# Index

<table>
<thead>
<tr>
<th>Abramovitz, M.</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy of Science Malaysia (ASM)</td>
<td>137</td>
</tr>
<tr>
<td>Action Plan for Science, Technology and Innovation (PACTI)</td>
<td>96</td>
</tr>
<tr>
<td>Agrarian Reform</td>
<td>19</td>
</tr>
<tr>
<td>Ajao, B. F.</td>
<td>157</td>
</tr>
<tr>
<td>alliance capitalism</td>
<td>173</td>
</tr>
<tr>
<td>all-out-populism</td>
<td>26</td>
</tr>
<tr>
<td>Altamirano, T.</td>
<td>27</td>
</tr>
<tr>
<td>Anand, S.</td>
<td>90</td>
</tr>
<tr>
<td>Andean Pact</td>
<td>20</td>
</tr>
<tr>
<td>Argentina software sector</td>
<td></td>
</tr>
<tr>
<td>direct approach application, complementarity tests</td>
<td>118–122</td>
</tr>
<tr>
<td>emerging economy, application</td>
<td>116–123</td>
</tr>
<tr>
<td>industrial policy in 116–118 sectoral performance, development policies and complementarities</td>
<td>122–123</td>
</tr>
<tr>
<td>Argentine Technology Fund (FONTAR)</td>
<td>118</td>
</tr>
<tr>
<td>Armenian business climate</td>
<td>58</td>
</tr>
<tr>
<td>Arocena, R.</td>
<td>2, 16, 51, 193</td>
</tr>
<tr>
<td>Asia-Pacific Economic Forum (APEC)</td>
<td>30</td>
</tr>
<tr>
<td>association approach</td>
<td>112</td>
</tr>
<tr>
<td>BioNexus status</td>
<td>144</td>
</tr>
<tr>
<td>BioNexus status companies</td>
<td>138</td>
</tr>
<tr>
<td>Biotechnology Corporation of Malaysia (BiotechCorp)</td>
<td>138</td>
</tr>
<tr>
<td>biotechnology, defined</td>
<td>135</td>
</tr>
<tr>
<td>Biotechnology Master Plan (BMP)</td>
<td>138</td>
</tr>
<tr>
<td>Biotechnology Regional Innovation Centres (BRICs)</td>
<td>132</td>
</tr>
<tr>
<td>biotechpole of Sidi Thabet</td>
<td>73</td>
</tr>
<tr>
<td>Bolivian University System (SUB)</td>
<td>195</td>
</tr>
<tr>
<td>Bramwell, A.</td>
<td>193</td>
</tr>
<tr>
<td>Brazilian National Development Bank (BNDES)</td>
<td>96</td>
</tr>
<tr>
<td>Brazil Maior Plan</td>
<td>98</td>
</tr>
<tr>
<td>Brown, C.</td>
<td>210</td>
</tr>
<tr>
<td>Brundenius, C.</td>
<td>192, 193</td>
</tr>
<tr>
<td>Bye, B.</td>
<td>62</td>
</tr>
<tr>
<td>capitalization of knowledge</td>
<td>193</td>
</tr>
<tr>
<td>Carranza, V.</td>
<td>31</td>
</tr>
<tr>
<td>Cassiman, B.</td>
<td>118</td>
</tr>
<tr>
<td>Cassiolato, J.</td>
<td>17</td>
</tr>
<tr>
<td>Castells, M.</td>
<td>173</td>
</tr>
<tr>
<td>Cervantes, M.</td>
<td>158</td>
</tr>
<tr>
<td>Chamber of Information and Communications of Argentina (CICOMRA)</td>
<td>117</td>
</tr>
<tr>
<td>Chamber of Software and Computer Services of Argentina (CESSI)</td>
<td>117</td>
</tr>
<tr>
<td>Cho, D. S.</td>
<td>215</td>
</tr>
<tr>
<td>civil society organizations</td>
<td>23</td>
</tr>
<tr>
<td>commercial liberalization</td>
<td>114</td>
</tr>
<tr>
<td>Commonwealth of Independent States (CIS)</td>
<td>56</td>
</tr>
<tr>
<td>Community Innovation Survey</td>
<td>123</td>
</tr>
<tr>
<td>complementarities, innovation activities economies, developing</td>
<td>112–116</td>
</tr>
<tr>
<td>theoretical arguments and empirical studies</td>
<td>110–112</td>
</tr>
<tr>
<td>correlation approach</td>
<td>111</td>
</tr>
<tr>
<td>Costa, L.</td>
<td>100</td>
</tr>
<tr>
<td>creative forgetting</td>
<td>53, 54</td>
</tr>
<tr>
<td>creole liberalism</td>
<td>19</td>
</tr>
<tr>
<td>De Althaus, J.</td>
<td>19</td>
</tr>
<tr>
<td>developmental university</td>
<td>190–203</td>
</tr>
<tr>
<td>diaspora</td>
<td>58</td>
</tr>
<tr>
<td>Dunning, J. H.</td>
<td>173</td>
</tr>
</tbody>
</table>
EBRD transition report 57
Economic and Industrial Health Complex (CEIS) 90
economic development 1, 15
economic reconstruction 28
Edquist, C. 191
Etzkowitz, H. 193
ex-ante concept 16, 51
Executive Group of the Health Industrial Complex (GECIS) 98

firm-level perspective 3
focus group discussion (FGD) 135, 136
forced conscriptions 26
foreign direct investment attraction 112
foreign direct investments (FDIs) 28, 29, 56, 58, 68, 73, 78, 81, 151
foreign technology buying 112
Freeman, C. 111, 173
Free Trade Agreements (FTAs) 35
Fund for Innovation, Science and Technology (FINCYT) 34, 35
Fund for Research and Development for Competitiveness (FIDECOM) 34
Fund for the Promotion of the Software Industry (FONSOFT) 117

Gadelha, C. 100
geographical proximity 180
Gerschenkron, A. 206, 208
Gevorkyan, A. V. 58
Gläser, J. 214
Global Competitiveness Index (GCI) 18
global financial crisis 31, 56
Global Innovation Index rank 58
global value chains (GVCs) 9, 16, 29, 62, 210–211, 240, 241
Globetronics 220
governance system, Armenia 59
gradual territorial control 25
gross domestic expenditure on R&D (GERD) 177
gross domestic product (GDP) 17, 30, 56, 57, 132
Growth Acceleration Program (PAC) 96
Gu, Sh. 52

health biotechnology (HB), in Malaysia
challenges, firms’ perspective 140–148
economic impact of 132–133
facts and figures 137–140
funding issues 144–145
government policy and regulation 147–148
human capital issues 145–147
issues and challenges 131–152
methodology 135–136
National Health Innovation System, biotechnology firms 133–135
Niche areas 147
product development (PD) chain 150
sector development, National Innovation Systems 142–144
STI capabilities 136–137
study design 135–136
sustainable HB sector, development 148–152
Herrera, A. 88
Higher Education Institutions (HEIs) 181, 182
Higher Level Personnel Training Coordination (CAPES) 96
Hobday, M. 215
Hommen, L. 191
Human Capital Report 58
Hungarian small- and medium-sized enterprises 171–186
innovativeness and networking, economy 176–178
networking, motivations 182–184
networks, participation 178–182
RDI collaboration 173–175
research methodology and sample 175–176
hyperinflation 27, 28, 37
import-substituting industrialization (ISI) 19, 28
Inari Technology 220–222
inclusive development, innovation 87
Industrial Competitiveness Development Fund (ICDF) 73
Industrial Eco-Technological Parks (PITEs) 36
informal institutions 4
Index

information and communication technologies (ICT) 68
information technology (IT) sector 60
Innovation and Competitiveness Programme for Peruvian Agriculture (INCAGRO) 30
innovation system research, developing countries 156–157
innovation via imitation process 76
innovative biotechnology firms 131
Innovative Economy Development: An Initial Strategy 59
Institute for Industrial Technology and Technical Norms (ITINTEC) 20, 23
Institute of Agricultural Innovation (INIA) 31
intellectual property rights (IPR) 59
International Monetary Fund 114
interventionism 19, 26
Isola, O. O. 158
Jegede, O. O. 157, 159
Johnson, B. 53
Kamien, M. I. 207
Kitanovic, J. 63
Kitanovic’s model 55
knowledge exchange (KE) 53, 70
knowledge generators 193
Korean Samsung 206
Koubaa, K. 76
Laboratory for Social and Solidarity Economy (LabESS) 79
Lai, Y. W. 215
large-scale privatization 53
latecomer strategic typology 206–233
Laudel, G. 214
learning, Armenia 61–64
through foreign actors 63–64
through local networks 62–63
learning economy 52
liberated zones 30
Lindem, G. 210
List, F. 50
low-end forgetting process 53
low-skilled labor 54
Lundvall, B.-Å. 51, 53, 191
Malaysian Institute of Microelectronic Systems (MIMOS) 207, 215, 216
market liberalization 37, 53, 54
market–multinational enterprises (MNEs) 240
Maskus, K. E. 194
Mathews, J. 210–212, 215, 224
micro–macro effect 114
Millennium Development Goals 6
Ministry of International Trade and Industry (MITI) 142
Ministry of Production (PRODUCE) 34, 35, 38, 40, 41, 238
Ministry of Science, Technology and Innovation (MOSTI) 142
Mohnen, P. 111
Morel, C. 103
Morero, H. A. 119
multilateral organizations 26
Narayanan, S. 215
National Agenda of Priorities in Healthcare Research (ANPPS) 95, 96
National Biotechnology Policy (NBP) 138
National Competitiveness Report 61
National Council of Science and Technology (CONCYTEC) 25–27, 29, 30, 34–36, 38, 40, 41, 238
National Fund of Science and Technology (FONDECYT) 25
National Innovation System, of Armenia 49–65
determinants, actors and networks 54–61
governance system 59
learning and 61–64
macro environment 56–58
in transition countries 50–54
National Innovation Systems (NISs) 1–4, 16, 17, 37, 236–237
macroeconomic and political stability 238
in Armenia 49–65
in Bolivia 191–2
in Nigeria 158–159
Innovation in developing and transition countries

in Peru 15–48
in transition countries 50–54
National Plan for Productive Diversification (PNPD) 35–36
national programme of research and innovation (NPRI) 78
National Research Council (CONI) 20, 23, 37
National Sectoral Innovation System (NSIS) 69
national STI/H policy (PNCTIS) 95
National Strategic Plan of Science, Technology and Innovation (PENCTI) 34, 38
National Superintendency of Education (SUNEDU) 36
National System of Agricultural Innovation (SNIA) 34
National System of Science and Technology (NSST) 20, 23, 27, 30
National System of Science, Technology and Technological Innovation (SINACYT) 17, 34–38, 40, 42
National University of San Marcos (UNMSM) 28
Nelson, R. 207
Newly Industrialized Economies (NIEs) 206
Nigerian mining industry 156–167
collaboration on innovation, impact 165–166
linkage of actors in 163–165
methodology 159–161
model specification and statistical analysis 160–161
prevalent types of innovation 161–163
sampling 159
study variables and measurement 159–160
Niosi, J. 134
Nussbaum, M. 90
Ohmae, K. 173
ordered probit estimation 119
Organisation for Economic Co-operation and Development (OECD) 51, 131
organizational innovation 160, 162–163
organizational learning 53
Oslo Manual 159
Oyebisi, T. O. 158
Oyewale, A. A. 158
Partnerships for Productive Development (PDPs) 97
Perry, M. 61
Peru’s policy transitions 17
Peruvian economy 16
Peruvian National System of Science and Technology 17–37
failed industrialization 19–24
lost decade, 1981–90 25–27
National Innovation Systems 31–37
organizational and institutional foundations, resetting 27–31
Public Funding Bonanza 31–37
state interventionism limits 19–24
Plan Inca 20
planning system legacy 54
political violence 28
power asymmetries 15
private investment 26, 29
privatization 52, 54
process innovation 162, 166
Productive Development Policy 97
protectionism 26
Radošević, S. 65
Rasiah, R. 215
Regional Innovation System (RIS) 50
research, development and innovation (RDI) 171, 184–186
resource-based view (RBV) approach 110
Röller, L.-H. 111
Roolaha, T. 61
Sagasti, F. 25, 27, 31
Scandinavian Institute of Competitiveness and Development (SICD) 196
Schumpeterian Mark I industry 208
Schumpeterian Mark II industry 208
Schumpeter, J. A. 50
Schwachula, A. 87
Schwartz, N. L. 207
science development 59
science push innovation 61
science, technology, and innovation in health (STI/H) 87
inclusive development 90–92
science, technology and innovation
(STI) 2, 6, 18, 34, 37, 38, 41, 86, 111
inclusive development 88–90
Sectoral Mining Innovation System
156
Sectoral Public Research Institutes
(SPRIs) 20, 25, 27, 29, 38
sectoral system of innovations (SSI)
209
Sheahan, J. 28
SilTerra 217–219
Sirius 54
Siyanbola, W. O. 158
small and medium enterprises (SMEs)
31, 73
social capital concept 51
social programmes 29
social science research 124
Soete, L. 173
Sölvell, O. 200
soviet heritage 52
state-owned enterprises (SOEs) 56
state policies 55
STI Framework Fund (FOMITEC) 35
STI/H, in Brazil 92–102
historical background 92–93
Ministry of Healthcare, 2004–07
95–97
Ministry of Healthcare
reinforcement, 2012–14 98–99
policy trajectories synthesis,
interactions and priority setting
99–102
policy trajectory, 2002–14 93–99
promotion of, 2002–03 93–95
strengthening of interactions,
production sub-systems 97–98
S&T indicators 30
structural economic reforms 37
structural reforms 28
structural support policy, TPIS 72–74
financial mechanisms, R&D 73–74
human capital policy, KE 74
innovation centres and collaborative
incentives 72–73
1st Silicon (X-Fab Sarawak) 219–220
Sutz, J. 2, 16, 51, 191
Synopsys 61
Taiwan Semiconductor Manufacturing
Corporation (TSMC) 206, 224,
230–232
Technological and Foreign Trade
Policy (PTTCE) 96
technological catch-up of Malaysian
semiconductor firms 206–235
analytical framework 212
data collection and analysis 212–214
firm-level catch-up strategies, global
value chains 210–211
government level catch-up strategies
208–210
industrial innovation patterns
207–208
industry conditions, firm-level
strategies and institutions,
analysis 222–224
latecomer strategies, typology
224–231
Malaysian IC firms, case studies
217–222
Malaysian Integrated Circuit
Industry 215–217
research methodology 212–214
technological catch-up process 2,
206–233
technological innovation 240
Technological Innovation Centers
(CITEs) 36–38, 41
Technology-Based Enterprise
Incubator (EMBATE) 201
Teece, D. J. 110
terrorism 28, 37, 78
Tiffin, S. 157
TPIS, after Jasmine Revolution 78–80
human capital skills dilemma 79–80
institutional background change,
revolution 78–79
obstacles to innovation catch-up,
pharmaceutical companies 80
TPIS, before Jasmine Revolution 69–78
conjunctural support policy 70–72
efficiency, firm level analysis 74–78
firm-level innovation survey 75
firm-level R&D, structure and
practices 77–78
Innovation in developing and transition countries

- strengths and weaknesses, firm-level perspectives 75–77
- structural policy instruments 70
- structural support policy 72–74
- Trade-Related Intellectual Property Rights (TRIPS) agreements 73
- transition economies 52
- Triple Helix model 191, 202
- Trojer, L. 197
- tropical infectious diseases 148
- Tunisian Guarantee Company (TGC) 73
- Tunisian Investment Incentive Code (IIC) 70
- Tunisian pharmaceutical innovation system (TPIS) 69
- Tunisian pharmaceutical market 70, 76
- United Nations Economic Commission for Europe (UNECE) report 60
- Universidad Mayor de San Simón (UMSS), Bolivia 190, 241, 242
- context of study 194–195
- mode 2 and innovation culture, research community 201–202
- National Innovation Systems 191–192
- research activities background 195–196
- systemic interaction approach, cluster development 198–201
- theoretical framework 191–194
- universities, NISs 192–194
- university technology transfer unit and activities 196–198
- university technology transfer unit (UTT) 190, 197–199, 203
- Vaccarezza, L. S. 192
- VCyT report 194
- Veblen, T. 206, 208
- Very-Large-Scale-Integration (VLSI) Technologies 216, 217
- Veugelers, R. 118
- Wahab, S. A. 194
- Wald test 119
- weak institutions 2
- Whittaker, H. 15
- Winter, S. 207
- Wolfe, D. A. 193
- World Bank 114
- World Economic Forum report 80
- Yacoub, L. 81
- Yacoub, N. 75, 81