

- Abandonment option  
 explanation of, 820  
 extensions and  
 implications of, 822  
 payoff on, 820–821  
 problems in valuing, 822
- Accounting  
 accrual, 42, 43  
 acquisition, 34, 728–730, 842  
 pooling, 34  
 purchase, 34
- Accounting balance sheets, 228
- Accounting betas  
 explanation of, 205–210  
 in private firms, 669–670
- Accounting book value. *See* Book value
- Accounting principles  
 asset measurement and, 29–30  
 earnings and profitability, 42–47  
 liability and equity, 36–41  
 risk measurement and, 47–48
- Accounting standards  
 book values and, 513  
 differences in, 53, 54
- Accounting statements, 27–29
- Accounts payable, 36
- Accounts receivable, 31
- Accrual accounting, 42, 44
- Acid test ratios, 49–50
- Acquisition accounting  
 changes in, 942  
 explanation of, 34, 728–729  
 goodwill and, 729–730
- Acquisition premium, 704
- Acquisitions. *See also* Takeovers  
 analysis of, 8–9  
 book equity adjustments, 513  
 capital expenses and, 261–262  
 charges related to, 730  
 choosing target firm and  
 valuing control/synergy  
 in, 711–724  
 classification of, 702–703  
 cost of ignoring, 263  
 deciding price of, 725–726  
 development of strategy  
 for, 706–711  
 diversity in, 706–707  
 firms involved in, 18  
 friendly, 703, 704, 709  
 hostile, 703–704, 709–710  
 managerial self-interest  
 and, 710–711  
 methods of accounting  
 for, 243–244  
 outcome of, 723  
 payment for, 726–730  
 of poorly managed firms, 708–710  
 process of, 703–704  
 steps in, 705–706  
 synergy and, 707–708  
 tax factors for, 720, 721, 727  
 of undervalued firms, 706  
 valuation of target firm  
 and, 713–723  
 writing off costs of, 242
- Adjusted beta, 187
- Adjusted present value (APV) approach  
 benefits and drawbacks  
 of, 418, 419
- cost of capital approach  
 compared with, 15–16, 401–402  
 leverage and, 402, 415–418  
 mechanics of, 398–401  
 steps in, 415–417  
 valuing company using,  
 400–401  
 without bankruptcy costs,  
 402
- Adris Grupa, 450
- After-tax cash flow (ATCF), 886
- After-tax operating income, 612
- Aggregate return on equity, 289
- Airbus, 821
- Allianz, 190
- Alternative distributions, 71–76
- Amazon.com, 236, 237, 296, 297
- Ambev, 814
- American Express, 429
- American options, 90, 100
- Amgen, 256–257, 261, 317, 390–391
- Amortizable life, 233
- Amortization, 37
- Amylin Pharmaceuticals, 500
- Analyst forecasts  
 explanation of, 282  
 future growth estimation  
 from, 284–285  
 information in, 282–283  
 quality of, 283–284
- Analysts. *See also* Financial analysis  
 characteristics and beliefs  
 of, 928–929  
 performance of, 145, 146

- Analytical tests, 459–462
- Angelos Stores, 849–850
- Announcements  
 earnings, 131–133  
 investment and project,  
 133, 134
- Anomaly, 134. *See also*  
 Market anomalies
- AOL, 141
- Apple Computer, 231, 282
- Application tests  
 comparable firms and,  
 462–463  
 controlling for differences  
 across firms and,  
 463–465  
 explanation of, 462  
 market regressions and,  
 466
- Aracruz Celulose, 622–624
- Arbitrage  
 index, 115  
 option pricing models  
 and, 786  
 tax, liquidity, and time  
 horizon, 149
- Arbitrage pricing model  
 (APM)  
 application of, 70  
 assumptions of, 68–69  
 diversification and, 69  
 expected returns and,  
 69–70, 207  
 explanation of, 68, 77  
 marketwide risk sources  
 and, 69
- Arithmetic average,  
 162–163, 272–273
- Arithmetic average  
 premium, 174
- Arms-length transactions,  
 696
- Armstrong, Michael, 628
- Artwork, 776–777
- Ashenfelter, Orley, 777
- Asset-based valuation, 22,  
 599
- Asset measurement  
 accounting principles  
 underlying, 29–30  
 asset value and, 30–35
- Assets. *See also specific*  
*types of assets*
- amortizable life of, 233
- book value of, 511
- cash-flow-producing,  
 766–775
- current, 31–32, 35
- fixed, 30–31
- intangible, 34, 644
- marketability of,  
 926–927
- non-cash-flow-producing,  
 775–777
- nonoperating, 423–440,  
 657–658
- with option  
 characteristics, 777  
 revaluation of, 728–729
- risky, 894–899
- underlying, 783
- unused, 18, 439–440
- value of, 30–35, 87
- Asymmetric distributions,  
 73–74
- AT&T, 106, 628, 704
- Augmented dividend payout  
 ratio, 333–335
- Autoregressive integrated  
 moving average  
 (ARIMA) models,  
 276–277
- Avatek Corporation, 105
- Averages, 459
- Averaging, in beta  
 calculation, 199
- Avonex, 791–792
- Balance sheets  
 accounting vs. financial,  
 229  
 explanation of, 27, 28
- BancorpSouth (BXS), 603
- Bank of Hawaii (BOH), 603
- Bankruptcy  
 costs of, 399–400, 402  
 overlevered firms and  
 probability of, 633
- Barnes & Noble, 296, 297
- Barra, 186
- Barrier options, 108
- Barriers to entry, 854, 856,  
 933
- Behavioral finance, 129–130
- Berkshire Hathaway, 429
- Betas
- accounting, 204–209,  
 669–670
- adjusted, 187
- arbitrage pricing model  
 and, 70
- averaging, 199
- bottom-up, 197–203,  
 205, 671–673
- in capital asset pricing  
 model, 75, 323, 668
- cost of equity, 183
- estimation of, 184, 188,  
 190, 198, 199, 669–672
- factor, 323
- fundamental, 193–203,  
 670
- historical market, 183–193
- market, 669–672
- in multifactor models,  
 668
- price-earnings ratio and,  
 475–476
- in private firms, 669–673,  
 693
- regression estimates of,  
 183–186
- service, 186–187
- size, growth and, 195
- stock, 742
- total, 673, 674
- unlevered, 196, 197
- Bias  
 in multiple estimation, 459
- in serial correlation,  
 123–124
- survival, 121
- in takeover valuation,  
 724–725
- Biased samples, 121
- Bid-ask spread approach,  
 123, 687–688
- Binomial option pricing  
 model  
 determinants of value  
 and, 94–95
- early exercise and,  
 102–103
- explanation of, 91–93
- inputs to Black-scholes  
 model converted to,  
 788–789
- replicating portfolio and,  
 91–92, 786

- Binomial tree, 104, 790  
 Biogen, 794–795  
 Biotechnology firms, 614  
 Black, Fischer, 90, 95  
 Black-Scholes model  
   background of, 90–91  
   converted to binomial model, 788–789  
   converting continuous variance in, 104  
   distressed firms and, 828, 830  
   dividends and, 98–100  
   estimating inputs to, 96  
   exercise, impact on  
     underlying asset value, 103  
   implied volatility and, 98  
   limitations of, 98–103  
   project delay option and, 786  
   for put option valuation, 105–106  
   replicating portfolio and, 786  
   value of call option in, 95, 96  
   variance and, 98  
 Blockbuster, 862–864  
 Block trades, 115  
 Bloomberg, 186, 187  
 Bludhorn, Charles, 710–711  
 Boeing Company, 35, 41, 44, 53, 63, 185–188, 196, 201, 203, 204, 207, 218, 220, 844, 852  
 Bondholders, 836–838  
 Bond ratings  
   default risk and, 78–81  
   determinants of, 80–81  
   interest rates and, 81  
   process for, 79  
 Bonds  
   convertible, 216  
   default spreads on, 177–180  
   government, 157–158  
   long-term, 37  
   maturity of, 178, 179  
   zero-coupon, 37  
 Book-to-market ratio, 138  
 Book value  
   accounting estimate of, 455  
   of acquisition, 704  
   debt ratios and, 218–219  
   disadvantages of using, 511–512  
   of equity, 40, 511, 514, 916–917  
   explanation of, 44  
   of liabilities, 511  
   reasons for use of, 511  
   return on capital and, 291  
   simulations and, 916–917  
 Book value debt ratios, 218–219  
 Book value multiples  
   applications of price-book ratios and, 521–530  
   investment strategies and, 530–532  
   price-to-book equity and, 511–521  
   Tobin's Q and, 537–539  
   value-to-book ratios and, 532–537  
 Borrowing  
   long-term, 37  
   risk-free, 91  
   short-term, 36  
   tax benefits of, 398–399  
 Bottom-up betas  
   benefits of using, 205  
   case for, 197–198  
   characteristics of, 197  
   estimation of, 200–203, 671–672  
   in private firms, 671–673  
 Bovespa, 190  
 Box-Jenkins models, 276–277  
 Brand name  
   value enhancement strategy and, 854–855  
   value of, 554–559, 767  
 Buffett, Warren, 7, 429  
 Build-up approach, 674  
 Build-up risk-free rates, 158  
 Business beta, 199  
 Business trust, 762  
 Buybacks. *See* Stock buybacks  
 Buyouts  
   explanation of, 703  
   leveraged, 703, 731–734  
   management, 703  
   valuation of, 730–731  
 Call options  
   Black-Scholes model and, 95, 96, 788  
   capped, 107–108  
   equity as, 827–829, 837, 838  
   explanation of, 87–88, 109  
   patents as, 789–790, 812  
   payoff diagram for, 88  
   project delay option as, 788  
 Capital, 263–268. *See also* Cost of capital; Working capital;  
*specific types of capital*  
 Capital asset pricing model (CAPM)  
   betas in, 75, 323, 668  
   explanation of, 65–68  
   investor portfolios in, 66–67  
   risk premium and, 154  
 Capital expenses. *See also* Net capital expenditures  
   explanation of, 42  
   misclassification of, 232–237  
 Capital gains, 242  
 Capital investments, 878–880  
 Capitalization rate, in real estate investments, 752  
 Capital leases, 38  
 Capped call, 107–108  
 Cash  
   for acquisitions, 727  
   consolidated valuation and, 424–425  
   as current assets, 31  
   discounting, 426–427  
   in foreign markets, 427–428  
   operating case requirements and, 423–424

- separate valuation and, 425–426
- Cash burn ratio, 318
- Cash-flow-producing assets
  - discounted cash flow valuation and, 766–767
  - franchise valuation and, 767–771
  - valuing businesses with personal component as, 770–774
  - valuing trademarks, copyrights and licenses as, 775
- Cash flow return on investment (CFROI)
  - after-tax cash flow and, 886
  - calculation of, 884–886
  - discounted cash flow and, 887–888
  - explanation of, 869, 884
  - firm value and, 889
  - internal rate of return and, 886–887
  - market value and, 890
- Cash flows
  - discounted, 13–15, 460
  - earnings vs., 596
  - estimation of, 228, 296, 584, 750–752
  - excess cash flow models vs. total, 16–17
  - increased from existing investments, 842–850
  - present value of, 16–17, 783
  - in private firms, 677–680
  - real estate valuation and, 750–752
  - risk-free rates and, 156
  - from stock purchases, 323
  - takeover valuation and, 724–725
  - terminal value and, 306, 319
  - test of, 16
  - valuation model choices and, 927
- Cash flow statements, 27, 29
- Cash flow to equity
  - explanation of, 592
  - financial service firms and, 592–596
- Cash slack, 707, 720
- Castillo Cable, 504, 506
- Chartists, 7
- Chez Pierre, 671–673, 688
- Cisco Systems, 106, 262–263, 280–281, 301, 444–445, 447
- Closed-end funds, 432–433
- Closure. *See* Terminal value
- Coca-Cola, 206, 317, 335, 342–343, 374–376, 429, 528–529, 548–549, 556–559, 569, 854–855
- Collectibles, 776
- Commerce One, 653
- Commodity firms
  - method to value, 621–626
  - sector-specific multiples and, 572–573
- Compahnia Vale Dia Roce (CVRD), 629–630
- Companion variables, 462, 552
- Compaq, 702, 713, 717–718, 729
- Comparable assets
  - explanation of, 759
  - real estate valuation and, 759–760
  - in relative valuation, 20
- Comparable firms
  - explanation of, 462–463
  - in relative valuation, 20–23, 462–463, 466
  - in takeover valuation, 724
- Competition, 555
- Competitive advantage
  - expansion option and, 814
  - growth rate and, 309
- Competitive advantage period (CAP), 309
- Compound options, 108, 812
- Conglomerate mergers, 837–838
- Congoleum, Inc., 721, 732–734
- Consistency principle, 156
- Consolidated Edison (Con Ed), 289, 326–327
- Consolidated valuation, 424–425
- Consolidation, 702
- Constant growth FCFE model
  - application of, 359–360
  - caveats for, 359
  - explanation of, 359
  - troubleshooting guide for, 361
- Contingent claim valuation
  - basis for, 23–24
  - option pricing models and, 24–25
  - underpinnings of, 24
- Continuous riskless rate, 96
- Contracts, 822
- Control
  - in private firms, 691–692
  - value of, 709–710, 714–715
- Convertible bonds, 216
- Copyright valuation, 775
- Corporate control, 714, 715
- Corporate finance, 9
- Corporate logos, 842
- Corporate names, 842
- Correlation, serial, 122–124
- Cost advantage, 115, 856–857
- Cost cutting, 844, 847
- Cost of capital
  - adjusted present value approach vs., 15–16, 401–402
  - best practices for estimating, 220, 221
  - calculation of, 218
  - equity value and, 396–397
  - estimation of, 220, 220
  - firm valuation and, 383–397
  - general version of FCFF model and, 385–395
  - illustration of, 405–414
  - implied, 889
  - leverage and, 402–414
  - in private firms, 674, 677

- Cost of capital (*Contd.*)  
 real estate valuation and, 749–750  
 stable growth firm and, 383–385  
 steps in, 403–414  
 takeover valuation and, 724, 725
- Cost of debt  
 calculation of, 211–215  
 for emerging market firm, 214–215  
 estimation of, 221, 404  
 in private firms, 674–676  
 stable growth firms and, 311–312
- Cost of delay, 784–785
- Cost of equity  
 betas and, 183–206  
 cost of capital approach and, 403–404  
 dividend discount model and, 323  
 estimation of, 205–207, 222  
 expected return and, 205–207  
 explanation of, 183  
 financial service firms and, 586  
 Gordon growth model and, 324, 325  
 private firms and, 668  
 for real estate valuation, 741, 749–750  
 takeover valuation and, 724
- Country risk exposure  
 measurement, 205–206
- Country risk premium  
 approaches to, 170–171  
 estimating asset exposure to, 171–172  
 function of, 166–167  
 measurement of, 167–170
- Covariances, 67–68
- Cross holdings  
 income from, 244  
 valuation of, 434–438
- Current assets, 31–32  
 Current liabilities, 36–37  
 Current ratios, 48–49
- Cyber Health Consulting (CHC), 237
- Cyclical firms  
 discounted cash flow valuation and, 17–18  
 negative earnings in, 613–621  
 recessions and, 17–18
- Daimler, 190  
 Daimler-Benz, 616–617  
 Dalton Motors, 719, 720, 722, 723  
 Dana Corporation, 618  
 Data mining, 76  
 DCF. *See* Discounted cash flow (DCF) valuation
- Debt. *See also* Cost of debt  
 calculating capacity for, 721–722  
 calculating weight of, 216–220, 404  
 capitalizing operating leases and, 217, 218  
 change in mix of equity and, 858  
 in cost of capital computation, 210–211  
 estimating market value of, 219  
 explanation of, 217  
 face value of, 833  
 financial service firms and, 582  
 gross, 220, 395–396  
 interest-bearing, 263  
 long-term, 37, 263  
 maturity of, 833  
 net, 220, 395–396  
 short-term, 263
- Debt ratios  
 book value vs. market value, 218–219  
 explanation of, 52  
 private firms and, 676  
 stable growth firms and, 311–312  
 takeover valuations and, 721
- Debt-to-capital ratio, 52  
 Debt-to-equity ratio, 52, 198
- Decision tree analysis  
 assessment of, 919–921  
 benefits and drawbacks of, 905–906  
 explanation of, 899–900  
 illustration of, 902–904  
 risk-adjusted value and, 906–908  
 steps in, 900–902
- Decline phase, in business life cycle, 646
- Default probability, 830, 831
- Default risk  
 bond ratings and interest rates and, 78–81  
 cost of debt and, 211  
 country risk premium and, 167–168  
 determinants of, 78  
 estimation of, 211–213  
 explanation of, 50, 77–78  
 stable growth firms and, 312
- Default spreads  
 on bonds, 177–180  
 determinants of, 178–180  
 estimation of, 177, 211–213  
 option pricing model and, 830, 831
- Deferred taxes, 39–40
- Defined benefit plans, 39
- Defined contribution plans, 39
- Definitional tests, 456–458
- Delay option. *See* Project delay option
- Dental practices, 772
- Depreciation  
 accounting changes for, 841–842  
 relationship between capital spending and, 366–367
- Derivatives, risk-free rates and, 158–159
- Descriptive tests, 458–459
- Deutsche Bank, 190, 594–595

- Digital Equipment Corporation, 702, 713–714, 717–718, 728, 729
- Dilution, expected, 443–444
- Discounted cash flow (DCF) valuation
- applicability and limitations of, 17–19, 929–934
  - basis for, 11–12
  - benefits of, 418
  - cash flow return on investment and, 887–888
  - cash flow to equity models and, 592–596
  - categorizing models of, 12–17
  - choices in use of, 929–933
  - cost of capital vs APV approaches and, 15–16
  - distress-adjusted, 633–637
  - dividend discount models and, 585–592
  - economic value added and, 872–878
  - equity valuation and firm valuation and, 12–15
  - estimating cash flows and, 750–752
  - estimating discount rates and, 740–750
  - excess return models and, 596–598
  - expansion option and, 815
  - explanation of, 12, 584
  - financial service firms and, 584–598
  - limitations of, 758
  - for real estate, 740–758
  - relative valuation and, 466–467, 930
  - terminal value and, 751
  - total cash flow vs. excess cash flow models, 16–17
  - for young/start-up companies, 656
- Discounted terminal value, 647
- Discount rates
- decision trees and, 907–908
  - estimation of, 740–750
  - private firms and, 668
  - in real estate valuation, 740–750
  - sector-specific multiples and, 574
  - survey approach to, 747–749
  - takeover valuations and, 724–725
- Disney, 353–354, 405–414, 416–418
- Distress, 320
- Distress-adjusted discounted cash flow (DCF) valuation, 633–637
- Distressed firms
- bondholder and stockholder conflict in, 836–838
  - discounted cash flow valuation and, 17
  - equity in, 826–828
  - estimating value of equity as option in, 831–835
  - viewing equity as option in, 828–831
- Diversifiable risk, 62–65, 67, 745–746
- Diversification
- acquisition, 706–707, 712, 719–720
  - arbitrage pricing model and, 69
  - real estate, 747
  - risk and, 64–66, 706–707
  - significance of, 648
- Divestitures, 243, 843–845
- Dividend discount models
- basic, 585
  - caveats on use of, 346–348
  - cost of equity and, 586
  - expected growth and, 587–588
  - explanation of, 323, 351
  - FCFE valuation compared with, 372–378
  - Gordon growth, 324–329
  - high-growth, 589–591
- H model for valuing growth and, 338–340
- inputs to, 585–586
- issues in use of, 344–345
- non-dividend-paying financial service firm and, 592
- payout ratios and, 330, 333–335, 339, 586–587
- stable growth, 471, 514–516, 588–589
- tests of, 345–348
- three-stage, 340–344
- two-stage, 329–336
- used for valuing entire market, 335–336
- value of growth and, 337–338
- Dividend payout ratio, 354
- Dividends
- Black-Scholes model and, 98–100
  - expected, 323, 339
  - firm pay out and, 346–347
  - free cash flow to equity and, 353–355
  - private firms and, 677–678
  - on underlying asset, 89
  - value-neutral actions related to, 841, 842
- Dividend yield, for natural resource, 800
- Double counting risk, 169
- Early exercise, options, 100–103
- Earnings. *See also* Negative earnings
- accounting principles and measurement of, 42–47
  - adjustment of, 229–246
  - announcements of, 131–133
  - cash flow distinguished from, 596
  - current, 931–932
  - in cyclical firms, 617–621
  - importance of updating, 230–231
  - life-cycle, 637–639

- Earnings (*Contd.*)  
 managed, 240–242  
 misclassification of, 232–239  
 multiples and normalized, 627  
 normalized, 627, 931–932  
 quality of forecasts of, 283–284  
 whispered, 240–241
- Earnings before interest, taxes, depreciation, and amortization (EBITDA)  
 enterprise value and, 500–508  
 explanation of, 50–51, 318  
 FCFF model and, 382
- Earnings before interest and taxes (EBIT)  
 explanation of, 44, 230  
 FCFF model and, 382
- “Earnings Forecaster” (Standard & Poor’s), 283
- Earnings multiples  
 enterprise value to EBITDA multiples and, 500–507  
 explanation of, 454, 468  
 PE ratio and, 487–497  
 price-earnings ratio and, 468–487  
 price to earnings before R&D expenses and, 499–500  
 price to future earnings and, 498–499  
 relative PE ratios and, 497, 498  
 value multiples and, 508
- Earnings per share (EPs)  
 growth in, 275, 285–286  
 historical growth rate, 275  
 time series models to predict, 276–278
- Earnings reports  
 warning signs in, 248  
 for young/start-up firms, 662  
 eBay, 777
- Economic value added (EVA)  
 calculation of, 870–871  
 discounted cash flow and, 872–878  
 equity, 884  
 explanation of, 536, 869  
 firm value and, 877–882  
 high-growth firms and, 883  
 market value and, 882–884  
 net present value and, 871–872
- Economies of scale, 707
- Effective tax rate  
 explanation of, 250–251  
 marginal vs., 251–252  
 value and, 252–254
- Efficient markets, 111, 112.  
*See also* Market efficiency
- Embraer, 209, 215, 221
- Emerging markets  
 beta estimation for companies in, 188, 190  
 cost of debt for firm in, 214–215  
 developing market exposure and, 392–395  
 lambdas and, 206  
 PE ratios across, 481
- E model (three-stage FCFE model)  
 application of, 367–370  
 caveats in use of, 366–367  
 explanation of, 366  
 trouble shooting guide for, 371
- Empire building, 710–711
- Employee benefits, as long-term liability, 38–39
- Employee development expenses, 593
- Enterprise value to EBITDA multiples (EV/EBITDA)  
 analysis of determinants of, 502–506  
 application of, 506  
 cross holdings and, 501–502  
 explanation of, 500–501  
 illustration of, 501–502  
 variants of, 508
- Enterprise value to sales ratio, 543
- Equity. *See also* Cost of equity; Return on equity (ROE)  
 accounting measure of, 40–41  
 book value of, 40, 511, 514  
 as call option, 827–829, 837, 838  
 change in mix of debt and, 858  
 estimating cash flows to, 285  
 estimating market value of, 219  
 nonstandardized, 696  
 reinvestment rate for, 358, 359  
 value of, 337, 584, 632, 658–659
- Equity economic value added, 884
- Equity research, 2, 3
- Equity risk  
 alternative models for, 71–76  
 comparative analysis of models for, 76–77  
 expected return and, 60–71  
 explanation of, 59–60  
 stable growth firms and, 311
- Equity risk premium  
 competing views of, 160–161  
 country, 166–172  
 explanation of, 159  
 historical, 161–166  
 implied, 172–176
- Equity value  
 FCFE models and, 361, 366  
 firm valuation vs., 12–15, 396–397, 440–442  
 negative, 632
- Equity value per share  
 firm value and, 440–441

- management and
  - employee options and, 442–448
  - nonoperating assets and, 423–440
  - voting rights and, 448–450
- Escape clauses, in contracts, 822
- Estimation noise, for young/start-up firms, 651–652
- European options, 90, 100
- Eurotunnel, 834–835
- Event studies
  - example of, 118
  - explanation of, 116
  - steps in, 116–117
- EV/Invested Capital, 533, 534, 536
- Excess returns
  - basic model of, 596–597
  - financial service firms and, 596–598
  - inputs to model of, 597–598
  - price-book value ratio and, 531–532
  - stable growth rate and, 314–315
- Exchange ratio, 728
- Exclusivity
  - in franchises, 767
  - trademarks, copyrights, and licenses and, 775
- Ex-dividend date, 104
- Exercise price
  - for natural resource, 800
  - on project delay option, 784
- Expansion options
  - applications for, 812–814
  - explanation of, 805
  - extensions and implications of, 810–812
  - inputs to value, 806–808
  - payoff on, 805, 806
  - problems in valuing, 810
  - tests for, 813–814
  - valuing firm with, 815, 816
- Expansion phase, in business life cycle, 645
- Expectations, for young/start-up firms, 663
- Expected extraordinary growth, price-earnings (PE) ratio, 474, 475
- Expected growth. *See also* Growth/growth rate
  - in cyclical firms, 617, 618
  - financial service firms and, 587–588
  - in operating income, 290–291
  - in private firms, 681–682
  - real estate valuation and, 751
  - value enhancement and, 851–854
- Expected liquidation value, 305
- Expected returns
  - arbitrage pricing model and, 69–70
  - capital asset pricing model and, 77
  - equity risk and, 60, 61
  - estimation of, 207–209
  - risk and, 68
- Expenses, nonrecurring, 43–44
- Extraordinary growth rate, two-stage dividend discount model and, 329–330
- Exxon Mobil, 625–626, 911–914
- Facebook, 576
- Fade factor, 889
- FCFE. *See* Free cash flow to equity (FCFE); Free cash flow to equity (FCFE) valuation models
- FCFF. *See* Free cash flow to firm (FCFF)
- Filter rules, 124–125
- Financial Accounting Standards Board (FASB), 38, 241
- Financial analysis. *See also* Analysts
  - function of, 43
- Financial balance sheets, 228
- Financial expenses, 238–239
- Financial flexibility
  - determinants of value of, 817–819
  - explanation of, 717
  - implications of, 819–820
- Financial leverage. *See also* Leverage
  - adjusted present value and, 415–418
  - betas and, 195–196
  - valuation issues related to, 630–632
- Financial ratios
  - long-term solvency and default risk, 50–52
  - short-term liquidity risk, 48–50
- Financial service firms
  - asset-based valuation of, 599
  - cash flow to equity models and, 592–596
  - categories of, 581–582
  - discounted cash flow valuation of, 584–598
  - framework for valuation of, 583–584
  - issues in valuing, 605–607
  - meaning of debt for, 582, 583
  - price-book value ratios for, 602–605
  - price-earnings ratios for, 600–602
  - regulatory overlay of, 582–583
  - reinvestment at, 583
  - relative valuation of, 599–605
- Financial statements
  - accounting standard differences and, 53, 54
  - approaches to, 27, 55
  - asset measurement and valuation and, 29–35
  - basic accounting statements, 27–29
  - disclosures in, 48



- Financial statements (*Contd.*)  
 earnings and profitability  
 measurement and, 42–47  
 financing mix  
 measurement and,  
 36–41  
 function of, 27  
 risk measurement and,  
 47–53
- Financial synergy  
 cash slack and, 720  
 debt capacity and,  
 721–722  
 diversification and,  
 719–720  
 growth and price-earnings  
 multiples and, 723–724  
 as motive for acquisition,  
 712  
 sources of, 707–708  
 tax benefits and, 720, 721  
 valuing, 719–723
- Financing expenses  
 explanation of, 42  
 strategies to reduce,  
 857–859
- Firms. *See also* Target firms;  
*specific types of firms*  
 comparable, 462–463,  
 562–563, 724  
 explanation of, 228  
 growth and size of,  
 279–281, 309  
 life cycle and survival of,  
 318–320  
 with long-term problems,  
 626–639  
 with negative earnings,  
 615–639, 853–854  
 with operating problems,  
 628  
 overvalued, 937  
 with patents, 638,  
 793–795  
 privatized, 629–630  
 with strategic problems,  
 627–628  
 takeover of poorly  
 managed, 708–710  
 tax books and reporting  
 books of, 257  
 technology, 243, 442, 489,  
 490  
 with temporary problems,  
 615–626  
 undervalued, 706, 937  
 value of, 304–305, 584,  
 828, 829, 832, 833, 877
- Firm-specific information,  
 valuation and, 3
- Firm-specific risk, 63, 64
- Firm valuation  
 adjusted present value  
 approach to, 398–402,  
 415–419  
 cost of capital approach  
 to, 383–397  
 effect of leverage and,  
 402–414  
 equity valuation vs.,  
 12–15, 396–397,  
 440–441  
 free cash flow to firm and,  
 380–383
- First in, first out (FIFO), 31
- Float, 659
- Foreign markets, cash held  
 in, 427–428
- Forward contracts, 158
- Forward price-earnings (PE)  
 ratios, 500
- Fractal geometry, 73
- Franchise buyers, philosophy  
 of, 7
- Franchise valuations,  
 767–771
- Frankfurt DAX, 188, 190
- Free cash flow to equity  
 (FCFE)  
 dividend discount model  
 valuation and, 372–376  
 dividends and, 354–355  
 earnings and, 472  
 estimating growth in,  
 358  
 explanation of, 351–354,  
 371  
 FCFF model compared  
 with, 381–383  
 financial service firms  
 and, 594–595  
 firm payout and, 356–357  
 growth in, 381–383  
 negative, 371  
 separate valuation and,  
 425
- Free cash flow to equity  
 (FCFE) valuation models  
 constant growth,  
 359–361  
 E (three-stage), 366–371  
 explanation of, 357–358  
 two-stage, 362–365, 367
- Free cash flow to firm  
 (FCFF)  
 explanation of, 228,  
 380–381  
 FCFE compared with,  
 381–383  
 growth in, 381–383  
 other cash flow measures  
 and, 381
- Free cash flow to firm  
 (FCFF) model (general  
 version)  
 explanation of, 385–386  
 firms best suited for, 386  
 illustrations of, 387–395  
 problems related to, 387
- Friendly acquisition, 703,  
 704, 709
- FTSE, 188
- Fundamental analysis, 6
- Fundamental betas  
 determinants of, 193–196  
 explanation of, 193, 670  
 in private firms, 670
- Fundamentals  
 multiple selection and,  
 461–462  
 PE ratios in markets with  
 different, 479  
 in relative valuation, 20
- Future claims, 441
- Future growth, 880–881
- Futures contracts, 158
- The Gap, 238, 266–267
- Garbage in, garbage out,  
 897, 917–918
- GEICO, 429
- Geneen, Harold, 711
- General Electric, 274–275,  
 282, 301
- Generally accepted  
 accounting principles  
 (GAAP)  
 acquisition accounting  
 and, 729

- explanation of, 29, 42  
 international financial reporting standards vs., 53, 54  
 Geometric average, 162–163, 272–273  
 Gerdau Steel, 392–395  
 Gianni Cosmetics, 838  
 Golden shares, 629  
 Goldman Sachs, 597–598  
 Goodwill, value of, 34  
 Gordon growth model  
   application of, 325–329  
   explanation of, 324  
   limitations of, 325  
   stable growth rate and, 324  
 Government bonds, 157–158  
 Govline Online (GOL), 575  
 Grocery sector, 565–568  
 Gross debt, 220, 395–396  
 Growth/growth rate. *See* Expected growth; Stable growth; Stable growth firms  
   analyst estimates of, 282–285  
   economic value added and future, 880–881  
   estimation of future, 284–285, 681–682  
   fundamental determinants of, 285–301  
   historical, 272–281  
   importance of, 271  
   methods to estimate, 271  
   patterns in, 932–933  
   PEG ratios and, 496  
   in private firms, 681–683  
   qualitative aspects of, 301–302  
   reinvestment and, 651–653  
   sources of, 933  
   value of, 337–338  
 Gulf Oil, 801  
 Gulf & Western, 709–710  
 Health care benefits, 38, 39, 441  
 Helsinki Stock Exchange (HEX), 189  
 Higgledy piggledy growth, 278–279  
 High-dividend stocks, 348  
 High-growth firms  
   economic value added for, 883  
   financial service firms as, 589–591  
   price–book value ratio for, 517–519  
   price–earnings ratio for, 471–473  
   price-to-sales ratio for, 546–547  
   two-stage dividend discount model and, 331  
   value-to-sales ratio for, 548–549  
 High-growth period  
   in business life cycle, 646  
   value enhancement strategies and, 854–857  
 Historical growth  
   estimation of, 272–278  
   financial service firms and, 587  
   negative earnings and, 612  
   usefulness of, 278–281  
 Historical market beta, 183–193  
 Historical risk premiums  
   caveats of, 164  
   country, 166–172  
   divergence in, 161–163  
   implied equity premiums vs., 172–176  
   modified, 165–166  
   for non-U.S. markets, 163, 165  
   for U.S. market, 164  
 H model, 338–340  
 Holt Associates, 889  
 Home Depot, 35, 41, 44, 53, 818–820, 852  
 Hostile acquisition, 703–704, 709–710  
 Hot hands phenomenon, 148–149  
 HSBC, 588–589  
 Human capital, 583–584  
 Hybrid securities, 215–216  
 Hyundai Corporation, 631–632  
 Hyundai Heavy, 437–438  
 IBM, 242, 627  
 Illiquidity discounts  
   determinants of, 684–685  
   estimation of, 686–688  
   explanation of, 684  
   studies of, 685–686  
 Implied equity premium  
   explanation of, 172–176, 743–744  
   historical vs., 176  
 Implied private costs of equity, 674  
 Income statement  
   characteristics of, 230  
   explanation of, 27, 28  
 Index arbitrage, 115  
 Index domination, 189  
 Inflation, real estate and, 740  
 Information  
   about real estate, 747  
   decision trees and value of, 905  
   used for valuation, 3–4  
   for valuing firms, 643–644, 648  
 Informational events  
   earnings announcements as, 131–133  
   investment and project announcements as, 133, 134  
   market reaction to, 130–131  
 Information traders, 7–8  
 InfoSoft, 669–672, 692  
 Infrastructure firms, 637–638  
 Infrastructure investments, 614  
 Initial public offerings (IPOs), 22  
 Insider trading, 142, 144–145  
 Institutional trading, 139–140  
 Institutions Brokers Estimate System (I/B/E/S), 284  
 Insurance companies, 600–602  
 Intangible assets, 34, 644  
 Intel, 240, 241

- Interest-bearing debt, 263
- Interest coverage ratios, 50–51, 212, 213, 675–677
- Interest rates, 81, 90
- Internal rate of return (IRR), 886–887
- International financial reporting standards (IFRS)
- acquisition accounting and, 729
- explanation of, 53, 54
- Internet service providers/retailers, 543, 562, 564, 573–575
- Internet stocks, 562
- Inventory, approaches to valuing, 31–32
- Inventory turnover, 49
- Inventory valuation, 841–842
- Investment announcements, 133, 134
- Investments
- income from, 242, 244–245
- majority active, 33–34, 434
- minority active, 33, 434
- minority passive, 32–33, 433
- in young firms, 662–664
- Investment strategies, 120–121
- Itami, Hiroyumi, 554
- ITT, 709–710
- J. Crew, 400–401
- January effect, 138–140, 142
- Jenapharm, 516–517
- Jensen, Michael, 732
- John Wiley & Sons, 775
- JP Morgan Chase, 602
- Jump process models, 74, 107
- Key person discount, 683
- Kurtosis, 60
- Lambdas, 205–206
- Last in, first out (LIFO), 32
- LatinWorks, 436–437
- Lawsuits, expected, 441
- Layoffs, 844
- LEAPS, 24
- Lear Aircraft, 821
- Leases
- capital, 38
- as long-term liability, 37–38
- operating, 38
- Lemieux, Mario, 240
- Leverage
- betas and financial, 195–196, 199
- FCFE models and, 361
- operating, 194
- optimal, 402–403
- Leveraged buyouts, 703, 731–734
- Leveraged firms
- adjusted present value and, 415–418
- firm value and, 402–414
- negative earnings and, 630–631
- Liabilities
- accounting principles and, 36–41
- book value of, 511
- current, 36–37
- expected, 441
- limited, 827
- long-term, 37–40
- measuring value of, 36–40
- short-term, 36–37
- Licenses
- firms with unutilized, 18
- valuation of, 775
- value enhancement and, 855
- Life cycle
- earnings and, 637–639
- explanation of, 318–319, 644–646
- negative earnings and, 614–615, 644
- private firms and, 697
- Lillian Vernon, 296
- Limited liability, 827
- Linear regression models, 273–275
- Linkedin, 296, 300, 576–577
- Liquidation
- distressed firms and, 832
- payoff to equity investors on, 826–827
- as value enhancement strategy, 843, 852
- Liquidation value, 305, 633, 925
- Liquidity
- beta estimation and, 190
- in private firms, 698
- real estate, 746
- L.L. Bean, 296
- Loans, 36. *See also* Borrowing; Long-term debt
- Log-linear regression models, 274–275
- Long-term bonds, 37
- Long-term borrowing, 37
- Long-term debt, 37, 263
- Long-term debt to capital ratio, 52
- Long-term debt to equity ratio, 52
- Long-term liabilities
- deferred taxes as, 39–40
- employee benefits as, 38–39
- explanation of, 37
- leases as, 37–38
- Long-term options, 98–100
- Long-term price movement, 126
- Long-term solvency, 50
- Lube & Auto, 719, 720, 722, 723, 838
- Lululemon, 875–877
- Lumpy capital expenditures, 259
- Lutèce, 773–774
- Macroeconomics, valuation and, 622
- Majority active investments, 33–34, 434
- Managed earnings, 240–242
- Management
- self-interest of, 710–711
- status quo vs. optimal, 934
- for young/start-up firms, 663–665

- Management buyouts, 703  
 Mandelbrot, Benoit, 72, 73  
 Marginal return on equity, 289  
 Marginal tax rate  
   effective vs., 250–252  
   explanation of, 250–251  
   for multinationals, 252  
   value and, 252–254  
 Margin of safety (MOS), 915  
 Margins, revenue multiples and, 560–562  
 Marketability, of assets, 926–927  
 Marketable securities  
   accounting for, 430–432  
   in consolidated valuation, 424–425  
   premiums or discounts on, 432–433  
   in separate valuation, 425–426  
 Market anomalies  
   explanation of, 134  
   January effect and, 138–140, 142  
   price-book value ratios and, 137–138  
   price-earnings ratios and, 136, 137  
   small firm effect and, 135–136  
   temporal, 138–142  
   weekend effect and, 140–141, 143, 144  
 Market betas, 669–672  
 Marketeters, use of valuation by, 8  
 Market efficiency  
   analyst recommendations and, 145, 146  
   event studies and, 116–118  
   evidence on, 122  
   explanation of, 112  
   implications of, 112–113  
   insider trading and, 142, 144–145  
   long-term movements and, 126–128  
   market anomalies and, 134–141  
   market reaction to information events and, 130–133  
   money managers and, 146–150  
   necessary conditions for, 114  
   overview of, 111  
   pitfalls in testing, 120–122  
   portfolio studies and, 119–120  
   propositions about, 114–115  
   short-term movements and, 122–126  
   speculative bubbles, crashes, and panics and, 128–130  
   survival bias and, 121  
   tests for, 116–120  
   time series properties of price changes and, 122–130  
   valuation and, 5  
 Marketing strategies, 552–554  
 Market performance, 121  
 Market regressions  
   application of, 568, 569  
   explanation of, 466  
   updating, 485–487  
 Market risk  
   arbitrage pricing model and, 68–69  
   of individual asset, 67  
   mean-variance models measuring, 65  
 Market share, 555  
 Market timers, investor philosophy of, 8  
 Market valuation  
   simulations and, 917  
   use of, 936–937  
 Market value  
   cash flow return on investment and, 890  
   economic value added and, 882–884  
   of equity and debt, 219  
 Market value debt ratio, 218, 219  
 Market value debt to capital ratio, 52  
 Market value debt to equity ratio, 52  
 Market value weights  
   for debt and equity, 221  
   firm valuation and, 386  
 Marketwide information, 3  
 Marks and Spencer, 265, 845, 846  
 Master limited partnerships (MLPs), 745, 747, 762, 763  
 Matrix approach, price-book value ratios and, 524  
 Mature growth phase, in business life cycle, 646  
 McDonnell Douglas, 203  
 Mergers  
   conglomerate, 837–838  
   success rates for, 731  
 Merrill Lynch, 186  
 MGM Resorts, 634–637  
 Microsoft, 240, 241, 282, 429–432, 576, 577, 855–856  
 MicroStrategy, 242  
 Miller-Modigliani theorem, 858  
 Minority active investments, 33, 434  
 Minority passive investments, 32–33, 433  
 Mismatch, revenue multiples and, 560–562  
 MLPs. *See* Master limited partnerships (MLPs)  
*Mobilizing Invisible Assets* (Itami), 554  
 Modified interest coverage ratio, 217  
 Modified multiples, 463  
 Money managers, 146–150  
 Monopolies  
   franchises as legal, 767  
   valuing regulated, 326–327  
 Monte Carlo simulations, 911–914  
 Moody's Investors Service, 78

- Morgan Stanley Capital International (MSCI) index, 188
- Morningstar, 186
- Motorola, 273, 295
- MSNBC, 430
- Multifactor models  
betas in, 668  
expected returns and, 77, 207  
risk and return analysis and, 71
- Multinational firms, tax issues and, 252, 847
- Multiples. *See also specific multiples*  
analytical tests and, 459–462  
application tests and, 462–466  
book value, 455, 511–539  
companion variables and, 552  
definitional tests and, 456–458  
descriptive tests and, 458–459  
earnings, 454, 468–508  
to estimate terminal value, 305–306  
of future revenues, 570–571  
modified, 463  
normalized earnings and, 627  
private transaction, 695–697  
public, 697–699  
in relative valuation, 20–23, 454–462  
revenue, 455, 542–571  
sector-specific, 455–456, 571–577  
selection factors for, 933, 935–936  
steps for use of, 456–466  
takeover valuation and, 724  
value, 508  
to value financial service firms, 600
- Multiple-scenario analysis, 895–897
- Mutual fund companies, valuation of, 771
- National Council of Real Estate Investment Fiduciaries (NCREIF), 742
- Nationalization, valuing company facing threat of, 897–898
- Natural resource firms  
method to value, 621–626  
undeveloped reserves of, 796–805
- Natural resource options  
illustration of, 801  
individual reserves vs. aggregate reserves and, 799–800  
inputs for valuing, 797–798, 800, 803  
price volatility and, 802  
uncertainty and, 799  
undeveloped reserves as, 796–805
- NBC, 430
- NCR, 241n, 704
- Near-cash investments, 428
- Negative earnings  
causes of, 613–615  
in commodity and natural resource firms, 621–626  
consequences of, 611–613  
in cyclical firms, 617–621  
financial leverage and, 630–632  
in firms with long-term problems, 626–639  
in firms with temporary problems, 615–626  
historical growth and, 275, 276  
life cycle perspective and, 614–615, 644  
operating problems and, 628  
privatization and, 629–630
- sectorwide or market-driven problems and, 617  
strategic problems and, 627–628  
value enhancement in firms with, 853–854  
in young/start-up firms, 615
- Negative FCFE, 371
- Negative working capital, 267–268
- Nestlé, 206, 363–365
- Net capital expenditures  
acquisitions and, 261–263  
estimation of, 258–263  
smoothing and, 259  
treated as operating expenses, 260–261  
value enhancement and, 849
- Net debt, 220, 395–396
- Net income  
estimation of, 243  
growth in, 287  
in private firms, 680–681
- Net operating losses (NOLs), 255–256, 847
- Net payoff, options, 87–88
- Net present value (NPV)  
economic value added and, 871–872  
of future projects, 781–782  
patent value vs., 792  
real option valuations and, 823
- New York City Cab Medallion, 768–770
- Nikkei, 188
- Nokia, 189
- Nominal risk-free rates, 156–157
- Noncash-flow-producing assets, 775–777
- Noncash return on equity (ROE), 358
- Noncash working capital  
characteristics of, 263  
expected changes in, 265–267

- value enhancement and, 849–850
- Nondiversifiable risk, 62–65, 67, 745–746
- Nondiversification, in private firms, 672–673
- Nonoperating assets
  - cash holdings and, 424
  - consolidated valuation and, 424–425
  - discounting cash and, 426–428
  - explanation of, 423
  - holdings in other firms and, 433–438
  - marketable securities and, 430–433
  - operating cash requirements and, 423–424
  - pension fund assets and, 440
  - risky security investments and, 428–430
  - separate valuation of, 425–426
  - unused assets and, 439–440
  - of young/state-up firms, 657–658
- Nonrecurring expenses, 43–44
- Normalized earnings, 627, 931
- NYSE Composite, 138
- Office buildings
  - DCF valuation model for, 754–756, 758, 760
  - equity stake in, 756–757
- Oil companies, 801
- Oil reserve, 798
- Operating cash balance, 423–424
- Operating efficiency, as value enhancement strategy, 844–847
- Operating expenses
  - capital expenses treated as, 260–261
  - capitalizing, 236, 237, 242
  - explanation of, 42
  - misclassification of, 232–237
- Operating income
  - adjustments to, 238–239
  - estimation of, 243
  - growth in, 289–300
  - in private firms, 680–681
- Operating leases
  - adjusting operating income for, 238–239
  - debt conversion for, 217, 218, 238
  - explanation of, 38
  - FCFF application and, 387–389
- Operating leverage
  - beta determination and, 194
  - reduction of, 857–858
  - risk and, 654
- Operating margin
  - comparison of, 845, 846
  - forecasts of, 296–297
  - for young/start-up companies, 650–651
- Operating risk, 857
- Operating synergy
  - as motive for acquisition, 712
  - sources of, 707
  - valuing, 715–718
- Optimal leverage, 402–403
- Option pricing
  - call and put, 87–88
  - capped and barrier, 107–109
  - compound, 108
  - rainbow, 108–109
  - valuation and, 23
  - to value equity, 831
  - venture investing and, 836
- Option pricing model
  - applicability and limitations of, 24–25
  - arbitrage possibilities and, 786
  - background of, 90–91
  - binomial, 91–95, 786
  - Black-Scholes, 95–106, 786
  - categorizing, 24
  - choices related to use of, 937–938
  - function of, 24
  - jump process, 74, 107
  - probability of default and, 830
  - use of, 937–938
  - valuing options using, 445–447
- Option pricing theory
  - conflict between bondholders and stockholders and, 836
  - project delay valuation and, 783
- Options. *See also* Call options; Project delay option; Put options
  - after-tax value of, 446
  - American vs. European, 90, 100
  - approaches to incorporate effect of, 443–445
  - compound, 108, 812
  - determination of value of, 89–90, 94–95
  - explanation of, 87, 109
  - future grants, 448
  - in management compensation packages, 442
  - natural resource, 796–802
  - overhang, 442, 444–445
  - patents as, 789–790, 812
  - rainbow, 108–109
  - real, 813, 823
  - sequential, 812
  - value per share and, 442–445
- Option to abandon. *See* Abandonment option
- Option to expand. *See* Expansion options
- Ordinary least squares (OLS) regression, 273
- Outliers, 459
- Overvalued firms, 937

- Par value, 37
- Patents  
 as call options, 789–790, 812  
 expiration of, 796  
 unutilized, 18  
 value enhancement and, 855  
 valuing, 34, 791–792  
 valuing firms with, 638, 793–795
- Payoff diagrams  
 explanation of, 87–88  
 for option to delay projects, 782–783
- Payout ratios  
 dividend discount models and, 330, 333–335, 339  
 financial service firms and, 586–587  
 price-earnings ratios and, 472  
 stable growth and, 324, 471, 588
- PBV ratios. *See* Price-book value (PBV) ratios
- PEG ratio (PE ratio to growth)  
 cross-sectional distribution of, 489–490  
 determinants of, 490–492  
 explanation of, 487–489  
 used for comparisons, 493–496
- Pension funds, 38–39, 440, 441
- PE ratios. *See* Price-earnings (PE) ratio
- PE ratio to growth (PEG). *See* PEG ratio (PE ratio to growth)
- Per-share value, of young/start-up firms, 658–659
- Personal expenses, 678
- Pharmaceutical firms, 614, 902–904
- Piecewise valuation, 418
- Pooling accounting, 34
- Portfolio management  
 payoff to active, 146, 148  
 valuation in, 6–8
- Portfolio studies, 119–120
- Power-law distribution, 72–73
- Preferred dividends, free cash flow to equity and, 353
- Preferred stock  
 cost of, 215–216  
 value of, 40
- Premiums, on marketable securities, 432
- Present value (PV), discounted cash flow valuation and, 11
- Price-book value (PBV) ratios  
 across firms in sector, 523–526  
 analysis of, 514–517  
 applications of, 521–530  
 characteristics of, 514  
 comparing firms across market and, 527–529  
 comparing firms across time, 529  
 disadvantages to use of, 511–512  
 excess returns and, 531–532  
 explanation of, 137–138, 455, 512–513  
 for financial service firm valuation, 602–605  
 for high-growth firms, 517–519  
 investment strategies using, 530–537  
 for market, 522–523  
 matrix approach and, 524  
 measurement issues related to, 512–513  
 reasons for use of, 511  
 regression approach and, 524–527  
 return on equity and, 519–521, 524, 527, 529, 530  
 risk and, 532
- Price changes, time series properties of, 122–130
- Price-earnings (PE) ratio  
 comparisons across countries, 479–481  
 across firms in market, 483–487  
 across firms in sector, 481–483  
 across time, 477–479
- Price-earnings (PE) ratios. *See also* PEG ratio (PE ratio to growth)  
 beta and, 475–476  
 discounted cash flow model perspective on, 471–473  
 earnings prior to R&D expenses and, 499–500  
 expected extraordinary growth and, 474, 475  
 explanation of, 454, 459, 468–469  
 for financial service firm valuation, 600–602  
 firms with negative earnings and, 498–499  
 forward, 500  
 high-growth firms and, 471–473  
 market distribution and, 469  
 regressions and, 562  
 relative, 497–499  
 in relative valuation, 464, 465  
 risk and, 475–476  
 stocks with low, 136, 137  
 used for comparisons, 476–487
- Price momentum, 124, 126
- Price movement  
 long-term, 126  
 short-term, 122–126
- Price reversal, 126–128
- Price-to-sales (PS) ratios  
 explanation of, 544–546  
 for high-growth firm, 546–547  
 net margins and, 565–568  
 regressions and, 562  
 revenue multiples and, 543  
 valuing brand name and, 555–556
- Pricing error, 76
- Pricing strategy, 552–555
- Private equity, 648

- Private firms  
 adjustments for risk in, 674  
 cash flows and, 19, 677–681  
 characteristics of, 667–668  
 control in, 691–692  
 discount rates and, 668–677  
 effect of key person on value of, 683–684  
 growth and, 681–683  
 illiquidity discounts and, 684–688  
 intermixing of business and personal expenses in, 678  
 tax issues in, 678–680  
 valuation motives and value estimates and, 688–691  
 valuing holdings in, 435  
 venture capital and private equity stakes and, 693–699
- Private transaction multiples, 695–697
- Privatizations, 629–630
- Probabilistic valuation  
 approaches  
 comparison of, 919–920  
 as complements or replacement for risk-adjusted value, 920–921  
 decision trees as, 899–908  
 overview of, 894  
 scenario analysis as, 894–899  
 simulations as, 908–919
- Procter & Gamble, 312, 315–316, 331–332, 338, 429, 473, 486–487
- Profitability  
 accounting principles and measurement of, 42–47  
 determination of, 32
- Profit margins, revenue multiples and, 550, 551
- Project delay option  
 cost of, 784–785  
 explanation of, 782  
 extensions of, 787–788  
 implications and extensions of, 787–788  
 inputs for valuing, 783–785  
 natural resources and, 796–802  
 option pricing models and, 786.788–789  
 patent valuing and, 789–795  
 payoff on, 782–783  
 problems in valuing, 787
- Project risk, 62–63
- Projects  
 analysis of, 781–782  
 announcements regarding, 133, 134  
 investing in risky, 837  
 stable growth firms and return on, 311
- Proxy models, 75–77
- Pseudo-American option valuation, 101–102
- Public multiples, 697–699
- Purchase accounting, 34
- Put-call parity, 106
- Put options  
 Black-Scholes model for valuing, 105–106  
 explanation of, 88  
 payoff diagram for, 88
- Quarterly Census of Employment and Wages (QCEW) (Bureau of Labor Statistics), 656
- The Quest for Value* (Stewart), 871
- Quick ratios, 49–50
- Rainbow options, 108
- R&D expenses  
 capitalizing, 232–233, 260–261, 390–391  
 price-to-earnings ratio and, 499–500  
 tax benefits of, 256–257
- Rate of return, internal, 886–887
- Rationality studies, 128–129
- Real estate  
 comparable/relative valuation and, 759–761  
 discounted cash flow valuation and, 740–758  
 financial assets vs., 739, 740  
 inflation and, 740
- Real estate appraisals, 758
- Real estate businesses  
 organizational structure of, 762–763  
 sources of income for, 761–762
- Real estate corporations, 747, 762
- Real estate indexes, 742
- Real estate investment trusts (REITs)  
 explanation of, 742, 762  
 investment and dividend policy for, 762–763  
 real estate prices and, 747  
 risk and, 745  
 taxes and, 762
- Real options, 813, 823
- Real risk-free rates, 156–157
- Recession, cyclical firms and, 17–18
- Regression betas  
 function of, 183–186  
 limitations of, 192–193
- Regression models, linear and log-linear, 273–275
- Regressions  
 applications of, 486  
 market, 485–487, 568, 569  
 multiples and, 464–466, 562–564  
 price-book ratio and, 524–527, 562  
 price-earnings ratios and, 562  
 real estate valuation and, 761
- Regulation, of financial service firms, 582–583, 606–607
- Regulatory risk, 898–899



- Reinvestment/reinvestment rate  
 at financial service firms, 583  
 measurement of, 291–293  
 negative, 294  
 net capital expenditures and, 258–263  
 stable growth firms and, 312–314, 383  
 trade-off on, 851–853  
 working capital and, 263–268  
 by young/start-up firms, 651–653
- Relative PE ratios, 497–499
- Relative strength measure, 124–125
- Relative valuation  
 application tests and, 462–466  
 basis for, 19  
 benefits and drawbacks of, 453–454  
 choices in use of, 933–937  
 choices related to use of, 933–937  
 comparables in, 20–23, 462–463, 466  
 cross-sectional vs. time-series comparisons and, 21  
 determinants and, 460–461  
 discounted case flow valuation and, 466–467, 930  
 for financial service firms, 599–605  
 fundamentals and, 20  
 multiples and, 20, 21, 454–462, 933, 935  
 of private firms, 695–699  
 underpinnings of, 19–20
- Reliance Industries, 260
- Replicating portfolio, 90–92
- Reporting books, 257
- Reserves, 242
- Restaurants, valuation of, 770, 773–774
- Restricted stock approach, 688
- Restructuring  
 beta calculation following, 203  
 firms in process of, 18
- Retention ratio  
 FCFE and, 358  
 stable growth firms and, 312–314
- Return distributions, 72–74
- Return on assets (ROA)  
 accounting for, 536  
 explanation of, 44–45
- Return on capital (ROC)  
 accounting for, 536, 537  
 characteristics of, 291–292  
 explanation of, 45–46  
 marginal and average, 294–295  
 negative, 296–297  
 positive and changing, 294–295  
 reinvestment needs and, 299–300  
 stable, 290–291
- Return on equity (ROE)  
 accounting for, 535  
 average, 288  
 current vs. expected, 529  
 determinants of, 288, 520–521  
 effect of changing, 288–289  
 explanation of, 46, 47  
 FCFF model and, 381  
 financial service firm valuation and, 604–605  
 implied, 327–328  
 marginal, 289  
 noncash, 358  
 price-book value ratio and, 519–521, 524, 527, 529, 530
- Return on invested capital (ROIC), 45
- Revenue  
 accounting principles and, 42–43  
 growth in, 279, 296, 298  
 lambda and, 205  
 multiples of future, 570–571
- Revenue growth, for young/start-up firms, 649
- Revenue multiples  
 advantages and disadvantages of, 542–543  
 analysis of, 543–559  
 cross-sectional distribution and, 543, 544  
 explanation of, 455m542, 543  
 multiples of future revenues and, 570–571  
 profit margins and, 550, 551  
 used in investment analysis, 559–569
- Rising Asia fund, 432–433
- Risk  
 acquisition diversification to reduce, 706–707  
 alternative models for equity, 71–76  
 Chinese symbol for, 58–59  
 comparative analysis of models for equity, 76–77  
 components of, 62–63  
 continuous, 897  
 default, 78–81  
 diversifiable and nondiversifiable, 62–65, 67, 745–746  
 double counting of, 169, 897, 906–907  
 economic value added and shifting of, 881–882  
 equity value and, 829  
 expected return and equity, 59–71  
 explanation of, 58–60  
 failure to control for, 121  
 firm growth and, 367  
 firm-specific, 63, 64  
 mean-variance models measuring market, 65–71  
 operating, 857

- price-book value ratio  
and, 532
- price-earnings ratios and,  
475–476
- in private firms, 674
- of real estate investments,  
741–742, 745
- regulatory, 606, 898–899
- scenario analysis and,  
894–899
- Risk-adjusted value,  
906–908, 918–919
- Risk and return models,  
160–161
- Risk assessment, for  
young/start-up firms,  
654, 655
- Risk-free  
borrowing/lending, 91
- Risk-free rates  
asset requirements and,  
154–155
- build-up, 158
- cash flows and, 156
- continuous, 96
- conversion of, 159
- cost of debt and, 211
- cost of equity and, 183
- default-free entities and,  
155
- explanation of, 154
- lack of default-free entity  
and, 157–159
- nominal, 307
- project delay option and,  
784
- real vs. nominal, 156–157
- Riskless rates. *See* Risk-free  
rates
- Risk management  
decision tree analysis and,  
905
- tax rate and, 848
- Risk measurement  
accounting principles  
underlying, 47–48
- financial ratios and,  
48–52
- financial statement  
disclosure and, 48
- for real assets in asset  
pricing models,  
741–747
- Risk premium. *See* Equity  
risk premium
- Risk proxy, 76
- Risky securities  
accounting for  
marketable securities,  
430–432
- business investments and,  
430
- reasons for holding,  
428–429
- as strategic investments,  
429–430
- RJR Nabisco, 703
- ROA. *See* Return on assets  
(ROA)
- ROC. *See* Return on capital  
(ROC)
- ROE. *See* Return on equity  
(ROE)
- R-squared ( $R^2$ ) of  
regression, 182, 186
- Runs test, 125–126
- Salaries, in private firms,  
677, 678
- Sales-to-capital ratio, 299,  
300
- Samples, biased, 121
- S&P 400, 345
- S&P 500, 186, 188, 336,  
478–479, 522, 776
- SAP, 861–862
- Scaling variables, 696, 698
- Scenario analysis  
assessment of, 919–921
- best case/worst case and,  
895
- explanation of, 894
- issues related to, 897–899
- multiple, 895–896
- for valuation and decision  
making, 896
- Scholes, Myron, 90, 95
- Sector regressions, 464, 465
- Sectors  
negative earnings in, 613
- PE ratios across firms in,  
481–483
- Sector-specific multiples  
advantages and  
disadvantages of,  
571–572
- analysis using, 576–577
- characteristics of,  
572–573
- explanation of, 455–456,  
571
- value determinants and,  
573–575
- Sector valuation, 936–937
- Secure Mail, 816
- Securities and Exchange  
Commission (SEC),  
142
- Segovia Entertainment,  
435–437
- Selling, general, and  
administrative (SG&A)  
expenses, 236, 237
- Sensitivity analysis, 895
- Separate valuation,  
425–426
- Sequential options, 812
- Serial correlation  
explanation of, 122–124
- price reversal and,  
126–127
- Service beta, 186–187
- Service businesses, valuation  
of, 771
- Shiller, Robert, 130
- Short-term borrowing, 36
- Short-term debt, 263
- Short-term liquidity risk, 48
- Short-term options, 98, 99
- Short-term price movement  
filter rules and, 124–125
- runs tests and, 125–126
- serial correlation and,  
122–124
- Siemens, 190
- Simulations  
assessment of, 919–921
- with constraints, 916–917
- for decision making,  
915–916
- explanation of, 908
- issues related to,  
917–918
- margin of safety and, 915
- Monte Carlo, 911–914
- risk adjusted value and,  
918–919
- steps in, 908–911
- Skewness, 60

- Skype, 576, 577
- Small firm effect  
 explanation of, 135–136  
 January effect and, 139
- Small firms, 210
- Social media companies,  
 575–577
- Specialty retailers, 561, 563
- Speculative bubbles,  
 128–129
- Stable growth  
 assumptions about,  
 308–316  
 constraints on, 306–307  
 Gordon growth model  
 and, 324, 325  
 terminal value and, 306  
 transition to, 316–317
- Stable growth firms  
 characteristics of, 310  
 cost of capital approach  
 and, 383–385  
 debt ratios and costs of  
 debt and, 311–312  
 equity risk and, 311  
 FCFE model and, 360  
 financial service firms as,  
 588–589  
 price–book value ratio  
 and, 514–516  
 project returns and, 311  
 reinvestment and retention  
 ratios and, 312–314  
 relative valuation and,  
 460–461  
 value-to-sales ratio and,  
 547–548
- Standard deviation, country  
 risk premium and,  
 169–170
- Standard error  
 of beta estimate, 184, 198  
 explanation of, 76
- Standard & Poor's (S&P),  
 78, 186
- Start-up firms. *See*  
 Young/start-up firms
- Start-up phase, in business  
 life cycle, 644–645
- State Bank of India,  
 589–591
- Statement of cash flows, 27,  
 29
- Status quo valuation, 713
- Stern, Joel, 871
- Stern Stewart, 871
- Stewart, Bennett, 871
- Stock  
 for acquisitions, 727  
 betas for, 742  
 preferred, 40  
 tax disadvantages of high-  
 dividend, 348  
 valuing non-dividend-  
 paying or low-  
 dividend-paying, 344
- Stock buybacks  
 adjusting book equity for,  
 513  
 firm pay out and,  
 346–347  
 two-stage dividend  
 discount model and,  
 333–335
- Stockholders  
 of distressed firms,  
 836–838  
 measuring what firms can  
 return to, 351–357
- Stock index, 742–743
- Stock prices  
 effects of option listing  
 on, 118  
 managed earnings and,  
 240–241  
 valuing options and, 446
- Stock splits, 841, 842
- Stock swap, 727
- Strike price, options, 89
- Strunks Inc., 403
- Subjective adjustments, in  
 relative valuation,  
 463
- Subsidies, for financial  
 service firms, 607
- Survey approach, to  
 estimating discount  
 rates, 747–749
- Survival  
 life cycle and, 318–320  
 of private firms, 698
- Survival bias, 121
- Susquehanna Bancshares  
 (SUSQ), 603
- Synergy  
 existence of, 708, 723  
 financial, 707–708, 712,  
 719–723  
 operating, 707, 712,  
 715–718
- Synthetic rating, 212, 213
- Takeovers. *See also*  
 Acquisitions  
 biases and common errors  
 in valuation of,  
 724–725  
 friendly, 703, 704, 709  
 hostile, 703, 704, 709–710  
 tax factors for, 720, 721,  
 727  
 value effects of, 705
- Target, 387–389
- Target firms. *See also*  
 Acquisitions;  
 Takeovers  
 deciding price of,  
 725–726  
 payment for, 726–730  
 selection factors for,  
 711–713  
 steps in acquisition of,  
 705–711  
 subsidizing, 725  
 valuation of, 713–725
- Tata Motors, 437–438
- Tax books, 257
- Taxes/taxation  
 acquisitions/takeovers  
 and, 720, 721, 727  
 after-tax value of options  
 and, 446  
 borrowing and, 398–399  
 debt and, 211  
 deferred, 39–40  
 dividends and, 348  
 effective vs. marginal tax  
 rate and, 250–254  
 high-dividend stocks and,  
 348  
 negative earnings and,  
 612  
 net operating losses and,  
 255–256  
 private firms and,  
 678–680  
 R&D expensing and,  
 256–257  
 real estate and, 746, 762

- tax books and reporting
  - books and, 257
- tax subsidies and, 258
- value enhancement
  - strategies and, 847–848
- Tax loss selling, 139
- Tax rate
  - effective, 250–254
  - estimation of, 213–214
  - marginal, 250–254
  - net operating losses and, 255–256
  - R&D expensing and, 256–257
- Tax subsidies, 258
- Technology firms, 244, 442, 489, 490
- Telebras, 190
- Telesp, 384–385, 848
- Tender offers, 703
- Terminal price, two-stage
  - FCFE model and, 362
- Terminal value
  - computation of, 304–305
  - discounted, 647
  - lif cycle and firm survival and, 318–319
  - liquidation value and, 305
  - multiple approach to, 305–306
  - private firms and, 683
  - real estate valuation and, 751–752
  - significance of, 320–321
  - stable growth model and, 306–317
  - two-stage FCFE model and, 362
- Tesla Motors, 255, 296, 300, 570–571, 649–653, 655, 657–661
- Three-stage dividend discount model
  - application of, 341–343
  - assumptions of, 341
  - explanation of, 340–341
  - troubleshooting guide for, 344
- Three-stage FCFE model. *See* E model (three-stage FCFE model)
- Time series models
  - description of, 276–278
  - limitations of, 278, 284
- Time series properties of
  - price changes
    - explanation of, 122
    - longer-term price reversal and, 126–128
    - long-term price movement and, 126
    - shorter-term price momentum and, 126
    - short-term price movement and, 122–126
  - speculative bubbles, crashes and panics and, 128–130
- Titan Cement Company, 190, 191, 202, 295
- Tobin, James, 537
- Tobin's Q, 19, 537–539
- Total SA, 328–329
- Toyota Motors, 619–621
- Trade execution, 122
- Trademarks, 34, 775
- Transaction costs, 122, 135
- Transparency, 439
- Treasury bills (T-bills), 59–60
- Treasury stock approach, 444–445
- Tsingtao Breweries, 368–370
- Turnover ratios, 49–50
- Twitter, 576, 577
- Two-stage dividend discount model
  - applications for, 331–332
  - explanation of, 329–330
  - limitations of, 330–331
  - price-book value ratio and, 517–519
  - stock buybacks and, 333–335
  - terminal price calculation and, 330
  - troubleshooting guide for, 333
  - value per share in, 490
  - valuing entire market using, 335–336
- Two-stage FCFE model
  - application of, 363–365
  - explanation of, 362
  - terminal price and, 362
  - troubleshooting guide for, 367
- Uncertainty, natural
  - resource options and, 799
- Underlying assets
  - project delay option and, 783
  - value of, 89
- Undervalued firms, 706, 937
- Undervalued stocks, 428–429
- Undeveloped land, 753
- Unlevered betas, 196, 197
- Unlevered firms, 398, 417, 418
- Unutilized assets, 18, 439–440
- Utility function, 62
- Valuation. *See also* Firm valuation; *specific types of valuation*
  - in acquisition analysis, 8–9
  - acquisitions and, 263
  - asset-based, 22, 599
  - behavioral finance and, 130
  - bias and, 2, 3
  - binomial option, 92–94
  - closure in, 304–321 (*See also* Terminal value)
  - consolidated, 424–425
  - contingent claim, 23–25
  - in corporate finance, 9
  - degree of precision in, 4
  - discounted cash flow, 11–19
  - equity and firm, 12–15
  - information used for, 3–4
  - macroeconomic views and, 622
  - market efficiency and, 5
  - marketing strategy and, 552–554
  - myths about, 2–6

- Valuation (*Contd.*)  
 philosophical basis for, 1–2  
 piecewise, 418  
 in portfolio  
 management, 6–8  
 precash and postcash, 694  
 product vs. process of, 6  
 reasons for conducting, 928–929  
 relative, 19–23, 695–699  
 role of, 6–8  
 scenario analysis for, 896  
 separate, 425–426  
 status quo, 713  
 venture capital, 646–648
- Valuation models  
 asset-based, 22, 925  
 choices in, 4–5, 925–929
- Value  
 adjusted, 319  
 effects of tax rate on, 250–253  
 of firm, 304–305, 584, 828, 829, 832, 833, 841  
 of growth, 337–338  
 liquidation, 305  
 risk-adjusted, 906–908, 918–919  
 of takeovers, 705
- Value drivers, for  
 young/start-up firms, 659–661
- Value enhancement  
 cash flow return on  
 investment approach  
 to, 869, 884–890  
 considerations for, 864–865, 890–891  
 economic value added  
 approach to, 869–884  
 firm-specific, 864  
 increase in cash flows  
 from existing  
 investments as, 842–850  
 increase in expected  
 growth as, 851–859  
 overview of, 841–842  
 price enhancement and,  
 864–865  
 Value enhancement chain,  
 859–860  
 Value Line, 186  
 Value per share of stock,  
 323  
 Value-to-book ratios  
 analysis of, 534–535  
 application of, 536–537  
 characteristics of,  
 533–534  
 explanation of, 532, 533  
 Value-to-sales ratio (VS),  
 455, 543, 547–549  
 for high-growth firm,  
 548–549
- Vans Shoes, 200–201
- Variables, companion, 462, 552
- Venture capital  
 private firms and, 693  
 returns on, 674  
 valuation and, 646–647
- Venture capitalists, 643
- Vesting, option, 445–446
- Vodafone, 516
- Volatility  
 Black-Scholes model and,  
 28  
 equity value and, 830  
 natural resources and  
 price, 802  
 Volkswagen, 360  
 Voting rights, 448–450  
 Voting shares, 691–692  
 Vulture investing, 836
- Washington Post*, 429
- Weekend effect, 140–141,  
 143, 144
- Weighted average, 32
- Weighted average cost of  
 capital (WACC), 384
- Wells Fargo, 898–899
- WestAmerica Bancorp  
 (WABC), 603
- Whispered earnings,  
 240–241
- Whole Foods Markets, 547,  
 554, 565–569
- Wilde, Oscar, 1
- Working capital  
 expected changes in  
 noncash, 265–267  
 explanation of, 263  
 FCFE model and, 351–352  
 negative, 267–268  
 noncash, 263–266,  
 849–850
- Write-offs, 242
- Xerox, 246–247, 627–628
- Yahoo!, 296–297
- Young/start-up firms  
 assessing current standing  
 of, 648  
 earnings in, 638–639  
 estimating reinvestment to  
 generate growth for,  
 651–653  
 expectations for, 663–665  
 implications for investors  
 related to, 662–663  
 implications for managers  
 related to, 663  
 information constraints  
 for, 643–644  
 key people in, 683  
 life-cycle perspective of,  
 644–646  
 negative earnings in, 615  
 noise for, 661–662  
 revenue growth for, 649  
 risk parameters and  
 discount rates for, 654,  
 655  
 survival of, 656–657  
 sustainable operating  
 margin in stable growth  
 for, 650–651  
 value drivers for, 659–661  
 value of, 655–658  
 value of equity and  
 per-share value of,  
 658–659  
 venture capital and,  
 646–648
- Zero coupon bonds, 37,  
 833