

## Index

- Active management, 261–262, 263, 264  
Active return, 254–255  
Adjusted beta, 114, 115  
AIG, 211, 223  
Alpha, 18, 48, 175–177, 309  
*Analysis* (Graham and Dodd), 352  
Animal spirits, 139, 141  
Annuitization, 281, 290  
Annuity payments, 276, 281  
Appraisal biases, 188  
“Approximating Expected Utility by a Function of Mean and Variance” (Levy and Markowitz), 353  
Arbitrage Pricing Theory (APT), 118–119  
*Are You a Stock or a Bond?* (Milevsky), 307  
Argentina, 118, 123  
Arnott, Robert, 2, 35, 36, 39–49  
Arnott’s weighting method, 2  
Arya, Sanjay, 3, 31, 32  
Asia, 125, 200  
Asian stock markets, 203  
Asset allocation, 249–251, 265, 268  
Asset allocation models, 267–274  
Asset allocation policy, 253–265  
  data, 256  
  difference among, 260–262  
  framework, 254–256  
  return level, 254, 263–264  
  variability across time, 257–260  
  variation among funds, 260–263  
  conclusion, 265  
Asset class returns, 299  
Asset classes, 306  
Asset mixes and annuitization equity allocation, 293  
Asset returns, 236  
Autocorrelations, 103, 105  
Available-dividend model, 68  
Available-dividend weighting, 66–67  
  
Bachelier, Louis, 246, 247, 353  
Backwardation, 166, 168, 172–173  
Bad monetary economics, 135, 136  
Ball, Ben, 356  
Bangladesh, 118  
Bank of America, 211, 223  
Bank of England, 223  
  
Bank size, 206  
Barry, Christopher B., 180  
Bayesian influence, 357, 358, 361  
Behavioral finance, 46  
Bernanke, Ben, 241  
Beta, 103. *See also* Systematic risk  
  as annual data, 115  
  coefficient, 104  
  estimation, 105  
  excess returns and, 107, 110  
  future returns and, 111  
Betas for small stocks  
  about, 103–104  
  beta and the size effect, 112–114  
  beta as predictor of returns, 109–111  
  firm size and beta estimation, 104–108  
  conclusion, 114  
Biases, 154  
  appraisal biases, 188  
  selection bias, 180, 182  
  value bias, 28–30, 59  
Bid-ask spread, 104  
Black swans, 348  
Black turkeys, 348  
Black-Scholes Option Pricing Model, 216, 226, 242  
Brinson, Gary P., 249, 263  
Brinson et al. studies, 253–254, 257, 258, 259–260, 263, 265  
Broad-market indexes, 69  
Brownian motion, 242, 243, 247  
Bubbles, 44, 200, 303  
  
Calomiris, Charles W., 204  
Cap weighting, 51  
Capital Asset Pricing Model (CAPM), 15–16, 81, 108, 109, 118, 128, 149, 216, 226  
Capital market history and theory, 212  
Capitalization-weighted index, 21  
Cap-weighted portfolio, 45  
Center for Research in Security Prices (CRSP), 105, 106  
Central Limit Theory, 313, 323  
Centroids, 91–92, 99  
Chan, K.C., 111  
Chen, N.F., 118–119  
Chen, Peng, 281, 299

- Chile, 125, 127  
China, 122, 246  
Clairvoyant value, 42  
Clare, A.D., 125  
Cloud computing, 315  
Cochrane, John H., 180, 182, 189  
Coherent DIST libraries, 317  
Collar strategy, 48  
Collared weighting, 3  
  about, 51–52  
  data, 52–53  
  fundamental measures of company size, 61  
  impact of, 53–54  
  mathematics of, 59–60  
  methodology, 52  
  performance, 54–57  
  turnover and impact costs, 57–59  
  conclusion, 59  
Commodity beta, 158  
Commodity futures, 158  
Commodity indexes  
  about, 157–158  
  commodity beta, 158–159  
  comparison of, 169–171  
  construction rules and, 169  
  excess returns source, 160  
  futures market, 161–164  
  index differences, 159–160  
  long-only, 157, 171–172  
  spot commodity markets, 160–161  
  storage market, 164–165  
  storage market and futures price curve,  
    165–167  
  strategy improvement, 167–168  
  term structure and linking factor, 116–159  
Company size vs. market capitalization, 35  
Conditional value at risk (CVaR), 191,  
  330–331, 339–340  
Confidence regions, 100  
Constant inflation model, 228, 297  
Contango, 164, 166, 168, 172–173, 172  
Contemporaneous independent regressors, 122  
Controlled monetization, 245  
Convenience yield, 164  
Cooley, Phillip, 279, 299  
Cooper, Ian A., 180, 191, 240–241, 243–246  
Core/explore framework, 306  
Corner portfolios, 270, 272  
Correlation matrixes, 316  
Correlation of returns, 268  
Correlation with stock market, 186–187  
Cost of capital value, 118  
Covariance matrix, 327  
Crashes, 303  
  Crash of 1929, 195, 213  
  Crash of 2008, 326  
Crisis and risk models, 239–248  
Critical line algorithm, 267  
Cross-autocorrelations, 103, 104, 114–115  
Cross-sectional regression approach, 109  
Cumulative density function (CDF), 232, 338  
Current account, 123  
Dantzig, George, 356  
De Finetti, Bruno, 352, 353, 361  
Deficit spending, 206  
Deficit-financed spending, 145  
Derivatives market, 208  
Discontinuities, 241  
Disequilibrium, 206  
Distribution String (DIST), 250, 314–315, 317,  
  318, 332, 333, 359  
Diversification, 271, 304  
Dividend indexes  
  about, 63  
  application, 65  
  approach, 65–66  
  available-dividend philosophy, 66–67  
  fundamentals, 64–65  
  scalability, 67  
  tool selection, 68–69  
  turnover, 67–68  
  conclusion, 69  
Dividend-based indexes, 65  
Dow Jones UBS Commodity Index, 159–160  
Dow Jones Wilshire 5000 index, 158  
Downside risk measures, 338–339  
Drawdowns, 200  
Easing, 135–136, 138  
Economic crises, 211–222  
  about, 211–215  
  log-stable distribution, 216–219  
  log-stable distributions, 216–219  
  risk measurement methods, 216  
  risk measurement model, 216  
  risk measurement vs. risk models, 220  
  risk measures vs. risk models, 220  
  conclusion, 220–221  
Economic policy, 143–146  
Efficient frontier, 151, 154, 187, 249, 267, 268,  
  284, 332, 343  
Efficient market hypothesis, 21  
Efficient market theory, 244  
Efficient portfolios, 271  
EHV models, 127  
Elton, Edwin J., 94  
Equities  
  equity styles as asset classes, 1–2  
  estimation issues, 3–4  
  fundamental indexation, flaws of, 2–3  
  publicly traded, 187  
Equity risk premium, 247  
Equity risk premium model, 117–128  
  about, 117–118  
  cost of capital, 123–127  
  data, 119–122  
  methodology, 118–119

- regression results, 122–123
  - conclusion, 128
- Equity risk premium puzzle, 246, 247
- Equity style indexes, 2
- Erb, C., 117, 119, 128, 166
- Europe
  - Morningstar European style indexes, 18–20
  - style indexes, 20
  - style investing in Europe, 16–18
  - U.S. equity indexes, 15–16
- Ex ante* pricing, 42
- Excessive lending, 206
- Exchange traded funds (ETFs), 36
- Expansionary monetary policy, 140
- Expectational backwardation, 172–173
- Expectational contango, 172–173
- Expected rate of inflation, 145
- Expected shortfall, 191
  
- Fair price multiple, 45
- Fair value multiples, 22, 24
- Fair value weighting, 41, 45
- Falk, Michael, 250, 303–309
- Fama, Eugene, 73, 83, 100, 109, 111, 117, 216–217, 220, 227, 241, 356
- Fama-French model, 82, 96, 99
- Fama-MacBeth approach, 109, 112, 114
- Fat-tail models, 316
- Fat-tailed distributions, 196, 217, 222, 227, 236, 241, 250, 323, 327, 333
- Fat-tailed models, 228
- Fed Funds Rate, 240
- Federal Reserve, 134, 137, 138
- Financial crises, 211
- Financial crises, worldwide, 223–236
  - about, 223–225
  - log-stable distributions, 226–227
  - risk measures, 227–228
  - standard risk model, 225–226
  - conclusion, 228–229
- Financial crisis of 2008, 195
- Financial stability hypothesis, 243
- Financial system failures, 240
- Finnegan, J., 166
- Fiscal policy, 240
- Fiscal stimulus, 206
- Fisher, Irving, 138, 206
- Fisher effect, 138, 140
- Flight to quality, 208
- Float-adjusted market cap, 68
- Forecast long-term geometric mean, 330
- Foreign market excess returns, 121
- The Foundations of Statistics* (Savage), 353, 356
- Fox, Steven, 250, 304–309
- France, 125
- French, Kenneth, 73, 83, 100, 117
- Frequentist approach to probability, 361
- Friedman, Milton, 138, 140, 145
- Fundamental Index approach, 40, 41, 42, 44, 48
  
- Fundamental indexation, 35
  - about, 21–23
  - independence assumption, 23–26
  - optimal combination of fundamental and market values, 33–35
  - potential, 26–28
  - value bias, 28–30
  - weighting method, 30–32
  - conclusion, 32–33
- Fundamental indexation approach, 46, 47
- Fundamental weighting, 28, 29
- Fundamentally weighted indexes debate, 39–49
- Funds
  - asset allocation policy variation among, 260–263
  - benchmark, 259
  - exchange traded funds (ETFs), 36
  - index funds, 64
  - International Monetary Fund (IMF), 121
  - mutual fund activity, 258
  - Needham Growth Fund, 89
  - PIMCO StocksPlus Fund, 88
  - U.S. equity fund categories, 90
  - variation in returns among, 260
  - venture capital funds, 186–187
  
- Gailbreath, John Kenneth, 44
- Game theory, 269
- Gaussian distribution, 243, 358
- GDP growth rate, 118
- GDP rates of change, 123
- GDP weighting, 44
- GDP-weighted index, 43
- Geometric difference, 11
- Geometric mean, 153
- Gerald, Curtis F., 60
- Germany, 125
- Gilts
  - vs. cash, 145
  - yields, 143
- Global financial crisis, 240
- Goetzmann, William N., 264
- Gompers, Paul, 180
- Goodness-of-fit, 96
- Government's role, 207
- Graham, Benjamin, 352
- Gray swans, 242, 247
- Great Depression, 138, 201
- Great Stagflation, 140
- Greenspan, Alan, 193, 199, 212, 223, 241
- Growth
  - cause of, 140
  - inflation rate and, 136
  
- Hardy, Stephen R., 81
- Harlow, W.V., 101, 338
- Harvey, C., 117, 119, 128, 166
- Hayek, Friedrich A., 140, 207
- Hazlitt, Henry, 135

- Hedging pressure, 163  
Hedging pressure hypothesis, 172  
Hedging strategies, 307  
Hendry, D.F., 122  
Hensel, Chris R., 259  
Hill, I.D., 365  
Historic returns, fat-tailed nature of, 196  
Historical stock market data, 194  
Holdings-based style models, 71–101  
Housing bubble, 207–208  
Hsu, Jason, 2, 23, 24, 25, 26, 35, 36  
Hudson, R.L., 239, 246  
Human capital asset, 307–308
- Ibbotson, Roger, 191, 194, 240, 242–247, 264, 299, 312, 313  
Ibbotson Associates, 105, 149, 332  
Ibbotson S&P Yearbooks, 194  
Ibbotson-Sinquefeld simulation model, 312  
Idzorek, Thomas M., 330, 365, 365  
Implied volatility, 242  
Independence assumption, 22  
Index funds, 64  
Index providers, 15  
Inflation, 134  
    cause of, 140  
    causes of, 144–145  
    gilt yields and economic policy, 143–146  
    modeling, 287–288  
    predictions of, 139  
    serial correlation of, 296  
    sovereign debt and, 245  
    vs. unemployment, 146  
Inflation rate(s), 131, 136, 144, 146, 298  
Intended effects vs. actual effects, 137  
Interactive simulation, 314  
Interactive simulation technology, 332  
Interest rates, 134  
Internal rate of return (IRR), 181  
International Monetary Fund (IMF), 121  
Internet bubble, 213  
Inventory of commodities, 160–161  
*Investment Companies and Their Portfolios* (Wiesenberger), 352  
Investment strategy ranking, 347  
Investment style, 71  
Investment Trusts Equity Index, 153  
Ireland, 123  
Irrational exuberance, 199, 200  
Isogeometric mean curve, 149–152
- Jahnke, William W., 249, 265  
Japan, 43, 122, 200, 224  
Japanese bubble, 44  
Japanese market, 215, 224  
Jarrett, Jaye, 279, 299  
Johnson distribution, 365  
Joint-and-survivor annuity, 295  
*Journal of Investment Management*, 352
- Kahneman, Daniel K., 305  
Kaplan, Paul D., 2, 31, 32, 39–48, 55, 125, 200, 241–242, 244–247, 303–309, 323, 330, 346, 351–353, 355–357, 359–360, 362–364  
Kat, H.M., 157–158  
Kelly Criterion, 347  
Keynes, John Maynard, 141, 146, 162, 163, 206  
Knowles, James A., 346  
Kolb, R., 162, 163, 164, 172–173, 172  
Kothari, S.P., 115  
Krokhmal, Pavlo, 340
- Lakonishok, Josef, 21, 111  
Large-cap stock indexes, 10  
Latin American countries, 125  
Law of unintended consequences, 137  
Legg Mason Value, 101  
Lehman Brothers, 211, 223  
Levy, Haim, 335, 344, 353, 354, 355  
Levy-Markowitz approximation, 335–336  
Lewis et al. model, 313  
Life expectancy, 284  
Likelihood function, 185  
Lindley, Dennis, 361  
Linking factor, 168  
Liquidated data, 188  
Liquidity trap, 146, 208  
Lo, Andrew W., 103  
Local averaging, 243  
Lognormal distribution, 189  
Lognormal model vs. log-stable model, 220  
Log-stable analysis, 229–236  
    multiperiod distribution, 231–233  
    probability density function, 230–231  
    value at risk and expected shortfall, 234–236  
Log-stable distribution, 217  
Log-stable model, 219, 220  
Long Boom, 202  
Longevity risk, 275, 290  
Long-only commodity indexes, 167, 169, 171  
Long-term asset allocation policy, 249  
Long-term forward-looking geometric mean, 327  
Long-term memory, 241  
Loss-aversion, 305  
Lower partial moment (LPM), 338–340  
Lump-sum investment approach, 183
- Macroconsistent portfolio, 61  
Macroeconomic models. *See* Equity risk premium model  
Macroeconomic variables form, 119  
Malaysia, 127  
Mandelbrot, Benoît, 191, 216–217, 220, 227, 239, 241–243, 246–247, 247, 356, 358  
Mandelbrot model, 217  
Mansueto, Joe, 356  
Market capitalization vs. company size, 35

- Market distribution, 305  
Market meltdowns, 193–196  
Market peak-to trough declines, 214–215  
Market-cap weighting, 28, 32, 64  
Market-value weighting, 32  
Markowitz, Harry, 36, 46, 249, 267–268, 269, 270, 305, 306, 325, 326, 335, 338, 344, 347, 351–364  
Markowitz 2.0, 250, 325–348, 361  
certainty equivalents, 336–337  
conditional value at risk (CVaR), 339–341  
density functions, 337–338  
downside risk, 338–339  
efficient frontier generation, 342–344  
expected utility, 335–336  
expected utility theory, 344–346  
“flaw” of averages, 326  
geometric mean, 330, 337  
improvements of, 326–327  
new efficient frontier, 332–333  
reward-risk ratios, 346–347  
risk, 330–331  
scenario approach, 327–330  
scenarios vs. correlation, 331  
smoothed multivariate discrete distribution (SMDD), 333–335  
supersonic model, 325–326  
technical details of, 333–347  
value at risk (VaR), 339–340  
Markowitz approach in asset allocation models  
about, 267–268  
mean-variance analysis assumptions, 269  
mean-variance analysis illustration, 269–271  
objective function, 271–273  
caveats and conclusion, 271–273  
Markowitz model, 273. *See also* Modern Portfolio Theory (MPT)  
*Markowitzitron*, 361  
Martin, John D., 180  
Maximal return, 10–11  
Maximum-likelihood procedure, 184, 185  
McCabe, Bernard J., 280, 299  
Mean reversion tendency, 43, 168  
Mean-variance analysis, 268  
Mean-variance efficient frontier, 151  
Mean-variance model, 326  
Mean-variance optimization (MVO), 219, 326–327, 352, 354–355, 358  
Mean-variance optimizer, 249  
Measurement accuracy, 149  
Meltzer, Allan, 139  
Merrill Lynch, 211, 223  
Milevsky, Moshe A., 280, 281, 299, 299, 307, 324  
Mill, John Stuart, 141  
Minsky, Hyman P., 206–207, 243, 244  
*The (Mis)behavior of Markets* (Mandelbrot and Hudson), 239, 246  
Modern Portfolio Theory (MPT), 206, 325  
asset allocation infrastructure, 360–362  
assumptions in, 305  
assumptions used in, 305  
De Finetti’s study, 352–355  
debate regarding, 303–309  
fat tails and Bayesian inference, 358  
Leonard (Jimmie) Savage legacy, 361–362  
Markowitz mean-variance optimization, 354–355  
origins and future, 351–365  
Sam Savage portfolio theory, 355–360  
scenarios and portfolios, 362–364  
Momentum-based long/short approach, 167  
Monetarism, 131, 133–142  
bad monetary economics, 135–136  
good and bad monetary economics, 137–138  
good vs. bad economics, 136–137  
monetary economics confusion, 138–139  
monetary economics message, 140–141  
myths about money, inflation, and economy, 135  
news response, 133–134  
sound monetary economics, 140  
Monetary policy, 134, 240  
change and bonds, 141  
effects of, 140  
inflation and, 139  
Money illusion, 145  
Monte Carlo simulation, 249, 250, 283  
of fat-tailed distributions, 333  
issues with, 314  
origin of, 311  
technological advances in, 315–317  
Monte Carlo simulation, updated, 311–324  
21st Century update, 314–315  
about, 311  
DIST, technical details, 318–323  
DIST availability, 317–318  
early use for asset allocation, 312–313  
Ibbotson and Sinquefeld without, 313–314  
implication for future, 315–317  
Morgenstern, Oskar, 269  
Morningstar, 1  
10-factor style model, 12  
DIST technology tools, 318  
style indexes, 8  
Morningstar 10-factor style model, 95  
*Morningstar Advisor* (magazine), 194  
Morningstar Associates, 282  
Morningstar Dividend Composite Index, 65–66  
Morningstar Dividend Leaders Index, 65–66  
Morningstar European equity style indexes, 2  
Morningstar European style indexes, 20  
Morningstar indexes, 10  
Morningstar market barometer graphics, 55  
Morningstar Style Box, 16, 78  
Morningstar Style Indexes, 12, 16  
Morningstar style model, 74

- Morningstar U.S. Market Index, 52, 53  
 MSCI, 43  
 MSCI EAFE, 43–44  
 MSCI UK Gross Return Index, 224  
 Multifractal concept, 242  
 Multivariate discrete distribution, 333  
 Multivariate normal distribution, 333  
 Mutual fund activity, 258
- Naïve Diversification Theory, 305  
 National Association of Real Estate, 153  
 Natural rate of interest, 138  
 Negative roll yield, 157, 169, 172  
 Net hedging, 163  
 Netherlands, 123  
 Neutral category, 100  
 Noisy-market hypothesis, 21, 22, 32, 35  
 Nominal vs. real quantities, 137  
 Nonlinear relationship, 331  
 Nonsynchronous trading, 104–105  
 Normal (bell-shaped) distribution, 323  
 Normal backwardation, 162, 163–164, 172–173  
 Normal distributions, 218, 358  
 Normally distributed disturbance, 334
- Objective function  
 about, 271–272  
 maximum expected return for a given level of risk, 272  
 risk tolerance, 272  
 safety-first behavior, 272–273
- Off-balance-sheet vehicles, 208  
 Okun, Arthur M., 146  
 Okun's Law, 146  
 One-lag inflation model, 288, 298  
 One-over N allocation, 306, 308  
 Options analysis, 243  
 Organization of Arab Petroleum Exporting Countries (OAPEC), 201  
*The Origin of Financial Crises* (Cooper), 239  
 Output gap approach, 144–145  
 Overleveraged economy, 240  
 Ownership zone, 77
- Parametric models of asset class returns, 299  
 Paretian vs. Student *t*-distribution, 357  
 Passive futures indexes, 158  
 Paulson, Henry, 212, 223  
 P/E ratio, 41–42  
 Peak-to-trough declines in seven countries, 214  
 Perold, André F., 21, 32, 35  
 Peterson, James D., 103  
 Phelps, Edmund, 140  
 Phillips, Don, 2, 55, 146  
 Phillips Curve, 145, 146  
 PIMCO StocksPlus Fund, 88  
 Pindyck, R., 160  
 Policy return, 254, 263, 264  
 Policy vs. total returns, 260  
 Policy weights, 255
- Population parameters, 273  
 Portfolio centroid, 77–78  
 Portfolio optimization, 325, 326. *See also* Mean-variance optimization (MVO)  
 Portfolio scalability, 67  
 Portfolio selection, 267  
 Poundstone, William, 336, 347  
 Power law, 218  
 Power law tails, 219  
 Power law yields, 219  
 Prespecified factor approach, 118  
 Press, William H., 230, 235  
 Probability management, 331  
 Productivity, 134  
 Pye, Gordon B., 280, 299
- Qromo (routine), 230, 235  
 Quantitative easing (QE). *See* Easing  
 Quantitative Services Group (QSG), 57–58  
 Quantity theory of money, 144, 145
- Rahl, Leslie, 193  
 Randomized error, 45  
 Rate of change approach, 119  
 Real estate, 147  
 Real estate asset-allocation parameters  
 assumptions and inputs, 148–149  
 geometric vs. arithmetic means, 150–153  
 market-cap weights, 149–150  
 results, 153–155  
 reverse mean-variance optimization, 147–156  
 Real estate data accuracy, 149  
 Real estate index, 149  
 Real vs. nominal interest rates, 138  
 Real vs. nominal payments, 281  
 Reference portfolio centroids, 80  
 Repeated sales method, 182–183  
 Residential real estate, 147  
 Retirement income management  
 asset allocation and annuitization in, 279  
 fixed annuities in, 287–288  
 sustainable withdrawal for portfolios, 279  
 Retirement income management, asset allocation  
 with annuities for, 275–300  
 inflation modeling, 296–299  
 literature review, 277–281  
 model extensions, 293–295  
 model with annuities, 287–293  
 model without annuities, 281–287  
 simulation approach for withdrawal models, 277–279  
 summary, 295–296  
 Retirement life insurance level, 299  
 Returns-based models, 95, 101n. *See also* Style models, holdings-based and returns-based  
 Returns-based results, 100  
 Returns-based style analysis, 72–73, 79–84  
 confidence regions for estimate style centroids, 96–99  
 poor goodness-of-fit, 93–94  
 style inconsistency, 94–95

- unconstrained regression vs. Sharpe model, 81–84
  - conclusion, 95–96
- Reverse mean-variance optimization, 147–156
- Reverse optimism, 152
- Risk. *See also* Conditional value at risk (CVaR); Economic crises; Equity risk premium model; Value at risk (VaR)
  - alternative measures of, 341
  - downside risk, 338–339
  - longevity risk, 275, 290
  - reward-risk ratios, 346–347
  - risk measures, 227–228
  - standard risk model, 225–226
  - systematic risk, 105, 106, 114
- Risk aversion, 245
- Risk capacity, 308
- Risk preference, 308
- Risk return of real estate, 147
- Risk Solver platform, 314, 318
- Risk tolerance, 308
- Risk trade-off, 304
- Risk-aversion, 305
- Risk-free rate, 106
- Risk-return trade-off, 110
- Roll, R., 118–119
- Roll yield, 157, 168, 172–173
- Roll-yield losses, 158
- Roy, Andrew D., 272
- Russell 100 Value Index, 65
- Russell 3000 index, 158
- S&P 500, 65, 89, 187, 216, 217
- S&P 500 futures contracts, 88
- S&P 500 Index, 158, 185, 212, 259
- S&P GSCI Commodity Index, 159–160
- Samuelson, Paul, 353
- Savage, Leonard “Jimmie,” 353–354, 355, 361
- Savage, Sam, 250, 312, 326, 332, 333, 353, 355–356, 360–361, 365–364
- Scenario-based model, 327
- Schumpeter, Joseph, 206
- Sector weights, 54
- Selection bias, 180, 182
- Self-rebalancing cap-weighted portfolio, 58
- Self-reinforcing phenomena, 243
- Serial correlation of inflation, 296
- Sharpe, William F., 3, 16, 73, 81, 82, 99, 99, 264, 338
- Sharpe model, 95
- Sharpe ratio, 346
- Shiller, Robert, 194, 199
- Shleifer, Andrei, 21
- Short run vs. long run consequences, 137
- Siegel, Jeremy J., 35, 47
- Siegel, Laurence, 2, 3, 39–47, 48–49, 69, 193, 194, 348
- Singapore, 122
- Single period model of investment, 269
- Sinquefeld, Rex A., 17, 312, 313
- Size effect, 18, 36
- Small firm portfolios, 104
- Smith, Adam, 206
- Smoothed Multivariate Discrete Distributions (SMDD), 333, 337
- Smoothed scenario, 329
- Sovereign debt, 145, 245
- Speculative fervors. *See* Bubbles
- Speculators, 162
- Stable distribution, 217. *See also* Fat-tailed distributions
- Stable Paretian distribution, 217, 222, 222, 227, 356, 358. *See also* Fat-tailed distributions
- Stevens, Dale H., 256
- Stimulus spending, 241
- Stock market, 186–187
- Stock market bubbles and crashes, 199–209
  - 2007 to 2009 Crash, 207–208
    - about, 199–200
    - crashes, cause of, 204–205
    - drawdowns during the Long Boom, 201–204
    - economic thought and financial crises, 206–207
    - Japanese record, 201
    - lessons from, 203–209
    - U.K. record, 200–201
    - U.S. record, 200
- Stock market crash of 2008, 239
- “Stocks, Bonds, Bills, and Inflation: Simulations of the Future (1976–2000)” (Ibbotson and Sinquefeld), 312
- Strategic asset allocation, 258
- Student *t*-distribution, 357
- Style analysis, 72
- Style betas, 82
- Style Box, 1, 9
- Style coefficients, 100
- Style effects, 18
- Style groups, 16
- Style inconsistency, 101
- Style indexes
  - about, 7
  - current state of the art, 8–10
  - differences between, 10–12
  - history of, 8
  - importance of, 12
  - popularity in Europe vs. United States, 17
- Style models, 74
- Style models, holdings-based and returns-based, 71–101
  - about, 71–72
  - category averages results, 86–87
  - data and calculations, 85–86
  - holdings-based style models, 73
  - individual funds results, 87–93
  - Morningstar Equity-Style Model, 75–79
  - returns-based style analysis, 79–84
  - returns-based style analysis potential weakness, 93–95
  - returns-based style models, 73–75
  - style analysis review, 73–74
- Style plot points, 72–73

- Style regression, 93
- Subjective probability, 361
- Success probability, 276, 282–283, 284
- Sustainable spending rate, 324
- Switzerland, 125
- Systematic risk, 105, 106, 114
- Systemic effect, 206
  
- TAIL (+Tactical, Active risk-tilting, Insurance, Leverage), 307
- Tail-risk hedging strategies, 307
- Taleb, Nassim N., 348
- Tessitore, Tony, 357
- Thailand, 127
- Theory of Investment Value* (Williams), 352
- Theory of speculation, 246
- Theory of storage, 166, 172
- Thin-tailed distribution, 218
- Till, H., 161, 162, 163, 172
- Tokyo stock exchange (TSE), 209
- Tokyo stock price index (TOPIX), 201, 209
- Total returns vs. policy, 260
- Trade-offs, 267
- Transparency, 208
- Treasury securities, 137
- Treynor, Jack, 26
- Truncated Levy Flight (TLF) distribution, 365, 365
- Two-lag inflation model, 298
  
- Uganda, 118, 127
- Ulam, Stanislaw, 311, 312
- Uncorrelated assets, 308–309
- Unemployment vs. inflation, 146
- United Kingdom, 18, 123, 143, 200, 223, 224
- United States, 1, 118, 122, 123, 200
- U.S. equity fund categories, 90
- U.S. equity indexes, 15
- U.S. equity style indexes, 2
- U.S. Federal Reserve, 223
- U.S. inflation rates, 276
- U.S. market, 123
- U.S. stock market, 119
- U.S. Treasury, 223
- U.S. unemployment rate, 133
- U.S. value and growth stocks, 10
- Utility function, 269
  
- Value at risk (VaR), 220, 228, 327, 330–331, 339–340
- Value bias, 28–30, 59
- Value effects, 36
- Value investing, 47
- Value investing principle, 43
- Value Line, 115
- Value/growth effects, 18, 19
  
- Value/growth return correlation, 10
- Van Kampen Value, 101
- Variability, 253
- Variability model, 247
- Venezuela, 122, 125
- Venture capital
  - in portfolio, 180
  - portfolio allocation levels, 181
  - publicly traded, 187
  - risk and return, 180
  - risk level, 180
- Venture capital and strategic asset allocation
  - about, 179–181
  - average return, standard deviation, and correlation, 184–185
  - data, 181–182
  - model, 182–184
  - results, 185–188
  - conclusion, 189
- Venture capital funds correlation with stock market, 186–187
- Venture capital investment long-term risk-return characteristics, 181
- Venture Economics, 181, 182, 183, 185
- Venture One database, 180
- Volatility
  - implied, 242
  - of inflation rates, 146, 298
  - of returns, 11, 121, 176
- Volatility ratio, 11, 12
- Von Neumann, John, 269
- Von Neumann-Morgenstern utility function, 335
  
- Walrasian model, 206
- Weather fear premium, 163
- Weighting method
  - about, 30–31
  - collared approach, 31–32
  - optimization approach, 31
- Wiandt, Jim, 36
- Wicksell, J.G. Knut, 138, 206
- Wiener, Norbert, 246
- Wiesenberger, Arthur, 352
- Williams, John Burr, 352, 353
- Withdrawal rate, success probability and, 282, 284
- World equity market, 123
  
- XLSim, 318
  
- Yamaichi Securities, 201
- Young, Virginia R., 280, 281
- Young's model, 280
  
- Zero-beta CAPM, 151
- Zweig, Jason, 305, 306