before a strategy can be tested, it must first be developed, and that development is best accomplished on a foundation of statistical analysis. Spreadsheets and databases are the perfect platform for that kind of technical work. In most cases the process involves a sequence of basic questions designed to reveal the statistical behavior of a stock following a specific set of conditions. There is virtually no limit to the size, number, or

complexity of the experiments that can be performed to search for unique correlations that are not generally known to the market.

This book is designed to help technically minded private investors learn to run just a little faster than the market. A few years ago the discussion would have been too complex to be generally useful because it would have been focused on data mining strategies in large databases. That has all changed. Most of the complex statistical analysis and model building that a few years ago could only be accomplished at the institutional level is now within the reach of any investor with a trading platform and a copy of Microsoft Excel. This book is built on that theme. It is designed to help investors learn to translate complex questions into simple spreadsheet models. The discussions span a range from simple conditionals and logical expressions to relatively complex VBA programs that generate statistical summary tables. My goal was to include content that can add value to the efforts of a wide range of investors and to challenge everyone to improve their analytical capabilities.

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I N D E X

A

- AAPL (Apple Computer), 128-129
- ABS function, 109
- Access, 16
- actual volatility of S&P 500 index, 53-54
- aligning records by date
 - AlignMultipleTickers() function, 85-89
 - AlignRecords() functions, 76-77
 - AlignRecordsComplete() function, 80-82
 - correctly aligned records for two tickers, 74-76
 - flagged date alignments, 71-72
 - handling ascending and descending dates, 80-83
 - record consistency verification with date checksum, 69-70
 - RemoveSpaces() function, 78-79
 - removing unmatched records after date alignment, 78
- AlignMultipleTickers() function, 85-89
- AlignRecords() function, 76-77
- AlignRecordsComplete() function, 80-82
- Amazon.com price change model
 - column descriptions for sample experiment, 163-166
 - conditional and logical expressions to evaluate successive price changes, 158-163
 - downward trend-reversal results for two years of daily price changes, 178-182
 - experimental trend-following results for two years of daily price changes, 173-174
 - minute-level time frame analysis, 156
 - processing trend statistics, 174-177
 - r-squared calculation and associated data columns, 166-168
 - r-squared (RSQ) function, 163
 - sequential price-change tests, 169-171
 - summary data for failed reversal days following downward spikes larger than 1.1%, 185-186

- summary data for reversal days
 - following downward spikes
 - larger than 1.1%, 183-184
 - tabulation of final results, 172
 - TrendStat() function, 174-177
- Anadarko Petroleum, 145
- AND function, 110, 171
- Apple Computer (AAPL), 128-129, 147-148
 - implied volatility, 57
 - price spikes, 46-49

B

- back-testing strategies, 154
- Black-Scholes values, 68
- Boeing, 141
- brief time frames, 57-58
- building models. *See* Amazon.com
 - price change model

C

- calendar effects
 - at broad market level, 17-20
 - explained, 9
 - at individual security level, 12-15
 - Oil Services HOLDRs exchange
 - traded fund (OIH)
 - example, 14
 - TOM (turn-of-month) effect, 10
- candlestick patterns
 - consecutive pairs of spinning top
 - candles, 112-113
 - descriptive ratios, 109-115
 - explained, 108-109
- capacity of spreadsheets, 64-65
- CBOE Futures Exchange (CFE), 53
- CBOE S&P 500 Three-Month
 - Variance Futures, 53
- CBOE Volatility Index (VIX), 35, 44
 - VIX/true ratio, 54-56

- CFE (CBOE Futures Exchange), 53
- Cisco (CSCO) case study, 1-4
- CME Group, 145
- ColumnLetter function, 88
- ColumnNumber function, 88
- consecutive pairs of spinning top
 - candles, 112-113
- consistency of records, verifying, 69-70
- context discovery, 51
- converting dates to decimal dates, 91-94
- corrections
 - predicting, 54-56
 - sharp market corrections, 53
- correlations, discovering, 128
 - MAX function, 132
 - MIN function, 132
 - PEARSON function, 130-131
 - Pearson product-moment
 - correlation coefficient, 131-136
 - compared to r-squared, 163
 - formula, 129-130
 - Pearson correlation matrix
 - for first-pass hierarchy, 136
 - Pearson correlation matrix
 - for 10 tickers, 135-136
 - Pearson correlation matrix
 - for 6 tickers, 131
 - PEARSON function, 130
 - Pearson r calculation for 6
 - tickers spanning 10 days, 131
- price-change responses of 16
 - stocks/ETFs to two sets of market conditions during 2008 banking collapse, 143-146

price-change responses of 17
 stocks/ETFs to two sets of
 market conditions, 139-142
 scatterplot for two closely
 related stocks, 128-129
 Countrywide Financial Corp., 137
 CSCO (Cisco) case study, 1-4

D

data mining experiments,
 discovering price-change
 relationships with, 21-24
 databases versus spreadsheets,
 63-65
 DataRow variable, 126-127
 DATE function, 66
 dates
 aligning records by
 AlignMultipleTickers()
 function, 85-89
 AlignRecords() function,
 76-77
 AlignRecordsComplete()
 function, 80-82
 correctly aligned records for
 two tickers, 74-76
 date alignments flagged
 through indirection, 72
 date alignments flagged with
 IF, 71-72
 handling ascending and
 descending dates, 80-83
 record consistency
 verification with date
 checksum, 69-70
 RemoveSpaces() function,
 78-79
 removing unmatched records
 after date alignment, 78

converting to decimal dates,
 91-94
 date alignments, flagging
 through indirection, 72
 with IF function, 71-72
 date formats, 65-69
 converting text to, 66-67
 default starting dates, 67
 recognition of, 65
 two- versus four-digit
 formats, 68
 functions
 DATE, 66
 DATEVALUE, 66
 YEARFRAC, 91, 94

DATEVALUE function, 66
 decimal date conversion, 91-94
 default starting dates, 67
 descriptive ratios, 108-115
 direction-neutral volatility
 distortions, 12-15
 dollar sign (\$), 161
 DuPont Co., 137

E

efficiency, 11
 Efficient Market Hypothesis
 (EMH), 11
 EIA (Energy Information
 Agency) Petroleum Status
 Report, 14
 Eli Lilly, 140
 EMH (Efficient Market
 Hypothesis), 11
 Energy Information Agency
 (EIA) Petroleum Status
 Report, 14
 ESRX (Express Scripts), 27
 evaluating successive price changes.
See Amazon.com price
 change model

event extraction, 50
 event-based clustering, 146
 Excel spreadsheets.
 See spreadsheets
 expiration-day behavior, 25-33
 Express Scripts (ESRX), 26
 extracting events, 50

F

Fama, Eugene, 11
 flagging date alignments
 through indirection, 72
 with IF function, 71-72
 functions. *See also* methods
 ABS, 109
 AlignMultipleTickers, 85-89
 AlignRecords, 76-77
 AlignRecordsComplete, 80-82
 AND, 110, 171
 ColumnLetter, 88
 ColumnNumber, 88
 DATE, 66
 DATEVALUE, 66
 IF, 71-72, 171
 IFERROR, 168
 INDIRECT, 72-74
 LEFT, 66
 MAX, 132
 MID, 66
 MIN, 132
 PEARSON, 130-131
 RemoveSpaces, 78-79
 RIGHT, 66
 RSQ, 163
 spikes, 119-121
 TrendStat, 174-177
 YEARFRAC, 91, 94

G

General format, 65
 German Central Bank, 9
 GLD (SPDR Gold Trust)
 price-change
 relationships, 21-24
 Google, 140

H

high-low prices changes
 changes greater than 5% for
 S&P 500 index (1987),
 39-41
 changes greater than 5% for
 S&P 500 index (January
 1990-November 2007),
 35-37
 changes greater than 8% for
 S&P 500 index (January
 1990-December 2010),
 37-39
 S&P 500 historical volatility
 (1929), 43-45
 S&P 500 historical volatility
 (1987), 41-42
 historical volatility, calculating,
 96-98

I

IBM, purchase of Lotus
 Development
 Corporation, 8
 IF function, 71-72, 171
 IFERROR function, 168
 implied volatility of S&P options,
 53-54
 Import Wizard, 65
 INDIRECT function, 72-74
 indirection, pointing to records
 with, 72

insider trading, 8-9
 intraday volatility, calculating,
 100-102

IterationIndex variable, 121

J-K-L

LEFT function, 66

Lotus Development Corporation,
 purchase by IBM, 8

M

managing date formats, 65-69
 converting text to dates, 66-67
 default starting dates, 67
 two- versus four-digit
 formats, 68

Marathon Oil, 140

market fingerprint, tracking, 13

market inefficiencies, discovering
 database/spreadsheet approach,
 12-20

graphical approaches, 20-24

MAX function, 132

methods. *See also* functions

 Range.Delete, 79

 Range.Insert, 84

 SpecialCells, 79

Microsoft Access, 16

MID function, 66

MIN function, 132

minute-level time frame analysis,
 156-157

models. *See* Amazon.com price
 change model

multiple tickers

 calculating volatility across,
 98-100

 record alignment program for,
 85-89

N-O

numbers. *See* dates

objects, WorksheetFunction, 117

Oil Services HOLDRS exchange
 traded fund (OIH) price
 changes, 12-15

option prices, calculating, 67

P

patterns, candlestick

 consecutive pairs of spinning top
 candles, 112-113

 descriptive ratios, 109-115

 explained, 108-109

PEARSON function, 130-131

Pearson product-moment
 correlation coefficient,
 131-136

 compared to r-squared, 163

 formula, 129-130

 Pearson correlation matrix for
 10 tickers, 135-136

 Pearson correlation matrix for 6
 tickers, 131

 Pearson correlation matrix for
 first-pass hierarchy, 136

 PEARSON function, 130

 Pearson r calculation for 6
 tickers spanning 10
 days, 131

Petroleum Status Report, 14

Philadelphia Gold/Silver Index
 (XAU) price-change
 relationships, 21-24

pinning effect, 25-33

pointers, SummaryRow, 123

polynomial trendlines, 149

predicting corrections, 54-56

price

- Amazon.com price change
 - model, 158
- column descriptions for
 - sample experiment, 163-166
- conditional and logical
 - expressions to evaluate successive price changes, 158-161, 163
- downward trend-reversal
 - results for two years of daily price changes, 178-182
- experimental trend-following
 - results for two years of daily price changes, 173-174
- processing trend statistics, 174-177
- r-squared (RSQ)
 - function, 163
- r-squared calculation and
 - associated data columns, 166-168
- sequential price-change tests, 169-171
- summary data for failed
 - reversal days following downward spikes larger than 1.1%, 185-186
- summary data for reversal
 - days following downward spikes larger than 1.1%, 183-184
- tabulation of final
 - results, 172
- TrendStat() function, 174-177
- Cisco (CSCO) case study, 1-4
- expiration-day behavior, 25-33
- high-low prices changes
 - changes greater than 5% for S&P 500 index (1987), 39-41
 - changes greater than 5% for S&P 500 index (January 1990-November 2007), 35-37
 - changes greater than 8% for S&P 500 index (January 1990-December 2010), 37-39
 - S&P 500 historical volatility (1929), 46-49
 - S&P 500 historical volatility (1987), 41-42
- option prices, calculating, 67
- price distortions, 17
- price spikes, 48-49
 - Excel VBA price-spike-summary program, 119-123
- price spike calculations, 46-49, 102-108, 123-128
 - summary table format, 117
- price-change relationships,
 - discovering
 - database/spreadsheet approach, 12-20
 - graphical approaches, 20-24
- responses to market conditions
 - price-change responses of 16 stocks/ETFs to two sets of market conditions during 2008 banking collapse, 143-146

price-change responses of 17
 stocks/ETFs to two sets
 of market conditions,
 139-142

time series correlation, 51-52

Q-R

queries (SQL), 32

r-squared (RSQ) function, 3-4, 163

Range.Delete method, 79

Range.Insert method, 84

RangeString variable, 83

ratios, descriptive ratios, 108-115

records, aligning by date

AlignMultipleTickers() function,
 85-89

AlignRecords() function, 76-77

AlignRecordsComplete()
 function, 80-82

correctly aligned records for two
 tickers, 74-76

flagged date alignments, 71-72

handling ascending and descend-
 ing dates, 80-83

record consistency verification
 with date checksum, 69-70

RemoveSpaces() function, 78-79

removing unmatched records
 after date alignment, 78

RemoveSpaces() function, 78-79

removing unmatched records after
 date alignment, 78

Research in Motion (RIMM),
 128-129, 144

RIGHT function, 66

RIMM (Research in Motion),
 128-129, 144

RSQ function, 163

S

scatterplot for two closely related
 stocks, 128-129

semi-strong efficiency, 11

sequential price-change tests,
 169-171

sharp market corrections, 53

SPDR Gold Trust (GLD)

price-change

relationships, 21-24

SpecialCells method, 79

spikes() function, 119-121

spreadsheets

Amazon.com price change model

column descriptions for
 sample experiment,
 163-166

conditional and logical
 expressions to evaluate
 successive price changes,
 158-163

downward trend-reversal
 results for two years
 of daily price changes,
 178-182

experimental trend-following
 results for two years
 of daily price changes,
 173-174

processing trend statistics,
 174-177

r-squared (RSQ)
 function, 163

r-squared calculation and
 associated data columns,
 166-168

sequential price-change tests,
 169-171

- summary data for failed reversal days following downward spikes larger than 1.1%, 185-186
- summary data for reversal days following downward spikes larger than 1.1%, 183-184
- tabulation of final results, 172
- TrendStat() function, 174-177
- capacity of, 64-65
- compared to databases, 63-65
- dates
 - aligning records by, 69-91
 - converting to decimal dates, 91-94
 - date formats, 65-69
- descriptive ratios, 108-115
- power of, 153-155
- statistical correlations,
 - discovering, 128
 - MAX function, 132
 - MIN function, 132
 - PEARSON function, 130-131
 - Pearson product-moment correlation coefficient, 129-136, 163
- price-change responses of 17 stocks/ETFs to two sets of market conditions, 139-142
- scatterplot for two closely related stocks, 128-129
- summary tables, creating, 116
 - Excel VBA price-spike-summary program, 119-123
 - price spike calculations, 123-128
 - summary table format: price spikes organized by ticker, 117
- time frame analysis, 155-157
- trendlines, creating, 147-149
- volatility calculations, 94-96
 - across multiple tickers, 98-100
 - historical volatility, 96-98
 - intraday volatility, 100-102
 - price spike calculations, 102-108
- SQL queries, 32
- standard deviations, comparing price changes in, 141-146
- statistical correlations,
 - discovering, 128
 - MAX function, 132
 - MIN function, 132
 - PEARSON function, 130-131
 - Pearson product-moment correlation coefficient, 131-136
 - compared to r-squared, 163
 - formula, 129-130
 - Pearson correlation matrix for 10 tickers, 135-136
 - Pearson correlation matrix for 6 tickers, 131
 - PEARSON function, 130
- price-change responses of 17 stocks/ETFs to two sets of market conditions, 139-142
- scatterplot for two closely related stocks, 128-129
- StdDevRange variable, 125
- strong-form efficiency, 11
- successive price changes,
 - evaluating, 160-163

successive price changes,
 evaluating. *See*
 Amazon.com price
 change model
 summary tables, creating, 116,
 123-128
 Excel VBA price-spike-summary
 program, 119-123
 summary table format: price
 spikes organized by
 ticker, 117
 SummaryRow pointer, 123

T

tables (summary), creating, 116
 Excel VBA price-spike-summary
 program, 119-123
 price spike calculations, 123-128
 summary table format: price
 spikes organized by
 ticker, 117
 text, converting to dates, 66-67
 time
 brief time frames, 57-58
 time frame analysis, 155-157
 time series correlation, 51-52
 TOM (turn-of-month) effect, 10
 tracking market fingerprint, 13
 trendlines, creating, 147-149
 TrendStat() function, 174-177
 turn-of-month (TOM) effect, 10

U-V

United Health Group, 141
 United Parcel Service, 140
 unmatched records, removing after
 date alignment, 78
 variables
 DataRow, 126-127
 IterationIndex, 121

RangeString, 83
 StdDevRange, 125
 WindowLength, 125
 verifying record consistency, 69-70
 VIX (CBOE Volatility Index),
 35, 44
 VIX/true ratio, 54-56
 volatility, 94-96
 actual volatility of S&P 500
 index, 53-54
 calculating across multiple
 tickers, 98-100
 CBOE Volatility Index (VIX),
 35, 44
 historical volatility
 calculating, 96-98
 S&P 500 historical volatility
 (1929), 43-45
 S&P 500 historical volatility
 (1987), 41-42
 implied volatility of S&P
 options, 53-54
 intraday volatility, 100, 102
 price spike calculations, 102-108
 VIX/true ratio, 54-56

W-X-Y-Z

Wal-Mart, 140, 144
 weak-form efficiency, 11
 Welteke, Ernst, 9
 WindowLength variable, 125
 wizards, Import Wizard, 65
 WorksheetFunction object, 117
 XAU (Philadelphia Gold/Silver
 Index) price-change
 relationships, 21-24
 YEARFRAC function, 91, 94