Index

Africa
  export performance 23–6
  export processing zones (EPZs) 213
  FDI
    attracting 202–40
    economic and policy determinants
      209–15
    entry procedures and requirements
      217–18
    policies 216–232
    policy implications 232–9
    investment promotion agencies (IPAs)
      228–32
  ISO certification 43
  legal systems 220–21, 238
  loss carry-forward provisions 220
  tax systems 220
  technology systems 1
  work permit regulations 220
  Africa Project Development Facility
    (APDF) 135
  Africa Regional Intellectual Property
    Organization (ARIPO) 117
  African Regional Industrial Property
    Office (ARIPO) 61
  Amsden, A.H. 4
  Angola, investment incentives 219
  Archibugi, D. 4
  Asia, export processing zones (EPZs)
    214
  Asian Tigers 189
  Atkinson, K.C. 119
  Ayiku, N.M.B. 74

  Bongenaar, B. 98
  Botchwey, K. 158
  Botswana, FDI entry requirements 218
  Bresnahan, T.F. 34
  Bwisa, H.M. 71, 73
  Cameroon, FDI entry requirements 218
  capital goods imports, Uganda 49, 118
  Caribbean Basin, FDI 234–6
  Carson Products West Africa, Ghana
    148
  CBI (Cross-Border Initiative) 49, 209,
    216, 218, 219, 220, 221, 230, 232
  Chand, S.K. 141
  Chenery, H.B. 2
  China
    exports 26
    and Uganda 131
  Codex Alimentarius Commission 127
  Cohen, W.M. 7
  Collier, P. 210
  comparative advantage 209
  competition
    changing nature 6
    ‘new competition’ 12
  competitiveness 2, 3–6, 12
  corruption 49, 68, 230
  Costa Rica, FDI 234–6
  Cross-Border Initiative see CBI
  customs systems 238
  Deraniyagala, S. 85, 86
  developing countries
    empirical research 7
    export growth 22
    exports 29
    industrial performance 13
  DFID (Department for International
    Development) 109, 138
  Dijkstra, A.G. 114
  Diyamett, B. 101
  Donge, J.K. van 114
Failing to compete

East African Community 96, 130–31
East Asia 23, 25
exports 26
economic policies, liberalization 15
The Economist 6
Edquist, C. 9
educational enrolment rates
engineering 35, 37
national 37–8
regional 32, 34–7
tertiary technical enrolments 34–6, 39
EMPRETEC Zimbabwe 196
engineers 122–3, 180–81
Enos, J.L. 1, 155, 166
enterprise-technology institution
relationships 132–3
entrepreneurship 14
Euromoney 48
export processing zones (EPZs) 67,
69–70, 211–15
Africa 213
Asia 214
changing concepts 212–13
Ghana 147
weaknesses 214–15
export structures 16–17
exports
Ghana 145, 146–7
global trends in 20–23
manufactured export performance
16–32
Tanzania 29, 85
Uganda 29, 112, 113, 135–7
world exports 1980–97 21
Zimbabwe 29
Faruqee, R. 15
FDI 1, 2, 16, 30–31, 44–9
Africa
attracting 202–40
economic and policy determinants
209–15
entry procedures and requirements
217–18
inflows 44, 46–8
policies 216–32
policy implications 232–9
Caribbean Basin 234–6
Costa Rica 234–6
economic determinants 207
and economic measures 239
Ghana 48, 172–3, 218
host country determinants 206
host government policies 204
inflows
by region 44, 45
and technology inflows 48
and infrastructure 210–11
Kenya 59, 63, 77
attraction 80–81
entry requirements 219
inward 66–9
and labour 210
and liberalization 208–9
location 202–9
decisions by MNCs 203–4
and technical change 205
processing times 218
resource-based 222
and skills 210
Sub-Saharan Africa
attraction 236–9
determinants 209–15
Tanzania 48, 91–4, 106–7
and technology activity 210
Uganda 48, 114–15, 118–22, 218
and the UK 233
Zimbabwe 48, 187, 218
FDI dependent strategies 30–31
FDI policy, Africa 236–8
FDI promotion 238
and Zimbabwe Investment Centre
(ZIC) 228–30
Financial Times 91
firms
linkages with universities 74
Zimbabwe 191
foreign direct investment see FDI
free trade zones 211–15
Frempong, G.K. 152
Gacuhi, A.R. 71, 73
Gambia, FDI entry requirements 218,
219
garment industry
labour costs 39–41
Tanzania 89
Zimbabwe 183
Ghana 141–75
business associations 147
capital goods imports 49
Carson Products West Africa 148
Council for Scientific and Industrial Research (CSIR) 149-50, 157, 166, 167, 173
financing 156
objectives 153-4
Development and Application of Intermediate Technology (DAPIT) 170
direct investments 160
Economic Recovery Programme 141
EMPRETEC 169-70
export promotion 146-7
exports 145
FDI
attracting 172-3
entry requirements 218
inflows 48
Food Research Institute (FRI) 166-8, 173
GDP 141, 142, 155
human capital 159, 161, 172
import liberalization 144
import substitution strategy 141
industrial background 142-9
industrial growth 142, 143
industrial investment 145-6
Institute of Industrial Research (IIR) 165-6
intellectual property regime 157-8
Investment Code 146
investment incentives 220
labour productivity 144-5
manufacturing 142, 143, 144-5
manufacturing value added (MVA) 142, 171
Ministry of Environment Science and Technology (MEST) 150-51, 152-3, 155, 172
Ministry of Industry Science and Technology (MIST) 150
National Research Council 149, 153
patents 157-8
Pioneer Food Cannery 148
policy framework for industry 145-9
policy recommendations 170-74
Private Sector Development Project (PSDP) 154
R&D 155, 157, 172
science and technology
financing 155-7
infrastructure 161-70
policies 149-58
Science and Technology Policy Research Institute (STEPRI) 150
162, 171-2
science and technology system, co-ordination and planning 172
skills 37, 159, 172
standards 162-5
taxes 158-9
technological activity 158-9
technological capabilities 51
Technology Consultancy Centre (TCC) 170
technology infrastructure and institutions 173-4
technology strategy formulation 171-2
technology transfer 158-9
Technology Transfer Centre (TTC) 162
training 159, 161
Ghana Academy of Sciences 149
Ghana Export Promotion Council (GEPC) 146-7
Ghana Free Zones Board (GFZB) 147
and TNCs 147-9
Ghana Investment Promotion Centre (GIPC), functions 146
Ghana Regional Appropriate Technology Service (GRATIS) 168-9
Ghana Standards Board (GSB) 162-3, 174
activities 164-5
Ghana Vision 2020 171
global trends, in exports 20-23
globalization 8, 205, 206, 207-8
Gogo, J.O. 17, 150, 155, 158
Government of Ghana 149
Green, F. 182
Guerrieri, P. 8, 100
Harbison, F.H. 37
Harbison-Myers Index 37, 38, 39
Harvey, C. 109
Helleiner, G.K. 14
high-technology (HT) products 20, 22
Highly Indebted Poor Country (HIPC) initiative 114
Holmgren, T. 114, 115
Hong Kong 105
human capital 5
Ghana 159, 161, 172
Kenya 78–9
Tanzania 104–5
Uganda 122–6, 138
Zimbabwe 186
human capital base 32, 34–41
Husain, I. 15
Ikiara, G. 56, 66, 67, 71, 73, 75, 133
ILO (International Labour Office) 5, 6
import liberalization 15
import substitution 6
import-substituting industries (ISIs), restructuring 31
imports, capital goods 49, 118
India, National Institute of Fashion Technology (NIFT) 185–6
industrial capabilities 3, 6–9
industrial development 2, 10
weaknesses 14–16
industrial growth 4
industrial performance 32
developing countries 13
Industrial Policy and Framework 1994–99, Uganda 113
industrial technology systems 1
infrastructure
and FDI 210–11
private sector investment in 221–2
infrastructure projects 208
innovation 8, 9, 22
Uganda 137–8
Institutional Investor 49, 119
institutional linkages 132–3
integrated structures 205, 206, 207–8
intellectual property rights (IPR) 60–61
Ghana 157–8
Kenya 60–63, 79, 81
Tanzania 88, 107
International Country Risk Guide Index 49, 216
International Standards Organization see ISO
investment incentives
Angola 219
Ghana 220
Kenya 219, 220
South Africa 220
Investment Policy Review of Uganda 119
investment promotion
and private organizations 223–4
and quasi-government organizations 223
investment promotion agencies (IPAs) 222–8
Africa 228–32
functions 224–5
implementation 227
investment regulation 227
and the private sector 228
techniques 225–6
ISO certification 41, 64
Africa 43
Kenya 70
Tanzania 96
Uganda 128, 129
Zimbabwe 192, 193, 199, 200
ISSER (Institute of Statistical, Social and Economic Research) 164
Kenya 54–82
capabilities 55
Central Bureau of Statistics 57
corruption 68
export processing zones (EPZs) 67, 69–70
FDI 59, 63, 66–9, 77
attraction 80–81
entry requirements 219
impediments 68
inward 66–9
GDP 56–7
human capital 78–9
import-substituting industrial strategy 56
industrial development 54–5
background 56–7
intellectual property rights (IPR) regime 60–63, 79
strengthening 81
investment incentives 219, 220
ISO certification 70
Jomo Kenyatta University of Agriculture and Technology (JKUAT) 73
manufacturing value added (MVA) 56
Ministry of Education, Science and Technology 58
Ministry of Labour and Human Resources Development 59
Ministry of Tourism, Trade and Industry 58-9
Nairobi University 73
National Development Plan (1970–74) 57
patents 61, 62–3
policy implications 75–81
Power Technics 64–5
protection 56
in universities 73–4
Science and Technology Act 58
science and technology policies 57–63
skills 37, 76, 78–9
standards 70–71
technological activity 63–6
technological capabilities 51, 52, 75–81
technology 55
technology imports 63–6, 79
technology infrastructure 70–75, 80
technology institutions 80
technology policy 58–60
technology strategy formulation 77–8
trade liberalization 56, 57, 59, 64, 66, 75–6
training 76, 78–9
universities 72, 73–4, 75
Kenya Bureau of Standards (KEBS) 70–71, 74–5, 80
Kenya Industrial Research and Development Institute (KIRDI) 57, 71–3, 75
internal constraints 72, 90
reorganization 71–3
services 72
Kenya Investment Promotion Centre (KIPC) 59, 67, 69–70, 80
Kenya Polytechnic 73
Kenyan Intellectual Property Office (KIPO) 61, 62–3
Knight, J.B. 178, 179, 180, 183
knowledge, use of 8
KSA 183
Kweka, J.P. 89
labour, and FDI 210
labour costs 18
Lall, S. 2, 3, 4, 5, 13, 14, 15, 18, 37, 41, 44, 48, 55, 76, 89, 99, 100, 105, 119, 144, 155, 159, 163, 166, 170, 171, 173, 180, 189, 190, 202, 210
Latsch, W. 133, 187
Leechor, C. 141
legal systems
Africa 220–21, 238
Tanzania 93
Levinthal, D.A. 7
liberalization 44, 202
and FDI 208–9
licence payments 44
loss carry-forward provisions, Africa 220
low-technology (LT) products 18, 22
Lundvall, B.-A. 9
McCormick, D. 168
McPherson, M.A. 114, 119
managerial performance 16
manufactured export performance 16–32
manufacturing 2, 12–13
Ghana 142, 143, 144–5
manufacturing value added (MVA) 32, 33
Ghana 142, 171
Kenya 56
Sub-Saharan Africa 12, 13
Tanzania 86
Zimbabwe 177
Manzocchi, S. 182
medium-technology (MT) products 18, 20, 22
mergers and acquisitions 208
Mlawa, H.M. 87, 103
MNCs 30
FDI location decisions 203–4
Mowery, D.C. 10
multinational corporations see MNCs
Myers, C.S. 37
national innovation systems 9
national technology systems 9–11
effectiveness 10
Nelson, R.R. 7, 8, 9, 10
‘new competition’ 12
Nigeria, FDI entry requirements 218

Index 263
Failing to compete

Obwona, M.B. 115, 120, 138
Pack, H. 37, 44
Patent Cooperation Treaties (PCT) 61
Patents
Ghana 157–8
Kenya 61, 62–3
Tanzania 88
Uganda 116–17
Paxson, C. 37, 44
Pietrobelli, C. 2, 4, 7, 31, 142, 170, 182
Pigato, M. 47, 48, 49, 208, 209, 217
Pioneer Food Cannery, Ghana 148
Policy failure 14–15
Policy liberalization, and FDI 208
Policy reform 4
Power Technics, Kenya 64–5
Private organizations, and investment promotion 223–4
Private sector
Investment in infrastructure 221–2
and investment promotion agencies (IPAs) 228
Privatization 44, 47, 208, 237
Productivity, impact of skills 37–8
Productivity growth 13
Protective barriers 3, 4
Quasi-government organizations, and investment promotion 223
R&D 7, 41, 42, 129–33, 138
Ghana 155, 157, 172
Tanzania 83–4, 89, 94, 95, 102, 105
Zimbabwe 186–7, 189–90, 193–5, 199, 200
Rao, K. 215
Ratauré, M. 13, 41, 89
Reinikka, R. 110, 112, 118, 134
Relocation
Of processes 29
Of production 22
Republic of Congo, FDI entry requirements 218
Republic of Kenya 54
Republic of Uganda 112
Research and development see R&D
Resource-based (RB) products 18, 22
Risk ratings 48–9
Robinson, M. 109
Robinson, P. 133, 187
Rosenberg, N. 10
RPED study 187
Rush, H. 99
Semboja, H.H.H. 85, 86, 89
Siemens 233–4
Singapore 234
Training system 182
Singapore Economic Development Board 227, 228
Skill levels, index 37
Skills 5–6, 34
and FDI 210
Ghana 37, 159, 172
Impact on productivity 37–8
Kenya 37, 76, 78–9
Sub-Saharan Africa 51
Tanzania 104–5
Uganda 122–6, 134, 138
Zimbabwe 177–86, 197–9
SMEs (small and medium enterprises) 119
Tanzania 100, 106
Uganda 116, 131
Zimbabwe 188, 191, 193–7, 199, 200
Soludo, C. 31
Soon, T.W. 182
South Africa, investment incentives 220
Srivastava, P. 13
Standards
Ghana 162–5
Kenya 70–71
Tanzania 95–6
Uganda 127–9
Zimbabwe 191–3
Stein, H. 15
Sub-Saharan Africa
Educational enrolment rates 34
Export of primary products 25–6
FDI attraction 236–9
Determinants 209–15
Manufacturing value added (MVA) 12, 13
Risk ratings 48
Skills 51
Technological base 51
technological competitiveness 31-2

Svensson, J. 110, 112, 118, 134
Szirmai, A. 86, 98

Tan, H.W. 180
Tanzania 83–108
‘Basic Industrial Strategy’ 84
Centre for the Development of
Science and Technology (CDTT) 87
COSTECH 94–5, 102, 104
functions 94–5
employment 92
exports 29, 85
FDI
attracting 106–7
inflows 48
inward 91–4
procedural problems 92–3
garment industry 89
GDP 84–5
and Germany 101
human capital 104–5
import substitution 84
industrial background 84–6
industrial base 83
Institute of Production Innovation
(IPI) 87, 100–101
institutions 87–8
intellectual property rights 88, 107
‘Investor roadmap’ exercise 91, 92–4,
221
ISO certification 96
labour productivity 86
legal system 93
manufacturing performance 85–6
manufacturing value added (MVA) 86
Ministry of Science, Technology and
Higher Education (MSTHE) 83
National Fund for the Advancement of
Science and Technology (NFAST) 87
patents 88
policy recommendations 103–7
private industry 102
R&D 83–4, 89, 94, 95, 102, 105
science and technology
plan 83–4
policies 86–8, 94
‘Sister Industrial Programme’ 99

skills 104–5
Small Industries Development
Organization (SIDO) 87, 99–100,
102, 106
SMEs 100, 106
standards 95–6
and Sweden 99
taxes 91
technological activity 88–90, 105
technological capabilities 51, 52
technological upgrading 103–4
technology imports 103, 105
technology infrastructure 94–102,
105–6
technology institutions 105–6
technology strategy formulation 104
trade liberalization 85
Tanzania Award for Science and
Technological Achievement
(TASTA) 87
Tanzania Breweries 89
Tanzania Bureau of Standards (TBS)
95–6, 105
Tanzania Cigarette Company 89, 90
Tanzania Investment Centre (TIC) 91
Tanzania National Scientific Research
Council (TNSRC) 86–7
Tanzanian Engineering and
Manufacturing Design Organization
(TEMDO) 87
Tanzanian Industrial Research and
Development Organization
(TIRDO) 87, 96, 100, 106
All services 97–8
technology projects 98–9
tax systems, Africa 220
taxes 237
Ghana 158–9
Tanzania 91
Uganda 115
Teal, F. 145, 171, 173
technical change, and FDI location 205
technological activity 41–3
and FDI 210
Ghana 158–9
Kenya 63–6
Tanzania 88–90, 105
Uganda 115
Zimbabwe 186–8
technological capabilities
Ghana 51
Kenya 51, 52, 75–81
Tanzania 51, 52
Zimbabwe 51, 52, 186–8

technological competitiveness
strategies 30–32
Sub-Saharan Africa 31–2
technological exports 20, 22
technological performance 16
technology 4
technology inflows 44–9
and FDI inflows 48
technology institutions 10–11
technology policies 10
technology systems, Africa 1
technology-intensive activities 17
Techmoserve 169
Thai Board of Investment, information provision 231–2
Thailand, investment promotion 227
Til, R. van 141
TNCs 4, 5, 8, 9, 22, 60
and Ghana Free Zones Board (GFZB) 147–9
training and skill development by 121–2
trade barriers 3
training 121–2
Uganda 123–4, 139
Zimbabwe 197–8
transnational companies see TNCs
TRIPs agreement 61, 117
TSG 68, 91, 219
Uganda 109–40
bilateral treaties 216
Business Uganda Development Scheme (BUDS) 116
capital goods imports 49, 118
and China 131
economy 109, 110, 134
education 138–9
engineers 122–3
exports 29, 112, 113
of roses 135–7
FDI 114–15, 118–22
entry requirements 218
inflows 48
foreign investment 138
GDP 109, 110

GNP 109
human capital 122–6, 138
Income Tax Act of 1997 115
index of industrial production 111
industrial background 109–12

*Industrial Policy and Framework 1994–99* 113
industrial structure 134
industry-university linkages 138
innovation 137–8
intellectual property regime 116–17
investment 110, 112
Investment Code 114–15, 119
investor confidence index 119
ISO certification 128, 129
liberalization 114
life expectancy 109
long-term strategic policies 137–8
macroeconomic framework 134
Makerere University 124–6
Management Training and Advisory Centre (MTAC) 124, 139
manufacturing production 109–10
Ministry of Finance 109
Ministry of Trade and Industry (MOTI) 113, 128
National Agricultural Research Organization (NARO) 126,
129–30
patents 116–17
policy framework, and the private sector 114–16
primary exports 26
Private Sector Foundation (PSF) 116
R&D 138
R&D institutions 129–33
rose exports 135–7
science and technology policy 112
skills 122–6, 134, 138
SMEs 116, 131
standards 127–9
strategic policy statements and objectives 112, 114
tariffs 114
taxes 115
technological activity 115
technology development 112–17
technology system, lack of 135–7
technology transfer to 118–22
training 123–4, 139
190–91
Scientific and Industrial Research and Development Centre (SIRDC) 193
skills 177-86, 197-9
skills levels 37
Small Business Support Unit (SBSU) 196–7
Small Enterprise Development Corporation (SEDCO) 196
SME support systems 195–7, 199, 200
SMEs 188, 191, 193, 194–5
standards 191–3
Standards Association of Zimbabwe (SAZ) 191–3
functions and financing 192
technological activity 186–8
technological capabilities 51, 52, 186–8
technological performance 186–8
technological priorities 188–9
technology finance 190
technology imports 186–8
technology index 187
and technology institutions abroad 200
technology support 199–200
Technology Transfer Centres, proposed 200
tertiary technical enrolments 178
textile and clothing industry 183
training 197–8
Unilateral Declaration of independence (UDI) 178, 189
Venture Capital Company of Zimbabwe (VCCZ) 197
vocational education 179
wages 183
Zimbabwe Enterprise Development Programme 196
Zimbabwe Investment Centre (ZIC) and FDI promotion 228–30
shortcomings 229–30
Zimbabwe Manpower Development Fund 182
Zimbabwe Productivity Centre, proposed 200