

# Index

- Abandonment option, 263  
Abnormal return persistence, 155–157, 163  
Absolute priority, 636–637  
Absolute return products, 12  
Absolute return standard, 18  
Absolute return strategies, 166–167, 321, 325–326  
Abstract models, 84  
Accelerated depreciation, 281–282  
Acceleration, 632  
Access, 505  
Accountants, 25  
Accounting accruals, 468–469  
Accredited investor standard, 296  
Active activists, 386  
Active followers, 386  
Active initiators, 386  
Actively managed portfolio, 829  
Active management, 17–18  
Active return, 17, 91, 829–830  
Active risk, 17, 829–830  
Activist investing, 384–397  
    agendas, 391–394  
    capital structure and dividend policy issues, 392–393  
    corporate governance agenda, 391–392  
    corporate governance battles, 389–390  
    historical risk and returns, 394–397  
    manager-shareholder conflicts of interest, 387–389, 393  
    mergers and divestitures, 393–394  
    types of shareholder activists, 385–387  
Activists, 386  
Actual fund risk, 741  
Actual investment strategy, 729  
Adjustable-rate mortgages (ARMs), 237–240  
    amortization schedule, 238  
    interest-rate cap, 238  
Advertising by investment advisers, 34  
Advisers Act, 33  
Advisory committees, 772–773  
Affinity fraud, 725  
After-tax approach, 269  
Agency conflicts, 733–734  
Agency costs, 388, 617  
Agency risk, 211  
Agency theory, 387  
Aggregation, 33, 45–47  
    of fund risks, 740–742  
    of internal rates of return, 126–127  
    of profit and loss, 135  
Algorithms, 735  
Alpha, 147, 148–157, 819. *See also* Ex ante alpha; Ex post alpha  
    commingled with beta, 162–163  
    cross-sectional return differential for, 189–191  
    distinguishing/separating alpha and beta, 821–822  
    empirical analysis of, 155–158  
    estimating, 155–161, 191–194, 196–198, 821  
    fallacies in estimation of, 197–198  
    in forward and futures contracts, 546–549  
    generating with distressed securities, 406  
    managed futures and, 373–375  
    in new investment model, 828–829  
    origination of, 149  
    portable (*see* Portable alpha)  
    statistical analysis of, 176–177  
    summary, 168  
    through commodities exposure, 555  
    in traditional asset allocation, 827–828  
    and zero-sum game, 830  
Alpha drivers, 164, 166–167  
Alpha testing, 606  
Alternative asset benchmarking, 103–107  
Alternative beta, 167  
Alternative hypothesis, 170  
Alternative investment categories, 5  
Alternative investment definitions, 3–4  
Alternative investment funds (AIFs), 36  
Alternative Investment Managers Directive, 36  
Alternative investments:  
    defining, 3–4, 15  
    distinguishing from traditional investments:  
        analysis methods, 14–17  
        return characteristics, 12–14  
    goals of, 17–19  
    structure of, 8–12  
Alternative real estate investment vehicles, 272–278. *See also* Real estate investing  
Alternative theoretical multiple-factor return models, 103–104  
Alternative trading systems, 30  
Amaranth Advisors, LLC, 712–714

- American Airlines, 407  
American credit options, 679  
American Stock Exchange (AMEX), 29  
Amortization period, 686  
Amortization schedule, 235, 238  
Analysis methods, 14  
    portfolio management methodologies, 17  
    return computation methodologies, 15  
    statistical methodologies, 15–16  
    valuation methodologies, 16  
Anchoring, 285, 720  
Angel investing, 605–606  
Annuity view of hedge fund fees, 308, 313  
Anomaly strategies. *See* Market anomalies  
Anticipated volatility, 433  
Applied models, 84  
Appraisals:  
    for property analysis, 241  
    real estate indices based on, 284–285  
        selective, 225  
        and smoothing, 226  
Arbitrage, 18, 479–480  
Arbitrage CDOs, 688, 689–691, 694–695  
Arbitrage-free credit risk models, 645–646  
Arbitrage-free models, 532  
Arbitrage-free pricing, 536–540  
ARCH (autoregressive conditional  
    heteroskedasticity), 77, 86  
ARIA funds (Agrée à Règles d'Investissement  
    Allégées), 36  
Arithmetic mean log return, 46  
Artwork, 221–222  
Asian contagion, 334  
Asset allocation:  
    alpha and beta and, 827–831  
    based on mean-variance optimization, 797–799  
    new investment model, 828–829  
    portfolio optimization, 795–807  
    with REITs, 256  
    traditional approach, 827–828  
Asset-backed securities (ABS), 452–455, 686  
Asset gatherers, 168  
Asset pricing models, 82–96, 107–108  
    applied vs. abstract, 84  
    CAPM (*see* CAPM (capital asset pricing model))  
    cross-sectional vs. time-series, 85–87  
    defined, 79  
    distinctions between types, 84–85  
    equilibrium, 88  
    ex ante, 87–88, 92, 102  
    for ex ante alpha estimation, 193–194  
    ex post, 89–90, 91, 95  
    misspecification of, 156, 160–161  
    multifactor (*see* Multifactor models)  
    normative vs. positive models, 82–84  
    single-factor, 87–90  
    theoretical vs. empirical, 83–84  
Assets, custody of, 34, 739  
Assets, lumpy, 13  
Asset-weighted indices, 336–337  
Assignment, 632  
Asynchronous trading, 464  
Attachment points, 665  
Attorneys, 25–26, 756–757  
Auction markets, 622  
Auction process, 622  
Auditors, 25, 755  
Australian Securities and Investment Commission  
    (ASIC), 37  
Autocorrelation, 48–49, 116–118, 793  
    Durbin-Watson test, 118  
    and ordinary least squares regression, 779  
Autoregressive, defined, 76  
Average returns, 46  
Average tracking error, 146  
Avis Budget Group, 399–400  
Backfill bias, 183, 339–340, 341  
Backfilling, 183–184  
Background checks, 760  
Back office operations, 25  
Backtest/back-testing, 183, 357–358  
Backwardation, 534, 537–538, 541–545,  
    564–565, 569  
Backward induction, 264  
BaFin, 36–37  
Balance sheet CDOs, 688, 694  
Balloon payments, 240, 241  
Bankruptcy process, 405–406, 410, 635–637  
    distressed securities fund participation in,  
        411–412  
    key concepts in, 636–637  
Bankruptcy remote, 687  
Bank use of credit default swaps, 675–676  
Barclays Global Aggregate Bond Index, 319  
Basic models, 84  
Basis and spread, 548–549  
Basis risk, 563, 681–682, 705  
Bayesian formula, 179–180  
Bayou Management, 721–723  
Behavioral biases, 720–721  
Behavioral finance, 720  
Benchmark return, 17, 67–68  
Benchmarks/benchmarking, 17, 79–82, 107  
    alternative assets, 103–107  
    with CAPM, 93–94  
    comparison group, 80  
    complexities to, 81–82  
    defined, 79  
    with Fama-French/Fama-French-Carhart  
        models, 101  
    for fund managers, 757–758  
    indices as, 80–81  
    and model misspecification, 160–161

- numerical example of, 80–81
  - and opportunistic investing, 329
  - peer benchmarks, 80
  - PSA benchmark, 246–247
  - return attribution and, 90–92
  - for rolling contracts, 567–568
  - types of, 80
- Beta, 111, 819. *See also* Systematic risk
- within CAPM, 147–148
  - commingled with alpha, 162–163
  - and commodity returns, 555–557
  - correlation and, 115–116, 195
  - errors in estimating, 820–821
  - estimating, 161, 194–198, 821
  - fallacies in estimating, 198
  - in multiple asset pricing models, 148
  - in new investment model, 828–829
  - nonstationary (shifting), 161–162
  - in risk budgeting, 809–810
  - separation of alpha and beta, 821–822
  - summary, 168
  - in traditional asset allocation, 827–828
  - in Treynor ratio, 142
- Beta creep, 161
- Beta drivers, 164–166, 168
- Beta expansion, 161
- Beta nonstationarity, 161–162
- Beta testing, 606
- BHP Billiton, 401
- Bias:
- backfill, 339–340, 341
  - expectation, 763
  - fee, 336
  - in hedge fund research, 333
  - instant history, 339–340, 341, 506
  - liquidation, 340, 341
  - participation, 340, 341
  - selection, 182, 339, 340, 341, 506
  - survivorship, 158, 182, 338–339, 341, 506
- Bias blind spot, 762
- Bid-ask spread, 29
- Bidding contests, 399–400
- Binary options, 382–384, 678–679
- Binomial option pricing, 205–207, 650–653
- Black-box trading, 375, 750. *See also* Systematic trading
- Black-box trading models, 345
- Black-Litterman approach, 806
- Black-Scholes option pricing model, 311, 646–647, 653–654
- Blanket subordination, 632
- Blocking position, 636
- Blue top lots, 204
- Boise Cascade, 209
- Bonds, and alpha, 153–155
- Borrowing type cash flow patterns, 123–124
- Breadth of strategy, 473–475
- Breakout strategies, 364–365
- Bridge financing, 607, 629
- Brokers, 24–25
- Brown, Stephen, 334
- Brownfield project, 215
- Bull option spreads, 665
- Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), 36–37
- Business activities, 740
- Business continuity management, 761
- Business plan, 600–601
- Business risk, 271, 637, 740–741
- Busted convertibles, 419
- Buy-and-build strategies, 618
- Buyout-to-buyout deal, 622
- Buy-side institutions, 21–23
- Calendar spread trading, 548–549
- Call markets, 29
- Call options. *See also* Options
- calls vs. puts, 744–745
  - and incentive fees, 138–139, 310–313
  - land as, 204–207
  - mortgage prepayment as, 236
  - nonlinearity of, 50
- Calibrate a model, 661
- Capacity, 343, 345
- Capacity limitations, 343
- Capacity risk, 375
- Capital assets and negative correlation with commodities, 551–552
- Capital calls, 603
- Capital Requirement Directive (CRD), 36
- Capital structure arbitrage, 409–411, 715
- Capital structure changes, 392–393
- CAPM (capital asset pricing model), 465–466, 467
- benchmarking with, 93–94
  - beta risk defined by, 165
  - and cross-sectional returns, 94–95
  - and effect of multiperiod issues, 104–105
  - empirical analyses with, 90–96
  - and ex ante pricing, 87–88, 89
  - and ex post pricing, 89–90
  - and mean variance portfolio optimization, 800
  - multifactor models and, 102–103
  - and nonnormality of returns, 105–106
  - vs. other single-factor models, 90
  - return attribution using, 90–92
  - and risk budgeting, 809–810
  - short-bias fund example, 480–481
  - and time-series analysis, 93
- Cap rate, 212
- Carlyle Capital Corporation (CCC), 716–717
- Carried interest, 132, 133, 134, 135
- Carry trades, 448
- Casey, Frank, 724

- Cash collateral, 698  
Cash flow CDOs, 695  
Cash flow structuring, 644  
Cash-funded CDOs, 692–693  
Cash waterfalls, 132–133  
Catch-up provision, 133  
Catch-up rate, 133  
Causality, 195  
CBOE Volatility Index (VIX), 438  
CDOs. *See* Collateralized debt obligations (CDOs)  
CDS. *See* Credit default swaps (CDSs)  
CDS indices, 682–683  
CDS Maturity, 673  
CDS Spread, 673  
Central moments, 51–53  
Charge-off loans, 589–590  
Chelo, Neil, 723–725  
Chapter 7 bankruptcy, 635  
Chapter 11 bankruptcy, 635  
Cherry-picking, 184  
Chief financial officer (CFO), 754  
Chief investment officer (CIO), 770  
Chief risk officer (CRO), 769–770  
China National Offshore Oil Corporation, 401  
Chinese economy, 350  
Chipotle Mexican Grill, 394  
Chumming, 184–185  
Churning, 35  
Classic convertible bond arbitrage trade, 418  
Classic dispersion trade, 441–443  
Classic relative value strategy trade, 417  
Classification of claims, 636  
Classification of hedge fund strategies, 302  
Clawback provision, 133, 135–137, 603, 771  
Closed-end mutual funds, 390–391  
Closed-end real estate mutual funds, 276–277  
Closet indexer, 313  
Club deals, 622–623  
CMOs. *See* Collateralized mortgage obligations (CMOs)  
Collateral:  
  maintenance margin, 529  
  risk and return of, 687  
  underlying, 703  
Collateralization, 131–132  
Collateralized bond obligations (CBOs), 686  
Collateralized debt obligations (CDOs), 7, 167, 663–666, 685–707  
  arbitrage CDOs, 688, 689–691, 694–695  
  attachment and detachment points, 665  
  background, 685–686  
  balance sheet CDOs, 688, 694  
  cash flow CDOs, 695  
  cash-funded CDOs, 692–693  
  defined, 663  
  distressed debt CDOs, 699–700  
  Diversified Strategies CFO, 700–702  
  external credit enhancement, 698  
  general structure of, 686–687  
  hedge fund CDOs, 700–702  
  market value CDOs, 696  
  overcollateralization, 697  
  and Peloton Partners Hedge Fund, 714–716  
  reserve account, 698  
  risks, 703–707  
    basis risk, 705  
    credit risk, 706–707  
    differences in periodicity and payment dates, 704–705  
    financial engineering, 704  
    spread compression risk, 705  
    from underlying collateral, 703  
    yield curve risk, 705–706  
  risk shifting, 698–699  
  single-tranche CDOs, 702–703  
  spread enhancement, 697–698  
  structure of, 664  
  structure types, 685  
  stylized CDOs, 663–665  
  and subordination, 696–697  
  synthetic CDOs, 693–695  
  terminology of, 687–688  
  visual overview of, 692  
Collateralized fund obligations (CFOs), 700  
Collateralized loan obligations (CLOs), 686  
Collateralized mortgage obligations (CMOs), 244, 249–255, 686  
  crisis of 1994, 253–254, 704  
  floating-rate tranches, 253  
  interest-only (IO) tranches, 252–253  
  planned amortization class (PAC) tranches, 252  
  principal-only (PO) tranches, 252–253  
  sequential-pay CMOs, 250–252  
  structuring of, 250–254  
  targeted amortization class (TAC) tranches, 252  
Collateral yield, 563  
Commercial banks, 27–28  
Commercial mortgage-backed securities (CMBS), 244, 248–249  
Commercial mortgages, 241–244  
  covenants, 242  
  default risk, 243–244  
  defined, 233  
  development loans, 242  
  financial ratios, 243–244  
  loan seniority, 242  
  loan-to-value (LTV) ratio, 243  
Commingled real estate funds (CREFs), 273  
Commission de Surveillance du Secteur Financier, 35  
Committed capital, 603  
Commodities, 4, 6, 167  
  as beta-based return enhancer, 555–557  
  commodity futures indices, 570–572

- as defensive investment, 573
- for diversification, 551–555
  - with capital assets, 551–552
  - equilibrium, 552–553
  - inflation and, 554
  - market imperfections and, 553
- exposure through futures contracts, 562–568
- forward and futures contracts (*see* Forward and futures contracts)
- historical risks and returns, 574–577
- institutional investors, 573–574
- investing without futures, 557–562
  - commodity-linked notes (CLNs), 561–562
  - equities, 558–559
  - ETFs, 559–560
  - physical commodities, 557–558
- negative correlation with capital assets, 551–552
  - for pursuit of alpha, 555
  - for return enhancement, 555–557
  - risks and returns, 572–574
  - structure of, 11
- Commodity equities, 558–559
- Commodity ETFs, 559–560
- Commodity Exchange Act (CEA), 356
- Commodity futures indices, 570–572
- Commodity futures pricing. *See* Forward and futures contracts
- Commodity Futures Trading Commission (CFTC), 356
- Commodity-linked notes (CLNs), 561–562
- Commodity pool operator (CPO), 356–357
- Commodity pools, 356–357
- Commodity trading advisers (CTAs), 22, 336, 356, 357, 373–375
- Comparable sale prices approach to valuation, 266, 270–271, 285
- Comparison group, 80
- Compensation schemes, 388
- Compensation structure, 10–11, 133–134, 391–392. *See also* Incentive fees; Management fees
  - clawback provisions, 135–137
  - fees, 134–135
  - hurdle rates, 132–133, 137–138
  - understanding, 754–755
- Complex cash flow patterns, 123–125
- Complexity premium, 424, 465
- Components of convertible arbitrage returns, 426
- Compounding, 44–48
- Compound options, 608–609
- Computer algorithm, 735
- Computer-based trading. *See* Systematic trading
- Concentrated portfolios, 167, 326
- Conditional, defined, 76
- Conditional correlation, 370–371, 785–787
- Conditional correlation coefficient, 370
- Conditional heteroskedasticity, 76
- Conditional payment rate (CPR), 246
- Conditional value-at-risk (CVaR), 69–70
- Confidence level, 171, 176–178
  - erroneous conclusions with, 179–181
  - vs. probability, 177–178
- Confidence probabilities, 69
- Confirmation bias, 720, 762
- Conflict of interest, 733–734, 738
- Conglomerates, 618
- Conservative funds of funds, 511–514
- Consolidation, in hedge fund industry, 300–301
- Consultants, 26–27
- Contango, 534, 537–538, 564–565
- Continuously compounded returns, 45
- Continuous markets, 29
- Contraction risk, 250
- Convenience yield, 539–540
- Convergence, 417, 566–567
- Convergence trading, 727
- Conversion premium, 418
- Conversion price, 594
- Conversion ratio, 418, 594
- Conversion value, 418
- Convertible bond arbitrage, 418–433
  - background, 424–425
  - busted convertibles, 419
  - components of, 426–428
  - defining and pricing, 418–419
  - effects from market crisis of 2008, 428
  - equity-like convertibles, 419
  - historical risk and returns, 428–433
  - hybrid convertibles, 420
  - return drivers of, 428
  - returns to, 425–426
  - short selling overview, 423–424
- Convertible bonds. *See also* Convertible bond arbitrage
  - and corporate asset volatility, 426
  - defined, 418
  - indirect equity issuance costs, 426
  - moneyiness in, 419
  - price behavior of, 419–420
  - reasons for attractive pricing, 425–426
- Convexity, 420
- Copula approach, 706
- Copula model of CDO default risk, 706–707
- Copyrights. *See* Intellectual property (IP)
- Corporate governance, 384–393. *See also* Activist investing
  - battles in, 389–390
  - capital structure issues, 392–393
  - compensation packages, 391–392
  - conflicts of interest, 387–389, 393
  - dividend policy issues, 392–393
  - interlocking boards, 391
  - shareholder activists, 385–387

- Corporate reorganizations, 393–394
- Correlation, 12–13, 109–118. *See also*
- Autocorrelation
    - and asset liquidity, 226
    - and beta, 115–116
    - changing, 785–787
    - conditional, 370–371, 785–787
    - correlation coefficient, 111–112
    - covariance and, 110–111
    - dispersion trades, 441–443
    - perfect negative, 75
    - in performance review, 764
    - with REITs, 259
    - rolling window analysis, 787
    - serial, 793
    - spurious vs. true, 195
    - in tail risk strategies, 440
    - true, vs. causality, 195
    - and variance, 61
    - zero, 75
  - Correlation coefficient, 111–112
    - and diversification, 113–115
    - Spearman rank correlation, 112–113
  - Correlation products, 694
  - Correlation risk, 437
  - Correlations go to one, 440
  - Cost-of-carry model, 534–536, 549, 566
  - Counterparty risk, 345, 436, 681, 768
  - Countertrend strategies, 366–368
  - Covariance, 110–112, 796
  - Covenant-light (cov-lite) loans, 590
  - Covenants, 242, 590, 602
  - Cramdown, 636
  - Credit default swaps (CDSs), 669–677
    - assignment of (novation), 675
    - and capital structure arbitrage, 411
    - defining parameters, 673
    - delivery, 672–673
    - index products (CDS indices), 682–683
    - mark-to-market (MTM) adjustment, 674
    - offsetting transaction, 675
    - risks with, 681–682
    - settlement, 672
    - standard ISDA agreement, 671–674
    - strategies used with, 675–676
    - termination, 675
    - and total return swaps, 670–671
    - trigger events, 671–672
    - uses for, 676–677
    - valuing contracts, 674
  - Credit derivatives, 7–8, 667–683. *See also*
    - Collateralized bond obligations (CBOs);
    - Collateralized debt obligations (CDOs);
    - Collateralized mortgage obligations (CMOs)
    - credit default swaps (*see* Credit default swaps (CDSs))
    - credit options (*see* Credit options)
    - funded vs. unfunded, 668
    - overview, 667–668
    - risks of, 680–682
    - single-name vs. multiname, 668
    - sovereign vs. nonsovereign, 668
    - stages in evolution of, 669
    - strategies used with, 675–676
  - Credit-linked notes (CLNs), 680
  - Credit options:
    - call option on a credit default swap, 679
    - compared to credit default swaps, 678
    - credit-linked notes (CLNs), 680
    - put option on a bond price, 679
    - terminology, 678–679
  - Credit protection buyer, 670
  - Credit protection seller, 670
  - Credit ratings changes, 642–643
  - Credit reference, 673
  - Credit risk, 641–662
    - arbitrage-free models, 645–646 (*see also* Black-Scholes option pricing model)
    - in CDOs, 696–699, 706–707
    - copula model of CDO default risk, 706–707
    - default risk, 641, 642
    - defined, 641
    - downgrade risk, 641, 642–643
    - drivers of expected credit losses, 655–656
    - and enhancements, 696–699
    - modeling, 706–707
    - reduced-form models (*see* Reduced-form credit risk models)
    - risk-neutral models, 656–661
    - structural models (*see* Black-Scholes option pricing model; Structural credit risk models)
  - Credit spread risk, 641–642, 643–644
  - Credit spreads, 657–659
  - CREFs (commingled real estate funds), 273
  - Crops. *See* Farmland
  - Cross-collateralization, 242
  - Cross-collateral provision, 242
  - Cross-sectional models, 85–87, 94–95
  - Cross-sectional return differential, 189–191
  - Crown Zellerbach, 209
  - Culture of fund, 740
  - Currency markets investing, 348–349
  - Custody of assets, 34, 739
  - Dark pool, 36
  - Data biases. *See* Bias
  - Data dredging, 182–185, 194, 196
  - Data mining, 182

- Data providers, 26  
Data smoothing. *See* Smoothing  
DAX Global Agribusiness Index, 214  
Deal-by-deal carried interest, 135  
Debtor-in-possession (DIP) financing, 637  
Debt service coverage ratio (DSCR), 243  
Debt-to-assets ratio, 274. *See also* Loan-to-value (LTV) ratio  
Debt yields, 249  
Decision node, 264  
Decision trees, 263–264, 265  
Declining investment opportunities, 719–720  
Default probabilities, of bonds, 659–661  
Default risk, 641, 642  
    and CMOs, 250, 254–255  
    and commercial mortgages, 243–244  
    and residential mortgages, 241, 248–249  
Deferred contracts, 530  
Deferred taxation, 39  
Degradation of trading rules, 359  
Delta, 420–422, 743–745  
Delta hedging vs. duration hedging, 452  
Delta-neutral, 422  
Demand shifts, 541  
Dependent variable, 777  
Depositories, 27  
Depository Trust and Clearing Corporation (DTCC), 27  
Depository Trust Company (DTC), 27  
Depreciation, 269  
    accelerated, 281–283  
    economic, 280–281  
    in real estate investment, 278–283  
    tax shield, 283  
Derivatives, 12. *See also* Credit derivatives  
    forward contracts, 130  
    full collateralization, 131  
    notional principal, 130–131  
    partial collateralization, 131–132  
    in real estate investment, 275–276  
    risks of exchange-traded vs. OTC, 436–437  
Detachment points, 665  
Deviations, 51–53, 55–56  
Dilution, 425  
Directional strategies, 321–322  
Discounted cash flow (DCF) method, 266. *See also* Income approach to valuation  
Discrete compounding, 45  
Discretionary fund trading, 345–346, 347–351  
Dispersion trade, 441–443  
Distressed debt, 588–591  
    and bankruptcy process, 634–637  
    defined, 7  
    risks of, 637  
    strategy types, 634–635  
    supply and demand for, 633–634  
Distressed debt CDOs, 699–700  
Distressed debt hedge funds. *See* Distressed securities funds  
Distressed securities funds, 405–415  
    bankruptcy process, 405–406  
    capital structure arbitrage, 409–411  
    historical risk and returns, 412–415  
    purchase of undervalued firm, 411–412  
    short sales as writing naked call options, 407–408  
Diversification, 12–13, 167  
    barriers to, 106–107  
    correlation coefficient and, 113–115  
    defined, 552  
    in funds of funds, 498–499  
    with hedge funds, 330–332  
    risk and, 82  
    vintage year, 611  
Diversified funds of funds, 517–520  
Diversified strategies, 321, 326–327  
Diversified Strategies CFC, 700–702  
Diversifiers, 12  
Diversity score, 687  
Divestitures, 393–394  
Dividend policies, 392–393  
Dobrovolsky, Sergei, 366  
Dollar Thrifty Automotive Group, 399–400  
Dollar-weighted returns, 128–129  
Dominant, 799  
Dow Jones–UBS Commodity Index (DJ-UBSCI), 571–572  
Downgrade risk, 641, 642–643  
Downside deviation, 143  
Downside risk measurement, 66–70. *See also* Risk measures  
Downside risk protection, 370–373  
Drawdown, 68, 763  
Due diligence, 747–775  
    administrative review:  
        business continuity management, 761  
        civil, criminal, and regulatory actions, 760  
        employee turnover, 760–761  
        investor relations, 761  
    checklists, 747–748  
    defined, 747  
    legal review:  
        advisory committees, 772–773  
        fees, 771  
        investment type, 770–771  
        lockups and redemptions, 771–772  
        subscription amounts, 772  
    measuring operational risk, 774–775  
    performance review, 761–767  
        drawdowns, 763  
        list of funds and assets under management, 762–763  
        portfolio pricing, 765–767

- Due diligence (*Continued*)  
statistical return data, 763–765  
volatility in assets under management, 765  
portfolio risk review:  
chief risk officer (CRO), 769–770  
leverage, 768–769  
risk management, 767–768  
reference checks, 773–774  
screening questions:  
investment objective, 748–749  
investment process, 749–750  
nature and source of value added, 750–752  
strategic review:  
benchmark, 757–758  
capacity, 759–760  
competitive advantage, 758  
current portfolio position, 758–759  
investment markets and securities, 756–757  
structural review:  
fund organization, 752–754  
manager organization and ownership, 754–755  
outside service providers, 755–756  
Due diligence analysis, 155, 499–501, 720–721.  
*See also* Risk analysis  
Duration, defined, 447–448, 451  
Duration hedging vs. delta hedging, 452  
Duration-neutral position, 447–448, 451  
Durbin-Watson test, 118, 779  
Dynamic positions, 745  
Dynamic risk exposure models, 783–785  
Early-stage venture capital, 606  
Earnings momentum, 470–471  
Earnings per share (EPS), 470  
Earnings surprise, 470  
Economic crises:  
CMO crisis of 1994, 253–254, 704  
financial crisis of 2007–2009 (*see* Financial crisis beginning in 2007)  
Economic depreciation, 280–281  
Economic infrastructure, 215–216  
Economic significance, 177  
Effective duration, 452  
Effective gross income, 267  
Effective tax rate, 279  
Efficiency, 13  
Efficiency buyouts, 617–618  
Efficient frontier, 798, 800  
Efficient market theory, 13  
Efficient portfolio, 798  
Elastic/inelastic supply, 540–541  
Embedded options, 434. *See also* Credit-linked notes (CLNs)  
Empirical analysis, 14  
of alpha, 155–158  
with CAPM, 90–96  
into hedge funds, 330–333  
Empirical models, 83–84, 97–103. *See also* Fama-French/Fama-French-Carhart models  
Endowments, 22  
Enhanced index products, 829  
Enhancements:  
overcollateralization, 697  
spread enhancement, 697–698  
subordination, 696–697  
Enron loophole, 714  
Entrepreneurship, 618  
Equally weighted indices, 336–337  
Equally weighted portfolios, 815–816  
Equilibrium diversification, 552–553  
Equilibrium expected returns, 806  
Equilibrium models, 88  
Equity hedge funds, 321–322, 461–494  
equity long/short, 484–489  
fundamental vs. quantitative, 485  
historical returns, 486–489  
130/30 funds, 485–486  
equity market-neutral, 489–493  
fundamental law of active management (FLOAM), 472–475  
market anomalies, 466–472  
accounting accruals, 468–469  
earnings momentum, 470–471  
implementing, 475–480  
insider trading, 472  
market efficiency tests as joint hypotheses, 466–467  
net stock issuance, 471–472  
price momentum, 469  
short-bias, 480–484  
sources of return:  
identifying factors for profit opportunities, 465–466  
liquidity provision, 462–463  
summary of risks, 494  
Equity kicker, 587  
Equity-like convertibles, 419  
Equity market neutral funds, 326  
Equity premium puzzle, 165  
Equity REITs (real estate investment trusts), 255, 277–278, 288–292  
Equity residual approach, 270  
Equity risk premium (ERP), 165  
Equity tranche, 664  
Escrow agreement, 603  
Estate tax, 40  
ETFs. *See* Exchange-traded funds (ETFs)  
Euromarkets, 29  
European Central Counterparty Limited (EuroCCP), 27



- European credit options, 679
- Event-driven hedge funds, 381–415
- activist investing, 384–397
  - activist agendas, 391–394
  - capital structure issues, 392–393
  - corporate governance agenda, 391–392
  - corporate governance battles, 389–390
  - dividend policy issues, 392–393
  - historical risk and returns, 394–397
  - manager-shareholder conflicts of interest, 387–389, 393
  - mergers and divestitures, 393–394
  - types of shareholder activists, 385–387
- distressed securities, 405–415
- activist approach, 409
  - bankruptcy process, 405–406
  - capital structure arbitrage, 409–411
  - historical risk and returns, 412–415
  - purchase of undervalued firm, 411–412
  - short sales as writing naked call options, 407–408
- merger arbitrage, 381–382, 397–405
- bidding contests, 399–400
  - and binary options, 382–384
  - event risk exposure, 31
  - and financing risk, 401–402
  - historical risk and returns, 402–405
  - and insurance selling, 381–382
  - and regulatory risk, 400–401
  - stock-for-stock proposals, 397, 398–399
  - traditional strategies, 397–398
- Event-driven multistrategy funds, 412, 415
- Event risk, 350–351, 381
- with commodities, 572–573
  - in merger arbitrage, 400–402
- Event risk strategies, 321–325
- Evergreen funds, 218
- Ex ante alpha, 149–151, 152
- defined, 150
  - estimating from ex post alpha, 191–194
  - estimation, errors in, 819–820
  - estimation of, 155–157, 163–164
  - in forward and futures contracts, 547
  - inferring from ex post alpha, 155–158
  - numerical example of, 153–155
- Ex ante and ex post return distributions, 42–43
- Ex ante models, 87–88, 92, 102
- Excessive conservatism, 308
- Excess kurtosis, 53–54
- Excess return, 89, 564. *See also* Ex post alpha
- Exchange-traded derivatives, 436–437
- Exchange-traded funds (ETFs), 28
- based on commodities, 559–560
  - based on real estate indices, 276
- Exchange-traded futures contracts, 528
- Exchange-traded notes (ETNs), 559
- Excludable assets, 220
- Excludable good, 220
- Exit plan/strategy, 601, 621–622
- Expectational return probability distributions, 42.
- See also* Ex ante and ex post return distributions
- Expectation bias, 763
- Expected returns, 795–797. *See also* Ex ante models
- Expected tail loss, 69–70
- Expenses in commercial property valuation, 267
- Exponential moving averages, 361–362
- ex post, 42
- Ex post alpha, 149, 151–155
- defined, 151
  - estimating ex ante alpha from, 191–194
  - identifying, 155–156
  - numerical example of, 153–155
- Ex post models, 89–90, 91, 95
- Exposure at default (EAD), 656
- Extension risk, 250, 251–252
- External credit enhancement, 698
- Factor models, 476
- Fair market value, 227
- False positive/false negative, 178–179
- Fama-French/Fama-French-Carhart models, 96, 98–102, 192, 465
- Fama-French three-factor model, 14, 781
- Family office, 22, 32
- Fannie Mae (FNMA), 716–717
- Farmland, 210–214
- agency risk, 211
  - exposure methods, 214
  - financial analysis of, 211–212
  - government subsidies, 212
  - investment risks, 211
  - multiple use options, 213–214
  - prices and returns, 212–213
- Favorable mark, 225
- Feasible portfolio, 798
- Fee bias, 336
- Fees:
- hedge funds, 134–135, 296, 304–315, 596–597, 771
  - incentive (*see* Incentive fees)
  - management (*see* Management fees)
  - performance, 304–315
  - review of, 771
  - of venture capital funds, 603
- Fiduciary duty, 32–33
- Film production and distribution, 221–223
- Financial activists, 385
- Financial asset, 5
- Financial crisis beginning in 2007, 436–437
- CMOs and, 254
  - credit risk and, 681
  - default risk and, 255
  - effect on REITs, 256–257
  - and hedge fund CDOs, 700

- Financial crisis beginning in 2007 (*Continued*)
  - hedge funds and, 327, 334–335
  - and Peloton Partners Hedge Fund, 715–716
  - regulation and, 30, 37
  - role of subprime mortgages, 704
- Financial crisis of 1994, 253–254, 704
- Financial engineering risk, 704
- Financial firewall, 770
- Financial markets, 28–30
- Financial market segmentation, 411
- Financial ratios, 243–244
- Financial risk, 271
- Financing risk, 401–402
- Finished lots, 204
- First order autocorrelation, 116–117
- First-stage venture capital, 606
- Fixed charges ratio, 243
- Fixed expenses, 267
- Fixed-income arbitrage funds, 447–458
  - asset-backed and mortgage-backed securities, 452
  - historical returns, 455–458
  - risks of, 454–455
  - sovereign debt, 449–452
  - three-security trade, 447
- Fixed Income Clearing Corporation (FICC), 27
- Fixed-rate mortgages, 233–236
  - amortization schedule, 235
  - monthly payment calculation, 234
- Floating-rate tranches, 253
- Followers, 386
- Ford Motor Company, 718
- Foreign market issuers, 28
- Forest product companies. *See* Timber and timberland
- Forward and futures contracts, 525–529, 569
  - alpha-driven strategies, 546–549
  - arbitrage-free models, 532
  - arbitrage-free pricing for physical assets, 538–540
  - backwardation and contango, 534, 537–538, 541–545, 564–565
  - basis and calendar spread, 548–549, 563
  - basis risk in, 563
  - collateral yield, 563
  - and commodity-linked notes (CLNs), 561
  - convergence, 566–567
  - defined, 525
  - differences between, 525–526
  - excess return on, 564
  - on financial assets, 564–565
  - financial vs. commodity contracts, 540, 544
  - fully collateralized position, 563–564
  - historical risks and returns, 574–577
  - and initial margin, 528–529
  - long position vs. direct asset ownership, 536–537
  - marking-to-market, 526–528
  - on real assets, 565–566
  - return components, 563–564
  - returns on, 545–549
  - rolling contracts, 530–531, 567–568
  - rollover decisions, 531, 563
  - roll yield (roll return), 564–566
  - settlement dates, 530–531
  - spot prices, 566–568
  - spot return, 563
  - term structure of forward prices, 531–542
    - arbitrage-free pricing, 536–540
    - cost-of-carry model, 534–536, 549, 566
    - short selling, 541–542
    - simplest case, 532–534
    - supply and demand shifts, 540–541
- Forward contracts, 130, 525. *See also* Forward and futures contracts; Futures contracts
  - defined, 356
  - fully collateralized, 131
- Foundations, 22
- Fourth markets, 30
- Fraud:
  - affinity fraud, 725
  - Bayou Management, 721–723
  - Bernie Madoff, 723–725
  - Lancer Group, 725–727
- Freddie Mac (FHLMC), 716–717
- Free riders, 386
- Frequency distributions, 41–44
- Friendly activists, 386
- Front office operations, 25
- FTSE NAREIT Composite Index, 287–288
- Fulcrum securities, 634
- Full collateralization, 131
- Full market cycle, 162
- Fully collateralized, 131
- Fund access, 505
- Fund administrators, 26
- Fundamental analysis, 346, 347–351
- Fundamental hedge funds, 485, 493
- Fundamental law of active management (FLOAM), 472–475
  - breadth of strategy, 473–475
  - information coefficient, 473–475
  - and information ratio (IR), 473–475
  - and nonactive bets, 475
- Fund-as-a-whole carried interest, 135
- Fund culture, 740
- Fund managers:
  - choice of markets and securities, 756–757
  - competitive advantage, 750–752, 758
  - estimating performance persistence, 791–793
  - information filterers/analyzers, 751
  - information gatherers/searchers, 751
  - investment idea sources, 759
  - investment strategy capacity, 759–760

- organization and ownership structure, 754–755
- performance review, 761–767
- selection of (*see* Due diligence)
- Fund manager selection. *See* Due diligence
- Fund mortality, 303
- Fund-raising, 603–604
- Fund replication, 790
- Funds of funds, 22, 302–303, 321, 326, 495
- Funds of hedge funds, 495–521
  - bias in, 506
  - conservative, 511–514
  - defined, 495
  - diversification benefits and costs, 495–501
    - indices and return replication, 497–498
    - institutional, 499–500
    - level of diversification, 498–499
    - portfolio construction, 499–501
  - historical returns:
    - conservative funds of funds, 511–514
    - diversified funds of funds, 517–520
    - market-defensive funds of funds, 508–511
    - strategic funds of funds, 514–517
  - internal management, 521
  - investment objectives of, 507
  - manager funnel, 499–500
  - manager selection, 504–505
  - market defensive, 508–511
  - multistrategy approach, 502–505, 521
    - flexibility and transparency, 503–504
  - incentive fees, 502–503
    - operational risk, 504–505
  - purpose and advantages of, 505–507
  - seeding relationships, 508
  - selection process, 499–500
  - strategic, 514–517
    - as venture capitalists, 507–508
- Futures contracts, 6, 525. *See also* Forward and futures contracts; Managed futures
  - real estate, 275–276
  - for risk management, 823
  - and zero-sum game, 831
- Gaming, 733–734, 764
- Gamma, 420–422, 427, 743–745
- GARCH (generalized autoregressive conditional heteroskedasticity), 76–77, 86
- Gates, 218, 772
- Gaussian distribution, 44
- Gearing, 274, 602
- General collateral stocks, 423
- General Growth Properties (GGP), 407
- Generalized, defined, 77
- General Motors, 411, 718
- Geometric mean return, 46–47
- Ginnie Mae (GNMA), 716–717
- Giveback. *See* Clawback provision
- Global macro funds, 326, 348. *See* Macro funds
- Goals:
  - of alternative investing, 17–19
  - managerial vs. shareholder, 387
- Goetzmann, William, 334
- Goldsmith, James, 209
- Goodness of fit, 780
- Government. *See also* Regulations; Regulatory risk
  - and infrastructure assets, 217
  - regulatory structures, 10
- Government debt. *See* Sovereign debt
- Government subsidies, 212
- Graduated payment loan, 239
- Granularity, 46
- Greek economy and financial crisis, 349–350
- Greenfield project, 215, 220
- Grinold, Richard, 473
- Haircut, 591
- Hard hurdle rate, 137
- Hard lockup period, 771
- Hazard rate, 340
- Headline risk, 334
- Hedge fund CDOs, 700–702
- Hedge fund failures:
  - from fraud, 721–727
    - Bayou Management, 721–723
    - Bernie Madoff, 723–725
    - Lancer Group, 725–727
  - from market losses, 711–721
    - Amaranth Advisors, LLC, 712–714
    - Carlyle Capital Corporation (CCC), 716–717
    - Marin Capital, 717–719
    - Peloton Partners, 714–716
- Hedge fund indices, 335–344, 497–498
  - capacity limitations, 343
  - construction of, 335–344
    - asset-weighted vs. equally weighted, 336–337
    - managed futures inclusion, 336
    - management and incentive fees, 336
  - data biases in, 338–341 (*see also* Bias)
  - investability of, 343–344
  - representativeness of, 338
- Hedge fund infrastructure, 26
- Hedge fund program, 317
- Hedge fund replication, 790
- Hedge funds, 4, 6, 22, 31–32, 35, 293, 327.
  - See also* Hedge fund failures; Hedge fund indices; Limited partnerships; Private equity funds
  - biases associated with, 338–341
  - classification of, 342–343
  - compensation schemes, 310
  - compensation structure, 133–134
  - concentrated portfolios, 167, 326
  - considerations for investing in, 328–333
  - derivatives strategies, 297

- Hedge funds (*Continued*)
- disaster recovery plan, 761
  - distinction from mutual funds, 295–298
  - for diversification, 330–332
  - effects on financial markets, 333–334
  - empirical evidence about, 330–333
  - employee turnover, 760–761
  - equity (*see* Equity hedge funds)
  - event-driven (*see* Event-driven hedge funds)
  - fees, 134–135, 304–315 (*see also* Incentive fees)
    - annuity view of, 308, 313
    - computation of, 304–305
    - evidence and conclusions, 313–315
    - and option theory, 310–313
    - present value of, 308–310
    - vs. private equity fund fees, 596–597
  - and financial crisis beginning in 2007, 291, 327, 334–335
  - fund culture, 740
  - fund mortality, 303
  - fund organization, 752–754
  - funds of funds (*see* Funds of hedge funds)
  - and headline risk, 334
  - hybrid, 330
  - incentive fees (*see* Incentive fees)
  - incentives, 132–133 (*see also* Incentive fees)
  - industry concentration, 300–301
  - industry growth, 298–300
  - industry size, 337–338
  - investment objective, 748–749
  - investment process, 749–750
  - legal documentation, 770–771
  - management (*see* Fund managers)
  - management compensation, 296, 308–310 (*see also* Incentive fees)
  - management due diligence, 499–501 (*see also* Due diligence)
  - management style, 313
  - manager behavior, 307–308, 312–313, 314–315
  - manager selection (*see* Due diligence)
  - market-defensive funds of funds, 326
  - merger arbitrage, 322–325
  - minimum investment sizes, 500–501
  - multistrategy (*see* Multistrategy hedge funds)
  - opportunistic strategies, 328–330
  - performance persistence, 791–793
  - portfolio risk review, 767–770
  - portfolios of (*see* Funds of hedge funds)
  - regulation of, 30–38, 296
    - non-U.S., 35–38
    - registration exemption, 31–32
    - structural issues, 31–32
    - U.S., 31–35
  - relative value strategies (*see* Relative value hedge funds)
  - return volatility effects, 310–313
  - risk analysis (*see* Risk analysis)
  - risks and returns:
    - empirical summary, 317–319
    - moments of the distribution in, 319–321
    - opportunistic strategies, 328–330
    - portfolio parameters, 327–328
    - strategy types, 321–328
  - short selling in, 297
  - single-manager vs. fund of funds, 302–303
  - sources of abnormal profits, 464–465
  - strategic review, 756–760 (*see also* Due diligence)
  - strategies classification, 302–303
  - strategy definitions, 342–343
  - strategy types, 321–328
    - absolute return, 166–167, 321, 325–326
    - directional, 321–322
    - diversified, 321, 326–327
    - event risk, 321, 322–325
  - structural review, 752–756 (*see also* Due diligence)
  - structure of, 11, 297
  - synthetic, 343
  - tax-neutral locations for, 38
  - tradable factors, 790
  - types of, 302–303
    - use of credit default swaps, 676
- Hedge funds of funds (HFOFs), 700. *See also* Funds of hedge funds
- Hedonic price index, 287
- Herd behavior, 762
- Herd trading, 732
- Hertz Group Holdings, 399–400
- Heteroskedasticity, 76, 779–780. *See also* ARCH (autoregressive conditional heteroskedasticity); GARCH (generalized autoregressive conditional heteroskedasticity)
- Heuristic methods, 809
- HFRI/HFRX Macro Indices, 351–354
- HFRI Macro Systematic Diversified Index, 376
- Higher moment risk factors, 105–106
- High-water mark (HWM), 305–307, 771
- High-yield bonds, 628
- Histogram, 41
- Historical data. *See also* Backtesting
  - beta risk and, 165
  - effect on risk and return, 228–232
  - estimating VaR from, 73–74
- Historical risk and return:
  - activist funds, 394–397
  - commodities, 574–577
  - convertible bond arbitrage funds, 428–433
  - distressed securities funds, 412–415
  - equity market-neutral funds, 490–493

- fixed-income arbitrage, 455–458  
long/short equity funds, 486–489  
merger arbitrage funds, 402–405  
short-bias funds, 481–484  
venture capital funds, 611–613  
in volatility arbitrage, 444–447
- Hodder, James E., 313–314
- Home office, private wealth institutions, 22
- Homoskedasticity, 76
- Hostile activists, 386
- Hunter, Brian, 712
- Hurdle rate, 132–133, 137–138, 305, 758, 801–802
- Hurdle rate provision, 307
- Hybrid convertibles, 420
- Hybrid hedge funds, 330, 420
- Hybrid REITs (real estate investment trusts), 255
- Hypotheses:  
defined, 170  
stating, 170, 173–175
- Hypothesis testing, 169–200  
assuming normality, 173–176  
conclusion terminology, 172–173, 176  
errors in, 178–179  
failure to reject null hypothesis, 172–173, 175–176  
four steps of, 170–176  
results interpretation, 177–181  
sample data analysis, 171–172, 175  
stating hypotheses, 170, 173–175  
and statistical analysis, 176–178  
test design, 171, 175
- Idiosyncratic prepayment factors, 247
- Idiosyncratic risk/returns, 89–94, 102, 148–149, 156–157, 160–161, 163–164. *See also* Multifactor models
- Illegal insider trading, 472
- Illiquidity, 13, 49–50, 106–107
- Implied volatility, 422, 433, 438
- “Incentive Contracts and Hedge Fund Management” (Hodder and Jackwerth), 313
- Incentive fee option, 311
- Incentive fees, 132, 133, 134–135, 310, 336, 603, 771  
call options as, 138–139  
clawback provisions, 135–137  
effects of return volatility on, 310–313  
hedge funds, 304–315, 596–597  
high-water mark and, 305–307  
leveraged buyout (LBO) firms, 615–616  
and manager behavior, 307–308, 312–313, 314–315  
in multistrategy hedge funds, 502–503  
option view of, 310–313  
research and conclusions on, 313–315
- Incentives, 736–737
- Inclusion, alternative investments defined by, 4
- Income approach to valuation, 266–270, 285
- Income taxation, 39–40
- Incurrence covenants, 590
- Independent variables, selecting, 782–783
- Index models, 90
- Index providers, 26
- Index products, 829
- Index rate, 238
- India, 350
- Indices. *See also* Hedge fund indices  
appraisal-based, 229, 231, 284–285  
as benchmarks, 80–81  
CDS indices, 682–683  
cumulative wealth, 229, 231
- Individually managed futures account, 357
- Inefficiency, 13–14
- Inelastic supply, 541
- Inflation, and commodity prices, 551–552
- Inflation risk, 271, 554
- Informational efficiency, 464–465
- Information coefficient (IC), 473–475
- Information filters/analysts, 751
- Information gatherers/searchers, 751
- Information node, 264
- Information ratio, 143–144, 473–475
- Infrastructure, hedge fund, 26
- Infrastructure investments, 5, 214–220  
categorization of, 218–220  
economic vs. social, 215–216  
government influence on, 216–217  
identifying, 214–215  
risk and reward of, 220  
vehicles for, 217–218
- Initial margin, 528–529
- Initial public offering (IPO), 621
- Initiators, 386
- Insider trading regulations, 34–35, 472
- Instant history bias, 339, 341, 506
- Institutional fund of funds, 499–500
- Institutional-quality investments, 3–4
- Institutional structure, 11
- Insurance:  
and merger arbitrage funds, 323–325, 381–382  
portfolio, 439
- Insurance companies:  
as mezzanine finance source, 630  
use of credit default swaps, 676
- Intangible assets, 5–6, 220
- Intellectual property (IP), 5–6, 220–224
- Intercreditor agreement, 631
- Intercurve arbitrage positions, 448
- Interest coverage ratio, 243
- Interest-only mortgages, 237
- Interest-only tranches, 252–253

- Interest-rate cap, 239
- Interest rate immunization, 451
- Interim IRR, 122
- Interlocking boards, 391
- Internal control procedures, 737–738
- Internal credit enhancement, 696
- Internal rate of return (IRR), 118–129
  - aggregating, 126–127
  - comparing across investments, 125–126
  - complex cash flow patterns, 123–125
  - computing, 120–121
  - defining, 119–120
  - effects of depreciation on, 279–283
  - interim or since inception, 122
  - lifetime, 121
  - modified approach, 128
  - point-to-point, 122
  - problems with, 122–129
  - and ranking investment alternatives, 127–128
  - and reinvestment assumption, 127–128
  - sensitivity to cash flows, 127
  - summary of, 129
  - time-weighted vs. dollar-weighted returns, 128–129
  - valuations, 122
- International Paper, 209
- Intracurve arbitrage positions, 448
- Intrinsic value (IV), 266
- Instability of indices, 343–344
- Investable index, 497
- Investable infrastructure, 5
- Investment, defined, 3
- Investment activities, 740
- Investment advisers, 23
  - advertising limitations, 34
  - custody of assets, 34
  - fiduciary duty of, 32–33
  - regulation of, 31, 32–33
- Investment Company Act of 1940, 31, 296
- Investment income tax, 39
- Investment management governance process, 736
- Investment mandate, 731
- Investment objective, 748–749
- Investment process, 749–750
- Investment process risk, 734–736
- Investment strategy, 729, 731–732
- Investment strategy risks, 729–730
- Investment value (IV), 266
- Ireland, 349
- Israel, Samuel, III, 721–723
- Issuance of new stock, 471
- Italy, 349
  
- Jackwerth, Jens Carsten, 313–314
- James-Stein approach, 807
- Japan, 350
  
- Jarque-Bera test, 64
- Jarque-Bera test for normality, 65–66
- J-curve effect, 604–605, 609
- Jensen's alpha, 144–145
- Joint hypothesis test, 466–467
- Joint ventures, real estate, 273–274
- Jones, Robert, 712
- Jones Hedge Fund, 295
- Junk bonds, 586
  
- Karavas, Vassilos, 332
- Kerkorian, Kirk, 718
- Key personnel clause, 750
- Khandani, Amir, 334–335
- Kurtosis, 50–51, 53–54, 105–106, 319–321
  - computing excess, 57
  - degrees of, 58–59
  - and Jarque-Bera test, 65–66
  - and mean-variance optimization, 804
  
- Lack of trends risk, 375–376
- Lancer Group, 725–727
- Land, 203–208. *See also* Farmland; Timber and timberland
  - as a call option, 204–207
  - mineral rights, 208
  - risk and return, 207–208
  - types of lots, 204
- Land banking, 203–204
- Large dealer banks, 23–24
- Late-stage/expansion venture capital, 607
- Lauer, Michael, 725–727
- Law of one price, 546
- League table, 755
- Least squares regression. *See* Ordinary least squares regression
- Legal documentation, 770–771
- Legal insider trading, 472
- Legal risks, 272
- Leptokurtosis, 58, 73, 319, 326
- Leverage, 351
  - in convertible bond arbitrage, 428
  - and declining investment opportunities, 719–720
  - gearing, 274
  - and liquidity, 716
  - in  $M^2$  (M-squared) approach, 145
  - in portfolio risk review, 768–769
  - regulation of, 34
  - in return computation methodologies, 15
  - use of, in hedge funds, 297
- Leveraged buyouts (LBOs), 585–586, 613–623
  - agency relationships, 616–617
  - appeal to target firms, 619
  - auction markets and club deals, 622–623
  - buyout-to-buyout deal, 622
  - compared to traditional investments, 615

- and corporate governance principles, 622
- defined, 7
- efficiency buyouts, 617–618
- example of, 619–621
- exit strategies, 621–622
- fees, 615–616
- fund structures, 615
- mezzanine financing as, 629
- portfolio of companies, 618–619
- risks and returns, 623
  - as source of distressed debt, 633
  - value creation by, 617–618
  - vs. venture capital, 599–600
- Leveraged loans, 591–592, 628
- Leverage risk, 350–351
- Liang, Bing, 337–338
- Lifetime IRR, 121–122
- Limited liability, 601–602
- Limited liability shield, 770
- Limited partnership (LP) interests, 592
- Limited partnerships, 22, 23. *See also* Hedge funds; Leveraged buyouts (LBOs); Private equity funds; Venture capital funds
  - clawback provisions, 135–137
  - compensation structure, 133–134
  - fees, 134–135
  - incentives, 132–133
  - joint ventures as, 273–274
  - private equity real estate funds as, 274
  - syndications and, 273
- Limits to arbitrage, 479–480
- Linear regression, 93, 94, 172
- Liquidation bias, 340, 341
- Liquidation process, 405–406
- Liquidity:
  - in equity hedge funds, 462–463
  - and leverage, 716
  - providing, 462–463
  - and return characteristics, 227–228
  - taking, 462
- Liquidity facility, 505
- Liquidity risk, 106–107, 271, 375, 436, 680–681
- Loan-to-value (LTV) ratio, 241, 243, 249, 274
- Loan-to-EBITDA multiple, 627
- Lockup period, 771
- Logarithmic returns, 45–49
- Lognormal distribution, 47–48
- Lognormal returns, 47–48
- Log returns, 45
- Long binary call option, 382
- Long binary put option, 382
- Long/short equity funds, 484–489
  - fundamental vs. quantitative, 485
  - historical returns, 486–489
  - 130/30 funds, 485–486
- Long/short investing, 166
- Long-Term Capital Management (LTCM), 324–325, 716, 769
- Long volatility strategy, 437–438
- Lookback. *See* Clawback provision
- Losses, profits following, 135–137
- Loss given default (LGD), 656
- Lower attachment point, 665
- Luck. *See* Idiosyncratic risk/returns
- Lumpy assets, 13
- Lyondell Chemical Company, 590–591
- Maastricht Treaty, 349
- Macro funds:
  - and currency markets investing, 348–349
  - discretionary trading, 345–346
  - distinction from managed futures funds, 347
  - fundamental vs. technical analysis, 345–346
  - returns of, 351–354
  - risks of, 350–351
    - and sovereign bond markets, 349–350
- Madoff, Bernie, 723–725
- Maintenance covenants, 590
- Maintenance margin, 529
- Malek, Marc H., 366
- Managed futures, 22, 336. *See also* Forward and futures contracts
  - defined, 355
  - distinction from macro funds, 347
  - downside risk protection, 370–373
    - empirical research on, 369–376
    - downside risk protection, 370–373
    - superior returns, 373–375
  - fundamental vs. technical analysis, 345–346
  - historical basis, 354–355
  - historical returns analysis, 376–379
  - individually managed futures account, 357
  - natural hedgers and, 373–374
  - non-trend-following strategies, 366–368
  - overview, 355
  - regulation of, 355–356
  - relative value strategies, 368–369
  - risks of, 375–376
  - systematic trading strategies, 345–346, 357–369 (*see also* Systematic trading)
  - trend-following strategies, 359–366
- Managed returns, 225–226
- Management buyouts (MBOs), 585, 629
- Management company operating agreement, 26
- Management fees, 134, 771
  - hedge funds, 296, 304–315, 336
  - leveraged buyout (LBO) firms, 615–616
- Management risk, 272
- Management selection, 504–505
- Managerial coinvesting, 308
- Managerial compensation structure, 10–11, 133–134
- Managerial goals, 387

- Manager-shareholder conflicts of interest, 387–389, 393
- Managing returns, 314
- Maounis, Nicholas, 712
- Marginal contributions of total portfolio risk, 811–813
- Margin call, 529
- Margin rate, 238
- Margin requirements, avoiding, 34
- Marin Capital, 717–719
- Marino, Daniel, 721–723
- Marked-to-market, 526
- Market anomalies, 466–472
- accounting accruals, 468–469
  - earnings momentum, 470–471
  - empirical analysis of, 467
  - implementing, 475–480
  - limits to arbitrage, 479–480
  - pairs trading, 477–478
  - short selling and reducing risk vs. increasing alpha, 478–479
  - using factor models, 476
- insider trading, 472
- market efficiency tests as joint hypotheses, 466–467
- net stock issuance, 471–472
- predicting persistence of, 467–468
- price momentum, 469
- Market crisis of 2008, 428
- Market defensive funds of funds, 326
- Market efficiency tests, 466–467
- Market impact, 479
- Market linking, 677
- Market maker, 463
- Market making, 29
- Market manipulation, 34–35, 226
- Market microstructure, 350
- Market-neutral equity funds, 489–493
- historical returns, 490–493
  - three-step strategy, 489–490
- Market neutrality, 489
- Market-neutral volatility funds, 438–439
- Market orders, 29
- Market return, 87
- Market returns, compared to smoothed returns, 227–228
- Market risk, 350–351, 730–732, 742
- Market segmentation, 167
- Markets in Financial Instruments Directive (MiFID), 35–36
- Market takers, 29
- Market timing, 149, 161
- Market value CDOs, 696
- Market Vectors Agribusiness ETF, 214
- Market weight, 553
- Marketwide factors, 789–790
- Marking-to-market, 437, 526–528, 529
- Marking-to-model, 437
- Markopolos, Harry, 723–725
- Markowitz, Harry, 797
- Mark-to-market (MTM) adjustment, 674
- Mark-to-model accounting, 767
- Martin, George, 332
- Massaging returns, 314
- Master-feeder structure, 31–32
- Master trusts, 752–753
- McDonald's, 394
- McGuire, William, 391
- Mean, 50–51, 54–55, 57, 319–321
- Mean neutrality, 489
- Mean-reverting/reversion, 360
- Mean-variance portfolio optimization, 795–803
- asset allocation based on, 797–799
  - complications to, 803–807
  - errors in, 803–805
  - extensions of, 805–807
  - hurdle rates from, 801–802
  - modifications for extreme weights, 805–807
  - skew and kurtosis in, 804
  - two-fund separation theorem and the riskless asset, 800–801
- Measures of central tendency:
- mean, 50–51, 54–55
  - median, 55
  - mode, 55
- Median, 55
- Merchant banking, 587
- Merger arbitrage, 322–323, 397–405
- bidding contests, 399–400
  - and financing risk, 401–402
  - historical risk and returns, 402–405
  - and regulatory risk, 400–401
  - stock-for-stock proposals, 397, 398–399
  - traditional strategies, 397–398
- Merger arbitrage funds, 381–382
- Mergers, 393–394
- Merton's structural model, 647–653, 654–655
- Mesokurtosis, 58–59
- Mezzanine debt, 587–588, 607, 625–632
- advantage of, 626–627
  - compared to other forms of financing, 627–628
  - defined, 7
  - distinguishing characteristics of, 631–632
  - examples of, 629
  - exiting, 627
  - overview, 625–626
  - sources of, 629–631
- Mezzanine stage, 607
- Mezzanine tranche, 664
- Microsoft, 392–393
- Middle market vehicles, 588. *See also* Mezzanine debt
- Middle office operations, 25
- Milken, Michael, 586



- Mineral rights, 208  
Minimum variance portfolio, 815  
Misvaluation of assets, 285–286  
MLMI (Mount Lucas Management Index), 371–373  
Mode, 55  
Model-based trading. *See* Systematic trading  
Model calibration, 661  
Model manipulation, 225  
Model misspecification, 156, 160–161, 193, 195, 467  
Model risk, 375  
Modified duration, 451  
Moments of the distribution, 50–54  
    in hedge fund strategies, 319–321  
    and normality testing, 64  
Momentum, 98–99, 360  
Money laundering, 35  
Moneyiness, 139, 205, 419  
Moneyiness of an option, 205  
Monte Carlo analysis, 74  
Moratorium, 672  
Mortgage-backed securities (MBS), 434, 452–455  
    commercial (CMBS), 244, 248–249  
    measuring unscheduled prepayment rates, 245–247  
    pass-through MBS, 244  
    residential (RMBS), 244, 247–248  
    role in financial crisis beginning in 2007, 704  
Mortgage-backed securities (MBS) arbitrage, 453–455  
Mortgage REITs (real estate investment trusts), 255–256, 256–260  
Mortgages. *See also* Commercial mortgages;  
    Mortgage-backed securities (MBS);  
    Residential mortgages; Subprime mortgages  
    conditional prepayment rate (CPR), 246  
    defined, 233  
Moving averages:  
    exponential, 361–363  
    strategies, 360–365  
    two simple moving averages, 363–364  
    weighted, 361–362  
MSCI All Country World Index, 319  
M<sup>2</sup> (M-squared) approach, 145–146  
Multicollinearity, 782  
Multifactor models, 96–103, 476, 781–783  
    applications of, 787–791  
    fund returns and fund replication, 790, 791  
    fund returns and marketwide factors, 789–790, 791  
    returns based on style analysis, 788, 791  
    returns of funds with similar strategies, 788–789, 791  
    return summary, 790–791  
    and CAPM, 102–103  
    empirically vs. theoretically derived, 97  
    ex ante, 102  
    identification of factors, 99–101  
    return summary, 790–791  
Multiperiod continuously compounded rate of return, 61  
Multiperiod issues, 104  
Multiple-factor regression models. *See* Multifactor models  
Multiple-factor scoring models, 476  
Multiple sign change cash flow patterns, 123  
Multiple sign change investment, 123  
Multistrategy hedge funds, 302–303, 326, 411, 415, 502–505, 521. *See also* Relative value multistrategy (RVMS) funds  
    Amaranth Advisors, LLC, 712–714  
    flexibility and transparency, 503–504  
    incentive fees, 502–503  
    managerial selection, 504–505  
    operational risk, 504–505  
Mutual funds:  
    closed-end, 276–277, 350–391  
    compared to funds of funds, 303  
    compared to separately managed accounts (SMAs), 233  
    distinction from hedge funds, 295–298  
    infrastructure funds, 218  
    open end, 274–275  
    real estate, 274–275, 276–277  
    relative return products, 326  
Naked option position, 407  
NASDAQ, 29  
National Council of Real Estate Investment Fiduciaries (NCREIF), 284  
National Futures Association (NFA), 356  
National Securities Clearing Corporation, 27  
Natural hedgers, 373–374  
NCREIF Property Index (NPI), 284  
Nearby contracts, 530  
Negative conditional correlation, 786  
Negative costs, 222  
Negative covenants, 590  
Net asset value (NAV), 304  
Net lease, 269  
Net operating income (NOI), 266  
Net sale proceeds (NSP), 266  
Net stock issuance, 471–472  
New York Stock Exchange (NYSE), 29  
Nonactive bets, 475  
Nonlinearity, 50  
Nonlinear return models, 783–785  
Nonlinear return processes, 167  
Nonnormality of returns, 14, 17, 105–106, 189–191  
Nonstationary returns, 785  
Non-trend-following strategies, 366–369  
Normal backwardation and contango, 544–545

- Normal contango, 544  
Normal distribution, 14, 44, 57. *See also*  
    Lognormal distribution  
Normality of return distributions, 64–66  
    Jarque-Bera test for, 65–66  
    moments-based tests for, 64  
Normative models, 82–84  
Notional amount, 673  
Notional principal, 130–131, 132  
Novation, 675  
N-sigma event, 769  
Null hypothesis. *See also* Hypothesis testing  
    defined, 170  
    failing to reject, 172–173, 175–176  
    rejection of, 175–176, 178–179  
    stating, 173–174  
    testing, 175–176
- Objective quantitative measures, 41  
Obligation acceleration, 672  
Obligation default, 672  
Observed volatility, 225  
Off-balance-sheet financing, 24  
Off-balance-sheet risk, 323  
Offshore funds, 752–753  
Off-the-run bonds, 449  
Omega score, 774  
130/30 funds, 485–486  
One-off transactions, 406  
On-the-run bonds, 449  
Open-end real estate mutual funds, 274–275  
Open interest, 526  
Operating expenses, 267  
Operational activities, 740  
Operational errors, 733  
Operational fraud, 734  
Operational fund risk, 741–742  
Operational risk, 272, 504–505, 732–734, 742  
    controlling, 736–740  
    custody of assets, 739  
    effect of incentives on, 736–737  
    fund culture, 740  
    internal control procedures, 737–738  
    measuring, 774–775  
    valuation procedures, 738–739  
Opportunistic investing, 328–330  
Optimal contracting, 307  
Option adjustable-rate mortgage (option ARM), 240  
Option-adjusted spreads, 452–454  
Options. *See also* Call options; Credit options  
    abandonment option, 263  
    binary, 382–384, 678–679  
    bull option spreads, 665–666  
    call options (*see* Call options)  
    calls vs. puts, 744–745  
    with commodity-linked notes (CLNs), 562  
    compound, 608–609  
    in dispersion trades, 441–443  
    embedded, 434 (*see also* Credit-linked notes (CLNs))  
    as incentive fees, 138–139  
    land as, 204–207  
    moneyness of, 205  
    mortgage prepayment as, 236  
    option collar, 724  
    pricing, and estimated volatility, 73  
    put-call parity, 648, 655, 743–744  
    in real estate investment, 275–276  
    real options, 261–262  
    risk exposure and Greeks, 743–744  
    riskless hedges, 743  
    and tail risk strategies, 439–441  
    as volatility bets, 744–745  
Options theory, 646–650  
Option strike price, 418  
Option view of incentive fees, 310–313  
Order aggregation, 33  
Ordinary least squares regression:  
    and autocorrelation, 779  
    and heteroskedasticity, 779–780  
    and outliers, 778–779  
OTC derivatives, 436–437  
OTC markets, 29  
Outliers, 193–194, 778–779  
Out-of-the-money index puts, 438  
Outside service providers, 25–28, 755–756  
Overcollateralization, 697  
Overdistributions. *See* Clawback provision  
Overfitting, 183  
Overreacting, 464
- Pacifists, 386, 387  
Pairs trading, 477–478  
Panel data sets, 85  
Paper lots, 204  
Parallel shift, 451  
Parametric VaR, 71–72, 73  
Park, James, 334  
Partial collateralization, 131–132  
Participants:  
    accountants and auditors, 25  
    attorneys, 25–26  
    buy-side institutions, 21–23  
    commercial banks, 27–28  
    consultants, 26–27  
    depositories and custodians, 27  
    foundations and endowments, 22  
    fund administrators, 26  
    hedge fund infrastructure, 26  
    home office, private wealth institutions, 22  
    large dealer banks, 23–24  
    outsider service providers, 25–28  
    plan sponsors, 22  
    prime brokers, 25  
    private investment pools, 22, 23

- retail brokers, 24–25
- sell-side institutions, 23–25
- separately managed accounts (SMAs), 22–23
- sovereign wealth funds, 22
- Participation bias, 340, 341
- Partnership agreement, 26
- Partnerships. *See* Limited partnerships
- Passive activists, 386
- Passive beta drivers, 166
- Passive followers, 386, 387
- Passive investing, 17, 166
- Passively managed portfolio, 829
- Pass-through MBS, 244
- Past performance, and future results, 155–157
- Past return behavior, 42–43. *See also* Ex ante and ex post return distributions
- Patents, 221–222
- Pattern recognition systems, 366
- Paulson, John, 402
- Paulson & Co., 402
- Payments, 236
- Pearson correlation, 473. *See also* Correlation coefficient
- Peer benchmarks, 80
- Peer group, 80
- Peloton Partners Hedge Fund, 714–716
- Perfect linear negative/positive correlation, 112
- Perfectly correlated returns:
  - and aggregating VaR, 75
  - standard deviation and, 61, 63
- Perfectly elastic supply, 540
- Performance attribution, 90–92
- Performance-based fee, 132
- Performance fees, 304–315
- Performance measures:
  - ratio-based:
    - information ratio, 143–144
    - return on VaR (RoVaR), 144
    - Sharpe ratio, 139–142
    - Sortino ratio, 142–143
    - Treynor ratio, 142
  - risk-adjusted:
    - average tracking error, 146
    - Jensen's alpha, 144–145
    - M<sup>2</sup> (M-squared) approach, 145–146
  - summary of, 146
- Performance persistence, 791–793
- Performance reporting:
  - and cumulative returns, 185–189
  - selective, 182–185
- Periodicity, 704–705
- Permitted investment strategies, 729
- Pershing Square, 394
- Perverse incentive, 308
- Physical assets, pricing, 538–540
- Physical commodities, 557–558
- Physical exchanges, 29
- PIK (payment in kind) toggle, 628
- Planned amortization class (PAC) tranches, 252
- Plan of reorganization, 635
- Plan sponsors, 22
- Platforms, 26
- Platykurtosis, 58, 319, 326
- Point-to-point IRR, 122
- Political risk, 211
- Ponzi schemes, 723–725
- Popper, Karl, 173
- Portable alpha, 822–827
  - applying, 824–825
  - challenges of, 826–827
- Portfolio allocation. *See* Asset allocation
- Portfolio insurance, 439
- Portfolio management methodologies, 17
- Portfolio optimization, 795–807
- Portfolio pricing, 765–767
- Position limits, 737
- Positive conditional correlation, 786
- Positive covenants, 590
- Positive models, 82–84
- Post-earnings announcement drift, 470–471
- Potash Corporation, 401
- Potential gross income, 267
- Preferred return, 133
- Prepackaged bankruptcy filing, 636
- Prepayment options, 236
- Prepayment risk, 245–246, 248–249, 250, 452–453
- Present value of hedge fund fees, 308–310
- Pretax approach, 269
- Price manipulation, 766
- Price momentum, 469
- Price transparency, 436
- Pricing risk, 436, 680
- Primary capital markets, 28–29
- Prime brokers, 25, 757, 773
- Principal-agent relationship, 387
- Principal components analysis, 789
- Principal-only (PO) tranches, 252–253
- Principal payments, unscheduled, 236
- Principal protected notes (PPNs), 37
- Private commodity pools, 356–357
- Private equity, 4, 6–7
  - background and terminology, 581–583
  - as debt securities, 587–592
    - distressed debt, 588–591
    - leveraged loans, 591–592
    - mezzanine debt, 587–588
  - debt types:
    - distressed debt, 632–638 (*see also* Distressed debt)
    - mezzanine debt, 625–632 (*see also* Mezzanine debt)
  - as equity securities, 584–587
    - leveraged buyouts, 585–586
    - merchant banking, 587
    - venture capital, 584–585

- Private equity (*Continued*)  
  hedge funds and, 596–597  
  investment process, 582  
  investor secondary market, 592–593  
  leveraged buyouts (LBOs) (*see* Leveraged buyouts (LBOs))  
  private investments in public equity (PIPE) transactions, 593–596  
  structure of, 11  
  trends and innovations in, 592–597  
Private equity firms, 582, 583  
Private equity funds, 22. *See also* Hedge funds; Limited partnerships  
  compensation structure, 133–134  
  defined, 582, 583  
  fees, 134–135  
  incentives, 132–133  
  profit and loss aggregation, 135  
Private equity real estate funds, 272  
Private equity securities, 583  
Private investment pools, 22  
Private investments in public equity (PIPE) transactions, 593–596  
Private markets, 30  
Private-placement memoranda, 26  
Privatization, 217  
Probability, confusion with level of confidence, 177–180  
Process drivers, 168  
Process risk, 734–736, 750  
Product innovators, 167–168  
Profit and loss aggregation, 135  
Profit approach to valuation, 266  
Profits and losses, alternating, 135–137  
Progressive taxation, 39  
Property, undeveloped. *See* Land  
Property analysis, 241  
Provision of liquidity, 463  
Proxy battle, 385  
Prudent person standard, 584  
PSA benchmark, 246–247  
Public commodity pools, 356  
Public-private partnership (PPP), 217  
Public Securities Association (PSA), 246  
Pure asset gatherer, 313  
*p*-value, 172  
  
Qualified purchaser standard, 296  
Quantitative hedge funds, 334–335, 465, 485, 493–494  
Quantitative macroeconomic models, 350  
  
Ramp-up period, 686  
Random walk, 360  
Rank correlations, 112–113  
Ranking of investments, 127–128  
  
Ratings migration, 642  
Ratio analysis, 241  
Ratio-based performance measures, 139–144  
  information ratio, 143–144  
  return on VaR (RoVaR), 144  
  Sharpe ratio, 139–142  
  Sortino ratio, 142–143  
  Treydor ratio, 142  
Raw moments, 51, 52  
Real assets, 4–6  
  defined, 203  
  futures contracts on, 565–566  
  structure of, 11  
Real estate, 5  
Real estate development projects, 261–264  
  abandonment option, 263  
  backward induction, 264  
  decision trees, 263–264, 265  
  option theory in, 262–263  
  as real options, 261–262  
Real estate investing. *See also* Real estate development projects; Real estate investment trusts (REITs)  
  alternative investment vehicles, 272–278  
  closed-end real estate mutual funds, 276–277  
  commingled real estate funds (CREFs), 273  
  derivative products, 275–276  
  equity REITs, 277–278  
  exchange-traded funds based on real estate indices, 276  
  joint ventures, 273–274  
  limited partnerships, 274  
  open-end real estate mutual funds, 274–275  
  options and futures on real estate indices, 275–276  
  private equity real estate funds, 272–273  
  syndications, 273  
  depreciation, 278–283  
  risks and returns, 271–272  
    data smoothing, 285–286  
    indices based on adjusted privately traded prices, 286  
    indices based on appraisals, 284–285  
    indices based on market prices, 287–288  
  valuation (*see* Real estate valuation)  
Real estate investment trusts (REITs), 210, 255–260  
  equity REITs, 255, 277–278, 288–292  
  ETFs and, 276  
  historical performance of, 257–260, 288–292  
  market trading of, 287–288  
  as syndications, 273  
Real estate joint ventures, 273–274  
Real estate mutual funds, 274–275, 276–277  
Real estate taxation, 40

- Real estate valuation, 264–272  
  comparable sale prices approach, 266, 270–271  
  discounted cash flow (DCF) approach, 266–270  
  income approach, 266–270  
  profit approach, 266  
  reasons for misvaluation, 285–286
- Realized volatility, 422, 433, 438
- Reallocation strategies, 503–504
- Real options, 261–263
- Rebalancing trades, 437
- Rebate, 423
- Recourse, 242
- Recovery rate, 408, 656
- Recovery value, 408–409
- Redemptions, 771–772
- Reduced-form credit risk models, 644–645, 655–662  
  advantages/disadvantages, 662  
  application of, 661–662  
  model calibration, 661  
  risk-neutral models:  
    credit spreads, 657–659  
    generalizing relationships from, 659–661  
    risky bond pricing with, 656–657
- Reference checks, 773–774
- Referenced assets, 673
- Reference portfolio, 687
- Refinancing burnout, 248
- Regression:  
  interpreting results, 780–781  
  multiple-factor models and, 781–783  
  ordinary least squares models and, 778–780  
  single-factor models and, 777–781
- Reg T margin rule, 34
- Regulations, 30–38, 217  
  for hedge funds, 30–38, 755  
    non-U.S., 35–38  
    U.S., 31–35  
  for investment advisers, 31, 32–33  
  short selling, 479–480, 481
- Regulatory risk, 217, 375, 400–401
- Regulatory structure, 10
- Reinvestment assumption, 127–128
- REITs (real estate investment trusts), 255. *See also*  
  Real estate investment trusts (REITs)
- Relative return products, 326
- Relative return standard, 18
- Relative strength index (RSI) indicator, 366–368
- Relative value hedge funds:  
  classic relative value strategy trade, 417  
  convertible bond arbitrage, 418–433  
    background, 424–425  
    busted convertibles, 419  
    components of, 426–428  
    defining and pricing, 418–419  
    delta, 420–422  
    effects from market crisis of 2008, 428  
    equity-like convertibles, 419  
    gamma, 420–422  
    historical risk and returns, 428–433  
    hybrid convertibles, 420  
    return drivers of, 428  
    returns to, 425–426  
    short selling overview, 423–424  
    theta, 421–422  
  fixed-income arbitrage, 447–458  
    asset-backed and mortgage-backed securities, 452–455  
    historical returns, 455–458  
    risks of, 454–455  
    sovereign debt, 449–452  
    types of, 448–449  
  multistrategy (RVMS) funds, 459  
  volatility arbitrage, 433–447  
    dispersion trade, 441–443  
    historical risk and returns, 444–447  
    instruments used by, 434–436  
    market-neutral volatility funds, 438–439  
    risks of, 443  
    strategies, 437–438  
    tail risk strategies, 439–441
- Relative value multistrategy (RVMS) funds, 459
- Relative value strategies, 368–369, 417. *See also*  
  Relative value hedge funds
- Reorganization process, 406
- Repo transactions, 34
- Representativeness, 338, 763
- Repudiation, 672
- Research. *See* Empirical analysis
- Research and development (R&D), 221–222
- Reserve account, 698
- Residential mortgage-backed securities (RMBS), 244. *See also* Mortgage-backed securities (MBS)  
  compared to CMBS, 248–249  
  pricing, with PSA rates, 247–248  
  refinancing burnout, 248
- Residential mortgages, 233–241  
  amortization schedule, 235, 238  
  default risk, 241  
  defined, 233  
  fixed-rate, 233–236  
  graduated payment loan, 239  
  interest-only, 237  
  interest-rate cap, 239  
  monthly payment calculation, 234  
  option adjustable-rate mortgage (option ARM), 240  
  prepayment option, 236  
  subprime mortgages, 241  
  unscheduled principal payments, 236  
  variable-rate/adjustable-rate, 237–239
- Restitution, 725
- Restructuring, 672
- Retail brokers, 24–25
- Return aggregation. *See* Aggregation

- Return attribution, 90–92, 158–163, 168, 191
- Return characteristics, 12–14
- diversification, 12–13
  - illiquidity, 13
  - inefficiency, 13–14
  - nonnormality, 14
- Return computation interval, 45–47
- Return distributions:
- and autocorrelation, 48–49
  - and illiquidity, 49–50
  - lognormal, 47–48
  - moments of the distribution, 50–54
  - and nonlinearity, 50
  - normal, 14, 44
- Return diversifiers, 19
- Return drivers, 164–168
- alpha drivers, 166–167
  - beta drivers, 164–166
  - of convertible bond arbitrage, 428
- Return enhancers, 18
- Return measurement frequency, 46
- Return on assets (ROA), 719
- Return on equity (ROE), 211–212, 719
- Return on notional principal, 130
- Return on VaR (RoVaR), 144
- Return persistence, 163–164
- Return replication, 497–498
- Returns. *See also* Alpha; Risk and return
- absolute, 18
  - active, 17
  - based on style analysis, 788
  - benchmark, 17
  - with convertible bond arbitrage, 425–426
  - explained by marketwide factors, 789–790
  - of funds with similar strategies, 788–789
  - relative, 18
  - reporting of, 339–340
  - with rolling contracts, 568
- Return-to-risk ratios. *See* Ratio-based performance measures
- Return volatility, 227–228
- Reuters/Jefferies Commodity Research Bureau (CRB) Index, 571–572
- Revolving period, 686
- Richmond-Fairfield Associates, 722
- Riding the yield curve, 450
- Risk. *See also* Beta; Risk and return
- active, 17
  - from actual strategies, 732
  - basis, 681–682, 705
  - behavioral biases and, 720–721
  - capacity, 375
  - and CDOs, 703–707
  - contraction, 250
  - correlation, 437
  - counterparty, 436, 681, 768
  - with credit default swaps, 681–682
  - with credit derivatives, 680–682
  - default, 241, 243–244, 248–249, 250, 254–255, 641, 642
  - event (*see* Event risk)
  - extension, 250, 251–252
  - financial, 271
  - financial engineering, 704
  - financing, 401–402
  - and historical returns, 228–232
  - investment process, 734–736
  - investment strategy risks, 729–730
  - lack of trends, 375–376
  - liquidity, 106–107, 271, 375, 436, 680–681
  - market, 730–732, 742
  - and market value vs. appraised value, 227–228
  - model, 375
  - operational (*see* Operational risk)
  - political, 211
  - prepayment, 245–246, 248–249, 250, 452–453
  - pricing, 436, 680
  - process risk, 750
  - in real estate development, 261
  - in real estate investment, 271–272
  - regulatory, 217, 375, 400–401
  - short volatility, 768
  - spread compression, 705
  - systematic (*see* Systematic risk)
  - systemic, 30
  - transferring, 823–824
  - transparency, 375
  - volatility, 437
  - yield curve, 705–706
- Risk-adjusted performance measures:
- average tracking error, 146
  - Jensen's alpha, 144–145
  - M<sup>2</sup> (M-squared) approach, 145–146
- Risk analysis:
- actual fund risk, 741
  - aggregating fund risks, 740–742
  - investment process risk, 734–736
  - investment strategy risks, 729–730
  - market risk, 730–732
  - operational risk, 732–734, 736–740
  - quantitative, 731
  - total fund risk, 741
- Risk and return:
- activist funds, 394–397
  - commodities, 574–577
  - convertible bond arbitrage, 428–433
  - distressed securities funds, 412–415
  - equity market-neutral funds, 490–493
  - of equity REITs, 288–292
  - fixed-income arbitrage, 455–458
  - in land investment, 207–208
  - leveraged buyouts (LBOs), 623
  - long/short equity funds, 486–489
  - merger arbitrage funds, 402–405

- with mortgage REITs, 256–260
- short-bias funds, 481–484
- with venture capital, 609–613
- in volatility arbitrage, 443–447
- Risk budgeting, 807–817. *See also* Risk parity
- Risk decomposition, 676–677
- Risk exposures, 743–744
- Riskless asset, 800–801
- Riskless hedges, 743
- Risk limits, 737
- Risk management. *See also* Risk analysis; Risk and return; Risk budgeting
  - futures contracts for, 823
  - in portfolio risk review, 767–768
- Risk measures:
  - for asymmetrical investments, 16
  - semivariance, 66–67
- Risk-neutral models:
  - credit spreads, 657–659
  - generalizing relationships from, 659–661
  - risky bond pricing with, 656–657
- Risk-neutral probability, 206, 651
- Risk parity, 810–817
  - and alternative investments, 816–817
  - creating portfolio using, 813–814
  - economic rationales for, 814–815
  - equations for allocations, 813
  - marginal contributions of total portfolio risk, 811–813
- Risk premium, 87
- Risk premium approach, 267
- Risk shifting, 698–699
- Robustness, 359
- Rogue trader, 733
- Rolling contracts, 530–531, 567–568
- Rolling down, 450
- Rolling window analysis, 787
- Roll yield (roll return), 564–566, 568–570
- Rotation, 209
- $r$ -square, 780
- S&P Global Infrastructure Index (GII), 217
- S&P Timber and Forestry Index, 210
- Safe harbor exemptions, 296
- Sample mean, 54–55
- Scale differences, 125
- Secondary capital markets, 29
- Secondary market for private equity interests, 592–593
- Second-stage/expansion venture capital, 607
- Section 3(c)1, 31
- Section 3(c)7, 31
- Securities and Exchange Commission (SEC), 34, 724
- Securities structure, 10
- Securitization, 10, 28
- Seed capital, 605–606
- Seeding funds, 507–508
- Segmentation, 411, 586
- Selection bias, 182, 339, 340, 341, 506
- Selective appraisals, 225
- Selective sampling, 194
- Self-selection bias, 182
- Self-selection effect, 504–505
- Selling insurance, 382
- Selling short. *See* Short selling
- Sell-side institutions, 23–25
  - brokers, 24–25
  - large dealer banks, 23–25
- Semideviation, 67
- Semistandard deviation, 67
- Semivariance, 66–67
- Seniority of loans, 242
- Senior tranche, 664
- Separately managed accounts, 22–23
- Actively managed portfolio, 829
- Sequential-pay CMOs, 250–252
- Serial correlation, 793. *See also* Autocorrelation
- Settlement dates, 530–531
- Share buyback program, 471
- Shareholder activists, 385–387, 390–391
- Shareholder goals, 387
- Shareholder-manager conflicts of interest, 387–389, 393
- Sharpe ratio, 139–142, 330–332, 333, 800
- Short-bias funds, 321–322, 461, 480–484
- Short correlation trade, 442
- Shortfall risk, 67
- Shorting volatility, 757
- Short interest, 464
- Short selling, 493
  - commodities, 541–542
  - overview, 423–424
  - and reducing risk vs. increasing alpha, 478–479
  - restrictions to, 479–480, 481
- Short squeeze, 424
- Short volatility exposure, 323
- Short volatility risk, 768
- Side pocket arrangement, 753–754
- Significance level, 171
- Simple interest, 44
- Simple linear regression models, 777–778
- Simple moving averages, 360, 363–364
- Single-factor models, 87–90, 192, 777–778.
  - See also* CAPM (capital asset pricing model)
- Single-manager hedge funds, 302–303
- Single-period binomial option pricing model, 205–207
- Single-tranche CDOs, 702–703
- Skewness, 50–51, 53, 105–106, 319–321
  - and Jarque-Bera test, 65–66
  - and mean-variance optimization, 804
  - relative, 56–57

- Skill. *See* Ex ante alpha
- Slack variable, 744
- Slippage, 358
- Slope coefficient, 778
- Smoothing, 224, 738
- appraisals and, 226–228
  - impact on observed volatility, 225
  - in real estate returns, 285–286
- Social activists, 385
- Social infrastructure, 215–216
- Soft dollar arrangements, 33–34
- Soft hurdle rate, 137–138
- Soft lockup period, 771
- Software, 26
- Soros, George, 334, 348–349
- Sortino ratio, 142–143
- Sourcing investments, 604
- South Korea, 349, 350
- Sovereign bond markets, 349–350
- Sovereign debt, 349–350, 449–452
- Sovereign wealth funds, 22
- Spain, 349
- Spearman rank correlation, 112–113, 473
- Special purpose corporation (SPC), 687
- Special purpose vehicle (SPV), 686–687
- Special situation funds, 411, 415
- Special stock, 423
- Sponsor of the trust, 686
- Spot market, 525
- Spot price, 525, 566–568
- Spot return, 563
- Spread, 548–549, 671
- Spread compression risk, 705
- Spread enhancement, 697–698
- Springing subordination, 632
- Spurious correlation, 181, 195
- Stale pricing, 275
- Speculation, 466
- Standard & Poor's Goldman Sachs Commodity Index (S&P GSCI), 571–572
- Standard deviation, 52, 57, 319–321, 798.
- See also* Volatility
  - computing, 55–56, 795–797
  - downside deviation, 143
  - and estimating VaR, 71–73
  - in information ratio, 143
  - properties of, 61–63
  - of returns, 59–60
  - and semivariance, 66–67
  - in Sharpe ratio, 140–141
  - in Sortino ratio, 142–143
  - and typical deviations, 59
- Standardized unexpected earnings (SUE), 470
- Stated investment strategy, 729, 731–732
- Stated tax rate, 279
- Stationarity, 763
- Statistical analysis, 155–158
- Statistical methodologies, 15–16
- Statistical moments. *See* Moments of the distribution
- Statistical return data, 763–765
- Statistical significance, 176–178
- Statistical testing, 176–181
- backtesting vs. backfilling, 183–184
  - cherry-picking, 184
  - chumming, 184–185
  - data dredging, 182–185
  - data mining vs. data dredging, 182
  - errors in, 178–179
  - unrepresentative data sets, 181–182
- Stepwise regression, 782
- Stock-for-stock merger proposals, 397
- Stock issuance, 471–472
- Stock swap deal, 398–399
- Stomber, John, 717
- Storage costs, 539–540
- Story credit, 588
- Strategic asset allocation, decision, 827
- Strategic funds of funds, 514–517
- Strategy breadth, 473–475
- Strategy definitions, 342–343
- Strategy drift. *See* Style drift
- Strategy implementation risk, 735–736
- Stretch financing, 631
- Structural credit risk models, 644–645
- binomial option pricing model, 650–653, 654
  - Black-Scholes option pricing model, 646–647, 653–654
  - disadvantages of, 655
  - Merton's model, 647–653, 654–655
- Structure, 9–10, 26
- Structured PIPEs, 595
- Structured products, 7–8, 11, 297, 637. *See also*
- Collateralized bond obligations (CBOs);
  - Collateralized debt obligations (CDOs);
  - Collateralized mortgage obligations (CMOs); Credit default swaps (CDSs);
  - Credit derivatives; Hedge funds
- Structure of interest rates, 448
- Structures:
- limits on categorization, 11–12
  - and nonnormality of returns, 14
- Structure types, 8–9
- Structuring of cash flows, 644
- Style analysis, 788
- Style drift, 342–343, 711, 730, 735
- Stylized CDOs, 663–665
- Subordination, 696–697
- Subprime mortgages, 241, 704, 715
- Subscription agreement, 26
- Subscription amounts, 772
- Survivorship bias, 158, 182, 338–339, 341, 506
- Suspicious Activity Report (SAR), 35
- Swaps, 526



- Swiss Financial Market Supervisory Authority (FINMA), 37
- Syndicated, 591
- Syndications, 273
- Synergistic risk effect, 742
- Synthesis, 84–85
- Synthetic cash positions, 677
- Synthetic CDOs, 693–695
- Synthetic hedge funds, 343
- Synthetic shorts, 677
- Systematic diversified funds, 326
- Systematic returns, 89
- Systematic risk, 89, 91–92. *See also* Beta; Multifactor models
- historical analysis of, 165
  - model misspecification of, 163
- Systematic trading, 345–346, 357–369
- non-trend-following strategies, 366–369
  - rules derivation for, 357–358
  - rules validation and degradation, 359
  - trend-following strategies, 359–366
    - analysis of, 365–366
    - breakout strategies, 364–365
    - moving average strategies, 360–364
- Systemic risk, 30
- Tactical asset allocation, 827
- Tail risk, defined, 439
- Tail risk strategies, 439–441
- Takeout provision, 632
- Taking liquidity, 462
- Targeted amortization class (TAC) tranches, 252, 253–254
- Target rate of return, 143
- Target semistandard deviation, 67
- Target semivariance, 67
- Target Stores, 394
- Taxes, 38–40
- and depreciation of real estate, 278–283
  - and dividends, 392–393
  - estate tax, 40
  - of income, 39–40
  - real estate, 40
  - of REITs, 256
  - withholding, 40
- Technical analysis, 346, 368
- Term structure of forward prices, 531–532
- alpha and, 546–549
  - backwardation and contango, 541–545
- Term structure of interest rates, 448
- Terrorism, legislation preventing, 35
- Test of joint hypothesis, 466–467
- Test statistic, 171–172
- Thailand, 349
- Thematic investing, 350
- Theoretical models, 83–84, 97
- Theta, 421–422
- Third markets, 30
- Third-party bidders, 399–400
- Thomson-Reuters In-the-Ground Global Agriculture Equity Index, 214
- Timber and timberland, 5, 208–210
- Timberland investment management organizations (TIMOs), 209
- Time resolution, 46
- Time-series models, 85–87, 93
- Time series return volatility models, 75–77
- Time-weighted returns, 128–129
- Total fund risk, 741–742
- Total return swaps, 670–671
- Toxic PIPes, 595–596
- Tracking error, 67–68, 80, 143
- Trade allocation, 763
- Trading strategies. *See also* Market anomalies
- factor models, 476
  - pairs trading, 477–478
  - short selling, 478–479
- Trading structure, 10
- Trading styles, 789
- Traditional investments, 3, 12–14, 829–830
- Traditional merger arbitrage, 397
- Traditional PIPes, 594–595
- Tranches, 663–664
- default risk, 254–255
  - defined, 249
  - effects of risk shifting on, 698–699
  - floating-rate, 253
  - interest-only (IO), 252–253
  - inverse floating TACs, 253–254
  - planned amortization class (PAC), 252
  - principal-only (PO), 252–253
  - seniority and risk, 250, 254–255
  - sequential-pay, 250–252
  - targeted amortization class (TAC), 252, 253–254
- Tranche width, 688
- Transparency risk, 375
- Treasury bonds, 449–450
- Trend-following strategies, 359–366
- analysis of, 365–366
  - breakout strategies, 364–365
  - moving average strategies, 360–365
- Treynor ratio, 142
- Trigger events, 671–672
- Turnaround strategies, 618
- 20-bagger, 600
- Two-fund separation theorem, 800–801
- Type I/Type II errors, 178–179
- UCITS (Undertakings for Collective Investment in Transferable Securities), 35
- Unbundling, 221
- Underlying business enterprises, 583
- Underlying collateral, 703
- Underreacting, 464
- Undeveloped land. *See* Land

- United Airlines, 401–402
- UnitedHealth Group, 391
- Universal banking, 27
- Unocal, 401
- Unscheduled principal payments, 236
- Unscheduled principal prepayments, 244–245
- Upper attachment point, 665
- USG Corporation, 407
- U.S. Investment Company Act of 1940, 31, 296
- U.S. Securities Act of 1933, 31
  
- Vacancy loss rate, 267
- Validation of trading rules, 359
- Valuation methodologies, 16
- Value at risk (VaR), 68–74
  - aggregating, 75
  - estimating, 70–75
    - from historical data, 73–74
    - for leptokurtic positions, 73
    - with Monte Carlo analysis, 74
    - with normally distributed returns, 71–72
    - with normally distributed underlying factors, 72
  - estimating volatility for, 72–73
  - parametric, 71–72, 73
  - return on, 144
  - strengths and weaknesses of, 70
  - summary, 75
- Variable expenses, 267
- Variable-rate mortgages, 233, 237–240
- Variance, 52, 57, 319–321
  - computing, 50–51, 55–56
  - properties of, 60–61
  - as symmetrical calculation, 66
- Variance neutrality, 489
- Variance notional value, 434
- Variance swaps, 434–436
- Variation margin, 529
- Vega, 433, 437–438, 743–745
- Vega notional value, 435
- Vega risk, 433
- Venture capital, 584–585. *See also* Venture capital funds
  - business plans, 600–601
  - compound option view of, 608–609
  - defined, 6–7
  - exit plans/strategies, 601
  - fund performance, 610–611
  - fund-raising, 603–605
  - historical return analysis, 611–613
  - investment structures used, 600
  - J-curve for start-up company, 609
  - vs. leveraged buyouts (LBOs), 599–600
  - risks and returns, 609–613
  - underlying businesses of, 600–601
- Venture capital funds:
  - covenants, 602
  - fees, 603
  - financing methods, 601–602
  - financing stages, 605–608
  - J-curve effect, 604–605
  - keys to top performance, 610–611
  - life cycle stages, 603–605
  - vintage year diversification, 611
- Vesting, 133, 136
- Vietnam, 349
- Vintage year, 582–583
- Vintage year diversification, 611
- Visual works of art, 221–222
- Volatility, 52, 225. *See also* Standard deviation;  
Vega
  - annual vs. daily, 765
  - in assets under management, 765
  - based on market vs. appraised values, 227–228
  - of convertible bonds, 426
  - defined, 433
  - estimating future based on past data, 75–77
  - impact of smoothing on, 225, 286
  - implied, 435, 438
  - in land investment, 205–207
  - managed returns and, 225–226
  - valuation and, 224
- Volatility arbitrage funds, 433–447
  - dispersion trade, 441–443
  - market-neutral volatility funds, 438–439
  - risks of, 443
  - strategies, 437–438
  - tail risk strategies, 439–441
- Volatility risk, 437
- Volatility swaps, 434–435
- Volatility-weighted portfolio, 816
- Vulture investors, 589
  
- Waterfalls, 132–133
- Weighted average cost of capital, 627
- Weighted average rating factor (WARF), 687–688
- Weighted average spread (WAS), 687–688
- Weighted moving averages, 361–362
- Well-diversified portfolios, 141
- Whipsawing, 364
- Window dressing, 726
- Withholding tax, 40
  
- Yield curve, 448, 451
- Yield curve arbitrage, 449–450
- Yield curve risk, 705–706
  
- Z-bond, 252
- Zero correlation, 75
- Zero starting value. *See* Notional principal
- Zero-sum game, 830–831