

Index

Note: Page numbers followed by 'n' indicate footnotes.

- AEVs *see* alternative execution venues
- agency activity of clearing members 50, 51, 52
- agency/proprietary (prop.) classification of clearing members 53–7
- allocational efficiency 74–5, 76
- alternative execution venues (AEVs) 33–6
 - stakeholders in clearing 59–60
- Alternative Trading Systems (ATS) 33n
- anonymity of trading 24, 41–2, 46
- asset specificity, influence on transaction costs 77–8

- back-office costs 96–9
- banks/brokers
 - as clearing service providers 33–5, 38–9
 - stakeholders in clearing 59
- barriers to market entry, impacts of networks 218
- basic clearing services 20–2
 - delivery management 22
 - preparing settlement instructions 22
 - trade confirmation 20
 - transaction/position management 21–2
- bilateral counterparty risk 23–4
- bilateral market model 39
- bilateral netting 25
- bounded rationality, influence on transaction costs 77
- brokers *see* banks/brokers
- Business Model Impact Matrix 240, 268–75, 278–9
 - globally active clearing members 272–5
 - preliminary findings 278–9
 - profit maximisation and cost efficiency 268–9
 - purpose 268–9
 - regionally active clearing members 269–70
 - regionally-to-globally active clearing members 270–2
 - see also see specific case studies*
- buy position 18

- capital markets
 - allocational efficiency 44n–45n
 - capital allocation and CCP clearing 46
 - concentration of risk in CCPs 45–6
 - efficiency impacts of CCP clearing 44–7
 - impacts of CCP margins 47
 - market liquidity and CCP clearing 46–7
 - operational efficiency 44n–45n
 - post-trade anonymity 46
 - risk management by CCPs 45–6
 - value-added of CCP clearing 44–7
- case studies of network strategies
 - clearing link study 286–345, 389–90
 - Eurex Clearing and the Clearing Corporation 300–45, 389–90
 - final assessment of impacts on efficiency 389–92
 - Global Clearing Link 300–45, 389–90
 - impacts of a single European CCP on efficiency 391–2
 - impacts of clearing links on efficiency, 389–90
 - impacts of mergers and acquisitions on efficiency 390–1
 - LCH.Clearnet Group Ltd 346–75, 390–1
 - London Clearing House Ltd and Clearnet SA merger 346–75, 390–1
 - merger study (LCH.Clearnet Group Ltd) 345–75, 390–1
 - single European CCP (hypothetical study) 375–88, 391–2
- cash equities clearing, application of derivatives study findings 413–14
- cash management 32
- CC&G (CCP in Italy) 64–5
- central banks, stakeholders in clearing 58
- central counterparty (CCP)
 - definition 23
 - role 2

- central counterparty (CCP) clearing
 - asset class benefits 47–9
 - benefits for individual market participants 41–4
 - benefits for securities vs derivatives markets 47–9
 - efficiency benefits for capital markets 44–7
 - macroeconomic benefits 44–7
 - microeconomic benefits 41–4
 - unique CCP services 23
 - value-added 41–9
- central counterparty (CCP) consolidation, MCP curve 282–3
- central counterparty (CCP) model, comparison with other market models 39
- central counterparty (CCP) risk 23–4
- central counterparty (CCP) services
 - anonymity of trading 41–2
 - collateral/cash management 43
 - cross-margining 43
 - delivery management 43–4
 - netting 37–8, 42, 43
 - novation 37–8, 42
 - position management 43, 37–8
 - range of clearing services 33–5, 37–8
 - risk management services 37, 42–3
 - settlement benefits 44
 - straight-through processing (STP) 37
 - transaction/position management 43, 37–8
- Central Securities Depository (CSD)
 - as clearing service provider 34–5, 36–7
 - definition 36n
 - settlement services 1n–2n
 - stakeholder in clearing 59, 60
- Chicago Board of Trade (CBOT) 3
- Chicago Mercantile Exchange (CME) 3
- cleared market share (volume) classification of clearing members 56–7
- clearers *see* clearing members
- clearing, definition 1–2, 17–40
- Clearing and Settlement Advisory and Monitoring Expert Group (CESAME) 17n
- Clearing Corporation (CCorp) *see* Global Clearing Link (case study)
- clearing corporations *see* clearing houses
- clearing firms *see* clearing members (CM)
- clearing house characteristics
 - department of affiliated exchange 39–40
 - horizontal integration 39–40
 - horizontal vs vertical integration debate, 40
 - independent entity 39–40
 - serving one or a group of exchanges 40
 - vertical integration 39–40
- clearing house owners, stakeholders in clearing 58–9
- clearing houses
 - central counterparty (CCP) role 2
 - characteristics 39–40
 - charges 82–6
 - clearing services provided 33–5
 - see also* central counterparty (CCP)
 - measurement of output 221–3
- clearing houses' cost structures 228–31, 234–5
 - implications of scale and scope enlargements 231–4
- clearing industry structures 60
 - comparison of Europe and the US 68–70
 - Europe 62–6
 - heterogeneity of existing structures 60–2
 - impacts of M&As 70
 - US 66–8
 - vertical/horizontal integration debate 60–2
- clearing links 103–10
 - classification by business purpose 105–7
 - classification by functional set-up 107–10
 - clearing membership (GCM) model 107, 108
 - cross-listing support 105, 106–7
 - fully integrated systems 107, 109–10
 - joint order book support 105, 107
 - overview of initiatives (1973–2006) 113–15
 - recognised CCP model 107–9
 - single exchange support 105–6
- clearing links strategy
 - benefits and constraints 291–5
 - clearing members' average costs 399–401, 404
 - framework for choosing links 418–20
 - stakeholder perceptions 291–5
 - total European industry costs 394–5, 403–4
 - which clearing houses should establish links 417–20
- clearing links study 286–345
 - clearing links as means to integrate European clearing 296–300
 - Eurex Clearing and The Clearing Corporation case study 300–45, 389–90
 - final assessment of impact on efficiency 389–90
 - findings from the empirical study 287–300
 - Global Clearing Link case study and analysis 300–45, 389–90
 - stakeholder views on clearing links 291–5
 - stakeholder views on cross-margining agreements 287–91
- clearing members (CM)
 - agency activity 50, 51, 52
 - agency/proprietary (prop.) classification 53–7
 - categories 50–2
 - classification by business focus 52–7

- definition 50
- general clearing members (GCM) 50–2, 54–6
- individual clearing members (ICM) 50–2, 54–6
- non-clearing members (NCM) 50–2, 54–6
- proprietary (prop.) activity 50, 51, 52
- regional/global classification 53–7
- transaction cost minimisation and network strategies 78
- volume (cleared market share)
 - classification 56–7
- clearing organisations *see* clearing houses
- clearing process
 - definition 1–2, 17–40
 - time lag 18
- clearing services
 - types of providers 33–9
 - types of services provided 33–9
 - see also* post-trade services
- clearing services providers, stakeholders in
 - clearing 58–9, 60
- Clearnet SA *see* LCH.Clearnet Group Ltd
- close-out netting 26–7, 38
- close-out of a position 18, 19
- CME Group 67–8
- Code of Conduct for post-trading (EC) 4–5, 6
 - reconciliation with study findings 416
- collateral/cash management by CCPs 31, 43
- Commodity Futures Trading Commission (CFTC) (US) 66, 67
- compatibility issues in networks 216–18
- compensation fund *see* default fund
- complementary clearing services 32–3
- cost of capital related to clearing 88–93
 - margin payments 91
 - minimum capital requirements 91–2
 - non-segregated customer accounts 92–3
 - regulatory capital requirements 91–2
 - risk management costs 89–93
- costs of derivatives clearing (analysis), 133–56
 - back-office costs 156
 - clearing members' perception of clearing costs 135–41
 - core cost drivers for clearing member types 145–50
 - cost of capital 151–3
 - direct vs indirect clearing costs, 141–5
 - findings from empirical study 134–56
 - information technology costs 154–6
 - relevance of various cost categories 141–5
 - relevance to clearing members 135–41
 - risk management costs 153–4
 - significance of various cost categories, 150–6
 - significant direct costs 150–1
 - summary of findings 190–1
 - see also* transaction costs of derivatives clearing
- costs of production 82
- counterparty, definition 21
- counterparty, definition 21
- credit exposure risk management 42n
- cross-margining 30, 43
- cross-margining agreements 101–3
 - benefits and constraints 287–91
 - overview of initiatives (1973–2006) 113–15
 - stakeholder perceptions 287–91
- CSD *see* Central Securities Depository
- custody services, definition 2n, 36n
- decentralised market model 39
- default fund 28, 31n
 - cost of capital for contributions 89–91
- default of a counterparty
 - legal enforceability of netting 26
 - risk management by CCPs 28–31
- definition of clearing 17–40
 - functional view 19–33
 - institutional view 39–40
 - process view 18–19
 - structural view 33–9
- delivery management 22, 43–4
- delivery vs payment (DVP) procedure 44
- demand-side scale effects 195–220
 - clearing services as network goods 200–2
 - definition of network effects 195–7
 - direct and indirect network effects 197
 - effects of changes in number of participants 202–12
 - horizontal networks 199
 - network economic particularities 216–20
 - network effects in clearing 197–216
 - network effects within the VPN 202–16
 - network formation and characteristics 198–9
 - network structure of the VPN 200–2
 - network view applied to the VPN 200–2
 - positive and negative externalities 197
 - positive and negative network effects 197
 - summary of findings 235–7
 - vertical networks 199
- Depository Trust and Clearing Corporation (DTCC) (US) 67
- derivatives, definition 1
- derivatives positions 18
 - time frame to fulfil legal obligation 21
- derivatives trading
 - open interest 21–2
 - time lag for clearing 2, 18
 - value-added of CCP clearing 47–9

- ECAG *see* Eurex Clearing AG
- economic particularities of networks *see* network economic particularities
- economies of scale and scope *see* supply-side scale effects
- Efficiency Impact Matrix 240, 258, 267–8, 277
see also specific case studies
- efficiency impact of a single European CCP
clearing members' average costs 401–2, 404–5
total industry costs 395–8, 403–4
- efficiency impact of European clearing links
clearing members' average costs 399–401, 404
total industry costs 394–5, 403–4
- efficiency of derivatives clearing 73–8
allocational efficiency 74–5, 76
clearing members' view 78
general efficiency criteria 74–6
influence on institutional arrangements 78
influence on market governance 77–8
information efficiency 75
link to transaction costs of clearing 78
operational efficiency 75–6
transaction cost theory 76–8
transaction costs and network strategies 78
- efficiency of European clearing
impact of a single European CCP 395–8, 401–2, 403–5
impact of European clearing links 394–5, 399–401, 403–4
preliminary analysis of network strategies 279–84
view of the European Central Bank 279
- Electronic Communication Network (ECN) 33n
- empirical study 119–32
data interpretation 128–9
data treatment 128–9
method and process of data collection 124–6
quality of expert inquiry 130–1
structure of the study 126–8
summary on purpose and use of insights 131–2
underlying data 119–24
- empirical study results
costs of derivatives clearing (analysis) 133–56, 190–1
transaction cost analyses 156–90, 191–4
- Eurex Clearing AG (ECAG)
challenges related to clearing links 414–15
market share 64–5
structure and ownership 64
see also Global Clearing Link (case study)
- European Association of Central Counterparty Clearing Houses (EACH) 4n
- European CCP arrangements, research gap 6–9
- European Central Bank, view of structure of European clearing 279
- European Central Securities Depositories Association (ECSDA) 4n
- European clearing industry structure 62–6
comparison with the US 68–70
- European clearing links strategy
clearing members' average costs 399–401, 404
total industry costs 394–5, 403–4
- European Commission, Code of Conduct for post-trading 4–5, 6, 416
- European financial markets, integration 3–4
- European Monetary Union 3, 6
- European post-trade industry structure
debate over 3–6
literature review 6–9
- European Value Provision Network *see* Value Provision Network (VPN)
- exchanges
marketplace for trading 33–6
stakeholders in clearing 59–60
- execution of a trade 18, 19
- exposure, definition 27
- Federation of European Securities Exchanges (FESE) 4n
- framework for efficiency analysis of network strategies 239–84
analytical matrices 240–1
Business Model Impact Matrix 240, 268–75, 278–9
clearing as a natural monopoly 283–4
effects of CCP consolidation 282–3
Efficiency Impact Matrix 240, 258, 267–8, 277
network strategies analysed 239, 241
preliminary findings based on archetypal network strategies 240, 275–84
Scale Impact Matrix 240, 242–58, 276
summary of impact on efficiency of European clearing 279–84
Transaction Cost Impact Matrix 240, 258–67, 276–7
- functional view of clearing 19–33
basic clearing services 20–2
complementary clearing services 32–3
scope and type of services 19–33
value-added clearing services 22–32
value chain components 19–33
- fungibility, definition 32n
- future development of the European clearing industry 406–27
applications of findings to cash equities clearing 413–14
challenges for Eurex Clearing AG 414–15

- challenges for LCH.Clearnet Ltd 415
- competitive dynamics 414–15
- framework for a clearing link strategy, 418–20
- global context of European clearing 423–4, 427
- positioning of clearing houses to benefit from changes 414–15
- recommendation for derivatives clearing 407–13
- reconciling findings with the Code of Conduct 416
- structural changes in the VPN 420–3
- summary of conclusions 424–7
- which clearing houses should establish clearing links 417–20
- future research recommendations 436–40
- futures (derivatives), definition 1n
- futures commission merchants (FCMs), stakeholders in clearing 59
- general clearing members (GCM) 50–2, 54–6
- give-up, definition 21n
- Global Clearing Link (case study) 300–313
 - background and objectives of the initiative 306–10
 - concept and structure of the initiative, 310–12
 - present status of the initiative 312–13
 - profile of Eurex Clearing AG 301–3
 - profile of The Clearing Corporation 303–6
- Global Clearing Link analysis 313–45, 389–90
- Business Model Impact Matrix 337–42, 344–5
- demand-side scale effects 319–28
- Efficiency Impact Matrix 330, 336–7, 344
- final assessment of impact on efficiency 389–90
- impact on network sizes of partnering CCPs 320–3
- internalisation of GCM level network effects 327–8
- interviewees' assessment of the initiative 313–15
- net positive network effects 328
- network economic particularities 323–5
- network effects 325–7
- Scale Impact Matrix 315–30, 343–4
- summary of findings 342–5
- supply-side scale effects 316–19
- Transaction Cost Impact Matrix 330–6, 344
- global context of European clearing 423–4, 427
- global/regional classification of clearing members 53–7
- guarantee fund *see* default fund
- horizontally integrated clearing houses, 39–40
- ICSD *see* International Central Securities Depository
- individual clearing members (ICM) 50–2, 54–6
- information efficiency 75
- information technology costs 95–6
- initial margin 29–30
- innovative ability of networks 219–20
- installed base, influence of 218
- institutional arrangements *see* network strategies
- institutional view of clearing 39–40
- integration and harmonisation initiatives *see* network strategies
- internal efficiency *see* operational efficiency
- International Central Securities Depository (ICSD)
 - as clearing service provider 34–5, 36–7
 - definition 36n
 - settlement services 1n–2n
 - stakeholder in clearing 59, 60
- LCH.Clearnet Group Ltd
 - challenges related to clearing links 415
 - market share 64–5
 - structure and ownership 64
- LCH.Clearnet Group Ltd (case study) 346–61
 - background and objectives of the merger initiative 351–4
 - concept and structure of the merger initiative 354–9
 - present status of the merger initiative 359–61
 - profile of Clearnet SA 349–50
 - profile of the London Clearing House Ltd 347–9
- LCH.Clearnet Group Ltd analysis 362–75, 390–1
 - Business Model Impact Matrix 373–5
 - demand-side scale effects 371–2
 - Efficiency Impact Matrix 373
 - final assessment of impact of efficiency 390–1
 - impacts of M&As on efficiency 370–5
 - interviewees' assessment of the merger 362–70
 - Scale Impact Matrix 370–2
 - summary of findings 370–5
 - supply-side scale effects 370–1
 - Transaction Cost Impact Matrix 372–3
- legal obligation, time frame to fulfilment 21
- leverage effect of derivatives products 23
- life cycle of a trade 1, 18–19
- liquidity, cost of capital needed for 91
- lock-in situations 219–20
- London Clearing House Ltd *see* LCH.Clearnet Group Ltd

- margin payments
 - cost of capital 91
 - impacts on market activity 47
- margining 28, 29–31
 - cross-margining 30
 - initial margin 29–30
 - marking-to-market of positions 30–1
 - variation margin 29, 30–1
- market infrastructure providers, stakeholders in clearing 58, 59
- marketplaces for trading 33–6
 - stakeholders in clearing 58, 59
- marking-to-market of positions 30–1
- McP curve, effects of CCP consolidation 282–3
- MEFF (CCP in Spain) 64–5
- merger study 345–75, 390–1
 - empirical study findings *see* case studies
 - LCH.Clearnet Group Ltd 346–75, 390–1
 - London Clearing House Ltd and Clearnet SA case study 346–75, 390–1
- mergers and acquisitions between clearing
 - houses 110–11
 - overview of initiatives (1973–2006) 115–17
- minimum capital requirements 91–2
- multilateral netting 25–6
- Multilateral Trading Facility (MTF) 33n
- NASDAQ 67
- NASDAQ OMX group 70
- natural monopoly, clearing industry as 283–4
- netting 24–7, 37–8, 42, 43
 - bilateral 25
 - close-out netting 26–7
 - degrees of legal enforceability 26–7
 - levels of netting 26–7
 - multilateral 25–6
 - payment netting 26n
 - position netting 26n, 27
 - settlement netting 27
 - type1 26–7
 - type2 26–7
- network economic particularities 216–20
 - barriers to market entry 218
 - compatibility issues 216–18
 - impact on technological innovation 219–20
 - influence of the installed base 218
 - innovative ability 219–20
 - lock-in situations 219–20
 - starting problem 218–19
- network effects
 - definition 195–7
 - direct and indirect 197
 - positive and negative 197
 - positive and negative externalities 197
- network effects at CCP level (first level) 202–10
 - collateral management effect 203, 207
 - complementary offering effect 203, 208
 - cross-margining effect 203, 205
 - information effect 203, 208–9
 - interface effect 203, 207–8
 - interrelation with GCM level effects 212–14
 - learning effect 203, 208
 - monopolistic behaviour effect 203, 209–10
 - netting effect 202–4
 - open interest effect 203, 205–6
 - performance effect 203, 209
 - size effect 203, 204–5
 - spill-over to other parts of the value chain 214–16
 - systemic risk effect 203, 206
- network effects at GCM level (second level) 210–12
 - collateral management effect 210, 212
 - complementary offering effect 210, 212
 - fungibility effect 210, 211
 - interface effect 210, 211–12
 - interrelation with CCP level effects 212–14
 - learning effect 210, 212
 - monopolistic behaviour effect 210, 212
 - netting effect 210–11
 - performance effect 210, 212
 - size effect 210, 211
 - spill-over to other parts of the value chain 214–16
 - systemic risk effect 210, 211
 - trust effect 210, 211
- network effects in clearing 197–216
 - clearing services as network goods 200–2
 - horizontal networks 199
 - network effects within the VPN 202–16
 - network formation and characteristics 198–9
 - network structure of the VPN 200–2
 - network view applied to the VPN 200–2
 - summary of findings 235–7
 - vertical networks 199
- network strategies
 - analysis using transaction cost theory 78
 - and transaction cost minimisation 78
 - definition 10
- network strategies between clearing
 - houses 99–117
 - classification 100–1
 - clearing links 103–10, 113–15
 - cross-margining agreements 101–3, 113–15
 - definition 100
 - degree of value-chain harmonisation and integration 100–1
 - mergers and acquisitions 110–11, 115–17

- mixing of theoretical archetypes 112–13
 - overview of initiatives (1973–2006) 113–17
 - single central counterparty (CCP) 111–13, 115–17
- network strategy impacts on efficiency
 - European clearing industry total costs 393–8, 403–4
 - European clearing links (average costs) 399–401, 404
 - European clearing links (final assessment) 389–90
 - European clearing links (total costs) 394–5, 403–4
 - European clearing members' average costs 398–402, 404–5
 - final assessment 389–92
 - mergers and acquisitions final assessment 390–1
 - single European CCP (average costs) 401–2, 404–5
 - single European CCP (final assessment) 391–2
 - single European CCP (total costs) 395–8, 403–4
- non-clearing members (NCM) 50–2, 54–6
- non-segregated customer accounts 92–3
- novation 23–4, 37, 42
- NYSE Euronext 70
- OMX Clearing 64–5
- one-pot cross-margining approach 102
- open interest of exchange-traded derivatives 21–2
- operational cash management 32
- operational efficiency 75–6
 - and transaction cost theory 76–8
- operational risk management 42n
- opportunism, influence on transaction costs 77
- opportunity cost of capital 88–9
- options (derivatives), definition 1n
- Options Clearing Corporation (OCC) (US) 66, 67
- over-the-counter (OTC) trading 33–4, 38–9
- payment netting 26n
- personnel costs 95, 99
- policymakers, stakeholders in clearing 58
- position, definition 18n
- position limits, risk management 31n
- position netting 26n
- post-trade anonymity 24, 41–2, 46
- post-trade industry structure
 - literature review 6–9
 - research gap 6–9
- post-trade services
 - definition 1
 - impacts on economic growth 2–3
 - impacts on financial market functioning 2–3
 - importance of efficient functioning 2–3
 - integration and harmonisation 2–6
 - quest for the optimal infrastructure 3–6
- process view of clearing 18–19
- proprietary (prop.) activity of clearing members 50, 51, 52
- proprietary (prop.)/agency classification of clearing members 53–7
- quantified efficiency impact of strategies
 - European clearing industry total costs 393–8, 403–4
 - European clearing links (average costs) 399–401, 404
 - European clearing links (total costs) 394–5, 403–4
 - European clearing members' average costs 398–402, 404–5
 - single European CCP (average costs) 401–2, 404–5
 - single European CCP (total costs) 395–8, 403–4
- regional/global classification of clearing members 53–7
- regulators, stakeholders in clearing 57–8
- regulatory capital requirements 91–2
- research on CCP clearing
 - literature review 6–9
 - research gap 6–9
- research on post-trade industry structure, literature review 6–9
- research study
 - analytical objectives 10–11
 - closing the research gap 9–11
 - focus on Europe 11–13
 - focus on exchange-traded derivatives clearing 11–13
 - purpose 9–11
 - study structure 13–15
- research study results
 - critical discussion 436–40
 - future research recommendations 436–40
- risk
 - allocation of 76
 - bilateral counterparty risk 23–4
 - central counterparty risk 23–4
 - credit risk exposure 27
- risk-adjusted return on capital (RAROC) 42
- risk management by CCPs 28–31
 - concentration of risk in CCPs 45–6
 - implications for capital markets 45–6
 - margining 28, 29–31

- risk management costs 93–5
 - cost of capital 89–93
- risk management services by CCPs 42–3
 - credit exposure management 42n
 - operational risk management 42n
- safekeeping (custody), definition 2n, 36n
- scale effects in clearing 195–238
 - demand-side scale effects (network effects) 195–220
 - supply-side scale effects 220–35
- Scale Impact Matrix 240, 242–58, 276
 - growth potential 253–4
 - impact on CCP and GCM level network sizes 246–7
 - influence of the installed base 248–9
 - lock-in effects 251–3
 - net positive network effects 257–8
 - network economic particularities 247–54
 - network strategies analysed 242–3
 - network strategies' demand-side scale effects 246–58
 - network strategies' supply-side scale effects 243–6
 - potential for CCP level network effects 254–6
 - potential to internalise GCM level network effects 256–7
 - preliminary findings 276
 - purpose 242
 - starting problem 249–50
 - see also specific case studies*
- securities, definition 1
- Securities and Exchange Commission (SEC) (US) 66–7
- securities markets, value-added of CCP clearing 47–9
- securities trading
 - time frame to fulfil legal obligation 21
 - time lag for clearing 2, 18
- sell position 18
- service provider charges 82–3, 86–7
- settlement
 - definition 1–2, 18–19, 36n
 - preparing instructions 22
 - see also post-trade services*
- settlement benefits of CCP clearing 44
- settlement cycle 48n
- settlement institutions 34–5, 36–7
 - stakeholders in clearing 58, 59
- settlement netting 27
- single CCP network strategy 111–13
 - overview of initiatives (1973–2006) 115–17
- single European CCP study 375–88, 391–2
 - analysis 377–88
 - background and objectives 375–7
 - Business Model Impact Matrix 388
 - clearing members' average costs 401–2, 404–5
 - demand-side scale effects 387
 - Efficiency Impact Matrix 388
 - final assessment of impact on efficiency 391–2
 - findings from the empirical study 377–88
 - impact of a single CCP on efficiency 386–8
 - potential benefits and constraints 378–82
 - Scale Impact Matrix 386–7
 - stakeholder interviews 377–86
 - suitability to integrate European clearing 383–6
 - summary of findings 386–8
 - supply-side scale effects 386–7
 - total industry costs 395–8, 403–4
 - Transaction Cost Impact Matrix 387–8
- SIS x-clear (CCP in Swiss and UK markets), 64
- stakeholders in clearing 57–60
 - AEVs 59–60
 - banks/brokers 59
 - central banks 58
 - conflicting goals and interests 60
 - CSDs/ICSDs 59, 60
 - exchange organisations 59–60
 - futures commission merchants (FCMs) 59
 - market infrastructure providers 58, 59
 - marketplaces 58, 59
 - owners of clearing houses 58–9
 - policymakers 58
 - providers of clearing services 58–9, 60
 - regulators 57–8
 - settlement institutions 58, 59
 - those pursuing private interests 57, 58–60
 - those pursuing public interests 57–8
 - users (with direct or indirect access) 58, 59
- starting problem in networks 218–19
- straight-through processing (STP) 37
- structural view of clearing 33–9
 - alternative execution venues (AEVs) 33–6
 - banks/brokers 33–5, 38–9
 - bilateral market model 39
 - CCP model 39
 - CCPs 33–5, 37–8
 - clearing houses 33–5
 - CSDs and ICSDs 34–5, 36–7
 - decentralised market model 39
 - exchanges 33–6
 - marketplaces 33–6
 - OTC markets 33–4, 38–9
 - settlement institutions 34–5, 36–7
 - types of clearing service providers 33–9

- supply-side scale effects (CCPs) 220–35
 - clearing houses' cost structures 228–31
 - cost implications of scale and scope enlargements 231–4
 - economies of scale 223–6
 - economies of scope 226–8
 - fluctuating demand in derivatives trading 234–5
 - high fixed costs in clearing houses, 234–5
 - measurement of clearing house output, 221–3
 - potential for economies of scale and scope, 228–31
 - summary of findings 237–8
- take-up, definition 21n
- technological innovation, impact of
 - networks 219–20
- time frame to fulfil legal obligation 21
- time lag for clearing 2, 18
- trade confirmation 20
- traded instruments, abstract nature 2
- traded volume, definition 22n
- transaction, definition 18n
- transaction cost analyses 156–90
 - clearing house fees 157–64
 - clearing houses' volume discount schemes 164–7
 - clearing members' average direct and indirect costs 173–5
 - clearing members' unit costs 175–7
 - cost reduction scenarios for clearing members 180–5
 - cost reduction scenarios for non-clearing members 186–90
 - derivatives clearing vs other market infrastructure costs 177–80
 - non-clearing members' perspectives 185–6
 - summary of findings 191–4
 - total European derivatives clearing costs (2005) 167–73
- Transaction Cost Impact Matrix 240, 258–67, 276–7
 - clearing member groupings 258
 - clearing member types 258
 - demand- and supply-side scale effects 258–61
 - effects of economies of scale 259, 260
 - effects of economies of scope 259, 260–1
 - globally active clearing members 265–7
 - network effects on transaction costs 259–60
 - preliminary findings 276–7
 - purpose 258
 - regionally active clearing members 261–3
- regionally-to-globally active clearing members 263–5
 - see also specific case studies*
- transaction cost minimisation and network strategies 78
- transaction cost theory 76–8
 - analysis of institutional arrangements (network strategies) 78
 - asset specificity 77–8
 - bounded rationality 77
 - effects of change in frequency 77–8
 - effects of small numbers of players 77
 - opportunism 77
 - transaction cost triggers 77–8
 - transaction governance structures 77–8
 - uncertainty 77–8
- transaction costs of clearing, and efficiency, 78
- transaction costs of derivatives clearing 79–99
 - 'all-in' costs 80
 - back-office costs 96–9
 - classification schema 80–1
 - clearing house charges 82–6
 - cost of capital 88–93
 - costs of production 82
 - direct costs 79–80, 82–7
 - indirect costs 79–80, 88–99
 - information technology costs 95–6
 - levels of transaction costs in the VPN 80–2
 - mode of measurement 79
 - monetarily quantifiable costs 79
 - origin of costs 79
 - personnel costs 95, 99
 - risk management costs 89–95
 - service provider charges 82–3, 86–7
 - see also costs of derivatives clearing (analysis)*
- transaction/position management by CCPs 21–2, 43
- treasury management 32
- turnover ratio (securities) 49
- two-pot cross-margining approach 102–3
- uncertainty, influence on transaction costs 77–8
- underlying, definition 1n
- unique CCP services 22–3
- US clearing industry
 - centralised clearing of securities and options 3
 - comparison with Europe 68–70
 - debate over post-trade industry structure 3
 - structure 66–8
 - structure of the futures clearing industry 3
- user-owned/governed clearing houses 40
- users (direct or indirect access), stakeholders in clearing 58, 59

- value-added clearing services 22–32
 - anonymity of trading 24
 - cash management 32
 - collateral management 31
 - counterparty risk against the CCP 23–4
 - netting 24–7
 - novation 23–4
 - removal of bilateral counterparty risk 23–4
 - risk management 28–31
 - unique CCP services 22–3
- value-added of CCP clearing 41–9
 - asset class view 47–9
 - benefits for individual market participants 41–4
 - benefits for securities and derivatives markets 47–9
 - efficiency benefits for capital markets 44–7
 - macroeconomic view 44–7
 - microeconomic view 41–4
- value chain components in clearing services 19–33
- value chain harmonisation and integration, network strategies 100–1
- Value Provision Network (VPN)
 - clearing member categories 50–2
 - clearing member types by business focus 52–7
 - current structure of the European VPN 64–6
 - definition 50
 - first level 50–1
 - future developments and structural changes 420–3
 - general clearing members (GCM) 50–2, 54–6
 - individual clearing members (ICM) 50–2, 54–6
 - levels of transaction costs 80–2
 - network structure 200–2
 - network view of 200–2
 - non-clearing members (NCM) 50–2, 54–6
 - second level 51–2
 - tiered structure 50–2
- Value Provision Network (VPN) network
 - effects 202–16
 - effects of changes in number of participants 202–12
 - first level (CCP level) 202–10
 - interrelation between CCP and GCM level effects 212–14
 - second level (GCM level) 210–12
 - spill-over of CCP and GCM level effects 214–16
- variation margin 29, 30–1
- vertically integrated clearing houses 39–40
- volume (cleared market share) classification of clearing members 56–7
- volume traded, definition 22n
- VPS (CCP in Nordic markets) 64