Index

Note: Italic page numbers denote figures.

actual (realized) volatility 304–6, 311–13, 325–37
actuarial fair value, swap spreads 159, 163–4, 165
anchor points, function for yield curve 199
annualized volatility 328–9
arbitrage cash and carry 160–2
government intervention, effect of 351–3
misrepresentation by politicians 353–5
net and gross bond basis 124–5
opportunities, search for 2–3
regulatory 4–5
see also no-arbitrage
Arrow, K. 1
asset&basis swaps 274–7, 282, 283–4, 286–7
asset selection, PCA as tool for 85–9
ASW (asset swap margin) equilibrium for bunds (low-risk bonds) 236–7
equilibrium with CCBS markets 234–6
equilibrium for JGBs (high-risk bonds) 240–3
model revisited 237–40, 286–8
ATM (at-the-money) options 300
delta, gamma and theta 306–8
and delta hedging 301–2
segmentation of the volatility surface 308–9
ATMF (at-the-money-forward) options, volatility 311, 321, 322
breakeven levels 314–16
Austria 68, 258, 259, 260, 261, 262
EMU exit probability 295–6, 297
bandwidth parameter 36–7, 38
banks capital costs 178–80
cost of equity (CoE) capital 148, 149, 150, 238, 278
regulatory requirements 178
Basel accords 4, 148
basis point value (BPV) bonds 11–12, 123, 196, 200
and CTD bonds 123–4, 126, 127, 129
hedge ratio calculation 93
neutrality, hedging 79–81
of an option 321
basis point value (BPV) *(continued)*

<table>
<thead>
<tr>
<th>Term</th>
<th>Page References</th>
</tr>
</thead>
<tbody>
<tr>
<td>option-adjusted (OABPV)</td>
<td>127, 133, 136</td>
</tr>
<tr>
<td>swaps</td>
<td>11–12, 207–8, 224, 226</td>
</tr>
<tr>
<td>Black, F. 1</td>
<td>299, 303</td>
</tr>
<tr>
<td>Black–Scholes model</td>
<td>303, 305, 307, 325–6, 328, 329</td>
</tr>
<tr>
<td>bond butterflies, trading</td>
<td>203–4</td>
</tr>
<tr>
<td>bond futures contracts</td>
<td>12</td>
</tr>
<tr>
<td>futures price and delivery option</td>
<td>121–5</td>
</tr>
<tr>
<td>multi-factor DO models</td>
<td>flexible 131–6</td>
</tr>
<tr>
<td>need for 128–31</td>
<td></td>
</tr>
<tr>
<td>one-factor delivery option models</td>
<td>125–8</td>
</tr>
<tr>
<td>bond purchases, costs to banks of financing</td>
<td>178–80</td>
</tr>
<tr>
<td>bond switches, trading</td>
<td>203–4</td>
</tr>
<tr>
<td>bonds</td>
<td></td>
</tr>
<tr>
<td>convexity 118–20</td>
<td></td>
</tr>
<tr>
<td>in different currencies, relative values of 223–44</td>
<td></td>
</tr>
<tr>
<td>duration 117–18</td>
<td></td>
</tr>
<tr>
<td>yield of coupon-paying</td>
<td>115–17</td>
</tr>
<tr>
<td>see also government bonds</td>
<td></td>
</tr>
<tr>
<td>BPV see basis point value breakeven levels, options</td>
<td>314–20</td>
</tr>
<tr>
<td>BSW (basis swap)</td>
<td>274–8</td>
</tr>
<tr>
<td>BTPs see Italian government bonds</td>
<td></td>
</tr>
<tr>
<td>Bunds see German Bunds</td>
<td></td>
</tr>
<tr>
<td>butterfly, BPV-neutral</td>
<td>79–81</td>
</tr>
<tr>
<td>butterfly spread</td>
<td>23</td>
</tr>
<tr>
<td>capital requirements, swap spreads</td>
<td>164–5</td>
</tr>
<tr>
<td>carry calculation</td>
<td>94</td>
</tr>
<tr>
<td>different currencies</td>
<td>216</td>
</tr>
<tr>
<td>and repricing</td>
<td>141–2</td>
</tr>
<tr>
<td>cash and carry arbitrage</td>
<td>160–1</td>
</tr>
<tr>
<td>CCBS see cross-currency basis swaps</td>
<td></td>
</tr>
<tr>
<td>CDS see credit default swaps</td>
<td></td>
</tr>
<tr>
<td>cheapest-to-deliver (CTD) bonds</td>
<td>122–3</td>
</tr>
<tr>
<td>and curve fitting of German Bunds</td>
<td>197–201</td>
</tr>
<tr>
<td>fitted bond curve example</td>
<td>197–9</td>
</tr>
<tr>
<td>multi-factor DO models</td>
<td>128–36</td>
</tr>
<tr>
<td>net and gross basis</td>
<td>124–5</td>
</tr>
<tr>
<td>one-factor delivery option model</td>
<td>125–8</td>
</tr>
<tr>
<td>switches and delivery</td>
<td>option 123–4</td>
</tr>
<tr>
<td>China</td>
<td>350</td>
</tr>
<tr>
<td>collateralized loans</td>
<td></td>
</tr>
<tr>
<td>FX swaps and CCBS as</td>
<td>220, 221, 222</td>
</tr>
<tr>
<td>see also repo rates</td>
<td></td>
</tr>
<tr>
<td>commodity market example,</td>
<td></td>
</tr>
<tr>
<td>PCA 69–71</td>
<td></td>
</tr>
<tr>
<td>conditional density</td>
<td>24, 25, 47</td>
</tr>
<tr>
<td>conditional expectations, calculating 35–8</td>
<td></td>
</tr>
<tr>
<td>conditionality of option trades</td>
<td>321–5</td>
</tr>
<tr>
<td>conversion factor (CF), deliverable bonds</td>
<td>121–2</td>
</tr>
<tr>
<td>convexity</td>
<td></td>
</tr>
<tr>
<td>misapplication of 118–20</td>
<td></td>
</tr>
<tr>
<td>and OIS rates 139</td>
<td></td>
</tr>
<tr>
<td>coupon effect 188</td>
<td></td>
</tr>
<tr>
<td>coupon-paying bond, yield of 115–17</td>
<td></td>
</tr>
<tr>
<td>covariance matrices</td>
<td>56–60</td>
</tr>
<tr>
<td>see also eigenvectors</td>
<td></td>
</tr>
<tr>
<td>credit default swaps (CDS) 14,</td>
<td>245–6</td>
</tr>
<tr>
<td>effect of increased US debt 180–2</td>
<td></td>
</tr>
</tbody>
</table>
PCA (principle components analysis)
on CDS-adjusted bond yields 263–70
on the CDS curve 255–7
on the EUR sovereign CDS market 257–63
pricing approaches 253–4
problems 270–2
structure of 246–8
delivery option (DO) 248–50
difference in settlement currency 250–3
versus USD asset swap spreads 14, 273–4
credit information in the ASW of bonds 278–81
credit information in the CDS 276–8
EMU model 288–97
no-arbitrage models 274–6
no-arbitrage relationships in practice 282–6
credit information in a CDS 246–7, 248, 252, 253
effect of applying no-arbitrage inequality 282
in the (USD) ASW of bonds 278–81
credit sources, repo transactions 147
cross-currency basis swaps (CCBS) 14, 211, 213–14
FX swaps 212–13
impact of a banking crisis on 217–18
pricing of 219–22
and the subprime crisis 218–19
textbook function 214–17
USD ASW equilibrium 234–6
cross-currency swap spread comparisons 191–2
CTD see cheapest-to-deliver (CTD) bonds
currency market, PCA example 104–11
custodial/tri-party repo 147–8
cyclical nature of swap spreads 171–3
Debreu, G. 1
default probability, calculating 190–1
default risk effect on OIS and LIBOR 140–1
effect of US debt on long-dated bonds 180–2
ICBS 153–4
of swap counterparties 157–8
deliverable basket see bond futures contracts
delivery option (DO)
bond futures contracts
conversion factor 121–2
and CTD switches 123–4
delivery process 122–3
multi-factor models 128–36
net and gross bond basis 124–5
one-factor models 125–8
credit default swaps 248–50, 271
credit information 276, 278, 290
delta of an option 299–301
changes in with time to expiry 307–8
and gamma 306
hedging strategy 301–5, 309
derivative securities, viewing swaps as 159–62
diagnostic tools for model selection 26–31

diffusion coefficient 24, 26, 29, 31–2, 34, 43–6

directional moves, eigenvectors 63–5
directionality

option trades 321–5

PCA and hedging 78–81
discount factors, specifying a function for 194–6

DO see delivery option

drift coefficients 24, 26–7, 28, 30

first-order nonparametric estimate 45

and model estimation 31–4
duration 11–12, 117–18

Dybvig, P. 120

ECB (European Central Bank)
haircut 144–5
eigenvectors 57–8
calculation issues 59

credit default swap (CDS) markets 68

PCA on the CDS curve 255–7

PCA on the EUR sovereign 257–63

PCA on CDS-adjusted bond yields 263–70
definition and theorem 57

interpretation 65–6

commodity markets 69–71

providing insight into market mechanisms 61–5

and volatility analysis 66–8

options, volatility surface 337–45

and PCA as a factor model 59–60

problem of instability over time 98–103

Einstein, A. 9

EMU exit probability 295–7

EMU model, CDS versus USD ASW 288–97

EONIA (euro overnight index average) 138

estimation 31–5

EUR and GBP, swaption volatility differences 43–50

EUR and ICBS, correlation between 155–6

EURIBOR 5

credit and funding information 278, 279

and credit risk in basis swaps 154–5

and cross-currency basis swaps 14, 213–14

CCBS Bunds 228–31

CCBS comparisons 191–2

and FX swaps 212

and intra-currency basis swaps 12

euro crisis 259, 262

Eurozone CDS markets 68, 258–63, 297, 353

ex ante cost of core capital 151–2

ex ante risk-adjusted returns 39–40

exchange rates

CCBS spreads and spot rates 221–2

and credit default swaps 250–3

and cross-currency basis swaps 14, 213–14

expected return, bonds 118–19, 120, 179

explanatory variables 75, 104, 107, 197
factor models 54–6
   PCA as 59–60
failures, repo 143–4
fair value of futures 124–5, 127,
   133, 136, 204–5
financial models 11–15
   risk and return analysis 48–50
Fisher–Weil Duration 117–18
fitted bond curves 13, 193
   applications 203–5
   to assess relative valuations 232–4
   different currencies, rich/cheap
      analysis 226–34
   discount factors, specifying a
      function for 194–6
   framework of analysis 193–4
   German Bund curve
      example 197–201
   statistical analysis of rich/cheap
      figures 202–3
   weights, choice of 196–7
fixed and floating rate perspectives,
   swap spreads 158–9
France 68, 258, 260, 261, 262
Friedman, M. 8
full asset swap spreads 186, 189
futures contracts see bond futures
   contracts
FX component, CDS 251, 252,
   253, 270
   credit information 277, 278, 282
FX swaps 212–13, 219–20
gamma of an option 299
   classification of trades 311–12
   definition 306
   relationship with theta 306–8
   and swaption volatility
      surface 309–10, 338
Gaussian kernel density 36–7
GBP and EUR, swaption volatility
   differences 43–50
GC (general collateral) 142, 220,
   221
   GC–repo basis swap 279–80,
      281, 283
   GC–repo BSW 281, 290, 291
   LIBOR–GC basis swap 279,
      280, 281
German Bunds 156, 191–2
   Bund yield curve 61, 62, 63, 64
      as collateral 147
   equilibrium of USD ASW
      236–7
   fitted bond curve
      example 197–201
   value of relative to US
      Treasuries 226–34
German CDS market 258–62
   credit risk relative to Italy
      288–94
government bonds 4, 6–7
   haircut schedule 144–6
   Indian 65
   Korean 284–5
   Spanish 145–6, 147
   supply of and swap spread 171–2
   swap curve as RV indicator
      for 185–92
   yields of vs. corporate
      bonds 157–9
   see also German Bunds; Italian
      government bonds (BTPs);
      US Treasuries
government intervention 351–5
haircuts, repo collateral 144–6,
   164–5, 170, 177
half-life of a process 46, 48
hedging strategies 6–7
BPV-neutral hedge ratio 321
delta hedging 251, 299, 301–5, 311
and implied volatility 343
PCA framework 78–82, 93–4
CDS-adjusted bond yields 268, 269
CDS quotes for EUR sovereigns 261–2, 268
problems and pitfalls 98
and realized volatility 332, 335
hitting times (first passage times) 40–2, 49–50

immediacy in trading, demand for 3–4
imunization 6–7
implied default probability 140, 190–1
implied volatility 304–5, 309, 310–11, 312–13, 323–9, 332–40, 343
Ingersoll, J. 120
instability of eigenvectors over time 98–103
insurance properties of LIBOR-repo spreads 162–4
interest rate compounding, effect on OIS rates and LIBOR 139
interpolated swap spreads 13–14, 186, 187, 207–9
interventionism 351–4
intra-currency basis swaps (ICBS) 12, 153
pricing determinants 153–6
and rich/cheap analysis 226–31
role as building blocks 156
intuitive approach, PCA 52–4, 58
Ireland 259
bonds and CDS 296, 297, 353
and EMU exit 296, 297
Italian CDS curve 255, 256, 257, 259, 269
Italian credit risk 293–4
Italian government bonds (BTPs) 288–90
CDS-adjusted yield curve 264–5
and EMU model general concept 291–4
redenomination following EMU exit 294–5
ITM (in-the-money) options 300–1, 303, 321, 322, 323
Japan credit risk 240–2, 251–2, 288
Jensen’s inequality 118–19
JGBs 216, 224–6, 235–6
asset&basis swapped 275, 277, 283–4, 287
USD ASW history of 5Y 235
volatility of USD ASW 240–3
yield spread volatility 130, 134–5, 136
JPY, and cross-currency basis swaps 215–16, 217, 218, 219
JPY cash flows 277–8
JPY-denominated CDS 251, 252
JPY swap curves, PCA 101, 102
JPY volatility surface 66, 67
k-factor linear model 54–5
k-factor residuals, PCA 55, 76, 84
kernel density 36–7
Korean bonds 284–5
Lehman crisis 240, 284, 325
leverage 178–9
LIBOR (London Interbank Offered Rate) 12, 138
and CCBS (cross-currency basis swaps) 213–14, 215
calculating USD LIBOR swap spreads for foreign bonds 224–6
and cross-currency asset swap margins 191–2
differences from OIS rates 138–41
and intra-currency basis swaps 153–5
and swap spreads, empirical analysis 169–70
LIBOR–repo spreads 173–7, 181–2
and swap spreads, theoretical determinants 158–66
LIBOR–GC (general collateral) basis swaps 279, 280, 281
LIBOR–OIS basis swaps 238
LIBOR–repo basis swaps 160–2, 163–4, 169–70, 173, 237–8, 239, 278–9
LIBOR–repo spreads 173–7, 181–2, 189–90
EURIBOR–repo spread 278–9
and interest rate levels, controlling for 190–1
model of 149–50
linear relationships, PCA 52–4
living standards 349–50, 351
loans 4
capital treatment of 148
OIS 138–41
see also LIBOR; repo rates
lognormal vs. normal volatility 328–9
long-dated bonds vs. swap spreads, relative cheapening of 170–1, 177, 180–1
long-run mean 21, 22–3, 24, 26–7, 42, 46
low-risk bonds and ASW model 243, 286, 287
equilibrium for Bunds 236–7
general hypothesis 242
swap spread of 239–40
Macaulay duration 12, 117, 118
macroeconomic issues 349–51
market intervention 351–4
market mispricings, government intervention 351–2
market reconstruction 82–3
matrices, covariance see eigenvectors
maturity
CDS curves 255–6, 269, 270, 283–4, 291
and comparison of bonds in different currencies 224–34
coupon-bearing bonds 116–18
ECB haircut schedules 144–6
and expected return 119
interpolated swap spreads 186, 187, 207, 208
PCA 61, 63, 64, 66, 86, 88
of underlying swap 309, 310, 316, 318, 319, 333, 337–41, 344
maximum likelihood estimation 31–4
mean reversion 10, 19–20
conditional, ex ante risk-adjusted returns 39–40
conditional expectations and probability densities 35–8
mean reversion (continued)
  diagnostics for model
    selection 26–31
first passage times 40–2
mathematical definitions 23–5
model estimation 31–5
practical example 43–50
processes exhibiting 20–3
return predictability and
  alpha 25–6
rich/cheap indicators for
  bonds 203
Merton, R. 1
mispricing 351–2
models
  estimation 31–5
  misspecified 4
  parsimony of 9
  scope and applicability of 8–9
  selection diagnostics 26–31
  usefulness of 8
see also statistical models
Monte Carlo simulation 132,
  133, 134
multi-factor delivery option models
  choosing input parameters
    for 133–6
  estimate for delivery
    option 132–3
  flexible version of 131–2
  need for 128–31
negative interest rates 195
negative pick-up levels 296–7
Nelson–Siegel (NS) model 55–6, 64
net present value (NPV) of a
  swap 157–8
the Netherlands 68, 260, 261, 262,
  292, 293, 296, 297
new issue pricing, predicting 204–5
Nikkei index 318–20
no-arbitrage inequality 273–4, 281,
  282–8, 295, 298
no-arbitrage models 273
  applied to EMU model 288–97
  for CDS pricing and
    trading 274–6
  for local ASW 237–9, 243
see also options
no-arbitrage relationships 273–4
  FX swaps 212, 220, 222
  in practice 282–6
no-arbitrage valuations
  bonds futures 159–60
  swaps as derivatives 160–1
nonparametric density 38, 41
  nonparametric kernal densities 37, 41,
  38, 41
normal vs. lognormal
  volatility 328–9
notional benchmarks (non-existent
  bonds) 205
notional coupon, bond futures
  contract 121–2, 129–30, 131
OIS (overnight index swap)
  rates 138
  differences from LIBORs 138–41
one-factor delivery option models
  125–8
optimization 33–4
option-adjusted BPV
  (OABPV) 127, 133, 136
options 15, 299
classification of trades
  in gamma sector 311–12
  gamma-theta
  relationship 306–8
volatility surface
  segmentation 308–11
pricing theory review 299–306
trade types
1: single underlying 313–20
1: two or more underlyings 320–5
2: single underlying 325–31
2: two or more underlyings 332–6
3: factor model for vega sector 336–45
3: pitfalls of differences in exposure 312–13
summary 346–7

Ornstein–Uhlenbeck (OU) process 24, 46
model forecast 90–4, 95, 110–11
OTM (out-of-the-money) options 126, 300–1, 303, 306, 308, 321, 322

par asset swap spreads 185–6, 187–8
par-coupon bonds 158, 159, 160–1, 162, 165
parsimonious models 9
payers, option trades 314, 315, 317, 320–4
PCA-neutral butterfly 79–81, 92, 93
pick-up 291, 293, 295–7, 297
premium pick-up 321, 323, 324
political implications 355
political intervention 351–4
Portugal 258, 259, 292, 293, 296, 297

power reverse dual callables (PRDCs) 216
pricing 5
bonds denominated in different currencies 224–44
bonds relative to swaps 178–80
CCBS 214, 216, 219–22
CDS 253–4
CDS due to currency effects 250–3
delivery option 248–50
ICBS, factors determining 153–6
market mispricing 351–2
of new issue, rich/cheap analysis 204–5
options 299–306, 318
repricing, repo collateral 141–2
USD ASW trades 286–7
principal component analysis (PCA) 8–9, 11, 51–2
asset selection tool 85–9
and credit default swaps 255–70
in the currency market 104–11
eigenvector interpretation in different markets 65–71
exposure analysis 81–2
as factor model 59–60
hedging strategy 78–81
and implied volatility of options 310–11
insight into market mechanisms 61–5
intuitive approach toward 52–4
market decomposition into uncorrelated factors 72–3
market reconstruction and forecasting 82–3
mathematics of 56–9
problems and pitfalls
correlation between factors during subperiods 94–8
instability of eigenvectors over time 98–103
trade ideas, embedding PCA in 73–8
principal component analysis (PCA) (continued)
trade ideas example 89–94
trade ideas tool 84–5
on volatility surface, options 337–46
yield curve model based on 83–4
private sector, capital raised from 178
probability of default 140, 149, 150, 153–4, 190–1, 251, 252
probability density calculations 35–8
pseudo-maximum likelihood estimation (PMLE) 32–3
quality of fit, fitted bond curves 199–201
random walk 20, 21, 24, 25
realized volatility 304–6, 311–13, 325–37
two or more underlyings 320–3
recovery rate 140, 149, 150
redenomination risk 271, 294–5, 296
regression analysis
fitted bond curves 193–206
see also principal component analysis
regression residuals 199, 200, 201, 205–6
regulatory arbitrage 4–5
regulatory requirements imposed on banks 178
relative value (RV) analysis
applications of 6–7
broader perspective 15
craft of 7–9
insights from 5–6
macroeconomic role 349–51
political implications 355
propositions of 1–2
repo (repurchase agreement) rates 137
credit sources 147
custodial/tri-party 147–8
failures 143–4
haircuts 144–6
model of LIBOR-repo spreads 149–50
repricing 141–2
right of substitution 146
specialness 142–3
repricing, repo rates 141–2
residuals, PCA 55, 85–9, 91, 94, 95, 96, 107, 109–11
return predictability 25–6
rich/cheap analysis, bonds applications of 203–5
bonds denominated in different currencies 226–34
statistical analysis 202–3, 205–6
right of substitution, repo 146
risk-adjusted returns 25–6
over various horizons 46–8
Sharpe ratio as one measure of 39–40
risk-free yield curves 245, 257, 263
risk premia 139–40, 153
risk weighting, loans 148, 149, 150
risky bonds 236, 240–3, 286, 287, 288
rolling time windows, realized volatility 329–31
Ross, S. 120
S&P500 index 300–3, 307–8
Scholes, M. 1, 299, 303
SDEs (stochastic differential
equations) 23–4, 27, 29,
31–2, 35, 41
secured loans
capital treatment of 148
repo (repurchase
agreements) 137, 141–8
security selection 7–8
segmentation, options 308–9
shadow cost of capital 179, 180
Sharpe ratios
for different horizons 47–8
as measure of risk-adjusted
return 39–40
vs. PCA-neutral hedge ratios 81
short positions in bonds 180
simulated random walk 20, 21
Smith, Adam 350
SONIA (sterling overnight index
average) 138
soy market, eigenvalue
interpretation 69–71
Spanish government bonds
145–6, 147
specialness, repo 142–3, 197,
279, 280, 290, 291
spot FX rates and CCBS
spreads 221–2
spot price of gold 22
standard of living 349–50, 351
Stanton, R. 28
stationary densities 25
statistical models 10–11
mean reversion 19–50
principal component
analysis 51–111
steepness of yield curve 72–3
sterling overnight index average
(SONIA) 138
stochastic differential equations (SDEs)
23–4, 27, 29, 31–2, 35, 41
stopping times (first passage
times) 40–2, 49–50
straddles, option trades 313, 314,
315, 323, 332, 333–4, 335
strike price, OTMs 126, 300, 301,
308
subprime crisis 154, 155–6, 171, 177
case study 165–6
and CCBS 218–19, 221–2
downgrading of US government
credit rating 180
substitution rights, repo rates 146
swap curve as RV indicator for
government bonds 185–6
problems with 187–9
solutions of 189–92
swap spreads 169
cyclical of 171–3
from an empirical perspective 13,
169–83
interpolated 13–14
and LIBOR–repo spreads 173–6
over time 170–1
as relative value indicators for
government bonds 13, 185
problems and solutions 187–91
typical use of swap curve 185–6
theoretical determinants
of 12–13, 157
default risk of swap
counterparties 157–8
fixed and floating rate
perspectives 158–9
insurance properties of LIBOR–repo spreads 162–4
practical issues 164–5
swap spreads (continued)
subprime crisis case study 165–6
viewing the swap as a derivative 159–62
swaption volatility differences, EUR and GBP 43–50

T-stat 202
term premia 139–40
theoretical determinants of swap spreads 12–13, 157
default risk of swap counterparty 157–8
fixed and floating rate perspectives 158–9
insurance properties of LIBOR-repo spreads 162–4
practical issues 164–5
subprime crisis case study 165–6
viewing the swap as a derivative 159–62
theta, options 305
definition of 305
potential problems 346
relationship to gamma 306–8
time to expiry, options 307–10
breakeven levels 318–19
time horizons
for realized volatility calculation 328–31
and volatility spread 46–50
time series, mean reversion 20–1
trade ideas, PCA 73–8
currency market example 104–11
step-by-step guide 89–94, 95
trading, role of relative value analysis 6

transition density 24, 25, 32–3, 35–6, 40, 42, 46
tri-party repo 147–8
unconditional density 24–5, 46, 47
uncorrelated PCA factors 51–2, 53
decomposing markets into 72–3
economic meaning of, interpreting 74–8
and monitoring market developments 84–5
problems of correlation during subperiods 94–8
reversing the decomposition 82–3
underlying see options
unemployment rate 171, 172
unsecured loans 4
capital treatment of 148
LIBOR and OIS 12, 138, 149–50
risk weighting under Basel rules 148
US credit deterioration and cheapening of 30Y bonds 180–1
US Treasuries 5, 156
Bunds as close substitutes for 236–7
debt sold to the public 172
swap spreads 170, 217, 225, 235, 239
value of relative to German Bunds 226–34
yields in USDs 227, 232
USD asset swap spreads vs. credit default swaps 273–4
USD (US dollars)
asset swap spreads vs. credit default swaps 273–4
calculating USD LIBOR swap spreads for foreign bonds 224–6
“going special” as collateral 220–1
vega sector options 306, 309–11, 312
volatility 22, 23, 24
spread 46–50
swaption 43–4
theoretical 31–2
volatility surface, options segmentation 308–11
vega sector 336–45
weighted average time to maturity, coupon-paying bonds 117, 118
weighting of data points, options 330–1
weights, choice of 196–7
Wiener process 24
yield 11–12
coupon effect 188
do...