

# Index

- AAA/AA/A-rated bonds 193–5
- absolute valuation 130, 145
- academic investors 142–3
- active investing 47–9
- active risk puzzle (Litterman) 496
- active strategies 25–6, 48
- adaptive markets hypothesis (Lo) 82, 406
- advisors, CTAs 232
- agriculture 218, 223
- alpha–beta barbell 482, 498
- alpha–beta separation 237–8, 498
- alphas
  - CAPM 237
  - currency carry 285–6
  - hedge funds 229, 231, 237–8, 240–1
  - long horizon investors 506–7
  - portable alpha 498
- alternative assets 207–47
  - assets list 209
  - commodities 219–26
  - hedge funds 226–41
  - liquidity 369
  - momentum strategies 302
  - PE funds 241–5
  - premia 207–47
  - real estate 210–19
  - risk factors 322
- alternative betas 237–8
- AM *see* arithmetic mean
- ambiguity aversion 97–8
- Amihud, Yakov 362, 371–2
- announcement days 454
- arbitrage
  - behavioral finance 87–9
  - CRP front-end trading 190–1
  - equity value strategies 265
  - term structure models 156
- Argentina 287
- arithmetic mean (AM) 59–60, 485–6
- art investing 218–19
- asset classes
  - 1990–2009 44
  - alternative assets 207–47, 302, 322, 369
  - “bad times” performance 11–12
  - currency carry 279, 288–90
  - derivatives 510–11
  - foreign exchange 279
  - forward-looking indicators 33–4
  - growth sensitivities 337–8
  - historical returns 8–9, 53
  - inflation 350–5
  - long history 39
  - momentum strategies 298–9, 301–5
  - performance, 1990–2009 23–4
  - profitable strategies 8–9
  - risk factors 322–3
  - style diversification 510–11
  - traditional 6, 208–9
  - trend following 302–3
  - understanding returns 6
  - value strategies 265–7
  - volatility selling 319
  - world wealth 516–17
- assets
  - 1968–2007 468–9
  - asset richening 473–4
  - AUM 506–7
  - Berk–Green management model 497
  - cyclical variation 457–65
  - empirical “horse races” 424–8
  - ERPC 120
  - feedback loops 401–3
  - forward-looking measures 409–17
  - growth 331–8
  - illiquidity 8, 12–13, 370–1
  - liquidity 359–61
  - long-horizon investors 504
  - market relations 331–8
  - multiple asset classes 435
  - prices/pricing 9–10, 70–1, 328–9
  - privately held 369
  - real assets 47–9
  - risky assets 401–3, 475
  - seasonal regularities 445–6

- assets (*cont.*)  
 survey-based returns 435  
 tactical forecasting 440–2  
 tail risks 380–9  
 time-varying illiquidity premia 370–1  
 volatility 392–5  
*see also* asset classes
- assets under management (AUM) 506–7
- asymmetric information 81, 360
- asymmetric returns 490
- asymmetric risk 234
- at-the-money (ATM) options  
 seasonal regularities 447  
 tail risks 378–9, 391–2  
 volatility selling 308, 311, 313, 317–19
- attention bias 90
- AUM *see* assets under management
- BAB *see* betting against beta
- backfill bias 229–32
- backwardation 427
- “bad times” 12, 68–71  
 carry strategies 290  
 catastrophes 283, 286  
 crashes 284–5, 287  
 crises 52, 284–5, 372–4, 474–6  
 inflation 342, 344–5  
 rare disasters 121–2, 395
- bank credibility 348, 476
- Bank of England 363–4
- Barcap Index 183–5, 192
- BBB-rated bonds 193–5
- behavioral finance 9–13, 87–109  
 applications 98–106  
 arbitrage 87–9  
 biases 90–4  
 cross-sectional trading 102–6  
 heuristics 90–2  
 historical aspects 9–13  
 macro-inefficiencies 98–102  
 micro-inefficiencies 102–6  
 momentum 104–6  
 over/underreaction 104–6  
 preferences 94–8  
 prospect theory 94–8  
 psychology 89–98  
 rational learning 58, 77–8  
 reversal effects 91, 104–6  
 speculative bubbles 98–102  
 value stocks 263
- BEI *see* break-even inflation
- benchmarks, view-based expected returns  
 15–16
- Berk–Green asset management model 497
- Bernstein, Peter 9
- betas  
 alpha–beta barbell 482, 498  
 BAB 394–5  
 currency carry 285–6  
 equity 127–8  
 hedge funds 233–4, 237–9, 241  
 long-horizon investors 504, 506–7  
 risk 283–4  
 time-varying 264–5
- betting against beta (BAB) 394–5
- biases 90–4  
 attention 90  
 behavioral finance 90–4  
 confirmation 93  
 conservatism 91–2  
 currency carry 275  
 downgrading 186  
 extrapolation 91  
 forward rate 272  
 hedge funds 228–32, 235–6  
 heuristic simplifications 90–2  
 high equity premium 124  
 hindsight 93–4  
 historical returns 7  
 learning limits 92–4  
 memory 90, 101  
 momentum 488  
 overconfidence 92–4  
 overfitting 113  
 overoptimism 93  
 reporting 113, 235–6  
 representativeness 90, 92  
 reversal tendencies 91  
 self-attribution 93  
 self-deception 92–4  
 survey data 432  
 terminology 63  
 volatility selling 318
- binary timing model 438–9
- Black–Litterman optimizers 441
- Black–Scholes (BS) option-pricing formula  
 310, 318–19
- Black–Scholes–Merton (BSM) world  
 309–10, 317
- blind men and elephant poem (Saxe) 4–5, 7,  
 9, 13, 15–16, 19

- bond risk premium (BRP) 153–78
  - approximate identities 154–6
  - bond yield 155–6
  - business cycles 458–9
  - covariance risk 169–70
  - cyclical factors 166, 172–6
  - decomposed 10-year Treasury yield 164–5
  - drivers 164–74
  - ex ante* measures 160–1
  - historical returns 157–9
  - inflation 167–9, 350–2
  - interpreting BRP 164–74
  - IRP 167–9
  - macro-finance models 156–7
  - nominal bonds 350
  - realized/excess return 154
  - safe haven premium 169–70
  - supply–demand 166, 171–2, 175–6
  - survey-based returns 433–4
  - tactical forecasting 174–7
  - targets 164–74
  - terminology 153–7
  - theories 153–7
  - YC 155–6, 160–4, 166, 172–4
- bonds 43–7
  - AAA/AA/A-rated 194–5
  - balanced portfolios 483
  - BBB-rated 194–5
  - credit spreads 193–5
  - ERP 120, 136–7
  - government 411
  - historical records 43–7
  - HY bonds 45–6, 193, 196–8
  - IG bonds 43–6, 184–7, 197, 204
  - inflation-linked 350, 352
  - long-term 8
  - nominal 342, 350–1
  - non-government 412–14
  - relative valuation 130–3
  - stock–bond correlation 169–70
  - top-rated 193–4
  - yields 130–3
  - see also* bond risk premium; corporate bonds
- booms 461–5
- break-even inflation (BEI) 352–4
- Bretton Woods system 347
- BRIC countries 333
- BRP *see* bond risk premium
- BSM *see* Black–Scholes–Merton
- bubbles 98–102
  - absolute valuation 145
  - memory bias 101–2
  - money illusion 102
  - real estate 216
  - Shiller’s four elements 98–9
  - speculative 98–102
- Buffet, Warren 480, 497
- building block approach 413–16
- business cycles 457–65
  - asset returns 457–65
  - economic regime analysis 461–5
  - ex ante* indicators 458–65
  - realized returns 458–65
- buybacks 128–9
- B-S *see* Black–Scholes option-pricing formula
- C-P BRP *see* Cochrane–Piazzesi BRP
- forward rate curve
- calls
  - seasonal regularities 447
  - tail risks 378–9, 386, 391–2
  - volatility selling 308, 311–18
- Campbell, John 34
- Campbell–Cochrane habit formation model 76, 84
- Capital Asset Pricing Model (CAPM) 9–10
  - alphas 237
  - carry strategies 283–4
  - Consumption CAPM 283–4, 324
  - covariance with “bad times” 68–9
  - disagreement models 81
  - ERP 120, 127
  - Intertemporal CAPM 71–2
  - liquidity-adjusted 367
  - market frictions 80
  - market price equation 66–8
  - multiple risk factors 71–2
  - risk factors 324
  - risk-adjusted returns 61
  - risk-based models 67–8
  - skewness 77, 389–90
  - stock–bond correlation 170
  - supply–demand 78
  - volatility 377
- Capital Ideas* (Bernstein) 9
- capitalism 470
- capitalization (cap) rate 214–16
- CAPM *see* Capital Asset Pricing Model

- carry strategies
  - 1990–2009 25–6
  - active investing 48
  - asset classes 279, 288–90
  - business cycles 464
  - credit carry 290
  - currency 272–92
  - ERP 128–30
  - financing rates 412
  - foreign exchange 29, 50–1, 405, 416, 420–1
  - forward-looking indicators 32–3
  - forward-looking measures 128–30, 409–16
  - generic proxy role 288, 291
  - historical returns 8
  - long-horizon investors 504
  - non-zero yield spreads 419–29
  - real asset investing 48
  - roll 422–4
  - Sharpe ratios 2008 29
  - slide 423
  - tactical forecasting 442–3
- cash, ERPC 120
- cash flow 66, 413
- catastrophes 283, 286
  - see also* “bad times”
- CAY *see* consumption/wealth ratio
- CCW *see* covered call writing
- CDOs *see* collateralized debt obligations
- CDSs *see* credit default swaps
- central banks 476
- Chen three-factor stock returns model 84, 264
- China 332, 475–6
- Citi (II-)Liquidity indices 364
- Cochrane–Piazzesi BRP (C-P BRP) forward rate curve 160, 164–6, 172, 175
  - see also* Campbell–Cochrane
- collateral return 219–20
- collateralized debt obligations (CDOs) 386–8
- comfortable approaches 505–6
- commodities 219–26
  - characteristics 208
  - equity value strategies 265
  - excess returns 222–3
  - expected returns 225–6
  - expected risk premia 219–22
  - futures 48, 219–26, 423, 427
  - historical returns 222–5
  - inflation 355
  - momentum 293–306
  - return decomposition 219–22
  - returns 1984–2009 209
  - supply–demand seasonals 454
  - term structure 220
  - trading advisors 232
  - value indicators 226
- commodity momentum 293–306
  - performance 294–8
  - rational stories 300–1
  - simple strategies 294–8
  - trend following 293–306
  - tweaks 298–9
  - when it works well 298–9
  - why it works 299–301
  - see also* momentum strategies
- commodity trading advisors (CTAs) 232, 301
- composite ranking cross-asset selection models 440
- compound returns 493
- conditioners 281–2
- confirmation bias 93
- conservatism 21–2
- constant expected returns 57–8
- constant relative risk aversion (CRRA) 75–6
- Consumption CAPM 283–4, 324
- consumption/wealth ratio (CAY) 147
- contemporaneous correlation 335
- contrarian strategies
  - blunders 266–7
  - feedback loops 402–4
  - forward indication approach 34–5
  - see also* reversal
- convenience yield 221
- corporate bonds
  - credit spreads 193
  - CRP 184–8, 193, 198–9
  - forward-looking indicators 34
  - front-end trading 188
  - IG bonds 184–7, 197, 204
  - liquidity 368–9
  - sample-specific valuation 30
  - tactical forecasting 198–9
- correlation 375–97
  - asset returns 380–9
  - correlation premium 386–8
  - correlation risk 376, 386–7
  - default correlations 387
  - equities 386–8
  - implied 387
  - risk factors 324
  - tail risks 376, 380–9

- costs 499–501
  - control 482, 499–501
  - currency carry 275
  - enhancing returns 499–501
  - taxes 500–1
  - trading costs 499–500
- country-specific vulnerability indices 282
- covariance
  - with “bad times” 68–71, 166
  - covariance risk 169–70
  - risk factors 325
- covered call writing (CCW) 311–14
- crashes
  - markets 284–5, 287
  - see also* “bad times”
- credit default swaps (CDSs) 201, 387–8, 478
- credit-pricing models 182–3
- credit risk 43–6, 179–206
- credit risk premium (CRP) 179–206
  - analytical models 181–3
  - attractive opportunities 188–91
  - business cycles 458–9
  - credit default swaps 201
  - credit spreads 191–8
  - decomposing credit spread 179–81
  - default correlations 183
  - emerging markets debt 203–4
  - front-end trading 188–91
  - historical excess returns 183–7
  - IG bonds 43–6, 184–7
  - low *ex post* premia 185–7
  - mortgage-backed securities 202–3
  - non-government debt 199–204
  - portfolio risk 183
  - reduced-form credit-pricing models 182
  - reward–risk 188–91
  - single-name risk 181–3
  - swap–Treasury spreads 199–201
  - tactical forecasting 198–9
  - terminology 179–83
  - theory 179–83
- credit spreads 191–8
  - AAA/AA/A-rated bonds 193–5
  - BBB-rated bonds 193–5
  - business cycles 460
  - CRP 191–8
  - cyclical effects 194–5
  - decomposition 179–81
  - empirical “horse races” 426
  - forward-looking indicators 14–15
  - high-yield bonds 193, 196–8
  - rolling yield 423
  - top-rated bonds 193–4
  - volatility 195–6
  - yield-level dependence 196
- credit and tactical forecasting 147
- creditworthiness 477–8
- crises
  - 2007–2008 crisis 474–6
  - currency carry 284–5
  - liquidity 372–4
  - money markets 52
  - see also* “bad times”
- cross-asset selection forecasting models 440–1
- cross-sectional market relations 331–2, 380–3
- cross-sectional trading 102–6
- CRP *see* credit risk premium
- CRRR *see* constant relative risk aversion
- CTAs *see* commodity trading advisors
- currency
  - base of returns 60–1
  - carry 272–92
  - empirical “horse races” 424–5
  - equity value strategies 265
  - inflation 355
  - see also* foreign exchange
- currency carry 272–92
  - baseline variants 275–6
  - combining carry 278–9
  - conditioners 281–2
  - costs 275
  - diversification 275
  - emerging markets 276–8
  - ex ante* opportunity 280
  - financial crashes 284–5
  - foreign exchange 279, 281, 284, 289
  - historical returns 272–6
  - hyperinflation 287–8
  - indicators 276, 278–9, 281–2
  - interpreting evidence 286–7
  - maturities 276
  - pairwise carry trading 275
  - portfolio construction 276
  - ranking models 275
  - regime indicators 281–2
  - seasonals 281
  - selection biases 275
  - strategy improvements 276–82
  - “timing” the strategy 280–2
  - trading horizons 276

- currency carry (*cont.*)  
   unwind episodes 281  
   why strategies work 282–8
- cyclical effects  
   credit spreads 194–5  
   growth 328  
   seasonal regularities 445–6  
   *see also* business cycles
- D/P *see* dividend yield
- data mining 112–13, 444  
   *see also* overfitting; selection bias
- data sources of time series 519–25
- data series construction 519–25
- day-of-the-week effect 453
- DDM *see* dividend discount model
- debt supercycle 472, 475, 478
- default correlations, CDOs 387
- default rates, HY bonds 196–8
- deflation 345–8, 355, 476–7
- delta hedging 309, 315
- demand *see* supply–demand
- demographics 135–6, 217
- derivatives 510–11
- Dimson, Elroy 16, 39–40, 124–5, 183, 335
- direct hedge funds 236
- disagreement models 81
- discount rates 66, 460
- discounted cash flows 66
- discretionary managers 481
- disinflation 347–8, 355, 461–5, 476–1
- disposition effect 97, 106
- distress 263–4, 267, 504–5
- diversification 509–12  
   currency carry 275  
   drawdown control 511–12  
   long-horizon investors 505, 509–12  
   return 224, 485–8  
   risk factors 511  
   style 510–11
- diversification return (DR) 224, 485–8
- dividend discount model (DDM) 416–17  
   equities 410–11  
   ERP 136–41  
   forward-looking indicators 14  
   growth rate debates 137–41
- dividend growth 335–6
- dividend yield (D/P) 33, 460
- DJCS HF index 232–3
- dollars  
   base of returns 60–1  
   cost averaging 495  
   currency carry 272–5  
   foreign exchange 50
- downgrading bias 186
- downside beta 233–4
- DR *see* diversification return
- drawdown control 511–12
- duration risk 24, 39
- duration timing 174–7
- dynamic strategies  
   equity value strategies 249–50, 258  
   portfolio construction 276  
   risk factors 322
- E/P *see* earnings/price ratio
- earnings  
   E/P ratio 33, 130–5, 135–6  
   EPS 330, 410  
   equity returns 334  
   forecasts 143  
   growth rates 331–6  
   yield 130–6  
   *see also* earnings/price ratio
- earnings-per-share (EPS) 330, 410
- earnings/price (E/P) ratio  
   absolute valuation 130  
   drivers 135–6  
   forward-looking indicators 33  
   measures choices 130  
   relative valuation 130–2  
   value measures 130–3, 135–6
- economic growth 331–2, 336–7  
   *see also* growth
- efficiency  
   behavioral finance 98–106  
   macro-inefficiencies 98–102  
   market inefficiency 111–12  
   micro-inefficiencies 102–6
- efficient markets hypothesis (EMH) 81–3
- elephant and blind men poem (Saxe) 4–5, 7, 9, 13, 15–16, 19
- EMBI indices 203
- emerging markets  
   carry strategies 285, 289  
   currency carry 276–8  
   debt 203–4  
   equity returns 332–4  
   future trends 475–6  
   growth 332–4
- EMH *see* efficient markets hypothesis
- empirical multi-factor finance models 72–3

- endogenous return and risk 401–7  
   feedback loops 401–5  
   market timing 405–6  
   research 405–6  
 endowments 244–5, 373, 508, 511  
 energy sector 221–3  
   commodity momentum 300  
   trend following 297–8  
   volatility selling 319  
 enhancing returns 479–502  
   costs 499–501  
   horizon 480–1, 492–5  
   investors 479–82  
   risk management 482–92  
   skill 496–9  
 EPS *see* earnings per share  
 equilibrium accounting 496  
 equilibrium model 122  
 equities  
   1990–2009 24–5, 40  
   business cycles 458–60  
   carry strategies 410–11  
   correlation premium 386–8  
   empirical “horse races” 426–7  
   forward-looking indicators 34  
   inflation 345, 353–5  
   long history 38  
   momentum 267, 303–5  
   sample-specific valuation 30  
   tactical forecasting 442  
   ten-year rolling averages 42  
   value strategies 249–69, 410–11  
   *see also* stock ...  
 equity index options 385  
 equity indices 307–19  
 equity market returns 331–6  
   cross-sectional relations 331–4  
   earnings 331–6  
   economic surprises 334–6  
   emerging markets 332–4  
   GDP growth rates 331–6  
   long-term growth 331–2  
   time series 334–6  
   valuation 125–8  
 equity momentum 303–5  
 equity premium puzzle 120–2  
 equity risk premium (ERP) 119–51  
   business cycles 458–9  
   DDM 136–41  
   equity betas 127–8  
   equity premium puzzle 120–2  
   ERP/C 120, 136–7  
   *ex ante* premia 120, 136–41  
   forward-looking measures 128–41  
   global evidence 124–5  
   growth 327  
   high market valuations 125–8  
   historical premium 122–8  
   lower premium 124–8  
   market timing 144–9  
   subjective expectations 141–4  
   survey-based expectations 141–4  
   survey-based returns 433  
   tactical forecasting 144–9  
   terminology 119–20  
   theories 120–2  
   windfall gains 125  
 equity risk premium over bond (ERP/B) 120, 136–7  
 equity risk premium over cash (ERPC) 120  
 equity value strategies 249–69, 410–11  
   asset classes 265–7  
   contrarian blunders 266–7  
   designing strategies 255–7  
   dynamic strategies 249–50  
   Fama–French portfolios 251–5  
   fundamental indices 257–8  
   historical performance 251–8  
   questions about design 255–6  
   sector neutrality 256–7  
   short term 266  
   style timing 258–61  
   tweaks 258–61  
   value vs. other indicators 267–8  
   why value works 261–5  
 ERP *see* equity risk premium  
 ERP/B *see* equity risk premium over bond  
 ERPC *see* equity risk premium over cash  
 errors in forecasting 173–4  
 euros 61  
 excess returns 154, 183–7, 322, 420–4, 505  
 expected cash flow growth 413  
 extrapolation by investors 91  
  
 Fama, Eugene F. 76, 81  
   *see also* Fama–French ...  
 Fama–French (FF)  
   portfolios 251–4  
   rational theories 71–2, 74–5, 125  
   three-factor model 71

- Fama–French (FF) portfolios 251–4  
 analysis 254–5  
 equity value strategies 251–5  
 migration dynamics 255  
 style investing 252  
 valuation ratios 254–5  
 value growth outperformance 254–5  
 VMG series 251–4
- Fed Model 130, 132
- Federal Reserve Bank of Philadelphia 433–4
- feedback effects  
 contrarian strategies 402–4  
 endogenous return and risk 401–7  
 momentum strategies 402–4  
 procyclical responses 402  
 risky assets 401–3
- feelings and moods, PT 98
- fees 238, 243, 500
- FF *see* Fama–French
- financial theories 9–13  
 asset-pricing theory 10  
 average realized returns 10  
 complexity of reality 11  
 costs equaling benefits 9  
 evolving theories 10  
 historical aspects 9–13  
 return variation with time 13  
 timing of losses 11–12  
 volatility 11
- financialization 468–9, 472–3
- fixed income 25, 43–4, 302
- FoF *see* fund of funds
- forecasts/forecasting 143–9  
 analyst's long-term earnings 143  
 economist's GDP 143  
 errors 173–4  
*see also* prediction; tactical forecasting
- foreign exchange (FX) 50–2  
 as an asset class 279  
 carry strategies 29, 50–1, 405, 416, 420–1  
 momentum strategies 302  
 returns terminology 60–1  
 seasonals 281  
*see also* currency ...
- forward premium puzzle 282–3
- forward rate bias 272
- forward rate curve (C-P BRP) 160, 164–5, 172, 175
- forward-looking asset return measures 409–17  
 building block approaches 413  
 carry strategies 409–16  
 value strategies 409–15
- forward-looking indicators 13–15, 32–5  
 asset class real yields 33–4  
 carry strategies 32–3  
 contrarian approach 34–5  
 historical records 32–5  
 market mispricing 13–14  
 shortcomings 14–15  
 time-varying risk premia 13–14  
 value strategies 32–3
- forward-looking measures 128–41  
 asset returns 409–17  
 carry strategies 128–30  
 DDM 136–41  
 ERP 128–41  
 long-term returns 128–30  
 value measures 130–6
- framing effects, PT 96–7
- French, Kenneth R. 251, 304, 323  
*see also* Fama–French
- front-end trading 159, 188–91
- fund of funds (FoF) 228, 236
- fundamental indices 257–8
- funding liquidity 360
- funding rate spreads, CRP 190–1
- future trends 467–78  
 rise of China 475–6  
 deflation 476–7  
 effect of 2007–2008 crisis 474–6  
 emerging markets 475–6  
 inflation 476–7  
 next 20 years 474–8  
 risky assets 475  
 sovereign creditworthiness 477–8
- futures, commodity 48, 219–26, 423, 427
- FX *see* foreign exchange
- G10 currencies  
 cross-asset selection models 440  
 currency carry 272–7, 280, 285, 289  
 FX markets 50  
*see also* currency ...
- GARCH models 74, 315
- GDP *see* gross domestic product
- generalized autoregressive conditional heteroskedasticity models *see* GARCH models
- geometric mean (GM) 44, 59–60, 485–7
- German Bunds 426
- glamour firms 262–3

- global assets since 1900 40
- global world wealth total 516
- GM *see* geometric mean
- gold standard 346, 349
- government bonds 411
- government debt 368
- Great Moderation 273, 286, 347–8, 470
- Greenspan, Alan 132
- Grinold, Richard 491
- gross domestic product (GDP) 137–40, 147, 327–38, 461
- growth 321–39
  - asset class sensitivities 337–8
  - asset market relations 331–8
  - business cycles 461–5
  - determinants 330–1
  - emerging markets 332–4
  - evidence for 328–31
  - GDP 137–40, 147, 327–38, 461
  - inflation 342–5
  - long-horizon investors 504
  - long-term growth 329–30
    - as risk factor 321–39
    - risk premia 325–6
    - speed limits 329–30
    - theory 328–31
    - time-varying premium 338
    - yield curve steepness 336–7
- habit formation 76
- Hallowe'en indicator 452–3
- Hasbrouck, Joel 362–3
- hedge funds (HFs) 226–41
  - accessing returns 236
  - alphas 229, 231, 237–8, 240–1
  - betas 233–4, 237–9, 241
  - biases 228–33, 235–6
  - capacity 239–41
  - characteristics 208
  - cost control 482
  - CTA performance 232
  - decomposed index returns 229–30
  - direct HFs 236
  - empirical facts 227–8
  - FoFs 236
  - leverage 484
  - managers 226–9, 235–9
  - negative factors 228–9
  - neglected risks 233–4
  - outperformance 227–8, 235–6
  - performance assessment 227–34
    - positive factors 227–8
    - prospective returns 239–41
    - replication strategies 238–9
    - return biases 230–3
    - returns 1984–2009 209
    - risks 228–9, 389
    - sector performance 235–6
    - Sharpe ratios 2008 29
    - skilled investors 481, 498
    - tail risks 389
    - voluntary reporting 230–3
- hedged global government bonds 43
- hedging currency 50
- HFR index 232–3
- HFs *see* hedge funds
- high-yield (HY) bonds 45–6, 193, 196–8
- hindsight bias 93–4
- historical averages 23–36
  - 1990–2009 23–7
    - endpoint year change 27–9
  - illiquidity 25–7
    - pre-1990 29–30
  - sample-specific results 27–32
  - volatility 26–7
- historical records 37–55
  - active investing 47–9
  - bonds 43–7
  - BRP average returns 157–9
  - foreign exchange 50–2
  - G10 markets 50
  - global assets since 1900 40
  - high returns 47–8
  - longer perspective 37–55
  - money markets 50–2
  - real assets 47–9
  - real returns 52–4
  - stocks 39–42
- hockey-stick-shaped graph 381, 391
- holiday effect 454
- horizon 492–5
  - compound returns 493
  - enhancing returns 492–5
  - long horizon 146–9, 480–1, 492–4, 503–14
  - retail investors 495
  - tactical forecasting 146–9
  - time diversification 494–5
- house money effect 97, 122
- house price appreciation (HPA) 212–13, 215–17
- housing 427–8
  - see also* real estate

- HPA *see* house price appreciation  
 HY *see* high-yield bonds  
 hyperinflation 287–8, 347, 428
- Ibbotson Associates 183  
 Ibbotson index 183, 192  
 Ibbotson, Roger 16, 39, 73, 125–6  
 IG *see* investment-grade bonds  
 ILLIQ price impact proxy 362–3, 368, 370–1
- illiquidity  
 assets 8, 12–13  
 average returns 26–7  
 hedge funds 234  
 long-horizon investors 504  
 market frictions 80  
 premium 359–74  
 reward–risk ratios 12–13  
*see also* liquidity
- illiquidity premium 359–74  
 definition 361  
 liquidity risk premium 367–8  
 stocks 366–7  
 time-varying 370–4
- implied correlation 387  
 implied volatility  
 tail risks 378–9, 383, 386, 396  
 volatility selling 310, 312–13, 316–17
- incubation bias 231  
 index OTM puts 316, 318
- indices  
 CCW strategies 311  
 equity 307–19  
 fundamental 257–8  
 market cap weighted 257–8  
 real estate 211  
 vulnerability 282  
*see also individual indices*
- industry 40–1, 259–61, 301  
 inefficiency *see* efficiency  
 inflation 321–7, 341–55  
 asset class sensitivity 350–5  
 BEI 352–4  
 BRP 166, 168, 175–6  
 business cycles 461–5  
 commodities 355  
 currencies 277–9, 287–8, 355  
 deflation 345–8, 355, 476–7  
 determinants 345–50  
 disinflation 347–8, 355, 461–5, 470–1  
 drivers 348  
 earnings yield 133–5  
 equities 345, 353–5  
 expectations 345–50  
 future trends 476–7  
 growth rates 342–5  
 history 345–50  
 hyperinflation 287–8, 347, 428  
 linkers 352–3  
 persistence 348–50  
 premium 341–57  
 process 345–50  
 real estate 354  
 returns 1990–2009 350–1  
 as risk factor 321–7, 341–55  
 secular trends 470–1  
 stagflation 134  
 tactical forecasting 175–6  
 time-varying premium 356  
 uncertainty 166, 168, 175–6, 348–9  
 US growth rates 1814–2009 342–4
- inflation risk premium (IRP) 342  
 asset sensitivities 353–4, 356  
 BRP 167–9  
 inflation process 348–9  
 uncertainty 168
- inflation-linked bonds (linkers) 352–3  
 information asymmetry 81, 360  
 infrastructure investment 217–18  
 instant history bias 231  
 institutional window dressing 446  
 insurance selling/buying 507  
 interest, UIP 421  
 interest rate swaps 199, 426  
 interest rates 421–2, 425–6  
 internal rate of return (IRR) 243  
 Intertemporal CAPM 71–2  
 inverse of the price-to-rent ratio 213  
 investment perspectives 6–7  
 investment-grade (IG) bonds 43–6  
 corporate 184–7  
 CRP 184–7, 197, 204  
 downgrading bias 186  
 historical CRP 184–7  
 trading activities 186–7
- investors  
 academics 142–3  
 CDOs 388  
 commodity momentum 299–300  
 cost control 482  
 enhancing returns 479–82  
 extrapolation 91

- long horizon 480–1, 503–14
- professionals 142
- rational theories 77–8
- retail investors 142, 495
- risk management 480
- skill benefits 481
- underreaction 299–300
- IRP *see* inflation risk premium
- IRR *see* internal rate of return
- irrationality
  - commodity momentum 299–301
  - currency carry 287–8
  - investors 77–8
  - survey-based returns 434–5
  - terminology 58–9
  - value premium 262–5
  - volatility selling 317–19
- January barometer 452
- January effects 446–52
- Jensen's alpha 62
- Keynes, John Maynard 100, 220
- Kim–Wright model (K-W BRP) 160, 164–6, 175
- KMV credit risk model 182
- KW BRP *see* Kim–Wright model
- lead–lag effects 305
- learning 58, 77–8, 92–4, 114
- Lehman Brothers index *see* Barcap index
- leverage
  - hedge funds 240
  - long-horizon investors 505, 507–8
  - risk reduction 480, 482–4
  - secular trends 470, 472
  - volatility 393
- lifecycle investing 495
- linkers *see* inflation-linked bonds
- liquidation bias, HFs 231–2
- liquidity 321–7, 359–74
  - alternative assets 369
  - average premia 365–9
  - corporate bonds 368–9
  - costs 500
  - crises 372–4
  - definition 359–61
  - equity value strategies 261, 265
  - estimation difficulties 361–2
  - fragility 364
  - global markets 365–6
  - government debt 368
  - harvesting premia 373–4
  - historical evidence 365–9
  - long-horizon investors 508
  - momentum strategies 369
  - privately held assets 369
  - as risk factor 321–7, 359–74
  - risk premium 367–8
  - seasonal regularities 448
  - SRs 490
  - time varying 361–5
  - trading cost study 362–3
  - value strategies 369
  - varying across assets 359–61
  - see also* illiquidity
- Litterman, Robert 496
  - see also* Black–Litterman
- Lo, Andrew 82, 406
- long-horizon investors 480–1, 492–4, 503–14
  - active alphas vs. passive beta 506–7
  - comfortable approaches 505–6
  - diversification 509–12
  - empirical return sources 504–6
  - in-house management 504–6
  - institutional practices 513–14
  - insurance selling/buying 507
  - key debates 506–7
  - large investors 512–13
  - leverage 507–8
  - liquidity 508
  - lottery selling/buying 507
  - market timing 509
  - recent success 505
  - takeaways 503–14
  - theory 504
- lookahead bias 231–2
- lookback bias 231–2
- loss 11–12, 122, 446, 489–90
- loss aversion models 122
- lottery approaches 390–1, 393, 395, 507
- LTCM HF management 228–9, 369, 372
- lunar cycle 454
- macro-finance models, BRP 156–7
- managers
  - hedge funds 226–9, 235–9
  - PE funds 244
  - skill 496–9
  - styles 481
- marginal utility (MU) 69–72

- market-cap-weighted indices 257–8
- market frictions 80, 114
- market inefficiency 111–12
- market liquidity 359–60
- market mispricing 13–14
- market price equations 66, 69
- market timing
  - endogenous return and risk 405–6
  - long-horizon investors 509
  - tactical forecasting 144–9
  - volatility 384–5
- markets
  - adaptive markets hypothesis 82, 406
  - assets and growth 331–8
  - economic surprises 334–6
  - EMH 81–3
  - equity market valuations 125–8
  - expectations 420–4
  - money markets 50–2
  - secular trends 470
  - time-varying illiquidity premia 371–2
  - volatility 384
  - see also* emerging markets; market ...
- Marsh, Paul 16, 39–40, 124–5, 183, 335
- MAX returns 391
- MBS *see* mortgage-backed securities
- mean 432
- mean reversion 162–3, 488
- median 432
- Mei–Moses art price index 218
- memory bias 90, 101–2
- memory effects 325
- Merton, Robert 71–2
  - see also* Black–Scholes–Merton
- Merton structural model 181–2
- Minsky, Hyman 100
- MIT-CRE real estate index 211–12
- MLMCCO *see* Mount Lucas Management
  - trend-following index
- mode 432
- momentum
  - 1990–2009 25–6
  - active/real asset investing 48
  - asset classes 8–10, 301–5
  - based on past returns 303
  - bias 104–6, 488
  - business cycles 464
  - commodities 225–6
  - currency carry 278
  - equities 267, 303–5
  - feedback loops 402–4
  - liquidity 369
  - real estate 216
  - risk factors 323
  - stocks 41–2
  - style rotation models 259
  - tactical forecasting 442–3
  - see also* commodity momentum
- monetary policy cycle, BRP 172–3
- money
  - illusion 102, 134, 217
  - markets 50–2
  - tactical forecasting 147
- moods and feelings, PT 98
- Moody's 182, 192, 197–8
- mortgage-backed securities (MBS) 202–3
- Moses *see* Mei–Moses
- Mount Lucas Management (MLMCCO)
  - trend-following index 296–7
- MU *see* marginal utility
- multi-factor models 71–2, 326–7
- myopic loss aversion model 122
- narrow framing, PT 96
- National Bureau of Economic Research (NBER) 458, 461
- NCREIF real estate index 210–12, 214–15
- noise traders 88
- nominal bonds 342, 350–1
- non-government bonds 412–13
- non-zero yield spreads 419–29
  - carry strategies 419–29
  - empirical “horse races” 424–8
  - future excess returns 420–4
  - market expectations 420–4
  - yield curve behavior 423
- OASs *see* option-adjusted spreads
- option-adjusted spreads (OASs) 192, 202–3, 412
- options
  - buying/selling 315–16
  - equity index 385
  - OASs 192, 202–3, 412
  - rolling yield 424
  - single-stock 386
  - tail risks 378–9, 385–6, 391–2
  - trading strategies 385–6
  - volatility 308–19, 378–9
  - see also* at-the-money options; calls; puts

- out-of-the-money (OTM) options  
 seasonal regularities 447  
 tail risks 378–9, 385–6, 391–2  
 volatility selling 311, 313, 316–18
- overconfidence 92–4
- overcrowding 444
- overfitting 113, 250  
*see also* data mining; selection bias
- overoptimism 93
- overreaction 104–6
- P/B ratio *see* price-to-book ratio
- P/E ratio *see* price/earnings ratio
- pairwise carry trading 275
- PE *see* private equity funds
- PEH *see* pure expectations hypothesis
- pensions 171–2, 513–14
- performance  
 1990–2009 23–7  
 in “bad times” 11–12  
 commodity momentum 294–8  
 equity value 251–8  
 Fama–French portfolios 254–5  
 hedge funds 227–34  
 historical returns 7–9  
 PE funds 243–4  
 real estate 211–13  
 volatility selling 311–14
- periodicity 304, 454
- Perold, Andre F. 402–3
- persistence factor (PF) 425
- perspectives on investments 6–7
- peso problem  
 carry strategies 283  
 ERP 124  
 return predictability 113–15  
 volatility selling 317
- PF *see* persistence factor
- Phalippou, Ludovic 243–4
- Phillips curve model 348, 356
- portable alpha 498
- portfolios  
 balanced stock–bond 483  
 construction 276, 491–2  
 CRP 183  
 currency carry 276  
 Fama–French portfolios 251–5  
 risk 183, 491–2
- prediction  
 YC 160–4  
*see also* forecasting; return predictability
- preferences 94–8
- presidential cycle 454
- price-to-book (P/B) ratio 254–5
- price/earnings (P/E) ratio 130, 133, 262, 354
- price/pricing  
 assets 9–10, 48–9, 70–1, 328  
 commodity momentum 298–9  
 credit-pricing models 182–3  
 E/P ratio 33, 130–3, 135–6  
 equity momentum 305  
 growth 328–9  
 historic real prices 54  
 ILLIQ price impact proxy 362–3, 368,  
 370–1  
 inverse of price-to-rent ratio 213  
 liquidity 366  
 market price equations 66, 69  
 Mei–Moses art index 218  
 options 309, 315  
 P/E ratio 130, 133, 262, 354  
 repricing effects 30–1  
 sample-specific valuation 30–1  
 spot prices 219–25  
 tactical forecasting 442–3  
 temporary fluctuations 367  
 trend following 298–9  
*see also* Capital Asset Pricing Model
- private equity (PE) funds 241–5  
 characteristics 208  
 historical performance 243–4  
 interpreting returns 244–5  
 liquidity 369  
 looking beyond average 244–5  
 manager selection 244  
 returns 1984–2009 209  
 venture capital 241–5
- professional investors 142
- profit 135–6, 304–5
- profitability 8–9, 315–19
- prospect theory (PT) 94–8, 108
- psychology of behavioral finance 89–98
- PT *see* prospect theory
- pure expectations hypothesis (PEH) 156,  
 164, 422–8
- puts  
 tail risks 378–9, 385, 391–2  
 volatility selling 308, 313–14, 316–18
- quant (quantitative) equity management 251,  
 261, 265, 268

- random walk hypothesis (RWH) 81, 156, 425
- ranking models 275
- rare disasters 121–2, 395  
*see also* “bad times”; peso problems
- rational expectations 58–9
- rational explanations  
 commodity momentum 300–1  
 survey-based returns 434–5  
 value premium 262–5  
 volatility selling 317–19
- rational learning 58, 77–8, 114
- rational theories 58–9, 65–85  
 asymmetric information 81  
 covariance with “bad times” 68–71  
 disagreement models 81  
 EMH 81–3  
 illiquidity premia 80  
 investor irrationality 77–8  
 marginal utility 69–70  
 market frictions 80  
 market price equations 66, 69  
 multiple risk factors 71–3  
 the “new world” 68–81  
 the “old world” 66–8  
 rational learning 77–8  
 skewness preferences 77  
 supply–demand 78–80  
 time-varying risk premia 73–6
- RE *see* real estate
- real assets 47–9
- real estate investment trusts (REITs)  
 210–12, 215–16
- real estate (RE) 210–19  
 art investing 218–19  
 characteristics 208  
 empirical “horse races” 427–8  
*ex ante* value measures 213–16  
 forward-looking indicators 34  
 historical performance 211–13  
 historical records 24–5, 34, 48  
 house prices 212–13  
 indices 211  
 inflation 354  
 infrastructure investment 217–18  
 main determinants 216–19  
 problematic data 210–11  
 REITs 210–12, 215–16  
 returns 1984–2009 209  
 value indicators 215
- real returns 52–4
- realized bond returns 154
- rebalancing asset classes 485–8
- recession 2008–2009 476
- reduced-form credit-pricing models 182
- reflexivity theory (Soros) 99, 402
- regression 439–41
- regret aversion, PT 98
- REITs *see* real estate investment trusts
- relative valuation, ERP 130–3
- rental yield 213, 216–17, 427–8
- replication strategies 238–9
- reporting bias 113, 235–6
- representativeness 90, 92, 432
- repricing effect 30–1, 460
- required returns 58–9
- retail investors 142, 495
- return biases 230–3
- return predictability 111–18  
 alternative interpretations 111–18  
 changing world 114–15  
 data mining 112–13  
 market frictions 114  
 market inefficiency 111–12  
 peso problems 113–15  
 rational learning 114  
 risk premia 111–12
- return reversal 367, 371
- return and risk, endogenous 401–7
- return-based risk factors 326–7
- reversal  
 behavioral finance 91, 104–6  
 commodity momentum 294  
 equity momentum 304  
 feedback loops 403–4, 407  
 models 104–6  
 real estate 216  
 return reversal 367, 371  
 theorists 104  
*see also* contrarian strategies
- reward–risk  
 bonds 47  
 CRP 188–91  
 illiquid assets 12–13  
 sample-specific results 28  
 Treasuries 157–9
- risk  
 arbitrage 88–9  
 beta risk 283–4  
 correlation 376, 386–7  
 covariance risk 169–70  
 CRP 179–206

- currency carry 283–5
- distress 263–4, 267
- duration risk 24, 39
- endogenous return and risk 401–7
- equity premium puzzle 121
- equity value strategies 263–4, 267
- hedge funds 228–9, 233–4
- neglected risks 233–4
- PE funds 242–3
- portfolios 183, 491–2
- skewness 284
- systematic risk 285, 316
- tactical forecasting 148
- volatility 376
  - see also* reward–risk; tail risks
- risk-adjusted returns 61–3
- risk aversion 75–6, 281–2, 291
- risk-based models 67–8
- risk factors 321–7
  - characteristics 325
  - choice of factors 324–5
  - combining factors 326–7
  - covariances 325
  - diversification 511
  - four factors 322–4
  - growth 321–39
  - inflation 321–7, 341–55
  - liquidity 321–7, 359–74
  - multi-factor model 71–3, 326–7
  - perspectives on investments 6
  - rational theories 71–3
  - return-based factors 32
  - risk premia 325–6
  - tail risks 321–7, 375–97
- riskless returns 62–3
- risk management 482–92
  - arithmetic mean 485–6
  - bearing more risk 480
  - diversification return 485–8
  - enhancing returns 482–92
  - geometric mean 485–7
  - monetizing risk reduction 480
  - rebalancing 485–8
  - risk adjustment 488–91
  - risk reduction 480, 482–4
  - Sharpe ratios 488–91
  - smart risk taking 491–2
  - volatility targeting 488
- risk-neutral default probabilities 182–3
- risk preferences 97–8
- risk premia
  - growth 325–6
  - return predictability 111–12
  - risk premium hypothesis 423
  - volatility 316–17, 383–4
    - see also* bond risk premium; credit risk premium; equity risk premium; inflation risk premium; time-varying risk premia
- risk reduction 480, 482–4
- risk-taking advice 17
- risky assets 401–3, 475
- roll 219–25, 300, 422–4
- RWH *see* random walk hypothesis
  
- S&P 500 index 146, 243–4, 311–12, 323, 385
- S&P GSCI commodity futures index 222–4
- safe haven 169–70, 175–6
- sample-specific averaging results 27–32
  - 1990–2009 27–32
  - changing end/startpoint years 27–9
  - pre-1990 29–30
  - subperiod analysis 32
  - valuation adjustments 30–1
- Samuelson, Paul 100, 494
- Saxe, J.G. 4–5, 19
- Scholes *see* Black–Scholes
- SDF *see* stochastic discount factor
- seasonals 445–55
  - announcement days 454
  - asset returns 445–6
  - currency carry 281
  - cyclical patterns 445–6
  - day-of-the-week effect 453
  - equity value strategies 261
  - Hallowe'en indicator 452–3
  - holiday effect 454
  - January barometer 452
  - January effects 446–52
  - long cycles 454
  - lunar cycle 454
  - monthly seasonals 446–52
  - presidential cycle 454
  - secular patterns 445–6
  - supply–demand 454
  - tactical forecasting 148, 442
  - turn of the month 453–4
  - twelve-month periodicity 454
  - within-day regularities 453
- sector neutrality 256–7, 259–60
- secular growth 328
- secular patterns in returns 445–6

- secular trends 467–78
  - 1988–2007 vs. 1968–1987 467–9
  - asset richening 473–4
  - disinflation 470
  - financialization 468–9, 472–3
  - future trends 467–78
  - Great Moderation 470
  - leveraging 470, 472
  - market vs. state 470
  - next 20 years 467–78
  - recession 2008–2009 476
  - reversible 468, 470–4
  - sustainable 468, 470–4
  - ten trends 468, 470
- securities 202–3
  - see also* TIPS
- selection bias 231–2, 275
  - see also* data mining; overfitting
- self-attribution 93
- self-deception 92–4
- selling volatility 307–19
- sentiment indicators 148
- share buybacks 128–9
- Sharpe ratios (SRs)
  - active investing 47–8
  - BAB 394
  - balancing stock–bond portfolios 483
  - BRP 158–9
  - commodity momentum 295
  - CRP 190–1
  - currency carry 277, 286–7
  - emerging markets 277
  - feedback loops 404–5
  - fixed income 43–4
  - front-end trading 189–91
  - hedge funds 239–40
  - historical records 24–30, 37–8, 43–4, 47–8, 158–9
  - illiquidity 27
  - momentum strategies 295, 303
  - plummeting in 2008 29
  - real asset investing 47–8
  - risk adjustment 61–2, 488–91
  - Treasuries 30
  - VGM series 252–3
- Sharpe, William F. 402–3
- Shiller, Robert 34, 73, 97, 145, 212–13
- Siegel, Jeremy 123, 494
- single-name risk 181–3
- single-stock options 386
- single-stock returns 380–3
- skewness 375–97
  - currency carry 284, 286
  - empirical evidence 390–2
  - evidence on 389–92
  - lottery preferences 390
  - options 378–9
  - positive/negative 389–90
  - preferences 376–7, 389–90
  - premium 314, 389–92
  - rational theories 77
  - risk 284
  - standalone skewness 390
  - tail risks 389–92
  - theory 389–92
- skill 496–9
  - applying skills 498–9
  - benefit to investors 481
  - enhancing returns 496–9
  - finding skills 496–8
- slide 423
- small-cap stocks 380, 383, 459, 464
- smart investing 491–2
- smart traders 88–9
- smirks 317
- Soros, George 99, 402, 475
- sovereign creditworthiness 477–8
  - see also* Treasuries
- spot prices 219–25
- spreads
  - funding rate 190–1
  - industry-adjusted value spread 259–60
  - non-zero yield 419–29
  - OASs 192, 202–3, 412
  - “spread products” 46–7
  - swap Treasury 199–201
  - see also* credit spreads
- SRs *see* Sharpe Ratios
- stagflation 134
- stagnation 461–5
- standalone skewness 390
- state regulation 470
- static strategies 249–50
- status seeking 395
- Staunton, Mike 16, 39–40, 124–5, 183, 335
- stochastic discount factor (SDF) 69, 72, 77
- stock markets 8, 368, 384–5
- stocks
  - balanced portfolios 483
  - Chen three-factor model 264
  - covariance risk 169–70
  - equity value strategies 254, 259–60, 263

- growth sensitivities 337–8
- historical records 39–42
- liquidity 366–8
- momentum 41–2, 301
- P/B ratio 254
- P/E ratios 262
- seasonals 447–8
- single stocks 380–3, 386
- small-cap 380, 383, 459, 464
- stock–bond correlation 169–70
- volatility 380–5
- see also* equities; equity ...
- Stocks, Bonds, Bills and Inflation* (Ibbotson)
  - 16
- storage theory 221, 300
- straddles 308–9, 313, 319
- strategy styles 6, 8
- structural credit risk models 181–2
- structural uncertainty 121
- style diversification 510–11
- style rotation models 258–9
- style timing 258–61
- subjective *ex ante* equity returns 141–4
- Summers, Lawrence 100, 475
- supply–demand
  - BRP 166, 171–2, 175–6
  - energy sector 222
  - fiscal effects 171–2
  - foreign flows 171–2
  - pension funds 171–2
  - rational theories 78–80
  - regulatory effects 171–2
  - seasonals 454
  - tactical forecasting 175–6
  - volatility selling 317
- survey-based BRP measures 160–1, 164–6, 175
- survey-based returns 431–5
  - consensus forecasts 432–4
  - criticisms 432
  - data problems 432
  - multiple asset classes 435
  - rational/irrational explanations 434–5
  - stale data 432
  - subjective returns 141–4, 431–5
  - timeliness of data 432
  - use of averages 432
- survivorship bias 229–32
- swap–Treasury spreads 199–201
- swaps
  - CDSs 201, 478
  - interest rate 199, 426
  - variance 309–10
- Swensen, David 205, 209, 245, 373
- systematic managers 481
- systematic risk 285, 316
- tactical forecasting 144–9, 174–7, 437–44
  - assets 440–2
  - BRP 174–7
  - combining models 441
  - corporate bonds 198–9
  - cross-asset selection models 440–1
  - CRP 198–9
  - cyclical factors 175–6
  - data mining 444
  - duration timing 174–7
  - enhancements 443
  - ERP 144–9
  - generic proxies 175
  - indicators 442–3
  - inflation uncertainty 175–6
  - models 437–44
  - overcrowding 444
  - pitfalls 444
  - real activities 147–8
  - safe haven influences 175–6
  - short/long horizon 146–9
  - supply–demand 175–6
  - technical indicators 148
  - timing models 438–40
  - trading 441–2
  - types of models 438–41
- tail risks 321–7, 375–97
  - assets faring poorly 392–5
  - average asset returns 380–9
  - CDOs 386–8
  - correlation 376, 380–9
  - hedge funds 389
  - historical aspects 378–89
  - as risk factor 321–7, 375–97
  - skewness premium 389–92
  - SRs 490
  - time-varying premia 395–6
  - volatility 376–7, 380–5, 392–5
- tax-loss selling 446
- taxes 193, 446, 500–1
- term structure
  - BRP 156–7, 160
  - commodities 220, 427
  - models 156–7, 160

- terminology 57–63  
 biased returns 63  
 BRP 153–7  
 constant expected returns 57–8  
 CRP 179–83  
 currency of returns 60–1  
 ERP 119–20  
 irrational expectations 58–9  
 measurement of returns 59–60  
 rational expectations 58–9  
 risk-adjusted returns 61–3  
 time-varying expected returns 57–8
- theory of storage 221, 300
- timber 212, 218
- time and retail investors 495
- time diversification 494–5
- time series 334–6, 384–5, 519–25
- time varying  
 betas 264–5  
 expected returns 57–8, 236  
 growth premium 338  
 illiquidity premium 370–4  
 inflation premium 354  
 liquidity 361–5  
 risk premia 13–14, 73–6, 111–12  
 tail risk premia 395–6
- timing  
 currency carry 280–2  
 long-horizon investors 505  
 losses 11–12, 489–90  
 markets 144–9  
 style timing 258–61  
 tactical forecasting 438–40
- TIPS *see* Treasury inflation-protected securities
- trading costs 499–500
- traditional asset classes 208–9
- Treasuries  
 1952–2009 44–5  
 attractive opportunities 189–90  
 bills 40, 51  
 BRP 157–9, 175  
 business cycles 461  
 creditworthiness 477  
 ERPB 120  
 foreign exchange 51–2  
 forward-looking indicators 34  
 front-end richness 159  
 interest rates 425–6  
 sample-specific valuation 30–1  
 survey-based returns 432–3  
 swap–Treasury spreads 199–201  
 timevarying illiquidity premia 370  
 timing models 438–9  
 TIPS 350–4  
 volatility 383
- Treasury bills 40, 51
- Treasury inflation-protected securities (TIPS)  
 350–4
- trend following 293–306  
 business cycles 464  
 four-asset classes 302–3  
 measures of 295–6  
 sectors 297–8  
 simple commodity strategies 294–5  
 volatility 296–7, 301  
 when it works well 298–9  
*see also* commodity momentum
- Triumph of the Optimists* (Dimson, Marsh, and Staunton) 16
- turn-of-the-month effect 453–4
- twelve-month periodicity 454
- UIP *see* uncovered interest parity
- uncertainty  
 equity premium puzzle 121  
 inflation 166, 168, 175–6, 348–9  
 structural 121  
 volatility 377
- uncovered interest parity (UIP) 271–2, 274, 421, 424–8
- underreaction 104–6, 299–300
- United States (U.S.)  
 1988–2007 vs. 1968–1987 468–9  
 bonds 43–7  
 equity growth 334–5  
 ERP 122–3, 135  
 historical records 39–42, 43–9, 51  
 inflation and growth 342–3  
 liquidity 368  
 money markets 51  
 real assets 48–9  
 stocks 39–42, 368  
*see also* Treasuries
- upward-biased returns 63
- U.S. *see* United States
- valuation  
 absolute 130, 145  
 emerging markets 333  
 equity markets 125–8  
 real returns 54

- relative 130–3
  - see also* earnings/price ratio
- value effect 8–10, 103
- value indicators
  - commodities 226
  - forward looking 32–3
  - real estate 215
- value measures 130–6
  - absolute valuation 130, 145
  - E/P 130–3, 135–6
  - earnings yield 130–6
  - ERP 130–6
  - Fed Model 130, 132
  - forward looking 130–6
  - inflation 133–5
  - real estate 211–16
  - relative valuation 130–3
  - yield ratio 131–3
- value minus growth *see* VMG
- value premium
  - equity value strategies 261–5
  - irrational explanations 262–5
  - rational explanations 262–5
  - style timing 261
- value spread, industry adjusted 259–61
- value strategies
  - 1990–2009 25–6
  - active investing 48
  - business cycles 464
  - currency carry 278
  - forward-looking asset returns 409–15
  - liquidity 369
  - real assets 48
  - risk factors 323
  - stocks 41–2
  - tactical forecasting 442–3
  - see also* equity value strategies
- variance risk premium 316
- variance-selling strategies 311–14
- variance swaps 309–10
- venture capital (VC) 241–5
- view-based expected returns 15–16
- VMG (value minus growth) 251–4, 257–65, 268
- volatility 375–97
  - asset returns 380–9
  - assets faring poorly 392–5
  - average returns 26–7
  - business cycles 461–5
  - commodity momentum 296, 299, 301
  - credit spreads 195–6
  - cross-sectional relations 380–3
  - E/P ratio 135–6
  - empirical “horse races” 428
  - equity value strategies 268
  - financial theories 11
  - high-volatility assets 392–5
  - historical returns 9
  - leverage 393
  - long-horizon investors 504
  - market timing 384–5
  - risk management 488
  - risk premium 383–4
  - secular trends 471
  - selling 25–6, 307–19
  - single-stock returns 380–3
  - status seeking 395
  - stock market returns 384–5
  - tail risks 376–7, 380–5, 392–5
  - targeting 488
  - time series 384–5
  - trend following 296–7, 301
  - uncertainty 377
  - volatility risk 376
  - see also* implied volatility
  - volatility selling 307–19
    - asset classes 319
    - biases 318
    - correlation premium 314
    - equity indices 307–19
    - historical averages 25–6
    - historical performance 311–14
    - implied volatilities 310, 312–13
    - irrational explanations 317–19
    - options 308–19
    - profitability 315–19
    - rational explanations 317–19
    - skewness premium 314
    - timing 315
    - trading options 308–10
    - trading strategies 311–14
    - tweaks 314–15
- vulnerability indices 282
- WDRA *see* wealth-dependent risk aversion
- wealth 76, 147, 515–18
- wealth-dependent risk aversion (WDRA) 76
- windfall gains 125
- window dressing 446
- world wealth 515–18
- Wright *see* Kim–Wright

Yale Endowment 244–5, 373

YC *see* yield curve steepness

yen 50, 60

yield

asset class real yields 33–4

bonds 45–6, 130–3, 193, 196–8

BRP historical averages 158–9

convenience yield 221

credit spreads 193, 196, 196–8, 423

currency carry 278–9

D/P 33, 460

earnings 130–6

HY bonds 45–6, 193, 196–8

non-zero yield spreads 419–29

relative valuation 131–3

rental yield 213, 216–17, 427–8

rolling yield 423–4

YTM 33, 411–12

*see also* non-zero yield spreads

yield curve steepness (YC)

bond yield 155–6

BRP 155–6, 160–4, 166, 172–4

cyclical factors 172

economic growth 336–7

forward-looking indicators 14

future bond returns 173–4

non-zero yield spreads 423

poor prediction 161–4

secular prediction 162–3

yield to maturity (YTM) 33, 411–12

zero sum game argument 241

Zimbabwe 287