

INDEX

- Abacha, Sani, 11
Abramovich, Roman, 38
absorptive capacity, 186
Abuja Joint Declaration, 305, 310
Access to Gross Revenue (AGR), 75
accounting, 107; asset disposal in conventional, 170. *See also* booking barrels
acreage, 83–84
activity rule: alternate, proposed, 138;
license-by-license, 148; Milgrom-Wilson, 138; relaxed revealed preference, 141, 142; revealed preference, 139, 146
additive pricing, 137
additive values, 115, 121, 122
adjustable peg, 187
Africa, 58*t*, 72*f*, 84, 199. *See also*
Sub-Saharan Africa; West Africa
agency problems: privatization and, 26–45;
solutions to, 39–45
AGR. *See* Access to Gross Revenue
agricultural sector, 241
Alaska, 25, 189; NRF inflows/outflows in, 216*t*, 215–18
Alaska Permanent Fund, 198, 243, 312
Algeria, 267
Amerada Hess Case, BP and, 46
Angola, 1, 13, 268
area (block size), 70*t*, 81–82
Argentina, 74*f*
ascending proxy auction, 136
asset depreciation, 39
asset disposal, 170
assets: booking barrels as, 55, 68, 79, 83;
disposal of, 170; income v., 4; management of, 295–98; ownership of, 89, 97;
preservation of, 104; protection of, 42–43; real reserves as protecting, 42–43
auction(s): additive values and, 115; basic issues for, 122–27; bidder preferences in, 115; block definition in, 118; clock/clock-proxy, 116, 133, 134–35, 136–37, 141–42, 143, 145, 145*t*; context-specific, 324; corrupt privatization and, 32–33; design of, 31, 33, 114–49, 324; developing countries and, 117, 128–29; discrete rounds in, 139; efficient outcomes of, 140; first-price sealed-bid, 116; format variations for, 144–46, 147*t*; gas, 134; implementation of, 143; key factors in, 114; Libya case study of, 131–32; non-oil industry, 133–35; outside U.S., 131–32; package/individual blocks in, 124–26; proxy phase of, 137, 140, 142–143; rigged, 37; setting-specific, 146; simultaneous ascending auctions, 116, 129, 133, 134; transparency, 114, 117; U.S., 126, 129–31; Venezuela's approach to, 84–85, 127, 132, 146, 148
auction software, 143
auction theory, 117–19
audits/reporting, oil fund account, 303–4
Azerbaijan, 3, 45, 73, 74*f*, 89, 198, 221, 228, 275, 303, 303*f*, 309

back-in option, 79–80
Bangladesh, genuine investment/GDP in, 166, 167*t*, 168*t*
bank, custodial, 288
barrels of oil per day (BOPD), 54. *See also* booking barrels

- bidder(s): aggregate quantities of, 138; business plans of, 144; collusion of, 122, 123, 124, 137, 145; foreign, 32, 33; valuation interdependence across, 119–20
- bidder participation, 135
- bidder preferences, 32, 115, 119–22
- bidding: bonus, 31–32, 87, 104, 126, 127, 293; collusion in, 122, 123, 124; competitive, 85, 86, 86*t*, 328, 329; corruption/collusion in, 31–32, 122, 123, 124; least desirable form of, 87; open/sealed, 122–23; package/individual block, 124–26; royalty, 32, 33; sealed bid round, 87; speculative, 134
- Blair, Tony, 97
- block(s): area/size of, 70*t*, 82; definition of, 118; leasing, 31, 129, 130; pricing of, 7*f*, 36, 126, 129, 137, 138–39, 140, 141–42, 143; shared/single ownership of, 121; suitability of, 117; U.S. term for, 129; valuation interdependence across, 121–22. *See also* tracts
- block offerings, 84; multiple, 123–24; package/individual, 124–26
- block size, 70*t*, 81–82. *See also* acreage
- Bolivia, 38, 71
- bonding, 324
- bonus bidding, 31–32, 87, 126; signature bonuses and, 32, 71, 104, 126, 127, 293
- booking barrels, 55, 68, 79, 83
- boom-bust cycles, 8, 197, 267, 268, 271, 325
- BOPD. *See* barrels of oil per day
- borrowing: aggressive, 190; avoiding taxation through, 262; expected oil revenue-based, 181; prohibiting, 299–300
- Botswana, 2
- BP, 46, 247–48, 275; Amerada Hess Case and, 46; transparency campaign and, 275
- Brazil, 189
- bribery, 47, 304, 309
- Brosio, G., 249
- Brunei, 2
- budget, unified, 194, 224–25
- business plans, bidders', 144
- Canada, 68, 94, 96, 304; checkerboard leasing of, 31
- capital, extraction, 163–65
- capital market access, 157–61, 170, 329
- capital stock, social welfare measured by, 158–60
- carbon dioxide (CO₂) emissions, 166, 167*t*
- cash transfers. *See* direct distribution
- Chad, 2–3, 179, 224, 329, 333–34; corruption/NRF in, 195; Government Take in, 72–73, 72*f*; oil revenue management in, 301, 302, 303, 303*f*, 304, 308, 311, 312; revenue of, 6, 7*f*; taxation benefiting, 6
- Chad-Cameroon Petroleum Pipeline Project, 301, 333
- Chavez, Hugo, 38
- checkerboard leasing, 31
- checks and balances, 211–13; consumption/GDP and, 211*t*; spending and, 212*f*
- Chevron, 25, 268, 319
- Chevron-Texaco, 25, 275
- childhood mortality, 237–39, 238*f*, 239*f*
- Chile, 39, 199, 218
- China, 3, 54, 78–79, 97; genuine investment/GDP in, 166, 167*t*, 168*t*
- citizen shares, 177–78
- citizens: participation deficit and, 265; state government and, 13, 265, 326, 330
- civil war, 1, 10, 13, 145, 168, 169, 245–46, 246*t*, 322
- Clinton, Bill, 49
- clock phase, 137, 141–42, 143
- clock/clock-proxy auctions, 116, 133, 134–35, 136–37, 141–42, 143, 145, 145*t*
- collusion: bidders', 122, 123, 124; clock auctions avoiding, 137, 145
- Colombia, 5, 13, 68, 74*f*, 78, 86, 248, 257–58
- Columbia University, 2, 286; Earth Institute oil team of, 307
- common values, 119
- compensation, 266; negotiation of, 106–7, 323; profit oil, 70*t*, 132. *See also* rate of return
- competition: auctions and, 135; bidding, 85, 86, 86*t*, 328, 329; increasing, 31; reduced, 31–32, 37
- competitive bidding, 85, 86, 86*t*, 328, 329
- complementary licenses, 137
- compliance: NRF rules, 218–19; oil company, 110; oil contract termination and, 111; state government, 218–19, 265
- confidentiality clause, 306
- conflict of interest: oil contract, 94; public-private, 94–97; revenue management law, 308–9; state government self-negotiation, 101
- Conoco, 85

- consumption: checks and balances and, 211*t*;
 growth of, 54; investment v., 173, 185,
 325; private, public investment v., 176–77;
 smoothing, 189, 195, 197, 204, 205
- contract. *See* oil contracts
- contractual-based fiscal systems, 56–57, 57*f*
- corruption, 10–11, 24–26, 98, 191; agency
 problems and, 26–45; auctions and,
 31–32, 37, 117, 129; bidding collusion,
 122, 123, 124; bribery and, 47, 304,
 309; kleptocracy, 260; market economy
 rewarding, 29; NRF and, 195; privatiza-
 tion, 26–39; public procurement and,
 309–10; revenue management law ad-
 dressing, 309; solutions to, 39–45; state
 government, 26–45, 266; Transparency
 International, scale, 268. *See also* pri-
 vacy; rent-seeking behavior; secrecy
- cost recovery, 75, 77, 77*t*, 82, 127
- costs: cleanup, 324; consumer, 258; export-
 ers', 257–58; negotiating, 108; opacity/
 secrecy, 267; overestimation of, 25; past,
 79; project, 66
- countries. *See* developing countries; oil-
 producing countries
- crypto taxes, 69, 70*t*
- custodial bank, oil fund account, 288, 291
- decentralization, revenue, 248–51
- democracy, 35, 208, 273; threats to, 12–13
- depreciation: asset, 39; exchange rate, 173,
 182, 185, 191–92; PSA and, 100; world
 average, 70*t*
- developing countries: auction problems
 specific to, 117, 128–29; direct distribu-
 tion in, 243–44, 252; new discoveries in,
 333–34; payments problem of, 45
- development: joint, 310–11; negotiating
 resource, 109; principles for, 44–45;
 strategies for national, 174–92
- development tracts, 130
- direct distribution, 188–89, 241–44, 252,
 295; advantages of, 243; gas revenue,
 189
- disclosure, 308; complete, 98; geological
 information, 31; mandatory/voluntary,
 275–76; pressure against, 332; rate of
 return, 105. *See also* transparency
- discovery, 54, 104; natural resource, new
 finds in, 333–34
- diversification: economic, 271; through
 privatization, 181
- domestic sectors, extraction creating two
 major, 5
- dos Santos, José Eduardo, 268
- drainage tracts, 130
- duration, 70*t*
- Dutch Disease, 5–6, 240, 325; IMF on
 minimizing, 191; non-oil export and,
 184; oil booms and, 181–86, 182*f*; PPF
 pattern of, 182–83, 182*f*
- earnings. *See* compensation; income
- Earth Institute oil team, 307
- East Timor. *See* Timor-Leste
- economic growth, 1–2
- economy: closed, extraction capital and,
 164; hydrocarbon, 58–59, 180–81;
 income-based strategies for, 178–79;
 mixed, 175; open, 161–65; political, 14,
 26–45, 194–227. *See also* macro-
 economy; market economy
- Ecuador, 3, 74*f*, 75, 90, 148, 217–18, 231,
 267
- education, investment in, 10, 166, 167*t*
- Effective Royalty Rate (ERR), 53, 56,
 73–78, 76*f*; calculating, 77, 77*t*; weak-
 ness of, 75
- efficiency, 30; auction outcome, 140; eco-
 nomic policy, 209–14; spending tied to,
 209–10
- Egypt, PSA of, 57*f*
- EITI. *See* Extractive Industry Transparency
 Initiative
- electricity, 134
- Elf Aquitaine, 268
- employment, selected countries', 239–40,
 240*t*
- energy, alternative, 257
- enforcement, asymmetric, 34
- English auction, 131
- enhanced oil recovery, 311
- entitlement, 65, 83
- environment, 109–10, 166, 167*t*; bonding
 for protection of, 324; information,
 97–99; multinationals liable for, 327;
 negotiation of, 109–10
- Equatorial Guinea, 2, 72*f*, 89, 268, 272
- ERR. *See* Effective Royalty Rate
- Europe, state-building in, 260
- exchange rate: appreciation, 5, 8, 140, 181,
 182, 183, 184, 185–87, 240; deprecia-
 tion, 173, 182, 185, 191–92; policy, 142,
 186–88, 191

- exit strategy, 191
- expenditure smoothing. *See* consumption smoothing
- expertise, 4–5, 90; negotiation, 90, 92–94, 109, 327
- exploration, 54, 70*t*; Venezuela's approach to licensing, 84–85
- exploration risk, 57–58; factors for exposure to, 81–83; hedging and, 180; license agreement, 99–100; PSA terms for, 61; risk management for, 180–81
- exporters, costs/negative results to, 257–58
- expropriation, 128
- extraction: domestic sectors created by, 5; front-loading rates of, production v., 6; grievances caused by, 13; loans for, 35–36; migration caused by, 13, 246; rapid, 35; rate of, 6; state government controlling, 39; timing of, 9, 15, 35, 40
- extraction capital, 163–65
- Extractive Industry Transparency Initiative (EITI), 85, 97, 274
- Exxon Mobil, 25, 90, 268
- FCC. *See* Federal Communications Commission
- Federal Communications Commission (FCC), 138
- Filipino Participation Incentive Allowance (FPIA), 64
- first-price sealed-bid auction, 116
- fiscal policy: governance and, 201–8, 209; transparency advantage for, 256–79. *See also* spending
- fiscal social contract, 256–79, 258
- fiscal systems: classification of, 57*f*; comparing, 62, 65–66, 66*f*, 67*t*; contractual-based, 56–57, 57*f*; license agreement, 56; oil contract, 53–87; progressive/regressive, 81, 81*t*, 323–24; PSA, 56, 57–58, 57*f*, 60–62, 61*f*, 65–66, 66*f*, 67*t*, 75, 77, 77*t*, 83, 84; R/T, 56, 58–60, 59*t*, 65–66, 66*f*, 67*t*; two families of, 56–57. *See also* accounting; policy
- fiscal terms: booking barrels in, 55, 68, 79, 83; ERR measure of, 53, 56, 75–78, 76*f*, 77*t*; evaluating, 53–87; exploration risk and, 81–83; fiscal system comparison of, 66, 66*f*; government participation statistic, 70*t*, 77–80; savings index, 56, 80; world average, 67*t*
- fixed fee, SA, 62–64, 63*t*
- foreign aid, 191–92
- foreign bidders, FSU not allowing, 32, 33
- Former Soviet Union (FSU), privatization in, 32–33, 36, 58*t*, 84
- Freeland, Crystal, 37
- front-loading, 71–72; production/extraction, 6
- FSU. *See* Former Soviet Union
- Future Generations Fund, 296. *See also* natural resource fund
- Gabon, 2, 72*f*, 74*f*, 267
- gas auctions, 134
- Gas war, Bolivian, 71
- GDP. *See* gross domestic product
- General Resource Fund (Kuwait), 198
- genuine investment, GDP and, by country samples, 166–68, 167*t*, 168*t*
- Gini coefficient, income distribution, 238–39, 238*f*, 239*f*
- global clearinghouse, 222, 225
- Global Witness, 268, 274
- GNI. *See* gross national income
- governance, 270; exploration risk and, 81–83; national development and, 190–92; PSA self-negotiating conflict of interest, 101; public, 308–10; secrecy in, 331; spending and, 201–8; stability of, spending impacted by, 201–8, 209; takeovers and, 222; transparency measures for, 208, 276–77. *See also* political economy; state authority; state government
- government participation: participation deficit and, 265; statistic, 70*t*, 77–80
- Government Pension Fund, 178
- Government Take, 56, 103; calculating, 69–70; fixed fee system of, 62–64, 63*t*; government participation and, 70*t*, 77–80; Kazakhstan, 77; minimum, 75; payment timing failure of, 71; profit oil split, 70*t*, 132; royalty tax system, 60; statistic, 69–75; U.S., 130; variable fee system, 62–64, 64*t*; Venezuela example of, 132; West African oil-producing countries', 72–73, 72*f*; world statistics for, 73–75, 74*f*
- government takeover, NRF prevention for, 222
- grievance, extraction and populations, 13
- gross domestic product (GDP), 325; assessing social welfare using, 43; genuine investment and, by country samples,

- 166–68, 167*t*, 168*t*, 169; national income overstatement of, 157–58; Sierra Leone, 6; social welfare assessment by, 43, 165–68, 167*t*, 168*t*, 169
 gross national income (GNI), 157–58.
See also national income
 Gulf of Mexico, 85
- Hartwick's Rule, 170
 HDI. *See* Human Development Index
 Heal, G., 158, 159
 health, 109–10
 hedging, risk and, 180
 HIV/AIDS, investment data and, 167
 Hong Kong, 1
 horizontal inequality: civil war and, 245–46, 246*t*; problem of, 244–46, 246*t*; solutions to, 246–48
 Hotelling's analysis, 40, 160, 164–65
 human capital investment, 10
 Human Development Index (HDI), 2
 Hussein, Saddam, 260
 hydrocarbon economy: development strategies for, 180–81; production, 58–59
- IIAPCO. *See* Indonesia American Petroleum Company
 IMF. *See* International Monetary Fund
 incentives: contract generated, 42; against NRF, 199–209, 213
 income: asset v., 4; expected/actual, 181, 196, 245; Exxon Mobil, 90; national, 155–71, 167*t*, 168*t*, 180, 325; oil v. other sources of, 180, 261; resource-rich countries', 1–2; strategies for low/middle high, 178–79. *See also* compensation; Government Take; oil revenue
 income distribution: child mortality as measure of, 237–39, 238*f*; 239*f*; national development and, 237–39
 income volatility, 6–8
 India, genuine investment/GDP in, 166, 167*t*, 168*t*
 individual block bidding, 124–26
 Indonesia, 1–2, 47, 57*f*; 60, 74*f*; 77, 82, 241, 242, 242*f*; 247–48, 250, 257, 260; exchange rate policy in, 142; PSAs of, 57*f*; public goods projects in, 241–42; relinquishment provisions in, 82
 Indonesia American Petroleum Company (IIAPCO), Pertamina contract with, 60
 inequality, 2, 6, 139; avoiding, 326; horizontal, 17, 210, 244–48; reducing, 232–57; research priorities on, 251–52; vertical, 17, 210, 239–44
 information: bidders' private, 120; geological, disclosure of, 31; negotiation of, 97–99; oil company/aggregate, 305; proprietary, 306–7; public office of, 307; transparency of, 97–99
 information asymmetry, 31, 33–34
 information deficit, 264–65, 266, 269
 infrastructure: privatization and, 23, 36–37, 39, 188; rural, 188; Sao Tome and Principe, 179
 Initiative for Policy Dialogue (IPD), 2
 interdependence of valuations: across bidders, 119–20; across blocks, 121–22
 interest-group politics, 200–201
 intergenerational sharing, 178
 international financial institutions. *See also* International Monetary Fund; World Bank
 international financial institutions, transparency measures for, 277
 international lending, 8, 181
 International Monetary Fund (IMF), 9, 36, 305; foreign aid/oil flow recommendations of, 191–92; privatization advice of, 38
 international oil companies (IOC), 54, 87, 327
 internet, transparency and, 307–8
 investment: consumption v., 173, 185, 325; education, 10, 166, 167*t*; extraction, loans for, 35–36; genuine/GDP, country sample of, 166–68, 167*t*, 168*t*, 169; human capital, 10; limits on, 298–98; negotiation as, 92, 93; oil boom impact on, 184–85, 185*f*; oil price and, 267; policymaking committee for, 295–96; public, 175–79, 181–86, 182*f*; shadow price, 166–67, 167*t*; social welfare and, 159–60; wealth and, 10
 investment committee, oil fund account, 295–96
 IOC. *See* international oil companies
 IPD. *See* Initiative for Policy Dialogue
 Iran, 14, 63, 74*f*; 258, 267, 271
 Iraq, 63, 243, 257, 258, 260, 267, 273; war in, 258

- JDA. *See* Joint Development Authority
 Johnston, Daniel, 75
 Joint Development Authority (JDA), 333
 joint ventures, 62, 99, 101, 127
- Kazakhstan, 45, 76, 85, 89, 198, 221, 268, 272, 273
 Keynes-Ramsey rule, 164–65
 KIA. *See* Kuwait Investment Authority
 kleptocracy, 260
 Korea, 1
 Kriström, B., 158, 159
 Kuwait, 198; oil fund account of, 296; oil revenue management in, 303*f*
 Kuwait Investment Authority (KIA), 296
- labor force, 91–92, 239–41, 240*t*; political economy and, 207. *See also* domestic sectors
 Latin America, 174*t*
 leasing, tract, 31, 129, 130
 legal system: PSA and, 100; rule of law practices, 94; transparency and, 98. *See also* enforcement
 Leitzinger, Jeff, 31
 lending: extraction investment, 35–36; international, 8, 181. *See also* borrowing
 Libya, 73, 84, 127; auction case study for, 131–32; reconsidering auction formats of, 146, 148
 license agreement (concessionary system), 56, 99–100
 license rounds, 84
 licenses: activity rule, 148; auction design and, 122; complementary, 137; examples of, 84–85; U. S., 148
- macroeconomy: exchange rate policy in, 186–88, 191; managing, 155–227; national development strategies in, 174–92; NRF and, 194–99, 205–6, 213–18, 219–27; oil wealth and, 173–93; savings, oil revenue and, 189–90; state government political economy and, 14, 194–227
 Malaysia, 30, 39, 43, 44, 46, 73, 74*f*
 manufacturing sector, 6, 241
 market economy, 29, 35
 maximum efficient production rate (MEPR), 68
 Myanmar, 246*t*
 MDGs. *See* Millennium Development Goals
- de Menezes, Fradique Bandeira Melo, 305
 MEPR. *See* maximum efficient production rate
 Mexico, 2–3, 8, 89, 189, 248; direct distribution and, 188
 Middle East: employment in, 240*t*; genuine investment/GDP in, 166, 167*t*, 168*t*; social welfare/oil production in, 174*t*
 migration, extraction causing in/out, 13, 246
 Milgrom-Wilson activity rule, 138
 military: presence, 247, 269; spending, 13
 Millennium Development Goals (MDGs), 176, 179
 Minimum Government Take, 75
 minimum price. *See* reservation price
 minimum share, 75
 mixed economy, 175
 Mongolia, 104
 monitoring deficit, 265
 Morocco, 246*t*
 multinationals. *See* international oil companies
- national development, 174–92; exchange rate policy and, 186–88, 191; governance and, 190–92; hydrocarbon economy strategies for, 180–81; income distribution and, 237–39; NRF in, 194–99, 205–6, 213–27; oil boom/Dutch Disease and, 181–86, 182*f*; oil revenue direct distribution and, 188–89; public investment and, 175–79; risk and, 180–81; savings, oil revenue, 189–90
 national income: calculating accurate, 325; GDP/GNP overstating, 157–58; measuring methodology for, 169; NNP and, 157–65; oil v. other sources of, 180; oil-producing countries', 155–71, 167*t*, 168*t*; per capita, 1–2; resource depletion subtraction from, 165; social welfare and, 158–60; theoretical summary for, 165–66
 national oil companies (NOCs), oil fund accounts in, 23, 53, 54, 263, 290
 natural resource fund (NRF), 194–99, 205–6, 213–27; Alaska's, 198, 242–43, 312; contracting out, 221–22; country-specific design of, 213–14; independent, 220–22, 224; inflows/outflows, 216*t*, 217–18; macroeconomy, 194–99, 205–6, 213–18, 219–27; policy making and,

- 213–22; political incentives against, 199–209, 213; politics and, 271–72; rules, 218–27; rules for, 214–27; third-party management of, 327; transaction publication of, 223–24. *See also* political economy
- natural resources, depletion of, 164–65
- Nazabayev, Nursultan, 268
- negotiation: compensation, 106–7, 323; costs/expense, 108; development plans, 109; expense, 108; expertise in, 90, 92–94, 109, 327; form selection for, 99–102; health/environment, 109–10; information environment in, 97–99; investment in, 92, 93; issues covered by, 102–3; key issues during, 91–93, 91*f*; license agreement form of, 56, 99–100; oil contract, 40–41, 89–112; oil price, 107; payment structure, 103–5; social projects and, 110; systems of, 55; taxation, 107, 108; team selection for, 93–94; transparency of, 97–99, 324
- Nepal, genuine investment/GDP in, 166, 167*t*, 168*t*
- net national product (NNP), 157–65, 325; capital market access and, 157–61; resource depletion and, 160
- Netherlands, 5
- NGOs. *See* nongovernmental organizations
- Nigeria, 1–2, 3, 6, 8, 11, 45–46, 62, 65, 72*f*, 74*f*; 85, 86, 94, 179, 186, 240*t*, 241, 242, 242*f*, 246*t*, 248, 263, 267–68, 269, 275, 305, 310, 333; employment in, 240, 240*t*
- Nigerian National Oil Corporation (NNPC), 65
- NNP. *See* net national product
- NNPC. *See* Nigerian National Oil Corporation
- NOCs. *See* national oil companies
- nongovernmental organizations (NGOs): mediation by, 247–48; transparency measures for, 277
- nontradables sector, 5–6
- North Africa, genuine investment/GDP in, 166, 167*t*, 168*t*
- North Sea, 5
- Norway, 2, 39, 43, 74*f*; 86, 95, 96, 109, 155, 178–79, 189–90, 191, 196, 199, 219, 272, 288, 292, 296, 304; best practices example of, 273; gas revenue direct distribution in, 189; maximum return example of, 106; NRF inflows/outflows in, 216*t*, 217–18; NRF of, 195; rule of law practices and, 94; state-run oil company of, 30
- Norwegian State Petroleum Fund, 198, 297
- NRF. *See* natural resource fund
- Obasanjo, Olusegun, 305
- Obiang, Teodoro, 268
- offshore program, U.S. auction, 130, 145
- O'Neill, Donal, 90–91
- oil companies, 23–149; cheating of, 24–26; compliance of, 110; expertise of, oil-producing countries and, 4–5, 90; information published by, 305; negotiating oil contracts with, 40–41, 89–112; oil contract objectives for, 68–69; secrecy of, 265–69; state-owned, 106; transparency and, 27, 277
- oil contracts, 70*t*; auction design for, 31, 33, 114–49, 324; complex, 41–42, 108; confidentiality clauses in, 306; conflict of interest in, 94; enforcement of, 34; factors common to all, 57; fair outcomes of, 105–6; fiscal terms of, 53–87; forms of, 99–102; incentives generated by, 42; key elements of, 68–87; Libya case study of, 131–32; negotiating, 89–112; oil company objectives for, 68–69; parties in, 111; privacy/nontransparency of, 105–6; progressiveness of, 81, 81*t*, 323–24; PSA, 56, 57–58, 57*f*; 60–62, 61*f*; 65–66, 66*f*; 67*t*, 75, 76, 77*t*, 83, 127; R Factor in, 70*t*, 73, 74*f*; 81*t*; rate of return and, 67*t*, 70*t*, 73, 74*f*; 81*t*; recommendation overview for, 323–24; renegotiation of, 40–41; risk and type of, 57–58; SA, 56, 62–64, 62*t*, 63*t*, 64*t*, 65–66, 67*t*, 102; stability of, 110; state government objectives in, 66; termination of, 111; time factor in/time-sensitive, 95–96; transparency of, 97–99, 105–6, 306–7; types of, by region, 58*t*. *See also* auction(s)
- oil fund account, 288–312; audits/reporting in, 303–4; custodial bank for, 288; deposits to, 290; establishment of, 288–90; internet access to information on, 307–8; investment policymaking for, 295–96; management of, 295–300; NOCs with, 23, 53, 54, 263, 290; oversight of, 288–95, 296–98, 300–303,

- oil fund account (*continued*)
 303*f*; public governance of, 308–10; revenue use in, 294–95, 294*f*; spending limits for, 291–94; trusts and, 312; withdrawals from, 290–91
- oil industry: dynamics in today's, 54; secrecy in, 265–69
- oil prices: determining, 107; oil fund account and, 292; projections of, 293; volatility of, 267
- oil production. *See* production
- oil revenue: annual changes, spending and, 212*t*; bonuses and, 104; calculating, 325; Chad's, 6, 7*f*; channeling, 32–33; direct distribution of, 188–89, 243–44, 252; diversion of, 27–34, 39; estimating permanent flows of, 180; expected, 181, 196; governance and, 104, 190–92; income distribution of, 237–39, 238*f*, 239*f*; NNP and, 157–65, 325; public information of, 190; risk management approaches for, 180–81; savings and, 189–90; tax, 12; timing of, 6. *See also* compensation; Government Take; income; income distribution; natural resource fund; oil revenue management; revenue; revenue management law
- oil revenue management: NRF rules for managing, 217–27; selected countries', 303*f*
- oil rights: assigning, 114; licensing, 56, 84–85, 99–100, 122, 137, 148; state government objectives in, 68; tract leasing and, 31, 129, 130. *See also* auction(s)
- oil trap, 273–74
- oil wealth, 155–71; benefits of, 174–75; calculating national, 325; income uniqueness of, 180, 261; macroeconomics of, 173–93; paradox of, 156
- oil/mineral booms, 8; boom-bust cycle of, 8, 197, 267, 268, 271, 325; Dutch Disease and, 181–86, 182*f*; horizontal inequality and, 244–48; investment impacted by, 184–85, 185*f*; labor force impacted by, 239–41
- oil-producing countries, 1–2; expertise of oil companies v., 4–5, 90; HDI ranking of, 2; income-specific strategies for, 178–79; international actions aiding, 326–28; national income of, 155–71, 167*t*, 168*t*, 180, 325; oil contract negotiation of, 40–41, 89–112; rulers of, 270; Transparency International corruption scale and, 268. *See also* exporters
- OPEC. *See* Organization of Petroleum Exporting Countries
- open economy, 161–65; extraction capital in, 163–64
- Open Society Institute, 274
- Organization of Petroleum Exporting Countries (OPEC), 263, 267
- Oversight Management Plan, 275
- overspending, political incentives for, 199–210, 213
- ownership, 44, 65; asset, 89, 97; block, 121; IOC, 59; PSA system, 60; R/T system, 59
- package values, 121, 137
- Pakistan, genuine investment/GDP in, 166, 167*t*, 168*t*
- Papua, 246*t*
- past costs clause, 79
- payments: cash/direct distribution, 188–89, 241–44; as central problem, 45; front-loading of, 71–72; structuring, 103–5; timing of, 42, 71
- pension benefits, 189
- Permina, IIAPCO contract with, 60
- Peru, PSA contract type of, 57*f*, 64
- Peruvian model, 57*f*, 64
- Philippines, 246–47
- policy: economic, 209–14; exchange rate, 186–88, 191; fiscal, 201–8, 256–79; spending, 39–40, 210
- polycymaking: investment, 295–96; NRF and, 213–22; sharing, 219–20
- political economy, 14, 194–227; agency problems in, 26–45; checks and balances and, 211–13, 211*t*; labor force and, 207; NRF and, 194–99, 205–6, 213–27; overspending in, 199–210; power rivalry model and, 200–205; savings incentive lack in, 199–209, 213; separation of powers and, 219–22; transparency improving, 222–25; unified budgets and, 194, 224–25
- political reform, 270–71
- politics: diversification and, 271; economist solutions and, 269–74; infrastructure and, 36–37, 39, 179, 188; interest-group, 200–201; managing, 237–312; NRF and, 271–72; privatization and, 26–38, 272; resource curse as issue of, 256
- pollution allowance auctions, 134

- population: grievances of, extraction and, 13; growth of, NNP and, 168
- portfolio composition, 40
- poverty trap, 177
- power rivalry model, 200–205. *See also* separation of powers
- PPF. *See* production possibility frontier
- predicated expenditure, 217
- price(s): block, 7*f*; 36, 126, 129, 137, 138–39, 140, 141–42, 143; oil, 107, 267, 292, 293; shadow, 158, 166–67, 167*t*
- price discovery, 133, 140; clock phase providing, 141–42; improving, 138–39
- price increments, clock phase, 143–44
- privacy, oil contract, 105–6
- private values, 119
- privatization, 188; agency problems and, 26–45; corruption and, 26–39; diversification through, 181; failure/limit of, 35–36, 272; infrastructure and, 23, 36–37, 39, 188; oil revenue diversion in, 27–30, 39; rapid, 36; Russia's, 32–33, 36, 37–38
- production: civil war and, 245; exploration and, 54; extraction capital use by, 164–65; extraction rate front-loading v., 6; sliding scales for increased, 80–81. *See also* hydrocarbon economy; production sharing agreement (PSA)
- production possibility frontier (PPF), 182–83, 182*f*
- production sharing agreement (PSA), 56, 57–58, 57*f*; 60–62, 61*f*; 65–66, 66*f*; 67*t*, 83, 84, 100–101; cost recovery limits in, 75, 77, 77*t*, 127
- production sharing contract. *See* production sharing agreement
- profit oil, 70*t*, 132
- profit sharing, 105
- profits tax system, 103–4
- progressiveness, oil contract, 81, 81*t*, 323–24
- project costs, PSA/R/T system, 65
- property rights, 35–36, 272
- proxy phase, in auctions, 137, 140; advantages of, 142–143; concern with, 143
- Prudhoe Bay, 25
- PSA. *See* production sharing agreement
- PSC. *See* production sharing agreement
- public: direct distribution to, 188–89, 243–44, 252; oil revenue information as, 190
- public goods, 175; Indonesia's strategies for, 241–42; underprovision of, 176–77
- public governance, oil fund account, 308–10
- public information. *See* transparency
- public information office, 307, 328
- public investment, 175–79; Dutch Disease and, 181–86, 182*f*; oil boom impacting, 184–85, 185*f*; private consumption v., 176–77
- public procurement, corruption and, 309–10
- Publish What You Pay (PWYP), 98, 274–75, 276
- Qatar, 2, 74*f*, 267
- R Factor, 70*t*, 73, 74*f*, 81*t*
- radio spectrum, 134
- Radon, 16
- rate of return, 67*t*, 70*t*, 73, 74*f*, 81*t*
- Reagan, Ronald, 31
- real reserves, 42–43
- regressiveness, fiscal system, 80–81, 81*t*, 323–24
- relaxed revealed preference activity rule, 141, 143
- relinquishment provisions, 70*t*, 82
- renegotiation, oil contract, 40–41
- rents, 4–5, 44; allocation of, 262; direct distribution and, 243; NRF addressing, 271–72; solving problem of, 271
- rent-seeking behavior, 4, 244, 258
- The Republic of Congo, 246*t*, 268
- research, inequality, 251–52
- reservation price, 36, 126, 129
- reserve-replacement ratio, 68
- resource dependence, 11, 37; democracy and, 12–13, 208; state authority and, 259–60
- resource depletion, 165; Hotelling model of, 164–65; national income and, 160
- revealed preference activity rule, 139, 146; relaxed, 141, 143
- revenue: centralization of, 249–50; decentralizing, 248–51; gas, direct distribution of, 189; subnational governments and, 249–51; transparency of, 247
- revenue equivalence theorem, 117–18
- revenue law management, enforcement, 287, 297, 304
- revenue management law, 287, 297, 304; borrowing prohibited by, 299–300; conflict of interest, 308–9; critical issues for,

- revenue management law (*continued*)
 286–312; investment policymaking for,
 295–96; joint development and, 310–11;
 natural resource sharing and, 310–11; oil
 fund account and, 288–304; portfolio
 managers of, 296–98; Sao Tome and
 Principe's, 286–87, 290, 291*f*; stability
 issues for, 311–12; state constitutions
 and, 311–12; transparency and, 247,
 296, 305–10. *See also* natural resource
 fund
- ringfencing, 70*t*, 72, 82
- risk: expropriation, 128; minimizing Dutch
 Disease, 191; oil contract types and,
 57–58; revenue, addressing, 180–81.
See also exploration risk
- royalty, 70*t*, 126–27
- royalty bidding, 32, 33, 127
- royalty rates, 127
- royalty tax system (R/T system), 56,
 58–60, 59*t*, 65–66, 66*f*, 67*t*; ERR
 and, 75
- R/T system. *See* royalty tax system
- rule of law, 110, 260–61; practices, 94
- rulers, oil-producing countries', 270
- Russia, 37–38; privatization in, 32–33, 36,
 37–38
- SA. *See* service agreement
- Sao Tome and Principe: economy/infra-
 structure of, 179; NRF inflows/outflows
 in, 216*t*, 217–18; oil price projections of,
 293; oil revenue management in, 303*f*;
 revenue management law of, 286–87,
 290, 291*f*; 294*f*, 300, 305
- Saudi Arabia, 90; oil wealth of, 156–57
- savings: incentives against, 199–209, 213;
 NRF and, 194–99, 205–6, 213–18,
 219–27; oil revenue, 189–90
- savings index, 56, 80
- sealed round bidding, 87
- secession, 245–46, 246*t*, 250
- secrecy: governance, 331; oil industry,
 265–69. *See also* privacy
- separation of powers, 219–22; forms of,
 220
- sequential auctions: collusion in, 124;
 simultaneous v., 123–24
- service agreement (SA), 56, 62–64, 62*t*,
 63*t*, 102; fixed fee system of, 62–64, 63*t*;
 R/T systems and, 65–66, 67*t*; variable
 fee in, 64, 64*t*
- settings, auction formats for specific, 146
- settlements, 25
- shadow prices, 158; investment at current,
 country sample for, 166–67, 167*t*
- shareholders, 28–29
- Sierra Leone, GDP of, 2
- signature bonuses, 32, 71, 104, 126, 127,
 293
- simultaneous ascending auctions, 116, 133,
 134
- simultaneous first-price sealed-bid auction,
 129
- Singapore, 1
- SLD. *See* straight line decline
- sliding scales, production increase, 80–81
- Smith, Adam, 28
- social projects, 110
- social welfare, 2, 110; capital stock measur-
 ing, 158–60; GDP assessment of, 43,
 165–68, 167*t*, 168*t*, 169; indicators of,
 by region, 173, 174*t*; NNP and, 157–65;
 technology and, 168; theoretical sum-
 mary for, 165–66; World Bank data on,
 166, 170. *See also* fiscal social contract;
 public goods
- spectrum industry, auctions in, 133, 134
- speculative bidding, 134
- spending: checks and balances tied to,
 212*f*; governance/stability impacting,
 201–8; limiting oil, 183–84; military,
 13; oil fund account, 291–94; over-
 199–209; political support tied to,
 206–8; public, political advantages of,
 209; sustainable levels of, 160; taxation
 and, 263; timing/amount of, 201; uni-
 fied budgets for, 194, 224–25. *See also*
 consumption; consumption smoothing;
 public investment
- spending effect, 5
- spot price FOB, all countries, 7*f*
- stability: governance, 201–8, 209; oil con-
 tract terms, 110; revenue management
 law, 311–12; rule of law, 110
- stability clauses, 96
- stabilization fund. *See* natural resource
 fund
- state authority, 260, 261; deficits in, types
 of, 264–65; disempowered, 11–12, 96,
 259, 264–65; fiscal social contract and,
 256–79; honey pot phenomenon and,
 259–65; resource dependence and,
 259–60; taxation and, 11–12, 261

- state constitutions, revenue management law and, 311–12
- state government: checks and balances in, 211*t*; citizens and, 13, 265, 326, 330; compliance of, 218–19, 265; conflict of interest in, 101; corruption in, 26–45, 266; diversion and, 27–34; extraction control by, 39; government participation statistic and, 70*t*, 77–80; oil rights objectives of, 68; political economy in, 14, 194–227; renegotiation and, 40–41; role of, 23–45; taxation and, 278. *See also* Government Take; infrastructure; sub-national governments
- State of Alabama v. Exxon Mobil Corp.*, 25
- state-building, 260, 261
- straight line decline (SLD), 70*t*
- subadditive values, 121
- Sub-Saharan Africa: genuine investment/GDP in, 166, 167, 167*t*, 168*t*, 169; social welfare/oil production in, 174*t*
- Sudan, 246*t*
- superadditive values, 121
- sustainability, 168; spending, 160
- Taiwan, 1
- takeover, government, 222
- tax rate, 110
- taxation, 69, 70*t*, 263, 265; back-in/government participation as, 79–80; borrowing to avoid, 262; Chad's, 6; decentralization and, 249, 250; direct, 278; government and, 278; negotiating, 107, 108; profits tax system, 103–4; PSA, 61; royalty tax system, 56, 58–60, 59*t*, 65–66, 66*f*, 67*t*; R/T system, 59, 59*t*; state authority and, 11–12, 261
- technology, social welfare and, 168
- termination, oil contract, 111
- threshold problem, 125, 143
- timing: extraction, 9, 15, 35, 40; negotiation, 95–96; oil revenue, 6; payment, 42, 71; spending, oil revenues and, 201
- Timor-Leste, 216*t*, 217–18
- Timor-Leste Petroleum Fund Law, 292, 296, 300, 303*f*
- title, facilities, 65
- tracts: leasing, 31, 129, 130; types of, 130. *See also* block offerings; block size
- transparency: agency problems and, 26, 27, 44; auction, 114, 117; BP, 275; campaign for, 274–75; fiscal social contract, 256–79; governance, measures for, 208, 276–77; internet access for, 307–8; negotiation, 97–99, 324; NGO measures for, 277; oil companies v. state government, 27; oil contract, 97–99, 105–6, 306–7; political economy improved by, 222–25; public information scope of, 305–7; revenue management and, 247, 296, 305–10; spending, 208; theory v. empirics for, 331; violation prevention for, 333. *See also* information deficit
- Transparency International, 268
- Trinidad and Tobago, 74*f*, 86, 140–41, 267–68, 275
- trusts, oil fund account, 312
- Uganda, 331
- UK. *See* United Kingdom
- UN Millennium Project, 179
- uncertainty, 92, 180, 181, 267
- unified budget, political economy and, 194, 224–25
- United Arab Emirates, 2, 89
- United Kingdom (UK), genuine investment/GDP in, 166, 167*t*, 168*t*
- United Nations Human Development Index, 2, 273
- United States of America, 12, 14, 25, 28, 30–31, 32, 34, 42, 60, 68, 85, 86, 97, 108, 112, 118, 128, 168*t*, 189; auctions in, 116, 126, 129–31, 145; auctions outside, 131–32; genuine investment/GDP in, 166, 167*t*, 168*t*; Government Take in, 130; licenses of, 85; oil rights and, 129
- U.S. *See* United States of America
- U.S. Enrichment Corporation (USEC), 34
- USEC. *See* U.S. Enrichment Corporation
- valuations, 133; interdependence of, 119–20, 121–22; state, 158–59
- values: additive, 115, 121, 122; bidding and, 115; common, 119; package, 121, 137; private, 119; proxy, expression of, 144; subadditive, 121; superadditive, 121
- variable fee, 62–64, 64*t*
- Venezuela, 2, 8, 36, 38, 46, 60, 62, 84, 86, 90, 129, 199, 246, 248, 258, 263, 267–68, 269; auction formats of, 84–85, 127, 132, 146, 148; Government Take of, 74*f*
- vertical inequality: problem of, 239–41; solutions for, 241–44

violence, 260
volatility, 6–8

war, 262; Iraq, 258

wealth: investment creating, 10; oil,
156–271; resource v. other types
of, 3–4

welfare. *See* social welfare

West Africa, Government Take in, 72–73, 72*f*
wildcat tracts, 130

winner's curse, 120, 122

World Bank, 85, 169; social welfare data of,
166, 170

Yeltsin, Boris, 37

Yemen, 246*t*

