

## Index

- ACRCP. *See* Advisory Committee for the Reference Copper Price
- ACTG. *See* Advisory Committee for Trend GDP
- AFCFRF. *See* Advisory Financial Committee for Fiscal Responsibility
- agricultural sector  
   in Arab region, 82–83, 86  
   Baumol's cost disease effects for, 89–90
- Alaska Permanent Fund, 153–154
- Algeria  
   Dutch Disease in, 229  
   economic diversification in, 49–50  
   EU GDP shocks and, 32–33  
   natural gas reserves in, 325–327  
   public sector employment in, 107  
   SWFs in, 277–278
- Arab region. *See also* oil-rich countries; resource-rich economies; specific countries  
   agricultural sector in, 82–83, 86  
   booms and busts in, 12–13, 342  
   Dutch Disease in, 229  
   export concentration in, 49–50  
   export diversification in, 304  
   EXR regimes in, 303–309, 343–345  
   fiscal institutions in, 274–279  
   fiscal policy for, in oil-rich countries, 226–230  
   fiscal revenues in, 330–334  
   government revenues and expenditures in, 338  
   hydrocarbon-dependency in, 45, 229–230, 330–334  
   labor market heterogeneity in, 311–313, 315–316  
   long-term GDP growth in, 342  
   manufacturing in, 49–50, 346  
   natural resource abundance in, 304  
   public sector employment in, 82–83  
   RER undervaluation in, 57–61  
   resource dependency in, 329  
   RREs in, 1–2, 229–230, 325–334  
   value-added exports in, 329–331  
   violence in, resource curse as influence on, 338–339
- Arab Spring, 301–302
- augmented growth model, 323, 353–355
- authoritarian regimes  
   public sector employment under, 106, 113–118  
   resource-rich economies and, 120–121
- Bahrain, 19–20  
   migrant worker population in, 118  
   non-hydrocarbon exports, 159  
   oil production in, 22  
   SWFs in, 277–278
- balanced budget rule, 289–291
- Baumol's cost disease, 89–90
- booms and busts, in Arab region  
   of commodities, 349–350  
   for oil, 355  
   in real estate, 12–13
- business cycles, GVAR models for, 17–18
- CAB. *See* cyclically-adjusted balance
- CBC. *See* Central Bank of Chile
- CCEMG estimator. *See* Common Correlated Effects Mean Group estimator
- Central Bank of Chile (CBC), 232, 242, 250–251, 259
- EXRs and, 318–319

- Chile, fiscal policy institutions in, 230–266.  
*See also* fiscal committees  
 Advisory Committee for the Reference Copper Price (ACRCP), 241–243, 249–250, 264–265  
 Advisory Committee for Trend GDP (ACTG), 241–243, 248–249, 264  
 Advisory Financial Committee for Fiscal Responsibility (AFCFRF), 241–243  
 budget accountability requirements, 236–239  
 budget management practices, 232–233  
 budget planning practices, 233–234  
 CAB in, 250–252, 276–277  
 CBC, 232, 242, 250–251, 259  
 control and auditing of government accounts, 239  
 for copper prices, 244, 255  
 CRCF in, 258–259  
 ESSF and, 232  
 EXR regimes and, 314  
 fiscal councils, 240–241, 278–279  
 under Fiscal Responsibility Law of 2006, 230–232, 234  
 fiscal rules for, 234–235, 243–258, 276–277  
 GDP growth and, 244, 255  
 institutional framework for, 230–243  
 PRF and, 231–232  
 SWFs in, 231–232, 258–261
- China  
 GDP shocks in, MENA region influenced by, 18, 34–37  
 U.S. GDP shocks and, 31  
 clientelism, 107  
 commodity booms, 349–350  
 commodity price volatility  
 oil curse and, 189  
 resource curse and, 189
- Common Correlated Effects Mean Group (CCEMG) estimator, 208–211
- Comprehensive Peace Agreement (CPA), 431
- conditional convergence hypothesis, for economic growth, 197–198
- consumption  
 Engel's Law and, 89–94  
 excessive, 8, 323–325, 340, 367  
 resource curse as influence on, 349–350  
 resource rents and, 350  
 U.S. oil consumption, 22  
 copper prices, 244, 255
- Copper Revenue Compensation Fund (CRCF), 258–259  
 countercyclical fiscal policy, 8–9, 42  
 reforms for, 360–364
- CPA. *See* Comprehensive Peace Agreement
- CRCF. *See* Copper Revenue Compensation Fund
- credit growth, 12–13
- cyclically-adjusted balance (CAB), in Chile, 250–252, 276–277
- debt overhang, xix, 3, 216
- democracy  
 economic growth and, 153  
 oil curse and, 152, 189–190  
 political checks and balances and, 194–196, 212–213, 215  
 public sector wages and, 127  
 resource curse and, 189–190  
 resource rents and, 194–195  
 RREs and, 189–190  
 valuation of, 114
- depletion effects, 286–287
- development, economic. *See also* economic growth  
 in Dubai, 406  
 export sophistication and, 50–53  
 oil curse and, 150  
 resource dependency and, 45  
 in RREs, 351–353
- dictatorships. *See also* authoritarian regimes  
 resource curse under, 439
- diversification. *See* economic diversification
- domestic currencies. *See* currencies, domestic
- Dubai, UAE  
 economic development in, 406  
 economic diversification in, 98, 410  
 oil curse and, 408–412
- Dutch Disease, 4  
 in Algeria, 229  
 in Arab region, 229  
 Engel's Law and, 83  
 exchange rate overvaluation, 3, 216–217, 346–348, 426–428  
 in GCC countries, 229  
 investing in investing and, 299  
 in Kuwait, 229  
 oil curse and, 150, 191–192, 229, 380, 428–430  
 resource curse and, 343–349, 437  
 in RREs, 228

- in Saudi Arabia, 229
  - services sector influenced by, 348
  - in Sudan, 444–445
  - in UAE, 380
- in GCC countries, 346–348
  - HHI index for, 49–50
  - in MENA region, 49–50, 97–99
  - oil curse and, 150
  - for oil-exporting countries, 47–48
  - private sector employment and, 11–12
  - public sector employment as part of, 11–12
  - RER overvaluation and, 71
  - resource curse and, 343–349
  - in RPLA countries, 97–99
  - of services sector, in Arab region, 84
  - in Sudan, lack of, 426–430
- economic growth. *See also* econometric model, for economic growth
  - conditional convergence hypothesis for, 197–198
  - democracy as influence on, 153
  - determinants of, 197–199, 201
  - external shocks and, 193–194, 199, 202–205
  - financial integration in world markets and, 198
  - in GCC countries, integration strategies for, 22
  - human capital formation and, 198
  - institutional influences on, 198–199, 202
  - international trade openness and, 198
  - in oil-rich countries, 151–152
  - political checks and balances and, 194–196
  - public services and, 198–199
  - resource curse and, 203
  - resource rents and, 190, 197–213
  - in RREs, 2, 188, 228
  - stabilization policies for, 199, 202
  - structural policies as influence on, 198–199, 202
  - in Sudan, 49–50, 443–445
  - in Sudan, oil dependency as influence on, 443–445
  - TFP as measure of, 389–393
  - transitional convergence hypothesis for, 197–198, 201–202
  - in UAE, 382–395
- economic spillovers. *See* spillovers, economic
- education
  - economic growth and, 198
  - in Saudi Arabia, 174–178
  - in UAE, economic investment in, 98
- Egypt
  - economic diversification in, 49–50
  - economic trade with EU, 23
  - public sector employment in, 107
- EITI. *See* Extractive Industries Transparency Initiative
- elites
  - public sector employment and, influence on, 108–109
  - regime change influenced by, 121
  - state security apparatus and, 114–116
- employment. *See also* private sector employment; public sector employment; wages and salaries
  - labor market policies for, in Saudi Arabia, 160–161
  - oil curse and, 161–162
  - in UAE, demographics of, 386–387, 403
  - employment-to-population ratio, 164
- Engel effects, services sector and, 90–91
- Engel's Law, 83
  - consumption and, 89–94
  - GDP and, 86
  - rents influenced by, 89–94
  - services sector and, 89–94
- equilibrium RER (ERER), 55, 57–59
  - computation methods for, 77–79
- ESSF. *See* Economic and Social Stabilization Fund
- EU. *See* European Union
- Euro Area block. *See also specific countries*
  - GDP shocks in, MENA region influenced by, 32–34
  - GVAR model for, 19–20
- European Union (EU)
  - economic integration in, GCC countries influenced by, 22
  - economic trade within Maghreb region, 23
  - economic trade within Mashreq region, 23
  - fiscal councils in, 240–241
- excessive borrowing, resource curse and, 340–342

- exchange rate (EXR) regimes, 4, 55–56, 70  
 in Arab region, 303–309, 343–345  
 CBC and, 318–319  
 in Chile, 314  
 Dutch Disease, 3, 216–217, 346–348, 426–428  
 equilibrium outcomes for, 317–318, 344  
 exchange rate overvaluation, 3, 216–217,  
 344, 346–348, 426–428, 451  
 fixed, 312  
 flexible, 307–308, 312  
 labor markets and, 311–315  
 OCA, 308–309  
 pegged, 307–308  
 resource curse and, 343–345  
 in RRLA countries, 303–309  
 in RRLI countries, 303–309  
 in Sudan, 451–452  
 theoretical framework for, 311–312  
 in UAE, 395–396, 401
- export concentration  
 in Arab region, 49–50  
 export performance and, 67
- export diversification, 49–50, 97–99  
 in Arab region, 304
- export instability theory, 437
- export performance  
 empirical model of, 61–69  
 EXPY and, 66  
 HP-gap RER undervaluation and, 69  
 manufacturing exports and, 64–65  
 oil rents as influence on, 63  
 RER undervaluation and, 63–66  
 resource rents and, 64–66
- export sophistication (EXPY), 50–53  
 export performance and, 66  
 for oil-exporting nations, 62
- EXR regimes. *See* exchange rate regimes
- external shocks. *See* macroeconomic shocks
- extraction effect, 287
- Extractive Industries Transparency Initiative (EITI), 9, 11, 360
- FDI. *See* foreign direct investment
- fiscal committees, in Chile, 239–243  
 ACRCP, 241–243, 249–250, 264–265  
 ACTG, 241–243, 248–249, 264  
 establishment of, 278–279  
 forecasts by, 251
- fiscal councils, 240–241, 278–279
- fiscal institutions, 4  
 in Arab region, 274–279
- commodity revenue volatility, 189
- countercyclical fiscal policy, 8–9, 42,  
 360–364
- economic policies set by, 13
- fiscal rules, 234–235  
 ACRCP growth projections, 249–250  
 ACTG growth projections under,  
 248–249  
 adoption of, 276–277  
 budget performance under, 246–255  
 CAB and, in Chile, 250–252, 276–277  
 changes to, 246–255  
 in Chile, 234–235, 243–258, 276–277  
 elasticities of, 246  
 evaluation of, 255–258  
 in GCC countries, adoption of, 363–364  
 in Germany, 235  
 implementation of, 246–255  
 macroeconomic impact of, 255–258  
 in Norway, 268–270  
 permanent-income approach for, 243  
 policy objectives for, 243–246  
 for resource rents, 10–11  
 in Sweden, 235  
 in UAE, 399–400  
 in U.K., 235
- for oil exporting countries, 274–279
- for oil-rich countries, 274–279
- reform of, 9
- revenue smoothing, 294, 363
- in RREs, 228–229, 274–279
- structural budget balance, 11, 363, 400
- fiscal policy. *See also* Chile, fiscal policy  
 institutions in  
 countercyclical, 8–9, 42, 360–364  
 domestic institutions for, 13  
 in oil-rich countries, in Arab region,  
 226–230  
 pro-cyclical, 157, 227, 396–400  
 in RREs, 226–230  
 transparency of, 365
- Fiscal Responsibility Law of 2006, in Chile,  
 230–232, 234
- fiscal responsibility laws, 230–231
- fiscal revenues, in Arab region, 330–334
- fiscal rules, 234–235  
 ACRCP growth projections, 249–250  
 ACTG growth projections under, 248–249  
 adoption of, 276–277  
 budget performance under, 246–255  
 CAB and, in Chile, 250–252, 276–277

- changes to, 246–255  
 in Chile, 234–235, 243–258, 276–277  
 elasticities of, 246  
 evaluation of, 255–258  
 in GCC countries, adoption of, 363–364  
 in Germany, 235  
 implementation of, 246–255  
 macroeconomic impact of, 255–258  
 in Norway, 268–270  
 permanent-income approach for, 243  
 policy objectives for, 243–246  
 for resource rents, 10–11  
 in Sweden, 235  
 in UAE, 399–400  
 in U.K., 235  
 fiscal transparency, 11, 365  
 foreign aid, RER and, 56  
 foreign direct investment (FDI), in MENA region, 37–39  
 foreign labor, in Saudi Arabia, 160
- game theory  
 basic model of, 108–113  
 data for, 118–131  
 hypothesis testing in, 126–129  
 in imperfect state repression models, 131–137  
 in perfect state repression models, 136–137  
 for public sector employment, 108–118  
 robustness checks in, 129–131  
 with state repression models, 113–118  
 GCC. *See* Gulf Cooperation Council countries  
 GDP. *See* gross domestic product  
 global macroeconomic modeling, 18–27  
 Global Vector Autoregression (GVAR) model  
 for business cycle linkages, 17–18  
 data measurement errors in, 28  
 domestic variables in, 20–21  
 economic spillovers in, 27–41  
 for Euro Area block, 19–20  
 foreign variables in, 21  
 for GCC countries, 17–18  
 global variables in, 22  
 inward spillovers in, 27–37  
 macroeconomic modeling for, 18–27  
 for Maghreb region, 17  
 for Mashreq region, 17  
 for MENA region, 16–27  
 methodology for, 17–18  
 model specifications, by country, 26–27  
 nations and regions in, 19  
 for OPEC members, 18–19
- Government Pension Fund, 271–274  
 Government Pension Fund Global (GPF), 271–274  
 Government Pension Fund Norway (GPFN), 271–274  
 Government Petroleum Fund (GPF), 266–267, 271–274  
 government sector employment  
 in Saudi Arabia, 170, 172–174  
 wages and salaries for, 175, 179  
 government-related entities (GREs), 404–405  
 GPF. *See* Government Petroleum Fund  
 GPFN. *See* Government Pension Fund Global  
 GREs. *See* government-related entities  
 gross domestic product (GDP)  
 in Arab region, 342  
 in Chile, fiscal policy framework for, 244, 255  
 Chinese shocks, 18, 34–37  
 Engel's Law and, 86  
 EU shocks, 32–34  
 in GCC countries, trade ratio with, 104–107  
 oil price volatility and, 2–3, 10–11  
 in oil-rich countries, trade ratio with, 104–107  
 resource rents and, 91–92  
 in RREs, 342  
 of services sector in Arab region, 84, 93–94  
 in UAE, 384, 409  
 U.S. shocks, 28–31  
 growth, 4. *See also* economic growth  
 in oil-rich countries, 151–152  
 growth models. *See* augmented growth model  
 Gulf Cooperation Council (GCC) countries,  
 1–2. *See also* Bahrain; Kuwait; Oman;  
 Qatar; Saudi Arabia; United Arab  
 Emirates  
 asset investment in, 296–299  
 composition of exports for, 159  
 counter-cyclical fiscal policy reforms in,  
 360–364  
 currencies pegged to U.S. dollar, 150  
 Dutch Disease in, 229  
 economic diversification in, 346–348  
 economic integration in, 22  
 fiscal rules in, adoption of, 363–364  
 labor markets in, 345–346  
 MENA region and, 16  
 migrant workers in, 99, 118  
 monetary policies in, 150

- Gulf Cooperation Council (GCC) countries (cont.)
- national oil funds in, 154–156
  - natural gas reserves and production in, 325–327
  - natural resource endowments in, 325
  - need for economic diversification in, 11–12
  - oil endowments in, 149–150
  - oil price cycles and, 3–4
  - oil production in, 22, 325–327
  - oil reserves in, 325–327
  - private investment in, 297–299
  - public investment in, 297–299
  - public sector employment in, 104–107
  - rent comparisons among, 3, 118
  - resource rents and, 327–329
  - resource revenue investment by, 296–297
  - revenue price volatility and, 10–11
  - savings policies for, 288–292
  - services sector in, 84
  - SWFs in, 362–363
  - trade/GDP ratios in, 104–107
  - volatility of government revenues in, management of, 292–295
  - wages per capita in, 118
- GVAR model. *See* Global Vector Autoregression model
- Herfindahl-Hirschman index (HHI), 49–50
- for oil exporters, 62
- HP-gap RER, 69
- human capital. *See also* education
- economic growth and, 198
  - oil curse and, 381
  - in UAE, 390
- hydrocarbon-dependency. *See also* resource dependency
- in Arab countries, 45, 229–230, 330–334
- imperfect state repression models, 131–137
- endogenous probability in, 133–135
  - regime change and, 134
- impulse responses, 31–32, 41
- income inequality, in Saudi Arabia, 157–158
- incomes. *See also* income inequality; oil incomes
- defined, 378
- industrial policy (IP), 12
- inefficient specialization hypothesis, 192–193
- inflation, in UAE, 405
- institutions. *See also* Chile, fiscal policy institutions in; fiscal institutions; Norway, fiscal policy institutions in
- domestic, fiscal policy influenced by, 13
  - economic growth influenced by, 198–199, 202
  - oil curse and, 151–158, 380–381
  - in oil exporting countries, 274–279
  - resource curse as institutional curse, 323, 334–339, 365–368
  - in RREs, 228–229, 274–279
  - in Sudan, 229–230
  - weak, 46, 152–156
- integrated budget rule, 289
- International Budget Partnership, 237
- international business cycles, 17
- intertemporal commitments. *See* political checks and balances
- investing in investing, 10, 297–299
- investment strategies, 4
- Dutch Disease and, 299
  - in oil-rich countries, 13
  - resource rents and, 13–14, 350
  - with SDF, 10
  - SWF and, 13
- IP. *See* industrial policy
- Iran, 23
- Iraq, services sector in, 99
- Italy, 19–20
- Jordan
- economic trade with EU, 23
  - public sector employment in, 107
  - as resource-poor country, 88–89
- kafala* system, 393–395, 414–415
- Kuwait, 19–20
- Dutch Disease in, 229
  - migrant worker population in, 118
  - national oil funds in, 154–156
  - oil production in, 22, 325–327
  - oil reserves in, 325–327
  - public sector employment in, 107
  - services sector in, 99
  - SWFs in, 277–278
- labor force participation
- defined, 164
  - in Saudi Arabia, 164–166, 168
- labor markets. *See also* government sector employment; private sector employment; public sector employment

- in Arab region, heterogeneity of, 311–313, 315–316
- economic shocks and, 312–313
- employment-to-population ratio, 164
- expatriate workers, 302, 306, 309, 345–346
- EXR regimes and, 311–315
- in GCC countries, 345–346
- heterogeneity of, 311–313, 315–316
- under *kafala* system, 393–395, 414–415
- national labor force, 312
- oil curse and, 151, 158–162, 181–183
- patronage and, 109–110
- population demographics as influence on, 158–160
- reservation wage, 160
- resource curse and, 324
- in RRLA countries, 302, 306
- in RRLI countries, 302, 306
- in Saudi Arabia, 151, 162–176
- segmentation of, 108–118, 324
- in UAE, 387–389
- unemployment rate, 150, 162–176
- LDCs. *See* less developing countries
- League of Arab States, 1
- Lebanon, services sector in, 99
- less developing countries (LDCs), 435–437
- Libya
  - economic trade with EU, 23
  - services sector in, 99
  - SWFs in, 277–278
- linkage theory, for resource curse, 436
- low democracy, 217
- low political checks and balances, 217
- macroeconomic modeling, 17. *See also*
  - augmented growth model
  - global, 18–27
  - for GVAR, 18–27
- macroeconomic shocks
  - in China, 18, 34–37
  - economic growth and, 193–194, 199, 202–205
  - in Euro Area block, MENA region
    - influenced by, 32–34
  - labor markets and, 312–313
  - social conflicts and, 194
  - in UAE, 396–400, 405–407
  - in U.S., 28–31
- Maghreb region. *See also* Algeria; Libya; Mauritania; Morocco; Tunisia
  - China and, as economic trade partner, 23
  - EU and, as economic trade partner, 23
  - GVAR model for, 17
- manufacturing, 49–50
  - in Arab region, 346
  - export performance and, 64–65
  - in RREs, 346
- manufacturing value added (MVA), 50
- Mashreq region. *See also* Egypt; Jordan; Syria
  - economic trade with EU, 23
  - GCAR model for, 17
- Mauritania, economic trade with EU, 23
- MENA oil exporters (MENAEX), 39–41
- microeconomic regulations, in services sector, 95–97, 100
- Middle East. *See also* Arab region; Gulf Cooperation Council countries; Middle-Income Middle East States; oil-rich countries
  - authoritarian regimes in, 113–118
  - public sector employment models in, 108–118
- Middle East and North Africa (MENA) region.
  - See also specific countries*
  - Chinese GDP shocks as influence on, 18, 34–37
  - economic diversification in, 49–50, 97–99
  - economic spillovers in, 27–41
  - EU GDP shocks as influence on, 32–34
  - FDI in, 37–39
  - GCC countries and, 16
  - GVAR model for, 16–27
  - industrial performance in, 51
  - MENAEX, 39–41
  - mining sector in, 88–89
  - RPLA countries in, 97–99
  - trade weights in, 23–26
  - U.S. GDP shocks as influence on, 28–31
- Middle-Income Middle East States (MIMES), 284–285
  - asset investment in, 296–299
  - OECD countries compared to, 285
  - permanent incomes in, 285–286
  - private investment in, 297–299
  - public investment in, 297–299
  - resource revenue investment by, 296–297
  - savings policies in, 285–295
  - volatility of government revenues in,
    - management of, 292–295
- migrant workers, in GCC countries, 99, 118
- MIMES. *See* Middle-Income Middle East States
- mining sector, in MENA region, 88–89

- Morocco  
 economic trade with EU, 23  
 as resource-poor country, 88–89  
 MVA. *See* manufacturing value added
- national oil funds, 154–156  
 National Resource Charter (NRC), 9, 360  
 fiscal transparency and, 11  
 natural gas reserves, production and, in GCC countries, 325–327  
 natural resource curse. *See* resource curse  
 NBIM. *See* Norges Bank Investment Management  
 neoclassical growth theory, 436–437  
 non-tradable services, 100  
 Norges Bank Investment Management (NBIM), 272  
 Norway, fiscal policy institutions in, 266–274  
 economic growth under, 270  
 fiscal rules, 268–270  
 government budget performance and, 270–271  
 Government Pension Fund in, 271–274  
 Government Petroleum Fund and, 266–267, 271–274  
 GPF in, 271–274  
 GPFN in, 271–274  
 institutional framework for, 266–268  
 NBIM and, 272  
 objectives of, 267–268  
 SWFs in, 253–268, 271–274  
 NRC. *See* National Resource Charter
- OCA. *See* Optimum Currency Area  
 OECD countries. *See* Organisation for Economic Co-operation and Development countries
- oil, production of  
 commodity price volatility influenced by, 41  
 in GCC countries, 22, 325–327  
 in Sudan, development history for, 422–424  
 in UAE, 22, 325–327, 374  
 for U.S. consumption, 22  
 oil booms, 355  
 oil curse. *See also* resource curse  
 causes of, 413  
 commodity price volatility, 189  
 democracy and, 189–190  
 democratic regimes and, 152  
 in Dubai, 408–412  
 Dutch Disease and, 150, 191–192, 229, 380, 428–430  
 economic development and, 150  
 economic diversification and, 150  
 economic volatility, 203–204, 323–325, 380  
 employment and, 161–162  
 employment policies and, 160–161  
 excessive borrowing, 340–342  
 excessive consumption, 8, 323–325, 340, 367  
 human capital and, 381  
 income inequality and, 157–158  
 inefficient specialization hypothesis for, 192–193  
 institutions and, 151–158, 380–381  
*kafala* system and, 393–395, 414–415  
 labor markets and, 151, 158–162, 181–183  
 Norway and, avoidance strategies for, 412  
 oil price volatility and, 150, 192  
 oil prices and, 2, 189  
 patronage and, 109–110  
 physical capital and, 381  
 political checks and balances, 194–196, 212–215, 217  
 political economy of, 191  
 political stability, 336–337, 404  
 private sector employment and, 150  
 public sector employment and, 156–157  
 rent transfers and, 156–157  
 RER and, 191–192  
 resource rents and, 151, 188  
 for Saudi Arabia, 157–162  
 status quo and, 153  
 as theory, development of, 191–196, 323–325, 435–440  
 in UAE, 377–382, 408–414  
 unemployment and, 150  
 voracity effect, 335–336  
 in Yemen, 229–230
- oil cycles, 12–13  
 causality testing for, 449  
 forecast error variance for, 450  
 in Sudan, fiscal response to, 447–450
- oil dependency. *See* resource dependency
- oil endowments  
 in GCC countries, 149–150  
 in Saudi Arabia, 149–150  
 sustainability of, 157–158  
 welfare spending and, 159
- oil exporters. *See also* Gulf Cooperation Council countries; Organization of the Petroleum Exporting Countries  
 economic diversification for, 47–48  
 empirical performance model for, 61–69

- EXPY for, 62  
 fiscal institutions for, 274–279  
 HHI for, 62  
 oil-dependent economies for, 47–53  
 public sector employment and, 106  
 RER undervaluation and, 57–61  
 UAE as, 382–395
- oil incomes, 149–150  
 endowment effect and, 159–160  
 national oil funds and, 154–156  
 in Nigeria, redistribution of, 153–154  
 sustainability of, 157–158  
 tax schemes for, 154
- oil prices  
 GCC and, 3–4  
 GDP and, 2–3  
 in Nigeria, 192  
 oil curse and, 2, 150, 189, 192  
 resource curse and, 189  
 SWF and, 10–11  
 in UAE, 400–407  
 in Venezuela, 192  
 volatility of, 2–3, 10–11, 150, 192
- oil rents  
 export performance influenced by, 63  
 in Sudan, 229–230, 452–455  
 in UAE, 395–407
- oil reserves, in GCC countries, 325–327
- oil rights, auctioning of, 193
- oil wealth, 4, 45, 150, 153, 160–161, 253–268, 336, 358, 383–384
- oil-rich countries. *See also* Gulf Cooperation Council countries; Organization of the Petroleum Exporting Countries; specific countries  
 Dutch Disease in, 229  
 fiscal indicators in, 276  
 fiscal institutions for, 274–279  
 fiscal policies in, 226–230  
 growth in, 151–152  
 investment strategies in, 13  
 monetary policies in, 150  
 public sector wages in, 104–108  
 rent distribution in, 13–14  
 resource curse in, 226–227  
 trade/GDP ratios in, 104–107
- OPEC. *See* Organization of the Petroleum Exporting Countries
- open economies, 129–131
- optimal savings rule, 291
- Optimum Currency Area (OCA), 308–309
- Organisation for Economic Co-operation and Development (OECD) countries, 285
- Organization of the Petroleum Exporting Countries (OPEC), 1  
 GVAR model for, 18–19
- Pan Arab Free Trade Agreement (PAFTA), 95
- patronage, political, 109–110
- PEFA framework. *See* Public Expenditure and Financial Accountability framework
- pegged EXR regimes, 307–308
- Pension Reserve Fund (PRF), 231–232
- perfect state repression models, 136–137
- permanent incomes, 285–286
- PFM system. *See* Public Financial Management system
- physical integrity rights, 120
- political checks and balances  
 democracy and, 194–196, 212–213, 215  
 low, 217  
 resource curse and, 214
- political economy, 13–14, 104. *See also* government sector employment; public sector employment  
 of oil curse, 191
- political patronage. *See* patronage, political
- populous group countries. *See also* Algeria; Arab region; Sudan; Syria; Yemen  
 resource curse in, 323, 365–368
- PRF. *See* Pension Reserve Fund
- private sector employment  
 economic diversification and, 11–12  
 oil curse and, 150  
 in Saudi Arabia, 158, 169–172  
 wages and salaries for, 118–119, 169–173
- pro-cyclical fiscal policy, 157, 227  
 in UAE, 396–400
- product spaces (PS), 12
- Public Expenditure and Financial Accountability (PEFA) framework, 441
- Public Financial Management (PFM) system, 441
- public procurement, 365
- public sector employment  
 in Arab region, 82–83  
 under authoritarian regimes, 106, 113–118  
 clientelism and, 104–107  
 democracy as influence on wages, 127  
 in economic diversification, 11–12  
 elites and, 108–109  
 in GCC countries, 104–107

- public sector employment (cont.)  
 hypothesis testing for, 126–129  
 in Middle East, 108–118  
 for migrant workers, 99, 118  
 oil curse and, 156–157  
 in oil-rich countries, wages for, 104–108  
 open economies and, 129–131  
 political patronage and, 109–110  
 reservation wage and, 160  
 resource rents and, 107, 142–146  
 in RREs, 107, 118–120  
 in Saudi Arabia, 158  
 state repression and, 106, 113–118  
 theoretical model for, 108–118  
 trade openness and, 129–131  
 wages for, 104–108, 118–119, 128, 130  
 public services, economic growth and, 198–199
- Qatar, 19–20  
 migrant worker population in, 118  
 oil production in, 22  
 SWFs in, 277–278
- real estate, 100  
 Real Estate Development Fund, 178  
 real exchange rates (RER)  
 appreciation, 56–57  
 assessment of, 45–46  
 by country, 74–77  
 depreciation, 56–57  
 economic diversification and, 71  
 empirical model of, 55–61  
 ERER, 55, 57–59, 77–79  
 estimation methods, 55–56, 71  
 export performance and, 63  
 foreign aid and, 56  
 HP-gap, 69  
 long-run determinants of, 64–65  
 misalignment series for, 70, 77–79  
 oil curse and, 191–192  
 regression analysis variables for, 72–73  
 resource rents and, 55  
 short-run determinants of, 64–65  
 undervaluation of, 46–47, 57–61, 63–67
- regime change  
 as collective action, 134  
 elites' influence on, 121  
 imperfect state repression models and, 134  
 probability variables for, 121–123, 125, 146  
 resource rents and, 122–124  
 regimes. *See also* exchange rate regimes  
 authoritarian, 106, 113–118, 120–121  
 remittances, 37–39  
 rent distribution, in oil-rich countries, 13–14  
 rent transfers  
 oil curse and, 156–157  
 resource curse and, 337–338  
 rentier states, 8, 336–337, 438  
 rents. *See also* resource rents  
 distribution of, 3, 13–14  
 Engel's Law as influence on, 89–94  
 in GCC countries, 3, 118  
 RER. *See* real exchange rates  
 reservation wage, 160  
 resource curse, 2–4, 188–191. *See also* oil curse  
 contagion channel of, 203–204  
 counter-cyclical fiscal policy reforms and,  
 360–364  
 democracy and, 189–190  
 under dictatorships, 439  
 Dutch Disease and, 343–349, 437  
 economic diversification and, 343–349  
 economic growth and, 203  
 economic variables for, 368–369  
 economic volatility and, 340–342  
 excessive borrowing and, 340–342  
 excessive consumption and, 349–350  
 export instability theory and, 437  
 EXRs and, 343–345  
 fiscal linkages in, 436  
 fiscal policy transparency and, 365  
 heterogeneity of, 212–217  
 hypothesis testing for, 353–359  
 as institutional curse, 323, 334–339, 365–368  
 institutional reform as answer to, 359–365  
 labor market segmentation and, 324  
 linkage theory for, 436  
 macroeconomic manifestations of, 324,  
 340–350  
 methodology of, 440–443  
 modernization effects of, 339  
 neoclassical growth theory and, 436–437  
 oil prices and, 189  
 political checks and balances and, 214  
 poor political institutions and, 358  
 in populous group countries, 323, 365–368  
 public procurement transparency and, 365  
 public spending efficiency reforms and,  
 364–365  
 rent transfers and, 337–338  
 rentier states and, 336–337, 438  
 resource rents and, 213

- in RREs, 226–227
- in Sudan, 440–443
- as theory, development of, 191–196, 323–325, 435–440
- violence and, 338–339
- voracity effect in, 335–336
- resource dependency, 1–2. *See also* resource-dependent countries
  - in Arab region, 329
  - economic development and, 45
  - in Sudan, 49–50, 424–428, 443–445, 455–456
- resource depletion
  - depletion effects, 286–287
  - extraction effects in, 287
  - permanent income frameworks for, 285–286
  - in savings policies, 285–292
- resource extraction industries, 174
- resource management, 9, 152, 339, 359–360
- resource rents, 3–4
  - clientelism and, 107
  - defining methodology for, 194–195
  - democracy and, 194–195
  - economic growth influenced by, 190, 197–213
  - export concentration and, 67
  - export performance and, 64–66
  - fiscal rules for, 10–11
  - in GCC countries, 327–329
  - GDP percentages and, 91–92
  - global averages for, 378
  - government consumption and, 350
  - investment and, 13–14, 350
  - investment strategies with, 13–14
  - from natural resources, 82–83
  - oil curse and, 151, 188
  - public sector employment and, 107, 142–146
  - regime change and, 122–124
  - RER and, 55
  - resource curse and, 213
  - in RREs, 3, 226–227
  - services sector and, 91–94
  - in UAE, 375, 378–379
  - wages and, by country, 142–146
- resource-dependent countries, 118, 137. *See also* Sudan
  - authoritarian regimes and, 120–121
  - public sector employment in, 107, 118–120
  - wages in, for public sector employment, 105
- resource-poor labor-abundant (RPLA) countries. *See also* Rwanda
  - contract-based services in, 97–99
  - economic diversification in, 97–99
  - in MENA region, 97–99
  - services sector in, 84
- resource-rich economies (RREs). *See also* Chile; Gulf Cooperation Council countries; Norway; oil curse; oil-rich countries; resource curse
  - in Arab region, 1–2, 229–230, 325–334
  - authoritarian regimes and, 120–121
  - democracy in, 189–190
  - Dutch Disease in, 228
  - economic growth in, 2, 188, 228
  - economic policy failures in, 2–3
  - economic volatility in, 340–342
  - excessive borrowing in, 340–342
  - financial development in, 351–353
  - fiscal policies in, 226–230
  - fiscal pro-cyclicality in, 227
  - government revenues and expenditures in, 338
  - long-term GDP growth in, 342
  - macroeconomic volatility in, 228
  - manufacturing in, 346
  - open economies in, 129–131
  - overview of, 325–334
  - permanent incomes in, 285–286
  - political and fiscal institutions in, 228–229, 274–279
  - political checks and balances in, 194–196
  - public sector employment in, 105, 107, 118–120
  - resource curse in, 226–227
  - resource rents in, 3, 226–227
  - resource-price reversals in, 227
  - savings policies in, 285–295
  - services sector in, 100–101
  - sustainability of, 227
  - SWFs in, 277–278
  - wages in, for public sector employment, 105
- resource-rich labor-abundant (RRLA) countries. *See also* Sudan
  - Algeria, 32–33, 49–50, 107, 229, 277–278, 325–327
  - economic structure of, 303–305
  - export diversification in, 304
  - EXR regimes in, 303–309
  - fixed EXR regimes in, 312
  - labor markets in, 302, 306
  - natural resource abundance in, 304
  - pegged EXR regimes in, 308

- resource-rich labor-abundant (RRLA) countries (cont.)  
 selected economic indicators for, 305  
 Syria, 23, 33, 99  
 Yemen, 229–230
- resource-rich labor-importing (RRLI) countries  
 economic structure of, 303–305  
 export diversification in, 304  
 EXR regimes in, 303–309  
 flexible EXR regimes in, 312  
 labor markets in, 302, 306  
 natural resource abundance in, 304  
 pegged EXR regimes in, 308  
 selected economic indicators for, 305
- RPLA countries. *See* resource-poor labor-abundant countries
- RREs. *See* resource-rich economies
- RRLA countries. *See* resource-rich labor-abundant countries
- RRLI countries. *See* resource-rich labor-importing countries
- salaries. *See* wages and salaries
- SAMA. *See* Saudi Arabia Monetary Agency
- SAR. *See* Saudi Credit and Savings Bank
- Saudi Arabia, 19–20  
 demographics, 162–169  
 Dutch Disease in, 229  
 economic indicators, 155  
 educational profile of, 174–178  
 employment policies in, 160–161  
 employment wages and salaries in, 169–174  
 employment-to-population ratio in, 164  
 endowment effect in, 159–160  
 fiscal indicators, 156  
 foreign labor in, 160  
 government sector employment in, 170, 172–174  
 income inequality in, 157–158  
 labor force participation in, 164–166, 168  
 labor markets in, 151, 162–176  
 migrant worker population in, 118  
 non-hydrocarbon exports, 159  
 non-Saudi unemployment rates in, 166–169  
 oil curse for, 157–162  
 oil endowments in, 149–150  
 oil production in, 22, 325–327  
 oil reserves in, 325–327  
 population, 162  
 population demographics in, 158–160  
 private sector employment in, 158, 169–172  
 public sector employment in, 158  
 Royal Decrees of 2011, 161–162, 176–180, 183–184  
 SAR, 178–180  
 unemployment rates in, 166–169
- Saudi Arabia Monetary Agency (SAMA), 154–155, 179
- Saudi Credit and Savings Bank (SAR), 178–180
- savings policies  
 asset investment, 296–299  
 balanced budget rule for, 289–291  
 complexity of, 287–288  
 depletion effects, 286–287  
 extraction effects and, 287  
 for GCC countries, 288–292  
 implications for rules of, 288–292  
 integrated budget rules for, 289  
 offsetting depletion principles, 285–292  
 optimal savings rule, 291  
 for resource-rich countries, 285–295  
 volatility management as part of, 292–295
- SDF. *See* Sovereign Development Fund
- services sector, in Arab region  
 determinants of, 94  
 Dutch Disease as influence on, 348  
 economic diversification of, 84–89  
 economic growth of, 84–85  
 Engel effects and, 90–91  
 Engel's Law and, 89–94  
 in GCC countries, 84  
 GDP and, 84, 93–94  
 in Iraq, 99  
 in Kuwait, 99  
 in Lebanon, 99  
 in Libya, 99  
 microeconomic regulations in, 95–97, 100  
 migrant workers for, 99  
 non-tradable, 100  
 public, 198–199  
 real estate in, 100  
 resource rents and, 91–94  
 in RPLA countries, 84  
 in RREs, 100–101  
 STRI calculations for, 95–96  
 in Syria, 99  
 trade performance of, 84–85  
 in UAE, 99
- services trade restrictiveness index (STRI), 95–96
- shocks. *See* macroeconomic shocks

- social capital, in UAE, 375, 382
- social security funds, 154
- South Sudan, 422
- Sovereign Development Fund (SDF), 10, 364  
 investment strategies with, 10  
 public spending and, 364–365
- sovereign wealth funds (SWF), 10, 236  
 adoption of, 277–278  
 in Chile, 231–232, 258–261  
 Economic and Social Stabilization Fund, 232  
 Economic and Social Stabilization Fund (ESSF), 232  
 in GCC countries, 362–363  
 government assets, 236, 244, 258–261  
 Government Pension Fund, 271–274  
 Government Petroleum Fund, 266–267, 271–274  
 GPFG, 271–274  
 GPFN, 271–274  
 investment strategies and, 13  
 liability management, 236  
 net foreign assets of, 258–261  
 in Norway, 253–268, 271–274  
 oil price volatility, 10–11  
 PRF, 231–232  
 in RREs, 277–278  
 U.S. returns on, 262
- spillovers, economic  
 FDI and, 37–39  
 in GVAR model, 27–41  
 inward, 27–37  
 in MENA region, 27–41  
 outward, 37–41
- state repression models. *See also* authoritarian regimes  
 game theory and, 113–118  
 for imperfect state repression, 131–137  
 for perfect state repression, 136–137  
 public sector employment and, 106, 113–118
- state security apparatus  
 under authoritarian regimes, 113–118  
 elites and, 114–116  
 with imperfect state repression, 131–137
- STRI. *See* services trade restrictiveness index
- Sudan  
 budget credibility in, 445–446  
 Comprehensive Peace Agreement, 431  
 CPA in, 431  
 decline of cotton industry in, 426–430  
 Dutch Disease in, 444–445  
 economic diversification in, 49–50  
 economic growth in, oil dependency as influence on, 49–50, 443–445  
 economic performance in, historical development of, 424–435  
 EXR regime in, 451–452  
 fiscal and political institutions in, 229–230  
 fiscal management challenges in, 445  
 government budget allocations in, by spending category, 453  
 government expenditures in, 430–432  
 lack of economic diversification in, 426–430  
 oil cycle in, fiscal response to, 447–450  
 oil dependency in, 49–50, 424–428, 443–445, 455–456  
 oil production in, development history for, 422–424  
 oil rents in, 229–230, 452–455  
 resource curse hypothesis for, 440–443  
 security expenditures in, 454–455  
 sustainability, 9  
 of fiscal policy, in RREs, 227  
 of oil endowments, 157–158  
 of oil incomes, 157–158  
 of RREs, 227  
 of wages and salaries, 157–158
- Sweden, fiscal rules in, 235
- SWF. *See* sovereign wealth funds
- Syria  
 economic trade with EU, 23  
 EU GDP shocks as influence on, 33  
 services sector in, 99
- tax schemes, for oil incomes, 154
- total factor productivity (TFP), 389–393
- trade, economic  
 in Maghreb region, 23  
 in Mashreq region, 23  
 in MENA region, 23–26  
 openness of, public sector employment as influence on, 129–131
- trade openness  
 economic growth and, 198  
 public sector employment as influence on, 129–131
- transitional convergence hypothesis, for economic growth, 197–198, 201–202
- transparency. *See* fiscal transparency
- Tunisia  
 economic diversification in, 49–50  
 economic trade with EU, 23  
 as resource-poor country, 88–89

- UAE. *See* United Arab Emirates
- U.K. *See* United Kingdom
- undervaluation, of RER, 46–47, 57–61, 63–67  
 HP-gap, 69
- unemployment  
 oil curse and, 150  
 in Saudi Arabia, 166–169  
 Saudi labor markets and, 162–176
- United Arab Emirates (UAE), 19–20. *See also*  
 Abu Dhabi; Dubai  
 Ajman, 409–410  
 annual wages in, 402  
 currency overvaluation in, 400–405  
 currency union efforts in, 396  
 Dutch Disease in, 380  
 economic diversification in, 49–50, 98  
 economic growth and productivity in,  
 382–395  
 economic indicators for, by emirate, 408  
 employment in, demographics of, 386–387,  
 403  
 expatriates in, 379  
 EXR regime in, 395–396, 401  
 fiscal expenditures in, 400–405  
 fiscal pro-cyclicality in, 396–400  
 fiscal rules in, 399–400  
 foreign shocks in, 405–407  
 GDP growth rates in, 384, 409  
 GREs in, 404–405  
 human capital in, 390  
 inflation in, 405  
 investment in education in, 98  
*kafala* system in, 393–395, 414–415  
 labor markets in, 387–389  
 lack of monetary policy in, 405–407  
 locals in, 379  
 macroeconomic policies in, 395–407  
 migrant worker population in, 118  
 national oil funds in, 154–156  
 non-hydrocarbon exports, 159  
 oil curse hypothesis for, 377–382, 413–414  
 oil exports, 382–395  
 oil price shocks in, 396–400  
 oil pricing for, 400–407  
 oil production in, 22, 325–327, 374  
 oil rents in, 395–407  
 oil reserves in, 325–327  
 overview of, 374–376  
 resource rents in, 375, 378–379  
 services sector in, 99  
 social capital in, 375, 382  
 SWFs in, 277–278  
 TFP in, 389–393
- United Kingdom (U.K.), fiscal rules in, 235
- United States (U.S.)  
 GDP shocks, 28–31  
 GVAR model for, 26–27  
 monetary policies in, 150  
 oil consumption by, 22  
 returns of SWFs, 262
- value-added exports, 329–331
- Venezuela, oil price volatility in, 192
- vertical public policy, 12
- volatility, of government revenues. *See also*  
 commodity price volatility  
 in GCC countries, 292–295  
 inter-year, 293–295  
 intra-year, 292–293  
 macroeconomic, of RREs, 228  
 management of, in savings policies, 292–295  
 in MIMES, 292–295  
 of oil prices, 2–3, 10–11, 150, 192
- voracity effect, 335–336
- wages and salaries  
 democracy as influence on, 127  
 in GCC countries, 118  
 for government sector employment, 175, 179  
 in oil-rich countries, 104–108  
 for private sector employment, 118–119,  
 169–173  
 for public sector employment, 104–108,  
 118–119, 128, 130  
 in resource dependent countries, 105  
 resource rents and, by country, 142–146  
 in RREs, 105  
 in Saudi Arabia, 169–174  
 sustainability of, 157–158  
 in UAE, 402
- wealth funds. *See also* sovereign wealth funds  
 national oil funds, 154–156  
 social security funds, 154
- welfare spending, 8, 159, 180
- Yemen, oil curse in, 229–230