Index

A
Abbott, 169
Action Plan for ASEAN Air Transport Integration and Liberalization, 278
Action Plan on Enhancing Acceptance and Implementation of International Maritime Organization Conventions, 280
Advanced Manifest Rule (AMR), 285
Advanced Planner and Optimizer (APO), 283
Agency for Science, Technology and Research (A*STAR), 175, 178
agglomeration formation of, 51
agglomeration of competence, 133
agglomeration of economic activities, 20, 101
agglomeration economies, 18, 101
agglomeration forces, 55
agglomerative force, 164
agile manufacturing, 267
Agreement on ASEAN Harmonised Electronic Equipment Regulatory Regime, 272
Agreement on Mutual Recognition Arrangement (MRA) for Engineering Services, 272
Agreement to Establish and Implement the ASEAN Single Window, 272
agricultural inputs, 165
agricultural sector
Thailand, 233
air freight sector, 277
Albany Molecular Research Inc (AMRI), 180
Allied, 169
AMD, 108, 151
American Cynamid, 169
anchor firm, 164
Annual Symposium of Stanford Global SCM, 267
APL, 289
apparel, 233
application software development, 275
Applied Biosystems, 191
architecture of products effect on fragmentation across space, 83
Arrow, 276
Asahi Chemical, 169
ASEAN Agreement on Customs, 327
ASEAN and China Joint Working Group, 286
ASEAN Community, 281
ASEAN Economic Community (AEC), 268, 274, 303, 305, 310, 315, 326
ASEAN Finance Ministers, 327
ASEAN Framework Agreement on Trade in Services (AFAS), 305–07
successful implementation of, 307–08
ASEAN Free Trade Agreement, 5, 9, 19, 60, 83, 197
ASEAN Free Trade Area (AFTA), 45, 301, 303, 306, 310, 315
ASEAN Framework Agreement on Multimodal Transport, 279
ASEAN Framework Agreement on the Facilitation of Goods in Transit, 279
ASEAN FTA zero-tariff, 268
ASEAN Heads of Governments, 305
ASEAN Highway Network, 280 development, 279
ASEAN ICT Focus 2005 to 2010, 281
ASEAN Industrial Cooperation (AICO) scheme, 19, 22, 77, 197, 207, 271
ASEAN Intelligent Transport System Policy Framework, 280
ASEAN intra-regional export, 312
ASEAN Investment Area (AIA), 272, 303, 305 complaints by manufacturers, 315–17
ASEAN Investment Cooperation scheme, 214
ASEAN Labour Ministers Meeting (19th), 273
ASEAN Member Countries (AMC), 309
ASEAN Ministers signing of Framework Agreement on ASEAN Investment area (AIA), 309
ASEAN Multilateral Agreement on Air Services, 278
ASEAN Multilateral Agreement on Full Liberalisation of Air Freight Services, 278
ASEAN plus Three, 302
ASEAN Policy Dialogue on National Occupational Safety and Health (OSH), 273
ASEAN Ports Association’s Handling of Dangerous Goods, 281
ASEAN Secretariat, 308
ASEAN Six, 271 export market, 270 trading with China, 294 trading with Japan, 296 trading with Korea, 297
ASEAN states low value-added location of, 317
ASEAN Summit (5th), 309
ASEAN Summit (11th), 272
ASEAN Supply Chain Council’s meetings, 293
ASEAN Transport Action Plan (ATAP), 279
ASEAN Transport Ministers Meeting, 278
ASEAN-China FTA, 60, 78, 83
ASEAN-China Infocomm Technology Week, 282
ASEAN-initiated regional cooperation, 301
ASEAN-Mekong Basin Development Cooperation (AMBDC), 280
Asia Pacific Economic Cooperation (APEC), 268
Asian Corridor, 268
Asian currency re-evaluations, 21
Asian Development Bank (ADB), 320, 324
Asian Economic Crisis, 5, 56, 83, 302, 304
Asian Financial Crisis, see Asian Economic Crisis
Asian firms, 96
Asian International Input-Output Tables, 55
Asian Tables, 82
assemblers
lead firms, 241
Association of Southeast Asian Nations (ASEAN), 267
automotive establishments in, 216
automotive sector, 75
commodities exported to China, 269
dialogue partners, 267–68
free trade agreements, 271
gross domestic product, 268
import origin, 270
imports from, 219
increased import content from, 69
integration, 314
intermediate goods, trade in, 60
manufactured exports, 322
Memorandum of Understanding on Air Freight Services, 278
private sector, 272
regional economic bloc, as, 271
supply chain hub, as, 292
tariffs, 312
tariffs on imported cars, 213
total trade, 268
trade flows, key observations on, 269
AstraZeneca, 180
Australia
ASEAN’s dialogue partner, 266
Authorized Economic Operator (AEO) programme, 285
Auto Alliance of Thailand (AAT), 220
auto clubs, 224
auto clusters
Detroit, 16
auto parts firms
benefits from production networks, 227
auto parts makers
structure of, 210
auto production networks
foreign-driven, 311
auto-makers
efficiency in just-in-time production, 226
automobile assemblers, 210
automobile components
standardization of, 210
automobile industry, see also automotive industry, automotive sector
global production networks, 198
Greater Bangkok region, 110
historical development in Thailand, 202–13
industrialization process in Thailand, 204
local content requirement legislation, 203
production networks, 199
automotive assemblers, 76
automotive belt, 243
Thailand, in, 231
automotive clusters
evolution, 231–37
automotive companies
numbers in Thailand, 241
automotive industry, 18, 68–75
local content, 68
strategic importance, 77
automotive industry clusters
Thailand, 196–254
Automotive Parts Industry Club, 207
automotive production networks
Eastern Seaboard Area, 225
automotive sector
changes in import content, 70
decomposition of changes in local content, 70
impact of technological structural changes on import content, 71
impact of trade structural changes on import content, 70
similarities with electronics sector, 75
spatial linkages in, 72, 74
Thailand, 78
Avent, 276
Avian Flu H5N1 diagnostic kit, 182

B
backward linkage effects, 81
Bali Concord II, 305, 326
Bang Chan, 205
Bangalore, 133
Bangkok, 223
Bangladesh
  labour from, 150
banks
  borrowing from, 92
BASF, 169
basic and clinical research, 190
basic infrastructure, 140–41
Batam, 114, 128, 140
  export processing zone, 144
Baxter-Travenol, 169
Becton Dickson, 179, 191
Best
  concept of clusters, 132
  focus on horizontal integration, 131
  productivity triad, 131–32
Best’s Productivity Triad, 23
Bilateral Free Trade Agreement, 304, 321
bilateral trade, 267
Bio*One Capital, 178
biomedical research
  basic and clinical research, 190
  clinical development, 190
  manufacturing, 191–92
  product and process development, 190
Biomedical Research Council (BMRC), 176
Centre for Molecular Medicine (CMM), 175
Biomedical Science (BMS) cluster, 20, 167
Singapore, 24
Biomedical Science Group (BMSG), 176
biomedical science industry
  compounded annual growth, 188
  Singapore, in, 158–93
Biomedical Science Initiative, 161–75, 186
  industrial cluster, 162–65
  value chain analysis, 162–65
Biomedical Science Investment Fund (BMSIF), 176, 178
Biomedical Science Proof of Concept (BMS POC), 177
biomedical sector
  boutique segments, 187
  policy to develop, 186
biopharmaceutical value chain, 165
biotechnology
  definition of, 167
  rapid manufacturing of, 168
biotechnology companies (1980s), 169
biotechnology firms
  alliance with pharmaceutical firms, 174
biotechnology industry, 168
  background to, 167–75
  product-development companies, 170
biotechnology sector
  vertical and horizontal models, 172
biotechnology value chain, 165–66
Board of Investment (BOI)
   incentives for firms in Zone Three, 231
   investors’ privileges, 239
BOI Engine Production Promotion scheme, 207
Booz Allen Hamilton, 258
brain circulation, 98
brand leaders (BL), 13
Brand-to-Brand Complementation (BBC), 19, 22, 77, 206
Initiative, 214
scheme, 213
Bristol-Myers Squibb, 180
Brunei, 317, 350
Bureau van Dijk Electronic Publishing, 115
business environment, 51
   improvement of, 51
business model
   increasing specialization, 94
business process outsourcing, 294

C
Cambodia, 326
Canada, 268
capital flow, 4
capital goods
   GL indices of trade in, 58
   growth of imports, 56
   imports of, 55, 57
   trade in, 60
capital inputs, 316
car prices (1988), 229
car-makers
   global production networks, 196
   see also automobile industry
cardiac pacemakers, 187
Carrefour, 289
Celanese, 169
Centre for Research in Cognitive and Neurodegenerative Disorders, 180
Chachoengsao, 223, 252
chemical industry, 169
chemical intermediates
   production of, 174
chemicals
   exports of, 185
chemo-genomics approach
drug discovery, 174
China, 268, 281
   apparel industry, 21
   ASEAN’s exports to, 269
   emergence of, 134
   FDI destination, top, 5
   trade with ASEAN Six, 296
Chonburi, 110, 197, 223, 252
Ciba-Geigy, 169
circulation process
   importance of, 265
Cisco, 13, 261–62
clinical research, 180
clinical research organizations, 180
CLMV countries, 313
   less developed, 319
cluster effect
   definition, 131
cluster-based approach, 188
biomedical science, 175
clusters
   cohesively networked, 13
   definition of, 199
   generation of egalitarian network, 132
   globally connected, 135
   underdeveloped, 135
clusters and industrial districts
   Guerrieri and Peitrobelli, study by, 201
commercial biopharmaceuticals, 182
commercial services
exports, 4
Commitments on Air Transport Services, 278
Common Effective Preferential Tariff (CEPT), 311–12
intra-industry trade in ASEAN region, 326
communication costs
lowering of, 2
communication technologies, 264
proliferation of, 295
companies
vertically integrated, 170
Compaq, 13
Compendium of International Civil Aviation, 277
competition
growing, 2, 161
impact of, 113
Competitive Advantage: Creating and Sustaining Superior Performance, 10
competitive firms, 16
competitiveness
key elements for generating, 17
competitors
network-oriented, 13
computer firms
Penang and Johor, 139
computer industry
horizontal model, 170
vertical and horizontal models, 171
computing power, 172
Consultative Meeting on the Priority Sectors (COPS), 272
consumer markets
growing, 265
consumption goods
import of, 55, 57
imports in ASEAN, 56
Container Security Initiative (CSI), 285
contract logistics service providers, 264
contract manufacturers, 147
contract organizations, 171
Contract Research Organizations (CROs), 165, 171
convergence
competitive pressures from, 173
Costa Rica, 35
costs
rising, 171
Covance, 180
Crick, Francis, 167
critical stakeholders, 135
cross-border fragmentation, 14–16
cross-border integration, 287
cross-border production networks, 260
cross-border production sharing, 37, 54–84
cross-keiretsu, 210
pattern, 208
phenomenon, 206
customer relationship management, 265
customized computer assembly, 141
customs, 328
harmonization, 327
procedures, 329
valuation, 328
Customs-Trade Partnership Against Terrorism (C-TPAT), 285
Czech Republic, 35
D
DEC
vertically integrated company, 169
decomposition analysis
local content, 79
definitions
cluster effect, 131
Dell, 13, 93, 108, 151
Delta Electronics, 106
Design-for-Manufacture (DFM), 285
design services, 275
Detroit, 202
Detroit-Windsor, 16
developed countries
  labour-intensive industries, 15
developing economies, 133, 135
governments in, 132
development agencies, 89
development costs
  rising, 173
Development of a Conceptual Framework for the Establishment of a Single Aviation Market in ASEAN, 278
development strategies
  import-substitution, 48
DHL, 104, 289
global connectivity in electronics production networks, 109
diagnostic instruments, 187
diagnostics, 173
Dicken, Peter, 316
disintegration-type fragmentation, 48, 51
distance-type fragmentation, 51
distribution network configuration, 274
distribution strategy, 274
domestic regulatory measures
  liberalization of, 2
Doner, 205
Dow, 169
Drucker, 266
drug development
  economics of, 173
  rising cost of, 172
drug discovery
  chemo-genomics approach, 174
drugs
  brand, 173
  commercialization of, 167
  new, 167
Du Pont, 169
dynamic cluster, 133–35
E
Eagle Global Logistics, 108
East Asia, 7
  cross-border production networks, 60
  dynamism of, 52
  impact of globalization, 4–9
  production networks, 40
  trade barriers, 8–9
East Asian Community (EAC), 293
East Asian Economic Community, 314
East Asian economies, 305
  heterogeneity, 21
East Asian regionalism, 313
Eastern Seaboard Development Project, 215, 238
  characteristic of production network, 225
economic activity
  globalization of, 86
  economic analysis, 44
  economic bilateralism, 321
economic crisis, 196
  after, 221
  effect on automobile industry in Thailand, 197
see also Asian Economic Crisis
economic development
  beneficial impact on, 47
  regional scale, 86
Economic Development Board (EDB), 110, 176, 274
  Initiatives in New Technology Scheme, 177
  Training and Attachment Programme (TAP), 177
economic integration, xv, 302
dejure, 326
limited benefit from formal regional trade agreements, 324
production goods, 56
utilization of, 52
economic surplus, 12
economics of network, 9–22
economies of scale, 2
electronic data interchange (EDI), 280
electronic firms against basic and high-tech infrastructure institutions, 152
breakdown of data, 139
Indonesia, 127–53
industrial clustering, 127–53
Johor, 145
market and value chain links, 146
multinational coordination, 145
technological capabilities, 149
technological intensities, 138
two-tailed tests of high-tech infrastructure, 143
two-tailed tests of skills and technological intensities and wages, 151
two-tailed tests of systemic networks, 144
variables, proxies and measurement formulas, 137
electronic manufacturing service (EMS), 93
electronics industry, 76
changes in local content, 61–68
globalization of, 97, 104, 274
electronics manufacturers capitalization on established market positions, 98
electronics production networks spatial clustering of, 99
electronics products production blocks of, 21
electronics sector, 78
changes in import content, 66
decomposition of changes in local content, 66
Japan, 83
local and import content, 65
similarities with automotive sector, 75
spatial linkages, 72, 73
technological structural changes on import content, 67
trade structural changes on import content, 66
Eli Lilly, 168, 179–80
emerging economies, 161
endogenous countries, 55
Eng Teknologi, 108
Enhanced Tax Deduction, 177
Enterprise Resource Planning (ERP), 283
entrepreneurial activities insufficiency of, 187
environmental services, 165
ESB Development Plan I, 243
European Union (EU), 268, 302
Exel, 104
export intensity, 137
export oriented industrialization policy, xv
export processing zones (EPZs), 129 failure of, 130
export-led economic growth, 4
export-led economy, 337
export-led industrialization, 337
export-oriented industries, 77
export processing zones, 133–34 failure, 135
exports role of foreign firms, 127
external economies, 101
external expansion, 174
Exxon-Mobil, 111

F
Fairchild Semiconductor, 276
finance, 10
financial capital institutions, 91
financial cooperation
  regional players, 336
financial incentives, 288
financial networks
  decentralized, 92
financial system
  developed, 336
firm-level drive
  lack of, 133
Flaherty, 266
Flextronics, 13, 105, 150
Food and Drug Administration (FDA)
  approval, 173
food supply chain
  protection, 285
foreign companies
  local content requirement, 2
foreign direct investment (FDI), 5–7, 33, 325
China, 5
  facilitation inward, 21
  global net inflows, 3
  incoming, 50
  inflows, 6
  one-stop service, 51
Singapore’s growth, 159
state-level coordination, 147
foreign equity ownership
  Thailand, 330
foreign firms
  employment generation, 127
foreign investment, 114
foreign investors, 322
forms of clusters
  spatial scales, 100
forms of equity
  development of diverse, 89
forward linkage effects, 81
fragmentation
  concept of, 37
  definition, 16, 39
  disintegration-type, 48, 51
  distance-type, 51
  evidence of, 15
  original idea of, 38
  two-dimensional, 16, 41, 49
fragmentation of production, 98
fragmentation model
  two-dimensional, 52
fragmentation theory, 9, 42, 46
  development of, 52
fragmentation theory approach, 33–53
Framework Agreement for the Integration of Priority Sectors, 272
Free and Secure Trade Initiative (FAST), 285
free trade agreements
  region-wide, 313
Free Trade Zone Penang Companies Association (FREPENCA), 141
freight costs, 7
frontier clusters, 134
Future, 276

G
gambling casinos
  critical mass of, 133
Gateway City IE, 240
Genentech, 168
General Agreement on Tariffs and Trade (GATT), 2, 268, 306
General Agreement on Trade in Services (GATS), 306
General Electric (GE), 13
General Motors (GM), 12, 202
generic drugs
  global market, 173
genetic engineering, 168
Genome Institute of Singapore, 182
genomics, 172
geographical concentrations, 16
geographical configuration, 12
GeoLogistics, 104
GL index
  intermediate goods trade, 77
Glaxo, 169
GlaxoSmithKline (GSK), 180, 188
  Centre for Research in Cognitive and Neurodegenerative Disorders, 180
Gleneagles Clinical Research Centre, 180
global 3PLs, 294
global commodity chains (GCCs), 11, 87
global economy, 86
global flagship networks, 94
global flagships, 13
global lead firms, 94
global markets
  integration, 145–47
global outsourcing, 295
global production network model, 112
global production networks (GPNs),
  xv, 13–14, 87–89, 98, 162–63, 198
  approach, 86–116
  dynamics of, 88–93
  multinational car-makers, 196
  spread of, 201
global sourcing, 265
  utilization of, 221
global supply chains, 292
global trends, 1–9
global value chains (GVCs), xv, 87, 136, 163, 303
  analysis, 163
  approach, 335
  arrangements, 336
  governance, 12–13
globalization, 1–4, 50, 161
  forces, 174
  foreign competition, 266
  harnessing of positive forces of, 4
  manufacturers having global networks, 319
globalization of production, 97
globalized economy, 9
globalized production activity, 88
Gloria-Arroyo, 323
Good Manufacturing Practice (GMP), 167
Gordon and McCann’s three ideal-typical model, 23
government
  involvement crucial, 339
government agencies, 113
GPN approach, 335
GPN Dynamics, 93
Grabowski, 172
gravity equation exercises, 44
Greater Bangkok Region, 16, 23, 110, 112
  automobile industry, 110
Gross Domestic Product (GDP), 3
Gross Regional Product share
  automotive cluster in Thailand’s Eastern Provinces, 231–32
  by regions in Thailand, 233
  growth poles, 129
Grubel-Lloyd (GL) index, 23, 58–59, 78
  intermediate goods, 59
see also GL index
GSK Biological, 181
Gulf of Siam
   discovery of gas in, 252

H
Ha Noi Agency, 281
hard disk drive (HDD)
   industrial clusters, 112
   industry, 104, 108, 110
   manufacturing centre, 160
   market, 105
   Penang, 23
   Singapore, 16
Health and Environmental Protection Management System, 281
Heckscher-Ohlin model, 15, 34
Hepatitis B, 188
Hepatitis C, 181
Hewlett Packard, 93, 106, 108, 142, 151
high-tech companies, 133
high-tech infrastructure, 135, 141
high-value added products
   transportation of, 276
Hoeschst, 169
Hoffmann-La Roche, 169
hollorization
   avoiding of, 48
homeland security, 284
Hong Kong, 136
Hopkins, John, 179
horizontal models
   computer industry, 170–71
   rising costs, response to, 171
human capital formation, 336
human capital utilization, 4
human clinical trials, 173
human development
   slow, 134
human protein, 168
human resource, 137
   industry linked development, 273
human resource management, 10
Hungary, 35
IBM, 12–13, 97
   vertically integrated, 169
ICI, 169
ICON, 180
ICT-enhanced information management, 94
implantable devices, 187
import content, 72
   changes in, 67
import shares
   diversion of, 71
import-substituting type industries, 34
import substitution, 337
imports
   increased, 56
India, 268, 281, 330
   strategy of, 324
Indonesia, 136
   automotive sector, 68
   electronic firms, 127–53
   foreign firms, role of, 127
   hands-off approach, 142
   industrial clustering, xv, 16–18, 165
   industrial clusters, 101–02, 104–11
   high growth regions, 87
   industrial complex model, 100, 111–12
   industrial complexes, 102
   industrial concentration, 102
   industrial districts
      Thailand, 198
   Industrial Estate Authority of Thailand (IEAT), 205, 238
   efficiently governed, 133
industrial organization
changing, 94
industrial policy, 77
industrial sectors
shares of exports of, 185
shares of output of, 184
industry
creation, 135
infrastructure, basic, 135
influenza test kits, 187
information and communication technology (ICT), 1, 159, 199, 211
information technology (IT), 282
infrastructure and logistics system
well-developed, 337
input structure
changes in, 60–61
input-output structure, 12
integrated design manufacturers (IDMs), 93
integration
global markets, in, 135
global markets and value chains, 145–47
Intel, 108, 142, 151, 170
Intellectual Property Management Hub Scheme, 177
inter-firm relationships, 26
inter-industrial linkages, 71
interdependencies, 91
interdependency
industries across borders, 72
intermediate goods, 4, 60
GL index, 59, 77
import of, 55, 57, 82
Japan, from, 56
intermediate goods trade, 23
international air freight traffic, 278
international connectivity, 4
international division of labour, 87
international input-output analysis
application of, 54–84
International Maritime Organization-ASEAN Follow Through Projects, 281
International Organization for Standardization (ISO), 285
international production
mechanism of, 36
international production networks, 50
international trade
rising trend of, 4
international transport services, 277
Internet
arrival of, 1
interpersonal relationships
local networks of, 102
Intima, 190
intra-ASEAN (AFTA) Economic Integration
factors preventing, 307–08
intra-ASEAN investment, 5
intra-ASEAN trade, 269
Intra-East Asian regional trade, 5
intra-East-Asia trade, 44
intra-firm production sharing, 38
intra-industry trade, 4
(1990–2000), 55
changes in, 58, 60
intra-regional competition, 320
intra-regional FDI inflows, 5, 7
intra-regional trade
EC countries, 58
intra-regional trade barriers, 9
intra-regional transfer
manufactured goods, 304
investment
sharp decline in rate of, 58
investors’ privileges, 239
inventory management, 274
Ireland, 136
Isard-type international input-output tables, 82
Israel, 136
Isuzu Engine Manufacturing, 208
IT technology
rapid development of, 20

J
Jabil Circuit, 108
Japan, 35, 268, 281
automotive parts suppliers, 83
decline in inputs from, 68
electronics sector, 83
free trade agreements, 323
import content from, 69
role as supplier of input, 74
spatial backward linkage effects on, 73
trading with ASEAN Six, 296
Japan Centre for Economic Research, 82
Japan External Trade Organization (JETRO), 312
Japanese auto-makers
rent sharing, 221
Thailand, in, 216
Japanese automotive industry
backward linkage effects on, 75
Japanese car-makers, 197
changes in LCR system, 238
satellite strategies, 206
see also Japanese automotive industry
Japanese investments, 136
Japanese part-makers
location of, 241–42
Japanese parts suppliers, 205
Japanese transnational corporations (TNCs), 87
Japanese Yen
appreciation of, 206, 215
Java, 128
computer assembly, 147
Java-Batam, 141
integration of electronic firms, 145
mean wages in, 150
Johnson and Johnson, 173
Johor, 114, 128, 140
electronic firms, 145
Joint Declarations for Cooperation to
Combat International Terrorism, 285
Jurong Island, 110
Jurong Island Chemical Complex, 111
just-in-time deliveries, 76, 267, 305
parts, 220
just-in-time production, 110, 303

K
Kanban, 222
Karlinska Institute, 179
keiretsu system, 206
Kelang Valley region, 146
Kia-Timor, 110
Kintetsu, 289
knowledge diffusion, 94
impact on, 94
Koizumi, Junichiro, 323
Komag, 108
Korea, 35
trading with ASEAN Six, 297
Korea International Cooperation
Agency, 280
Kuala Lumpur International Airport (KLIA), 151
Kunming Rail Link, 280
Kyoto Convention, 327

L
labour
differentiation and division of, 135
division of, 87
labour costs
low, 7
labour markets
flexible, 91
labour productivity, 137
labour-intensive activities, 47
labour-intensive industries, 15
Lad Krabang, 205
Laem Chabang IE, 238, 240
land-intensive activities, xv
Laos, 317, 326
Las Vegas, 133
Latin America, 35
lead firm customers, 96
lead firms, 163
lean management, 267
learning and innovation, 147–51
policy, 134
Lee Kuan Yew School of Public Policy,
160
Lem Chabang port, 197
less developed countries (LDCs), 33,
39
policy-makers, 36
liberalization policy, 196
Life Science industry, 176
Life Science Investment Fund, 177–78
Likert scale scores, 138
Lilly System Biology, 179
local content requirement, 2, 84, 237
(1990), 62
(2000), 63
abolishment of, 203
changes by industry, 60, 61
changes in, 64
decline in many industries, 61
decomposition analysis, 79
decomposition of changes in, 61–68
decrease, 23
factors affecting, 75–77
impact of, 253
important determinants of, 78
Local Industry Upgrading Programme
(LIUP), 322
local suppliers, 14
localization
forces of, 320
localized social networks, 103
location
specific aspects of advantages, 338
logistics management, see supply
chain management
logistics users, 264
Long Towy port, 197
Lonza, 182
Lundvall, 136
lyophilization plant, 181
M
Maccine, 180
machinery
definition, 34
machinery goods, 35
machinists, 150
Malaikolunthu, Asokkumar, 153
Malaysia
automotive industry, 68–69
automotive sector, 75
economic statistics on growth, 107
electronic firms, 127–53
national car project, 110
Trade Minister, 311
mammalian cell culture plant, 182
managers, 150
manufactured goods
intra-regional transfer of, 304
manufacturers
practising JIT production, 306
specialized, 95
manufacturing
outsourcing of, 164
Maquila, 37, 53
marginal costs
    lower, 14
market demand fluctuations, 95
Marshall, Alfred, 99, 128, 131, 201
Maxtor, 104, 108–09
MDS Pharma, 180
Medical Design Excellence Awards, 191
medical devices, 165
memory chips
    distribution of, 274–76
    distributors in Southeast Asia, 274
Menlo Logistics, 108
mergers and acquisitions
    company’s way of keeping afloat, 193
Metro, 289
Mexico, 35, 53
Microsoft, 170
milk-run system
    parts delivery, 222
Mitsubishi Chemicals, 169
Mitsui Petrochemicals, 169
MMI Holdings, 105, 108
model of agglomeration economies, 101
model of cluster development, 99
model of competitive advantage, see Porter’s Diamond
model of industrial clusters, 100–104
model of pure agglomeration, 100
modular product architecture, 76
Mongolia, 285
Monsanto, 169
Most Favoured Nation tariffs, 310
Motorola, 97
Muar, 146
multilateral trade rounds, 5
multilateral trading system, 302
Multimedia Super Corridor (MSC), 142, 151
multinational car-makers
    Thailand, choice of, 234
multinational companies (MNCs), 20, 187
    extension of resources sourcing, 303
multinational corporations, see multinational companies
multinational companies
multinational enterprises (MNEs), 36
    business practices, 13
multinationals
    focus on global distribution operations, 275
Myanmar, 326, 330
N
Nam Tok-Three Pagoda Pass-Thanphuzyazat, 280
Nanyang Technological University (NTU), 179
national banking institutions
    influence of, 92
national banking systems, 93
national competition schemes, 322
national governments
    development of policies, 114
    National Neuroscience Institute, 188
    National Science Foundation (NSF), 134
National Semiconductor, 97, 108, 151, 275
National University of Singapore (NUS), 179
natural shipping lanes, 288
NEC Solutions Asia Pacific Pte Ltd, 284
network cohesion, 135, 142–43
network economies, 88
network management
    total-integration-type, 46
new communication technologies, 4
New Zealand, 268, 285
Newly Industrialized Economies (NIEs), 115
Nike, 259, 261
Nissan-Toyota-Isuzu-Siam Cement joint project, 237
non-equity relationships, 89
non-land based activities, 18
non-monotonic impact
decreasing transport costs, 19
non-monotonic relations
transport costs, 18
non-tariff barriers
reduction of, 2
non-tradable goods, 61
North American Free Trade Area (NAFTA), 5
North-South Highway Malaysia, 140
North-South trade pattern, 34
Northeast Asian economies, 55
Novartis, 174, 180
Novartis Institute for Tropical Diseases (NITD), 179–80
Novo, 169
Novo Nordisk, 180
NYK Lines, 289

O
OECD, 167
one-stop services
acceptance of FDI, 51
FDI, 51
one-stop shop, 295
Operational Headquarters
Seagate, 105
organizational fix, 94
Operations Management’s approach, 261
organization structure, 13
Original Brand Manufacturing, 147
original equipment manufacturer (OEM) suppliers, 97
original equipment manufacturing contracts, 41
OSIRIS database, 115
outsourcing, 13, 15, 172, 265
current practices, 294
global, 295
outsourcing partners
specialization of, 275

P
Pan Pearl River Delta regionalism, 317
Pan-Asia Supply Chain Forum, 293
parts and components
characteristics of, 76
dependence on, 54
trade of, 15
transport costs, 84
parts producers association, 224
patents
expiry of, 173
PEG-Intron, 181
Penang, 16, 47, 128
computer firms, 139
electronics industry, 139
firms showing superior rating, 145
personal computer industry, 106
Second Industrial Master Plan, 144
semiconductor firms, 106
skills intensity, 150
strategic plan, 145
technology support, 146
world class airport, 141
Penang Development Corporation (PDC), 108, 140
Penang Industrial Coordination Council, 143
Penang Skills Development Centre, 142
petrochemicals
export of, 185
Pfizer, 180, 188
pharmaceutical firms
biotechnology firms, alliance with, 174
conventional, 170
pharmaceutical industry, 173
pharmaceutical ingredients
active, 174
pharmaceutical manufacturing, 180–82
pharmaceuticals, 165
pharmaceuticals sector
export of, 183, 185
PharmBio Growth Fund, 178
Philippines, 21
public works, 320
Philippines-Turkey bilateral cooperation, 321
Plaza Accord (1986), 214
Poland, 3
policy environment, 48
policy matrix, 49
two-dimensional fragmentation, 49
policy-making
regional, 113
Port Safety
integrated, 281
Porter, Michael, 10, 99, 259
Porter-type clustering, 133
Porter’s Diamond, 17, 23, 130
framework, 17
Porter’s Value Chain, 10
poverty, 134
primary activities, 10
primary sector, 61
printed circuit boards (PCB), 147, 275
process of co-development, 96
process technology, 137
procurement, 10
product authentication, 284
product patents
United States, 139
product research and development, 137, 139
product-development companies
critical mass of, 170
production blocks
centres of activities, 259
production costs, 95
production facilities
spatial relocation of, 95
production goods
economic integration, 56
production network model, 112
production networks, xv, 20, 48
advancement of, 36
benefits at firm level, 223–26
characteristics at firm level, 223–26
cross border, 54–84
dynamic aspects of, 46
East Asia, 40
global, 94
global configuration of, 87
international, 46
macro benefits from, 226–30
mechanics of, 33–53
organizational scale, 200
relation specific, 42
Southeast Asia, in, 301–30
various industries, 52
production networking
ASEAN, in, 321
production networking strategy, 306
production processes, 9
production sharing, 35
acceleration of, 71
international, 53
production superintendents, 150
productivity
increased, 2
productivity triad, 131–32
<table>
<thead>
<tr>
<th>Index</th>
<th>357</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol to Amend the Framework Agreement on the ASEAN Investment Area, 272</td>
<td>regional imperatives, 292</td>
</tr>
<tr>
<td>Proton, 110</td>
<td>Regional Industrial Relations website, 273</td>
</tr>
<tr>
<td>public policy intervention on clusters, 132</td>
<td>regional integration, 305</td>
</tr>
<tr>
<td>public-private cooperation committee (PPCC), 211</td>
<td>ASEAN, in, 321</td>
</tr>
<tr>
<td>Q</td>
<td>movement along market-driven forces, 303</td>
</tr>
<tr>
<td>Quintiles, 180</td>
<td>Southeast Asia, 88, 93</td>
</tr>
<tr>
<td>R</td>
<td>regional players</td>
</tr>
<tr>
<td>Radio Frequency Identification (RFID), 281</td>
<td>financial cooperation, 336</td>
</tr>
<tr>
<td>importance of, 284</td>
<td>regional policy-making, 113</td>
</tr>
<tr>
<td>technologies, 283</td>
<td>regional production chain, 316</td>
</tr>
<tr>
<td>usage of, 28</td>
<td>regional production network</td>
</tr>
<tr>
<td>Rafidah Aziz</td>
<td>automobile industry, 199</td>
</tr>
<tr>
<td>issue of tariffs being bilateral matters, 311</td>
<td>regional production networking, 319</td>
</tr>
<tr>
<td>rationalization of production, 2</td>
<td>regional scheme</td>
</tr>
<tr>
<td>Rayong, 110, 223, 252</td>
<td>feet-dragging in, 321</td>
</tr>
<tr>
<td>Read-Rite, 108</td>
<td>Regional Trade Agreements (RTAs), 9, 303–04</td>
</tr>
<tr>
<td>real world merchandise, 3</td>
<td>regional trends, 1–9</td>
</tr>
<tr>
<td>regional arrangements, 317–18</td>
<td>regulatory approval, 167</td>
</tr>
<tr>
<td>regional authorities, 113</td>
<td>Republic Polytechnic, 284</td>
</tr>
<tr>
<td>regional capability building of, 113</td>
<td>research and development, 106</td>
</tr>
<tr>
<td>regional cooperation, 7</td>
<td>electronic firms, 138</td>
</tr>
<tr>
<td>ASEAN-initiated, 301</td>
<td>revolution, 98</td>
</tr>
<tr>
<td>regional development, 92</td>
<td>research methodology, 198</td>
</tr>
<tr>
<td>models, 128–37</td>
<td>RFID Centre, 284</td>
</tr>
<tr>
<td>venture capital, 91</td>
<td>Ricardian Model, 15, 34</td>
</tr>
<tr>
<td>regional economic integration, 302</td>
<td>rules</td>
</tr>
<tr>
<td>Regional Economic Policy Support Facility, 308</td>
<td>standardization and harmonization of, 325</td>
</tr>
<tr>
<td>regional free trade agreements, 305, 338 initiatives, 312</td>
<td>Rules of Origin (RoO), 83</td>
</tr>
<tr>
<td>regional impact</td>
<td>Russia, 268</td>
</tr>
<tr>
<td>intense competition, 113</td>
<td>Ryder, 108</td>
</tr>
<tr>
<td>S</td>
<td>Samrong industrial estate, 237</td>
</tr>
<tr>
<td>Samrong plant</td>
<td>pick-up truck assembly operation, 222</td>
</tr>
<tr>
<td>Samut Prakan, 205, 223, 252</td>
<td></td>
</tr>
</tbody>
</table>
Sanofi-Aventis, 180
Schering-Plough, 180–81, 191
Schumpeter, 131
Seagate, 112
semiconductors industry
importance in ASEAN, 271
Sepang, 151
Service Level Agreements, 290
service link cost, 48
service links, 260
services
liberalization of, 9, 325
shipping services, 320
short life cycle products, 260
Siam Cement Group, 253
Siam Toyota Manufacturing, 208
Silicon Valley, 134, 162, 168
Silicon Valley-Bangalore, 16
Singapore, 136
biomedical output, 182
Biomedical Research Council (BMRC), 175
Biomedical Science (BMS) cluster, 24
biomedical science cluster in manufacturing, 183
Biomedical Science (BMS) Initiative, 161–75
biomedical science industry, 158
Biomedical Science Innovate ’N’ Create Scheme, 178
biomedical science, performance of, 179–88
BioVenture Centre, 179
Chemical 2000, 111
clinical research, 180
Economic Development Board, 274, 288, see also Economic Development Board
economic performance, 159
electronics industry cluster, xv
electronics sector, 180, 184
exports, 185
foreign direct investment, dependence on, 158
hard disk drives manufacturing centre, 160
HDD industrial cluster, 16
HDD industry, 110
higher value-added economy, 159
importance of knowledge and innovation, 160
Institute of Chemical and Engineering Sciences’ Chemical Synthesis Laboratory, 175
location, 288
Manufacturing 2000, 111
overview of economy, 158–61
petrochemical cluster, 110
petrochemical industry, 111
pharmaceutical research and development, 179
population, 186
range of services, 180
reduction in business costs, 330
regional producer, 111
Science and Engineering Research Council, 175
Start-Up Enterprise Development Scheme (SEEDS) Capital, 178
target for external expansion, 174
tax deduction for patenting costs, 178
Singapore Bio-Innovations Fund, 178
Singapore Bioimaging Consortium, 175
Singapore Biomedical Science (BMS) Initiative, 175
first phase of development, 175
International Advisory Council, 175
Singapore Cancer Syndicate, 175
Singapore Consortium of Cohort Studies, 175
Singapore Immunology Network, 176
Singapore Stem Cell Consortium, 175
Singapore-Johor-Riau growth triangle, 114
Singapore-Kunming Rail Link (SKRL), 280
single market
ASEAN in 2015, 305
skills intensity, 137, 150
Slovakia, 35
small and medium enterprises (SMEs), 51
attracting FDI, 51
small molecule drugs and biologics, 181
SmithKline, 169
Solectron, 13
South Korea, 268
Southeast Asia, 7
economic activity, 18
regional economic cooperation, 301–30
supply chain management and logistics, 259–97
spatial configuration
economic activity, 18
spatial linkage
changes in, 60, 61
spatial structure, 45
spot-market-type transactions, 42
ST Microelectronics, 141
Muar, 46
stand-alone overseas investment projects, 211
standardised labour intensive activities, xv
Stauffer, 169
strategic alliances
competitors, 13
subregional, 45
subcontract-exchange scheme, 322
Sumitomo Chemical, 111
supplier system
engine industry, 209
suppliers
low-tier, 14
supply chain, 258
example of, 260–61
IT, 283
value-added process in each node in, 260
supply chain activities, 263
supply chain management (SCM), 25, 260
challenges, 287–93
decisions, hierarchy of, 262
definitions, 260
global economy, in, 265–67
locational aspects, 271–74
logistics in Southeast Asia, 267–87
operational level, 264
scope of, 260–65
transportation systems, 276–81
supply chain planning, 295
supply chain process integration, 262
supply chain security, 285–86
supply chain systems, 283
supply chains
information technology, 281–85
technology and security, 291
support activities, 10
Swanson, Robert, 168
synergistic integration, 322
system approach, 9
System Quad, 23–24
systemic coordination, 152
systemic development, 139–47
systemic forces, 133
Porter-type clustering, 133
systemic quad, 132–37, 139
four pillars of, 136
T

tacit knowledge, 164
Takeda, 169
Taiwan, 136
tariff barriers
  elimination of, 310
tariff reduction, 327
tariffs
  imported cars, 213
  reduction of, 2
tax breaks, 288
taxation
  easing of, 339
technicians, 150
techno-diversity
  importance of, 131
technological advances, 265
technological clusters
  activation of, 20
  emergence of, 338–39
technological complexity, 148, 150
technological innovation, 4
technological intensities, 150
technological upgrading, 135
technology development, 10
Temasek Holdings
  administration of Batam’s EPZ, 144
Tesco, 289
Texmaco, 136
Thai Auto Parts Manufacturers’ Association, 215
Thai Automotive Industry, 208
  structural difference from Japanese, 207
Thai Automotive Parts Manufacturers’ Association (TAPMA), 206
Thailand
  Anand Panyarachun-led government, 215
  assembling of commercial vehicles, 205
  assembly of semi knocked-down kits, 205
  automobile belt, 231, 243, 252
  automobile dispute with Malaysia, 310
  automobile industry, 111
  automobile industry and parts, 326
  automobile sales and export, 204
  automotive belt, 198
  automotive companies, number of, 241
  automotive industry, 251
  automotive industry cluster and production networks, 196–254
Board of Investment (BOI), 203
  car assemblers, 240
  car-manufacturing factories, location of, 238
  Eastern Provinces, 231–37
  Eastern Industrial Estate, number of factories in, 247
  Eastern Seaboard (ESB), 202
  Eastern Seaboard provinces, reasons to invest in, 248
  Eastern Seaboard areas, 252
  Eastern Seaboard Development Project, 215
  evolution of automotive clusters, 231–37
  export of cars, parts and accessories, 218
  exports of automobiles, 212
  foreign auto-makers, 314
  foreign equity ownership, 330
  global production network in, 213–30
  government’s pro-industrial and economic policies, 110
  GPN characteristics of auto-makers in, 216–23
historical development of automobile industry, 203–13
import of cars, parts and accessories, 217
industrial decentralization policy, 237
industrial districts, creation of, 197
Industrial Estate Authority of Thailand, 205
industrial estates, 202, 242
industrial estates, choice and benefits of locating in, 248–51
industrial estates, number of, 254
industrial estates, number of factories in, 244–45
Industrial Policy Committee, 211
industrialization in Eastern Seaboard provinces, 247
Japanese car-makers in, 197
lack of national car policy, 251
leather products, 233
local content requirement policy, 205
location of automotive factories, 242–48
location of factories, 243
map of automotive belt, 246
non-tax incentives, 215
number of factories by IEs, 244–45
as part of global automobile production network, 214–16
partner in global automotive production networks, 251
parts suppliers, 237
production capacity of major assemblers in, 212
production costs of selected parts, 230
public utility problems, 250
regional orientation of automotive industry, 219
sales and export of automobiles, 230
Samrong IE, 237
structure of auto parts makers in, 210
tariff on Completely Built Unit (CBU), 213
TDRI survey, 234
Three General Industrial Zones, 239
value added per worker in manufacturing sector, 228
value added share of manufacturing sector GRP by regions, 235–36
value added share on non-agricultural sector, 234
Zone Three, 231
Thailand Automotive Institute, 229
Thailand Development Research Institute (TDRI), 24, 245
Thanong Bidaya, 311
*The Competitive Advantage of Nations*, 16
theory of comparative advantage, 304
therapeutic devices, 173
third-party logistics providers (3PLs), 264
Tiger economies, 322
time-to-market reduction of, 110
Toyota, 22, 202
U.S. supplier network, 222
Toyota Altis, 226
Toyota Cooperation Club (TCC), 222
Toyota IMV project, 211
Toyota Manufacturing, 208
Toyota Motors Thailand, 253
Toyota Production System, 222–23
Toyota Thailand, 221
trade, 4–5
drivers of, 7–9
trade and investment rules liberalization of, 316
trade barriers, 8–9
   low, 7–8
trade exports
growth of merchandise, 4
trade facilitation measures, 2
trade structure
   changes (1990–2000), 55–58
trade volume, 3
trading partner network, 294
traditional theory, 38
training services, 224
transaction cost
   arm’s length, 41
transnational corporation (TNC), 163
transnational supply chains, 294
transport costs
decreasing, 19
transportation costs, 7–8
   lowering of, 2
transportation services
development in Southeast Asia, 277
   high-value added products, for, 276
Treaty of Amity and Cooperation in Southeast Asia (TAC), 285
Trigeneration, 181
truncated operations, 136
Tuas Biomedical Park (TBP), 181
Tuzmen, Kursad, 321
typology of knowledge, 139

U
UNCTAD, 129
   Top 50 TNCs, 115
underemployment, 134
UNIDO, 129
   working paper, 25
Uniject, 190
United Nations Conference on Trade and Development (UNCTAD), 268
United Nations Development Program (UNDP)
dialogue status with ASEAN, 268
United States, 167, 268
   apparel imports of, 21
   automobile assemblers, 203
   product patents, 139
   production sharing with, 35
University of Dundee, 179
University of Illinois, 179
unskilled labour
   import of, 150
Urbana-Champaign, 179
Uruguay Round, 213
U.S.-Mexico border operations, 53
U.S.-Mexico nexus, 37
U.S.-Mexico production sharing, 37
U.S.-Singapore Free Trade Agreement (USSFTA), 114

V
vaccines, 187
value-added developed markets, 316
value-chain activity
   firm-specific organization of, 113
value chain analysis, 164–65, 259
   importance of concept, 163
value chain concept, 9–11
   three dimensions in, 12
value chains
   global, see also global value chains
   integration, 145–47
value-adding activities
   interrelated, 12
vehicle industry
   internationalization of, 213
vehicle production
   locations, 219
vendor-managed inventory, 275
venture capital, 152
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertex Pharmaceuticals, 174</td>
</tr>
<tr>
<td>vertical models</td>
</tr>
<tr>
<td>computer industry companies, 171</td>
</tr>
<tr>
<td>vertical production sharing, 46</td>
</tr>
<tr>
<td>vertical specialization, 15</td>
</tr>
<tr>
<td>vertically integrated companies, 169–70</td>
</tr>
<tr>
<td>Vietnam, 326</td>
</tr>
<tr>
<td>W</td>
</tr>
<tr>
<td>wages, 137, 150</td>
</tr>
<tr>
<td>Wal-Mart, 12, 289</td>
</tr>
<tr>
<td>Watson, James, 167</td>
</tr>
<tr>
<td>Wattanasiritham, 208</td>
</tr>
<tr>
<td>Welch Allyn, 191</td>
</tr>
<tr>
<td>Western Corridor, 142</td>
</tr>
<tr>
<td>Western Digital, 112</td>
</tr>
<tr>
<td>Winchester City of the East, 160</td>
</tr>
<tr>
<td>World Bank</td>
</tr>
<tr>
<td>limitation on export-processing zones, 129</td>
</tr>
<tr>
<td>report, 186</td>
</tr>
<tr>
<td>World Customs Organization (WCO), 285, 329</td>
</tr>
<tr>
<td>World Health Organization (WHO)</td>
</tr>
<tr>
<td>Collaborating Centre for Influenza, 182</td>
</tr>
<tr>
<td>World Trade Organization (WTO), 2, 5, 268</td>
</tr>
<tr>
<td>Y</td>
</tr>
<tr>
<td>Yen, see Japanese Yen</td>
</tr>
<tr>
<td>Young, 128, 131</td>
</tr>
</tbody>
</table>