

Index

- A**
- Absolute spread change
 - approach, 4
 - risk projections, DTS approach, 66
 - volatility, 7e
 - comparison, 8f
 - Absolute spread volatility
 - instability, 10
 - relative spread volatility, contrast, 233f
 - Active credit exposure
 - hedging, 187–189
 - motivation, 189
 - Active portfolio managers, spread decomposition usage, 133–134
 - Adjustment factor (AdjF)
 - liquidity dispersion, relationship, 93
 - non-quoted adjustment factor, contrast, 100
 - Aggregate credit steepener, U.S. Credit Index (performance contrast), 223t
 - Aggregate issuer-matched DTS steepener
 - market state source, 224f
 - volatility, reduction, 222
 - yearly performance, 225t
 - Aggregate issuer-matched DTS strategy, performance, 223
 - Aggregate portfolio, DTS neutrality, 220
 - Aggregate R^2
 - impact, 12
 - report, 13
 - Alltel 30-year bond hedge ratio, variation, 181f
 - Alpha, generation, 201
 - Alpha-beta recombination strategies, 357
 - Alternative corporate benchmark, adoption, 288–291
 - Analytical duration
 - empirical duration, relationship, 159–161
 - hedging, 190
 - Analytical TEV, empirical TEV (contrast), 188f
 - Annual credit spread premium, 281, 284
 - estimates, comparison, 276t
 - OAS relationship, historical default data (usage), 270f
 - Annual reported index excess returns, 271t
 - Arbitrage
 - activity
 - breakdown, 356
 - requirements, 354
 - relationship, 353
 - risk, 353–356
 - Asset value volatility, observation, 233–234
 - Average annual credit spread premium (estimation), historical default data (usage), 267t
 - IG Corporate Index, 269t
 - Average CDS spread, increase, 144
 - Average DTS-weighted excess returns, sector/duration bucket, 217f
 - Average excess returns, 216
 - Average hedge ratios, implication, 244
 - Average monthly returns, median, 310f
 - Average OAS, usage, 187
- B**
- Barclays Capital
 - Euro Treasury Index, spread volatility projections test, 65f
 - excess returns, 268, 270
 - Index Production Team, message collection/storage, 89
 - traders, bid-ask data collection, 113, 115
 - U.S. IG/HY Credit Indexes, Liquidity Cost Score, 83f
 - Barra's E1 risk model, betas (prediction), 206–207
 - Bear Stearns, takeover, 137

- Benchmark bond, defining, 91–92
- Beta
 - estimates, usage, 183
 - estimation, 244
 - history-based betas, 206
 - prediction, 206–207
- Beta-based hedge, 244
- Beta-hedged strategy
 - correlation, 203
 - performance, 201
- Beta-weighted hedge, 200–201
- Bid-ask indications, 102t
 - Bloomberg message screen, example, 89f
- Bid-ask markets, estimation, 91
 - LCS approach, 102t
- Bid-ask quotes, absence, 109–110
- Bid-ask spreads
 - calculation, 88
 - indicative only characteristic, 115
 - liquidity measures, correlation, 81
 - quotes, 89
- Bid-ask trader indications, limitation, 90
- Black-Scholes-Merton formulas, impact, 75–76
- Black-Scholes option pricing equation, usage, 75
- Bloomberg message screen, 89f
- Bond-level expected default cost, variables (choice), 138
- Bond-level indicatives, LCS (relationship), 93, 96
- Bond-level LCS, importance, 141
- Bond-level risk premium variables, analysis, 150
- Bond-level spread decomposition, aggregation, 136–137
- Bond-level trading volume data
 - availability, 81
 - measure, 117
- Bonds
 - age, 99
 - amount outstanding, 99
 - attributes, 98–102
 - LCS regression, 99t, 118t
 - regression, 119t
 - average LCS, 107–108
 - bid-ask spread indications, 90
 - biweekly price returns, usage, 178–179
 - bond-level persistence, 111–112
 - characteristics, differences, 159
 - classification, 28
 - composition/volume, 175t
 - data set, 14
 - DTS/OAS, 99
 - eligible universe, TES filter restriction, 130
 - event study approach, 159
 - excess returns, 85–86
 - hedge ratios, 178f
 - idiosyncratic spread change, 17
 - interest rate sensitivity, decline, 159
 - issuance, investment-grade rating, 180–181
 - LCS volatility, 150
 - liquidity
 - costs, LCS measure, 129–130
 - distribution, change, 83
 - Liquidity Cost Score (LCS)
 - buckets, 110–111
 - comparison, 106
 - trading volume (relationship), 96
 - long-term statistical averages, 79
 - monthly relative statistics, 299
 - non-positive spreads, exclusion, 34
 - option-adjusted spread
 - drivers, 139, 141
 - modeling, 138
 - stability/decline, 134–135
 - variation, 134
 - option adjusted spread duration (OASD), 82
 - peer group, risk characteristics, 10
 - population, variation, 185
 - pre-rating/post-rating event hedge ratios, 184f
 - pre-rating/post-rating event regressions, 182
 - price
 - adjustment dynamic, cross-sectional variation, 174
 - obtaining, 75
 - price-quoted bonds, 88
 - rating events
 - experience, frequency, 180f
 - summary statistics, 182t
 - relative trade efficiency, 130
 - removal, 278
 - return aggregation, frequency/period/level, 161
 - sales (distribution), exclusion triggers (impact), 324t

- selection, LCS (usage), 241
- spread-quoted bonds, 88
- trader ranks, 109
 - bid-ask quotes, absence, 109–110
- trading volume, 98–99
 - control, 178
- Bond-specific factors, impact, 143
- Box trade, 218
- Buy-and-hold credit investor, spread premium, 265
- C
- Callable bonds, exclusion, 34
- Capital structure, 78
- Cash basket proxies, creation, 129
- Cash-CDS basis, 187
 - change, 317
- Cash-CDS spread basis, behavior, 297
- Cash credit replication (TCX), 338–351
 - arbitrage risk, 353–356
 - average LCS, 342f
 - average monthly excess return, difference, 344–345
 - cash indexes, synthetic replication, 351–358
 - CDX-Cash Basis/iTraxx-Cash Basis, 354f
 - construction methodology, 339
 - credit index, 344t, 345f, 359f
 - cumulative excess return difference, 346f
 - excess returns, difference, 346f
 - credit RBIs, 358–363
 - cumulative excess returns, 359f
 - excess returns, contrast, 360f
 - cumulative excess returns, 361f
 - difference, 346f
 - ED-Ff futures spread, 351
 - excess returns, 345f
 - issuers, number, 342f
 - LCS, cross-sectional distribution, 343f
 - liquidity, 342–343
 - risk, 352–353
 - market value percentages, monthly change, 347
 - monthly excess returns, 344t
 - monthly OAD/TCX/Credit Index, 343f
 - monthly/quarterly TCX, turnover, 350f
 - monthly TCX transaction costs, 348f
 - monthly TCX turnover, 347f
 - monthly tracking errors, 362f
- OAD, 343–344
- overexposure, 345
- performance, U.S. credit index (contrast), 344–346
- portfolio
 - composition, 340t–341t
 - construction rules, 338–339
 - properties, 339–344
- rollover risk, 356–358
- spread, 352–353
- spread-to-swap levels, 353f
- synthetic replication, tracking error drivers, 351
- transactions cost, 347–348, 351t
 - control, quarterly rebalancing (usage), 348–351
- turnover
 - cost, 347–348
 - pattern, 350
- Cash indexes, synthetic replication, 351–358
- Cash-only portfolio, position sizes (limitation), 218
- CDX-Cash basis, 354f
- Chain rule, usage, 76
- Committee on Uniform Security Identification Procedures (CUSIP), 89
- Communications Sector, issuers (average spread/spread changes), 11f
- Composite corporate indexes, estimated annual credit spread premium, 287t
- Conditional default probability (CDP), 146
- Conditional recovery rate (CRR), 138–139
 - loss-given-default measure, 146
 - model, results, 141
- Consumer sectors
 - default contribution, 137f
 - liquidity contribution, 137f
- Contemporaneous liquidity/turnover, 314
- Contribution-to-DTS exposures, manager reliance, 33
- Core-plus allocations, 157
- Corporate benchmark, alternative (adoption), 288–291
- Corporate bonds
 - duration buckets, summary statistics, 216t
 - estimation methodology, 161–163
 - liquidity, quantification, 81
 - market, illiquidity, 174
 - monthly total spread volatility, range, 63
 - risk-reward profile, variation, 213

- Corporate bonds (*Continued*)
 - spread premium, capture process, 265
 - U.S. Treasury hedge ratios, 162t
- Corporate bond spread
 - behavior, analysis, 5–20
 - risk-free rate, relationship, 75
 - sensitivity (measurement), 3
 - volatility, 48–50
- Corporate default probability (CDP), 138–139
 - model, results, 141
- Corporate Index
 - average DTS, 259f
 - credit rating categories, 161
 - partition, 8–9, 14
- Corporate index, spread premium shortfall, 274–279
- Corporate indexes
 - alternatives, 279–288
 - estimated annual credit spread
 - premium, 287t
 - list, 280t, 285t
 - estimated annual credit spread premium, 287t
- Corporate issuers, spread (DTS-like behavior), 61
- Cost-of-carry model, 353
- Countries
 - relative spread volatilities, 64
 - spread dynamics, 64
- Credit bond
 - portfolio, hedging, 149–150
 - roundtrip trade, execution, 266
- Credit crisis (2007–2009), 229
 - broker-dealer financing, difficulty, 355
 - downgrade risk, 250–257
 - DTS application, 234–244
 - relative/absolute spread volatility, 233f
 - risk model construction, DTS usage (advantages), 244–246
 - spread behavior, 229–234
- Credit curve
 - data/methodology, 214–217
 - empirical analysis, 217–227
 - positioning, 213
- Credit default swaps (CDSs), 39
 - CDS-cash bonds basis, widening, 39
 - changes, usage, 149
 - coefficients, magnitude (change), 143
 - communication sector, 46f
 - dataset, description, 42t
 - indexes, spreads, 230f
 - investment-grade bonds, 140t
 - investment-grade bonds-only regression, 142t
 - Kraft, 134f
 - regression coefficients, 143
 - results, 5
 - sectors, estimates (comparison), 44
 - spread duration, 242
 - usage, 227
 - variables, 134
- Credit default swaps (CDSs) spreads
 - empirical analysis, 41–50
 - increase, 144
 - regression, 151t
 - change, 151t
 - systematic volatility, 42, 44
 - volatility, analysis (QML procedure), 48
 - width, 137
- Credit exposure (obtaining), cash/synthetic replication (usage), 337
- Credit index
 - excess returns, difference, 346f
 - monthly excess returns, 359t
 - RBI-2, empirical/analytical durations (basis), 188f
- Credit markets
 - change, 48
 - extreme conditions, 158
 - securities, risk (increase), 253, 255
 - segmentation, 173
- Credit ratings
 - basis, 179–180
 - hedge ratios, variation, 163–166
 - spread, hedge ratios function, 164f
- Credit RBIs, 358–373
 - basket
 - components, 337–338
 - VIX/ED-FF positions, calculation, 361
 - monthly excess returns, 359t
 - short VIX exposure, 362f
 - tracking errors, 363t
- Credit sector exposures, skewing, 124–125
- Credit spreads
 - decomposition, purposes, 133–134
 - interest rates, negative correlation, 163
 - liquidity cost, identification, 82

- premium, 266
 - market spread level, correlation, 268
 - volatility, 268
 - puzzle, 268
- Credit steepeners
 - implementation, CDSs (usage), 224–227
 - trades, implementation, 213
- Crossover names, spread change, 44
- Cross-sectional high-yield OAS, explanation, 147
- Cumulative excess returns
 - difference, portfolio contrast, 127f
 - IG Corporate level, 272f
 - performance, contrast, 127f
- Cumulative relative returns, 304t
- D**
- Daily corporate bond pricing data, 173
- Daily spread change, absolute/relative volatility, 63f
- Data description, 34–35
- Default contribution, 137f
 - market OAS, 144f
 - sector-wise spread decomposition, 141f, 146f
- Defaulted bonds, investment, 298
- Default losses, representation, 139
- Default OAS components, 145f
- Default risk
 - accounting, 141
 - joint dynamics, 133
- Derivatives, usage, 352
- Descriptive statistics, usage, 299–303
- Developed markets sovereigns, DTS (usage), 59–66
- Diversification, downgrade-based model, 252t, 254t
- Downgraded bonds
 - average spread level, 183
 - hedge ratios, 183
 - historical losses, 252–253
 - pre-rating/post-rating event regressions, 182
- Downgraded issuers
 - liquidity, 312f
 - performance, 314
 - variation, 255–256
 - relative spreads, 307f
 - relative turnover, 312f
 - underperformance, 305
 - upgraded issuers, performance (comparison), 306
 - value-weighted returns, equal-weighted returns (contrast), 305–306
- Downgrade event, 297
 - negative informational content, investor overreaction, 297
- Downgrade risk, 250–257
 - estimation, 257
 - quantification, 256
- Downgrade rule, 278
- Downgrades
 - average underperformance, 251t, 254t
 - yearly results, 255t
 - loss, standard deviation, 253
 - performance cost, 249
 - performance effect, long-term historical study, 258
 - possibility, 256
- Downgrade tolerant corporate index, 279, 281
- Dummy variables, usage, 77
- Duration-adjusted carry
 - curves, 217
 - sector/duration bucket categorization, 215f
- Duration-based bonds, 119–120
- Duration buckets, summary statistics, 216t
- Duration exposures, matching, 186
- Duration-matched treasuries, excess returns, 214
- Duration-neutral credit steepener trades, implementation, 213
- Duration-neutral steepener, positive spread carry, 216
- Duration sample, 35f
- Duration times spread (DTS), 3, 20–21
 - advantages, 244–246
 - applications, 234–244
 - basis, 199–200
 - contributions, 4
 - limitations, 261
 - matching, 338–339
 - DTS-based approach, 245, 257–258
 - DTS-based forecasts, 65
 - DTS-based issuer caps, 32
 - DTS-based models, implementation
 - difficulty, 33
 - DTS-based risk, 261
 - DTS-hedged trades, systematic risk, 198

- Duration times spread (DTS) (*Continued*)
DTS-neutral positions, 218, 220
DTS-neutral steepener, performance, 219t
examination, investment grade CDS (usage), 225
issuer matching, 221t
DTS/OAS, 87
DTS-weighted excess returns, sector/duration bucket, 217f
DTS-weighted trade, volatility, 200
excess return volatility
contrast, 21f
contrast, seniority classes, 30f
relationship, 58
exposure
evolution, 69f
matching, 198
usage, 241
hedge, generation, 242
levels, ratio inversion, 258–259
limits, placement, 262
measure, incorporation, 258
model, position limits (ratios), 259f
paradigm, introduction, 33
periodic usage, 260–261
prediction, 20
quintiles, 21
ratio, 205
comparison, 206t
usage, 205–206
seniority classes, 27–30
summary statistics, 22t
theoretical basis, 73
theoretical derivation, 233
usage, 190, 245
usefulness, 73
volatility estimator, quality, 236
Duration times spread (DTS) hedge
advantage, 203
observation, 202
performance, 198
- E**
Emerging markets (EM)
debt, spread dynamics, 55–59
sovereign debt, DTS relation (evidence), 59f
Emerging Markets (EM) Dollar
Denominated Index, 55–56
countries spread level, 58f
historical spread level, 56f
Empirical analysis, 161–163
Empirical beta-based hedge, 244
Empirical duration
analytical duration, relationship, 159–161
credit risk perception, impact, 164–165
spread level, relationship, 171f
theory/evidence, 159–172
usage, 186–192
Empirical hedge ratios
behavior instability, exhibition, 167
credit rating/period, 169t
projected hedge ratios, comparison, 167f
Empirical hedge ratios, projection, 166
Empirical RBI, level, 187
Empirical TEV, analytical TEV (contrast), 188f
Equity market betas, 207
Estimated annual credit spread premium, 287t
index data, usage, 282t, 283t
Estimated average annual credit spread premium, historical default data (usage), 267t
Estimated average annual spread premium, index data (usage), 273t
Estimated return volatility, 67t
Estimation methodology, 40–41
Euro Aggregate Index
DTS exposure, evolution/attribution, 69f
estimated return volatility, 67t
isolated return volatilities, 68f
spread exposure, increase, 68, 70
Euro Corporate Indexes
annualized excess return volatilities, 61f
systematic spread volatility estimation, QML usage, 50t
Eurodollar (ED) futures contracts, 357
European credit markets, trading conventions, 113
European indexes, OAS (time series), 113
European sovereign crisis, 117–118
European Treasury Indexes, spreads, 60f
Euro sovereign crisis, 61–62
Euro Treasuries, DTS (usage), 59–66
Euro Treasury Index
annualized excess return volatilities, 61f
average spread, 59–60
daily spread change, 64–66

- DTS exposure, evolution/attribution, 69f, 70f
- LIBOR spread, 60
- progression, 68, 70
- Eurozone economies, deficits/debt ratios, 55
- Excess return, 20–21
 - standardized excess return, distribution, 24f
 - volatility
 - estimates, 24
 - forecasts, comparison, 22–25
- Excess return volatility
 - DTS function, 59f
 - duration times spread, contrast, 21f, 27f
 - seniority classes, 30f
 - measure, 20–25
- Execution strategies, 82
- Expected default losses, alternative measure (usage), 145–147
- Expected default probability measures, 146
- Expected TEV, improvement, 123–124
- F**
- Fallen angels, 81
 - analysis, 325–332
 - asset class, 319–332
 - construction method, 319–322
 - bonds sales (distribution), exclusion triggers (impact), 324t
 - Buy All portfolios, 322
 - construction, sample, 298–299
 - cumulative relative returns, 304t
 - data/methodology, 298–303
 - descriptive statistics, usage, 299–303
 - downgraded issuers, relative turnover/liquidity, 312f
 - dynamic portfolios, construction, 319–320
 - dynamic strategy, performance analysis, 297
 - flexible reversal portfolio, 321–322, 324–325, 327
 - high-yield securities proportion, 295–296
 - high-yield status, maintenance, 303
 - issuers
 - average monthly returns, median, 310f
 - population, 300t
 - market value, 300t
 - minimum relative cumulative return
 - month, distribution, 309f
 - observations, 300–301
 - performance, 325–332
 - asymmetric relation, 311
 - cross-sectional regression, 315t–316t
 - cross-sectional variation, 307–311
 - forced selling, relationship, 297
 - portfolio
 - bond inclusion/exclusion criteria, 320t
 - characteristics, 322–325
 - composition summary statistics, 323t
 - performance, 326t–327t
 - price behavior, 296
 - price pressures, 296
 - volume/liquidity/cash-derivative, proxy basis, 311–314
 - price reversal, evidence, 305
 - quarterly average returns, 304t
 - rating event month, beginning/ending credit qualities (distribution), 301t
 - rating events
 - bonds, status, 302t
 - performance dynamics, 303–318
 - relative cumulative performance, distribution, 308f
 - returns, cross-section predictability, 314–318
 - reversal period, 318
 - risk/performance, 295
 - robustness tests, 328–330
 - rules-based portfolios, characteristics/performance, 298
 - selling imbalance, 312–313
 - spreads, reversal, 307
 - strategy, 319
 - three-month reversal, 321, 325
 - three-month reversal portfolio
 - monthly relative returns, distribution, 328f
 - performance, 331t
 - properties, 330
 - rolling six-month average relative returns, 329f
 - transactions costs, performance net, 330–332
 - underperformance period, 318
 - value-weighted monthly relative returns, 303, 305
 - weighting scheme, 321
- Fed Funds (FF) futures contracts, 357

- Financial sectors
 - default contribution, 137f
 - liquidity contribution, 137f
- Firm-specific fundamental information, usage, 138–139
- Five-year spread premium, index data (usage), 275f
- Fixed rate IG bonds, comparison, 121t–123t
- Flexible Reversal portfolios, 321–324, 327
- Flight-to-quality scenario, 73
- Forced selling
 - impact, 297
 - performance, relationship, 297, 311–318
- Forecasting data, examination, 205–207
- Fully tolerant corporate index, 279, 281, 288
- Fully Tolerant Corporate Index, composition, 289f
- Future spread volatility, estimates, 64–65
- G
- Gamma, estimates (usage), 183
- Gaussian conditional probability density function, usage, 53
- Gauss-Wiener process, 74
- German Treasury index, LIBOR spread, 60f
- Greece, absolute spread volatility (increase), 64
- H
- Hedged portfolios, excess returns, 144t
- Hedge ratios
 - aggregated data, usage (disadvantage), 179
 - data/methodology, 179–181
 - discontinuity, 165f, 185–186
 - discontinuous behavior, 173
 - empirical analysis, 181–183
 - estimation, 185
 - event study approach, 179–186
 - exhibition, 165
 - extrapolation, 166
 - function, 177f
 - implication, 244
 - performance evaluation, relationship, 183–186
 - predictability, 166–172
 - rating changes, 179–186
 - reverse, 181
 - spread level, relationship, 161, 163
 - stability, 166–172
 - pattern, 186
 - stale pricing, impact, 173–179
 - variation, 163–166
 - rating event categorization, 185f
- Hedges (determination), metric (usage), 198
- Hedge security, market beta (estimates), 202
- Hedging, 241–244
 - approaches, 199–200
 - comparison, 197
 - DTS application, 241–242
 - mechanisms, 201t, 204t
 - results, analysis, 200–207
 - simulation methodology, 199–200
 - strategies, 199
- High beta, 3–4
- High-profile bonds, two-way flow, 92
- High-spread buckets, population, 57
- High-Spread Euro Countries, spread volatility level (contrast), 62f
- High-volume bond, defining, 91–92
- High-yield bonds
 - analysis, 139
 - boundary, 15
 - callable issuance, 179
 - core-plus investment, 189–192
 - interest rate sensitivity, 189–190
 - uncertainty, 157
 - liquid subset, 177
 - OAS regression, 154t
 - performance, 325
 - regressions, usage, 117
 - research, 158
 - variation, 18
- High-yield data, usage, 16
- High-yield debt
 - effective duration, 158
 - out-of-benchmark (core-plus) allocations, 157
- High Yield indexes, 229–230
- High Yield Indexes, credit rating categories, 161
- High Yield indexes, spreads, 230
- High-yield managers, total return/default risk perspective, 159
- High-yield markets, investment-grade markets (hedge ratio discontinuity), 165f
- High-yield securities, 18–19
 - fallen angel proportion, 295–296

- High-yield spreads
 - decomposition, 147
 - impact, 147
- Historical absolute spread changes, 235f
- Historical back-testing, information ratio generation, 214
- Historical default, usage, 267–268
- Historical risk flares, performance, 226t
- Historical time period, 235
- History-based betas, comparison, 206
- Hit ratio, elevation, 183
- HY Index, 82
- I
- Idiosyncratic risk
 - minimization, 123
 - reduction, 352
 - issuer matching, 218–220
- Idiosyncratic spread
 - level, volatility, 17f
 - volatility, 16–18
 - conditional relation, pooled estimation, 47t
 - measurement, collection, 17
- Idiosyncratic spread change
 - linear term coefficient, distributions, 46f
 - volatility, 17f
- Idiosyncratic volatility, 19–20, 44–48
- IG bonds, index percentage, 120f
- IG Corporate-High Yield BB-Only Composite, 284
- IG Corporate Index
 - annual average spread premium, 281
 - annual reported index excess returns, 271t
 - attributes, 277t
 - average, 270
 - credit spread premium
 - measurement, 266–279
 - negative level, 273
 - data, implication, 274
 - monthly index excess returns, 284
 - risk, comparison, 284
 - spread premium, index data (usage), 275f
 - usage, 265–266
- IG Credit Index, relationship, 87
- IG-HY Composites, risk behavior, 286
- IG Index, 82
 - LCS relationship, 88f
 - monthly estimated TEV, contrast, 124f
- IG-only fully tolerant corporate index, 279
 - composition, 290f
- IG-Only Fully Tolerant indexes, 288
- IG Sector, out-of-sample test, 103f
- Illiquid bonds, holding (mark-to-market impact), 86
- Illiquidity, increase, 83
- Indexes
 - cumulative excess return performance, contrast, 127f
 - downgrade rule, 278
 - excess returns, 270–271
 - replication
 - derivatives, usage, 186–187
 - stratified sampling, usage, 241t
- Index-level LCS, 125f
- Index tracking portfolios
 - construction, 123
 - creation, 236–241
- Information ratio
 - generation, 214
 - maximization, 203–204, 242
- In-sample monthly prediction error dataset, out-of-sample months (usage), 148
- In-sample projection, 52
- Interest rates, credit spreads (negative correlation), 163
- Interest rate sensitivity
 - difference, 177
 - stale pricing, impact, 158–159
 - uncertainty, 157
- Intra-industry pairwise CDS trades, performance statistics (hedging mechanism), 201t, 204t
- Investment-grade bonds
 - analysis, 139
 - boundary, 15
 - daily quotes, changes (absence), 173
 - LCS, regression, 140t
 - liquidity cost cumulative distribution, 84f
 - liquidity cost frequency distribution, 84f
 - liquid subset, 177
 - OAS/CDS spreads, regression, 140t
 - OAS regression, 153t
 - residual/confidence intervals, coefficient, 148f
 - spread decomposition methodology, 136–137
- Investment-grade bonds-only regression, 142t

- Investment Grade CDX, 231f
- Investment-grade corporate universe, spread
 - level partitioning, 6–7
- Investment-grade data, usage, 16
- Investment-grade markets, 319
 - high-yield markets, hedge ratio discontinuity, 165f
- Investment-grade rating categories,
 - interest-rate sensitivities, 163–164
- Investment managers, low-volatility
 - long-term outperformance strategy, 266
- Involuntary selling, 305
- Isolated return volatilities, 68
 - Euro Aggregate Index, 68f
- Issuer
 - diversification, downgrade-centric analysis, 250
 - DTS contributions, limitations, 261–262
 - limits, comparison/combination, 260–262
 - population, 300t
 - risk, diversification framework, 249
- Issuer-matched DTS steepener
 - combination, 220–224
 - historical performance, 220
 - historical risk flares, performance, 226
 - passive carry trade, 222–223
- Issuer-matched utilities steepener,
 - performance, 222f
- Issuers
 - issuer-specific events, effect (minimization), 48
 - one-year default probability, estimation, 138
 - recovery rate, estimation, 138
- Issuer-specific risk, 204
- iTraxx-Cash basis, 354f
- K**
- Key rate durations (KRDs), 66–67
 - profile, basis, 187
- Kraft Foods (KFT)
 - credit default swap (CDS), 134f
 - duration-based group, 119
 - LCS, 135f
 - liquidity/default characteristics, 134–135
 - option-adjusted spread (OAS), 134f
 - spread decomposition, 136f
- L**
- Lehman Brothers default
 - impact, 236
 - overweight, 345
 - performance effect, exclusion, 255
- Liquid basket, issuer representation, 109
- Liquid cash basket proxies, creation, 129
- Liquid credit benchmarks, 82
- Liquidity
 - abundance, 141, 143
 - components, contributions, 144f
 - conditions, worsening, 170
 - constraint, 278–279
 - contribution, 137f
 - sector-wise spread decomposition, 141f, 146f
 - crisis, 128–129
 - defining, 82
 - differences, 137
 - dispersion, adjustment factor (relationship), 93
 - distribution, change, 83
 - improvement, 123
 - increase, 174
 - CAS components, 145f
 - penalty, 117–118
 - proxy, 173–174
 - risk, 352–353
 - joint dynamics, 133
 - subjective measures, LCS correspondence, 108
- Liquidity constraint tolerant corporate index, 279
- Liquidity cost
 - embedding, identification, 82
 - LCS capture, 130
 - market measure, 134
- Liquidity Cost Score (LCS)
 - bond-level indicatives, relationship, 93, 96
 - Bucket, bonds (example), 112
 - changes, usage, 149
 - coefficients, magnitudes (change), 143
 - comparison, out-of-sample test (usage), 104t–105t
 - computation, 81, 139
 - bid-ask indications, usage, 93
 - credit market segmentation, 91–92
 - cross-sectional distribution, 343f
 - cumulative excess return, difference, 87f

- distribution, 109f
 - Pan-European/U.S. fixed rate IB bonds, 120f
- frequency distribution, 124
- investment-grade bonds-only regression, 142t
- Kraft, 135f
- LCS-sorted portfolios
 - summary statistics, 111t
 - transition matrices, 112t
- liquidity, subjective measures (correspondence), 108
- method, out-of-sample test (1-2-3 rankings), 106–107
- methodology, 88–92
 - distinctions, 113
- migration, potential, 111
- 1-2-3 rankings, 107
- 1-2-3 ranks, comparison, 108t
- persistence, 110–112
 - summary statistics, 111t
- price percentage terms, measurement, 83
- quintiles
 - examination, 84–86
 - excess return performance, examination, 86
- regression, 99t
 - coefficients, 143
 - investment-grade bonds, 140t
- relationship, 88f
- sector analysis, 85f
- segmentation, 92f
- TRACE
 - trading volume, relationship, 98f
 - volume, relationship, 98f
- usage, 82
- variables, 134
- volatility, 150
 - regression, 151t
- Liquidity Cost Score (LCS) model
 - specification, 98–102
 - support, out-of-sample test (usage), 110
 - test, 102–112
 - validation, LOW bond usage (example), 103, 106
- Liquidity Cost Score (LCS) value
 - consistency, 107
 - estimation, regression (usage), 117
 - generation, 96
 - persistence, 111
- Liquidity quintiles
 - bonds
 - composition/volume, 175t
 - hedge ratios, 178f
 - examination, 174
 - price return volatilities/correlations, 176t
 - spread, hedge ratio function, 177f
- Liquid tracking portfolios
 - construction, 82
 - maintenance, 128
- Log-likelihood function, 51
- form, writing, 53
- logarithm, 52
- London Interbank Offered Rate (LIBOR) spreads, 39
 - duration, 358
 - value calculation, problems, 87
- Long-dated corporates
 - duration-matched treasuries, excess returns, 214
- Long-dated corporates, performance, 213
- Long DTS exposures, 218
- Long-short trades, 197
- Long-term credit beta, source, 360
- Long-term statistical averages, impact, 79
- Loss-given-default measures, 146
- LOW bonds, 93
 - LCS comparison, out-of-sample test (usage), 104t–105t
 - non-quoted off-the-run issues, treatment, 100, 102
 - quotation, LCS results, 94t
 - roundtrip execution cost, LCS representation, 107
- Low-spread buckets, population, 57
- M**
- Market beta
 - estimates, 202
 - forecasting methods, 205
- Market exposures, 203
- Market-level risk premium, representation, 138
- Market liquidity
 - deterioration, 111
 - increase, 125
- Market OAS
 - components, 145f
 - contributions, 144f

- Market risk
 aversion, increase, 224
 definition, determination, 198
 hedging, 197
 impact, 203
 premium
 contributions, 144
 importance, 143
Market's best bid-ask spread, 90
Market segmentation, 184
Market stress, 147
Market value, 300t
Market weights, usage, 187
Mark-to-market constraints, reduction, 136
Mark-to-market investors, short-term
 dislocations, 136
Maturity
 dependence, 78f
 slope dependence, 77–79
Maximum likelihood
 estimates, 41
 technique, 40
Maximum likelihood estimation (MLE)
 methodology, 40–41
Median cash-CDS basis, 313f
Median relative LCS, 311
Median spread levels, volatility (contrast),
 43f
Merton model, zero-coupon bond, 74–77
Minimum variance hedge, 203–205
Modified Peer Group, 325
Month-by-month regressions, estimation,
 146–147
Monthly estimated TEV, IC index (contrast),
 124f
Monthly excess returns, 359t
Monthly LIBOR-OAS volatilities, 352
Monthly portfolio performance, statistics,
 150t
Monthly TCX, turnover, 350f
Monthly tracking errors, 362f
Multicollinearity, concern, 139
Multi-factor risk models, 244–245

N
Natural spread volatility, 256
Net performance, equation, 330
Next-period beta, prediction, 205
Non-benchmark bond
 consideration, 117
 off-the-run issue, 92
 quote, 93
 trading, 92–93
Non-benchmark quoted bonds, LCS
 computation (bid-ask indications), 93
Non-investment-grade bonds, allocation,
 189–190
Non-investment-grade markets, 319
Non-quoted adjustment factor (NQAdjF),
 usage, 100
Non-quoted bonds
 adjustment, 100
 identification, modeled LCS (usage), 103
Non-quoted bonds, LCS model
 specification, 98–102
 usage, 96–102
Non-quoted universes, comparison, 101t
Non-systematic risk, sources, 257
Normalized excess return realizations,
 mean/standard deviation, 23f
Normalized residuals, time series
 (mean/standard deviation), 23
Normalized spread changes, statistical
 properties (distribution), 66
Null hypothesis, *p*-values, 182

O
Off-the-run issue, 92
1-2-3 ranks, LCS (comparison), 108t
1-2-3 trader rankings, average LCS
 (correspondence), 108–109
One-month LIBOR rate, 320
One-month USD LIBOR rate, 190
On-the-run bond, 92f
 defining, 91–92
On-the-run CDX.NA.IG contract, 230
Option-adjusted duration (OAD) model, 179
Option adjusted spread (OAS)
 annual credit spread premium, historical
 default data (usage), 270f
 attribute levels, 147
 composition, change, 141–145
 drivers, 139, 141
 investment-grade bonds, 140t
 investment-grade bonds-only regression,
 142t
 Kraft, 134
 levels, comparison, 144–145
 percentage, market/default components,
 145f

- regression, 151t
- residual, size, 148
- time series, 113, 115f
- Option adjusted spread (OAS) changes, 147
 - long-term time series, 233–234
 - prediction, 148
 - regression, 151t
 - usage, 149
- Option adjusted spread duration (OASD), 82
- Ordinary least squares (OLS) regression, 52–53
- Out-of-benchmark allocations (core-plus allocations), 157
- Out-of-sample excess returns, 149–150
- Out-of-sample months, usage, 148
- Out-of-sample tests, 102–112
 - IG sector, 103f
 - occurrence, 106
- Out-of-the-money puts, writing, 223–224
- P**
- Pairs trades, market risk hedging, 197
- Pan-European bonds
 - duration-based bonds, 119–120
 - fixed rate IG bonds, 121t–123t
 - raw bid-ask spreads, 115
- Pan-European credit bonds, LCS (usage), 113–123
- Pan-European credit indexes
 - characteristics, 114t
 - liquidity characteristics, 116t
 - OAS time series, 115f
- Pan-European credit market: European sovereign crisis, 117–118
- Pan-European fixed rate HY bonds, LCS regression, 118t
- Pan-European fixed rate IG bonds
 - LCS distribution, 120f
 - LCS regression, 118t
- Pan-European IG bonds, quality (increase), 113
- Pan-European IG index, 115
- Pan-European LCS
 - regression, 119t
 - U.S. LCS, comparison, 118–123
- Pan-European non-quoted LCS model, 117–118
- Pan-European trader-quoted benchmark bonds, pooling, 118
- Pan-Europe liquidity cost, increase, 118
- Partition, sample, 35f
- Passive carry trade, 222–223
- Peer groups, population, 299
- Performance
 - attribution, 190, 202
 - models, 32–33
 - evaluation, hedge ratios (relationship), 183–186
 - forced selling, relationship, 297, 311–318
 - metrics, difference, 184
 - primary driver, 197
 - statistics, hedging mechanism (usage), 201t
- Pooled estimation, results, 45–46, 47t
- Pooled idiosyncratic spread volatility, spread level (contrast), 18f
- Population, sample (sector/year basis), 34f
- Portfolio
 - bond inclusion/exclusion criteria, 320t
 - characteristics, 322–325
 - company strategy, 133–134
 - composition: summary statistics, 323t
 - concentrations, control, 249–250
 - contribution-to-DTS exposure, 249–250
 - credit bond portfolio, hedging, 149–150
 - credit torpedoes, 32
 - cumulative excess returns, 125
 - difference, contrast, 127f
 - flexible reversal, 321–322
 - investor construction, 128
 - LCS, 125f
 - LCS-sorted portfolios
 - summary statistics, 111t
 - transition matrices, 112t
 - management
 - applications, empirical duration (usage), 186–192
 - tools, 32–33
 - managers
 - spread change, summary/implications, 30–34
 - TES liquidity usage, 130
 - monthly performance, statistics, 150t
 - MV, 128
 - performance, 326t–327t
 - rebalancing, 124–125
 - structuring
 - LCS, usage, 128
 - realized downgrade losses, increase, 253
 - TCX portfolio, properties, 339–342
 - TEV details, 126f

- Portfolio (*Continued*)
three-month reversal, 321
true duration, 157
turnover
example, 128f
involvement, 128
- Portfolio construction
investor opportunity, persistence (impact), 111
LCS, usage, 123–129
usage, 28
- Position size ratios
change, 255
misinterpretation, 260
setting, DTS (usage), 257–260
- Post-rating event hedge ratios, 184f
- Pre-crisis, relative/absolute spread volatility, 233f
- Pre-rating event hedge ratios, 184f
- Price pressure, proxies, 311–314
- Price-quoted bonds, 88
- Probability density function, denotation, 51–52
- Profit and loss (P&L) volatility, 201, 203
- Pro Forma DTS risk model, risk
factors/exposures (description), 67t
- Projected hedge ratios, empirical hedge ratios (comparison), 167f
- Proxies, ratings downgrades (usage), 250
- Q**
- Quarterly average returns, 304t
- Quarterly TCX, turnover, 250f
- Quasi-maximum likelihood (QML)
approach, 39, 51–53
estimation methodology, 52–53
usage, 45t
- Quoted bonds
LCS/issue size/age, relationship, 95t
LCS/OAS/DTS, relationship, 97t
- Quoted universes, comparison, 101t
- R**
- Random variable, probability density function (denotation), 51–52
- Rates-only hedge, usage, 189
- Rating event
performance dynamics, 303–318
- Rating event, defining, 179–180
- Ratings downgrades, proxy usage, 250
- Ratings transitions, historical frequency, 250
- Raw bid-ask spreads, 115
- Realized market betas, predictors, 206t
- Recovery data, usage, 267–268
- Regression
coefficients, 13f
fit, improvement, 147
intercept, 143
- Regression-based results, corroboration, 163
- Relative cumulative performance,
distribution, 308f
- Relative OAS changes, long-term time series, 233–234
- Relative spread change
stability, enhancement, 8
volatility, 7f
basis, 23
comparison, 7–8, 8f
- Relative spread volatilities, 64
absolute spread volatility, contrast, 233f
- Relative value opportunities (identification),
spread decomposition (usage), 147–148
- Remaining maturity tolerant corporate index, 279
- Replicating bond index (RBI), 351
basket swap, 337–338, 357
- Reported index excess return, 265
- Return variance, source, 256
- Return volatility
estimation, 66–68
result, 213–214
sources, 256t
- Risk-averse investors, risk premium demand, 133
- Risk factors, capture (absence), 127–128
- Risk-free interest rate, assumption, 75
- Risk management, DTS (benefits), 229
- Risk measures, 220
- Risk model construction, DTS usage (advantages), 244–246
- Risk premium, contributions, 144f
- Risk projection, usage, 235–236
- Risk properties, 285t
- Risk-return profile, 223–224
- Risky Present Value (RPV), 242
- Robustness tests, 328–330
- Rolling TBA contracts, usage, 355
- Rollover risk, 356–358
- Roundtrip cost, 88

- R-squared values, usage, 205
- Rules-based portfolios,
 - characteristics/performance, 298
- Russian Crisis
 - credit markets, change, 48
 - evidence, 19
 - response, 5–6
- S
- Same-industry CDS pairs, hedging
 - mechanism performance, 243t
- Sector buckets/breakpoints, 35f
- Sector exposures, 32–33
- Sector-level LCS, calculation, 83–84
- Sector-specific risk, mitigation, 190
- Sector-wise spread decomposition,
 - default/liquidity contributions, 141f, 146f
- Securities
 - market sensitivity, ex ante estimate, 199
 - risk, increase, 253, 255
 - trading on price, 165
- Security-level analysis, impact, 13–14
- Senior bonds, classification, 28
- Seniority classes, DTS (usage), 27–30
- SENIOR portfolios, 28
 - notes/senior notes, inclusion, 29
 - summary statistics, 29t
- Shift/slope factors, regression coefficients, 13f
- Short bonds, sale, 190
- Short-dated corporate bonds
 - duration-matched treasuries, excess returns, 214
 - excess returns, 216–217
 - performance, 213
- Short DTS exposures, 218
- Short-duration Pan-European GE bonds,
 - identification, 119–120
- Short empirical duration strategy
 - rates/performance, changes, 191f
 - summary statistics, 191t
- Shorter-maturity bonds, spread offering, 215
- Short-maturity bonds, exposures, 261
- Short-term dislocations, 136
- Short-term estimator, usage, 236
- Single-issuer DTS steepener trade, return, 220
- Slope dependence, 77–79
- Sovereign bonds, DTS, 55
- Sovereign issuer, daily spread change (absolute/relative volatility), 63f
- Sovereign risk (management), DTS (usage), 66–70
- Sovereign spreads
 - increase, 61
 - return volatility, embedding, 68
- Spread
 - absolute change, sensitivity, 4
 - asset classes, results, 5
 - basis, changes, 313
 - behavior
 - dynamics, examination, 56
 - stability, 18–20
 - buckets, summary statistics, 22t
 - changes, neutralization, 149
 - dependence, linear/nonlinear specification (usage), 46f
 - increase, 170
 - normalization, 12
 - parallel shift, 73
 - reversal, 307
 - risk, components, 352
 - spread volatility, linear relationship, 17–18
 - systematic change, exposure, 31
 - volatility, 40–41
 - prediction, risk projection (usage), 235–236
 - projections, 235
- Spread-based constraint, adjustment, 32
- Spread changes
 - absolute/relative volatility, 63f
 - assumption, 246
 - autocorrelation, 63
 - behavior, analysis, 9–10
 - cross-sectional standard deviation, measurement, 256
 - dynamics, 10–13
 - models, regression estimates, 12t
 - portfolio managers,
 - summary/implications, 30–34
 - return, calculation, 4
 - spread level dependent model, regression estimates, 57t
 - volatility, 5
 - credit rating, 6f
 - spread range, 6f
 - volatility, contrast, 43f

- Spread decomposition
 applications, 147–150
 expected default losses, alternative
 measure (usage), 145–147
 high-yield spread decomposition, 147
 Kraft, example, 136f
 methodology, 138–139
 model (month-by-month regression), CDP
 (usage), 152
 outlier-robust regression, 152t
 usage, 133–134, 147–148
- Spread decomposition models
 alternatives, 150–152
 bond-level liquidity risk factor,
 incorporation, 150–151
 usage, 139
- Spread duration, 20–21
 data, 22t
 inequality, 3–4
- Spread duration-adjusted LCS quintile, 130
- Spread level
 empirical duration, relationship, 171f
 hedge ratios, relationship, 161, 163
 pooled idiosyncratic spread volatility,
 contrast, 18f
 QML, usage, 45t, 47t
 systematic spread volatility
 relationship, 231
 volatility, contrast, 232f
 yearly regression, 19f
- Spread premium, 265
 capture, 288–291
 constriction, index rules (impact), 278
 estimation, historical default data (usage),
 274
 measurement
 historical default/recovery data, usage,
 267–268
 index excess returns, usage, 268–274
 spread premium, usage, 268–274
- Spread-quoted bonds, 88
- Spread volatility, 261
 dependence, determination, 48
 idiosyncratic components, 63
 idiosyncratic spread volatility, 16–18
 linear growth, 73
 prediction, 46f
 projections test, 65f
 refinements/tests, 25
 regression, 58, 62
 relationship, 78f
 spread, zero level, 25–27
 spread function, 76f, 77f
 spread level, contrast, 59f
 systematic components, 63
 yearly regression, 19f
- Stale pricing, impact, 158–159, 173–179
- Standardized excess return, distribution, 24f
- Standard & Poor's 500 (S&P500) Index,
 U.S. Corporate Index/Total Return
 Volatility (relative spread volatility
 contrast), 234f
- Subordinated bonds, classification, 28
- SUBORD portfolio, 28
 notes/senior notes, inclusion, 29
 summary statistics, 29t
- Synthetic credit replication, 338
- Synthetic replication
 arbitrage limits, impact, 356f
 tracking error
 arbitrage limits, impact, 355
 drivers, 352
- Systematic market factors, impact, 143
- Systematic risk, 198
 variance, 202
- Systematic spread change
 measurement, 48
 representation, 14
 spread level
 relationship, 14
 volatility, contrast, 232f
 time series volatility, 15f
 volatility/spread level, relationship,
 15–16
- Systematic spread volatility, 9, 13–16
 estimation, QML (usage), 49t, 50t
 spread level
 conditional relation, 45t
 contrast, 16f
 QML, usage, 45t
 spread level, relationship, 231
- Systematic volatility, 42, 44
- T**
- Tactical mark-to-market investors,
 distinctions, 136
- Targeted portfolio LCS value, maintenance,
 128
- Target index, investor replication, 186–187
- TCX. *See* Cash credit replication

- TED spread, 87
 - LCS, relationship, 88f
- Theoretical hedge ratio, calculation, 163
- Three-month reversal portfolio
 - monthly relative returns, distribution, 328f
 - performance, 331t
 - properties, 330
 - rolling six-month average relative returns, 329f
- Total DTS exposure, evolution, 69f
- Total economic value (TEV)
 - estimation, 125
 - monthly estimation, IG index (contrast), 124f
 - weighted average, 124–125
- Total economic value (TEV), differential, 188f
- Total economic value (TEV), improvement, 123–124
- Total return swap (TRS), guarantee, 337
- TRACE
 - reports, 173–174
 - usage, 90
- TRACE volume, LCS (relationship), 98f
- Tracking errors, 363f
 - drivers, 352
- Tracking error volatility (TEV)
 - decline, 187
 - details, 126f
 - impact, 188f
- Tracking portfolio, construction, 123
- Tradable cash basket proxies, creation, 129
- Trade efficiency scores (TECs), 129–130
 - computation, 130
 - creation, LCS value basis, 130
 - liquidity ranking, 130
- Trader-quoted bonds, LCS (usage), 92–96
- Traders
 - bid-ask indications, relationship, 91
 - 1-2-3 rankings, average LCS (correspondence), 108–109
 - quotes, indicative only characteristic, 113
 - rank categories, LCS distribution, 109f
- Trades
 - formation, 242
 - performance, 197
 - volatility, 204
- Trading volume data, TRACE report, 173
- Trailing 24-week empirical betas, poor quality, 203
- Transactions costs
 - control, quarterly rebalancing (usage), 348–351
 - performance net, 330–332
 - volatility, 348
- t*-statistics, 317
 - range, 18–19
 - relationship, 44
- Turnover
 - constraint, rebalanced monthly subject, 123
 - costs, estimation, 129
- U
- Uncertainty, source, 74
- Underperformance
 - period, 317
 - defining, 314
 - standard deviation, 252
- Unhedged portfolio
 - excess returns, 149f
 - out-of-sample excess returns, 149–150
- United States, liquidity cost (increase), 118
- Upgraded bonds, pre-rating/post-rating event regressions, 182
- Upgraded issuers
 - downgraded issuers, performance comparison, 306
 - relative spreads, 307f
- U.S. Aggregate Index, spread-to-swap levels, 353f
- U.S. bonds
 - duration-based bonds, 119–120
 - fixed rate IG bonds, comparison, 121t–123t
- U.S. corporate bonds, results, 5
- U.S. Corporate Index
 - credit ratings, 5
 - data description, 34–35
 - investor usage, 295
 - quality subsets, DTS levels, 258
 - rating event, 298
 - relative OAS changes, long-term time series, 233–234
 - span, 9
 - systematic spread volatility estimation, QML usage, 49t
 - total return volatility, relative spread volatility (contrast), 234f
 - tracking, 253

- U.S. credit bonds, Liquidity Cost Scores, 82–88
- U.S. Credit Index
aggregate credit steepener, performance contrast, 223t
performance statistics, 222
realized negative excess returns, 223
TCX performance, contrast, 344–348
tracking, 338
- U.S. credit indexes
characteristics, 114t
liquidity characteristics, 116t
OAS time series, 115f
- U.S. credit markets, trading conventions, 113
- U.S. fixed rate HY bonds, LCS regression, 118t
- U.S. fixed rate IG bonds
LCS distribution, 120f
LCS regression, 118t
- U.S. High Yield Indexes, 168f, 172f
bonds, proportion, 296
systematic spread volatility estimation, QML (usage), 50t
- U.S. IG Credit Index, LCS segmentation, 92f
- U.S. Investment Grade Corporate Index, 167, 171f
monthly spread levels, time series, 229–230
- U.S. investment-grade corporate CDS results, 48
- U.S. Investment Grade spreads, 230
- U.S. LCS
Pan-European LCS, comparison, 118–123
regression, 119t
- U.S. trader-quoted benchmark bonds, pooling, 118
- U.S. Treasury hedge ratios, 162t
- U.S. Treasury yield
changes, return (sensitivity measurement), 160
differences, 164
- V
- Value-weighted monthly relative returns, 303, 305
- Vodafone, duration-based group, 120
- Volatility
drought, 235
forecasts, comparison, 235f
idiosyncratic volatility, 44–48
quantification, 242
systematic volatility, 42, 44
- Volatility, observation problem, 40
- Volatility Index (VIX), 87
futures, 136–137, 351
futures, possibilities, 357
LCS, relationship, 88f
- Volatility-to-spread slope, dependence, 78–79
- Voluntary selling, 305
- W
- Washington Mutual defaults, impact, 236
- WorldCom, downgrades, 218
- X
- Xtrakter, bond-level trading volume data, 117
- Y
- Yearly spread slope estimates, 18–19
- Z
- Zero-coupon bonds
exclusion, 34
Merton model, 74–77
price, 75