

Index

• A •

absolute advantage, 75
abstracting, 18
accounting profits, economic versus, 198–199
actual expenditures, 115–116, 119–120, 122
actual investment, 117
AD (aggregate demand) curve, 102
advantage, comparative, 74–76, 318
adverse selection, 307
aggregate demand
 shift, adjusting to recession, 104–105
 shocks, inventory and, 115
 stimulating, 126
aggregate demand (AD) curve, 102
agriculture
 competition, 195
 inflation, 84
 price supports, 174
Akerlof, George, 301
allocatively efficient profit-maximizing firms, 16
altruism, 25–26
ancient living standards, 10
animal extinction, 297
anticipation
 failure to stimulate economy, 131–132
 inflation, 95
 monetary policy, 85
 rational expectations, 133
antitrust laws, 279–280
Arrow, Kenneth, 320
assets
 GDP, 61
 international trade, 73–74
 money as, 138
asymmetric information
 described, 17, 299
 insurance, 305–308

 trade, limiting, 300–301
 used car market, 301–305
AT&T (American Telephone and Telegraph Corporation), 262–263
automobile production, 292
automobiles, market for used. *See* used car market
autonomous expenditures, 118
average costs
 marginal versus, 33–34
 monopolies, 250–251
 total, 204–205
 variable, of labor, 202–203
average total cost, monopolies, 250–251

• B •

balance, trade, 71
balanced budget, 69
barriers, trade, 327
barter system, 80
Becker, Gary, 322
behavior and scarcity, 23
benefits
 capturing all, 221–222
 safety innovations, marginalism and, 328–329
bi-metallic standard, 84
birthrates, falling, 326
bonds
 Federal Reserve bank purchase of, 145
 government borrowing through, 69, 135–137
 monetary policy, 141–142
 price link to interest rates, 142–143
borrowing money
 deferred payment standard, 86
 government spending, 135–136
 hyperinflation and, 83
 national debt, 136
broadcast television, 311

- Bryant, William Jennings, 84
 budget, balanced, 69
 budget deficits
 balanced budget and, 69
 future tax revenues, 136–137
 national debt and, 136
 printing money, 137–138
 budget surplus, 69
 Bureau of Labor Statistics CPI Web site, 88
 business cycle, 98–99
 buyer
 asymmetric information, 17, 299
 behavior and scarcity, 23
 buying as much as possible, 181–183
 cardinal versus ordinal utility, 176–177
 constrained optimization, 176
 decision-making, 180
 diminishing marginal utility, 177–180
 final choice, making, 29–30
 happiness, maximizing, 25–26
 human behavior modeling, 24
 insurance, 305–308
 interest rates, 145
 irrationality, 32–34
 limitations, 27–29
 marginal utility, 31
 measuring happiness, 25
 numerous in competitive market, 221
 per dollar marginal utility, equalizing, 186–188
 scarcity and choices, 13
 trade, limiting, 300–301
 two goods, allocating money between, 183–186
 uninformed decision-making, 31–32
 used car market, 301–305
 buyer surplus
 continuous goods, measuring, 226–228
 defined, 225
 discrete goods, measuring, 225–226
- C ●
- C (consumption expenditures), in GDP, 65, 66–67
 cable television monopolies, 257
 cancer research, 312
 capital equipment, 61, 145
 cardinal utility, 176
 cars, market for used
 asymmetric information, 301–305
 expert opinions, getting, 304–305
 poor quality, reasons for, 301–302
 quality, driving from market, 302–303
 reputation, building, 304
 warranty, offering, 303–304
 cartel
 collusion, difficulties of, 268–269
 coordinating, 268
 described, 268
 Prisoner’s Dilemma, 275–279
 quotas, enforcing, 278–279
 as strategic situation, 270
 cash, holding, 140–141
 ceilings, price, 171–172
 circular flow diagram
 GDP, 62–63
 households and firms, 59
 coercion
 cartel quotas, 278–279
 threats in Prisoner’s Dilemma, 275
 coins, 81
 collusion
 difficulties of, 268–269
 outcome, 267
 trust-busting, 280
 command economy, 47
 commercials, television, 311
 common good, self-interest promoting, 26
 Commons, Tragedy of
 environmental problems and poor property rights, 297–298
 overgrazing commonly owned field, 296–297
 comparative advantage, 74–76, 318
 competition
 accounting versus economic profits, 198–199
 cost structure, analyzing, 199–207
 insurance rates, 306
 invisible hand theory, 16
 lack of, problems with, 16–17
 microeconomics, 16
 monopolies, breaking into several firms, 262–263

- new, profit limits and, 281
- price, limits on, 208
- price takers and quantity makers, 196–197
- redundant, monopolies discouraging, 257–258
- requirements, 195–196
- competition, imperfect
 - collusion and competition, outcomes of, 267
 - described, 195, 266
 - product differentiation, benefits of, 280–281
 - profit limits, facing, 281–286
- competitive free markets
 - benefits of, 219–220
 - causes and consequences of, 235–236
 - costs and benefits, comparing through supply and demand, 222–223
 - deadweight losses, 230–235
 - gains, total surplus measuring, 225–230
 - process, 236–238
 - profits guiding firm entry and exit, 238–242
 - properly functioning, prerequisites for, 220–222
 - public goods, providing, 336–337
 - responsiveness, 329
 - socially optimal output level, 224
- complementary goods, 192
- composition, fallacy of, 328
- confession, in Prisoner's Dilemma, 271
- constrained maximization, 321
- constrained optimization, 176
- consumer choices
 - behavior and scarcity, 23
 - final choice, making, 29–30
 - happiness, maximizing, 25–26
 - human behavior modeling, 24
 - interest rates, 145
 - irrationality, 32–34
 - limitations, 27–29
 - marginal utility, 31
 - uninformed decision-making, 31–32
- Consumer Price Index (CPI)
 - forecasting, 94–95
 - forming, 87–92
- consumer surplus
 - continuous goods, measuring, 226–228
 - defined, 225
 - discrete goods, measuring, 225–226
- consumption expenditures (C), in GDP, 65, 66–67
- continuous goods, measuring, 226–228
- coordinating cartel, 268
- corn laws, 74
- costs
 - benefits, comparing through supply and demand, 222–223
 - capturing all, 221–222
 - comparative advantage, 76
 - criminal behavior, 322
 - curves, crossing, 205–207
 - fixed, 199, 203
 - imposed on others, 290–291
 - lowering in natural monopolies, 258
 - negative externalities, 293
 - per unit of output, 200–202
 - private versus common field, 296–297
 - profits and wages, 110–111
 - supply curve shifts, 161–163
 - total, average, 204–205
 - total exceeding total revenues, 216
 - variable, 199–200, 202–203
 - variable exceeding total revenues, 214–216
 - zero and minimum production, 240–241
- costs, marginal
 - average, confusing, 33–34
 - decision-making, 207–208
 - described, 205
 - losses, visualizing, 213–214
 - marginal revenue, equaling, 208–210
 - monopolies, 250–251
 - pricing, 262
 - profits, visualizing, 210–212
- costs, opportunity
 - demand, slope of curve, 156–157
 - as limitation, 28–29
 - profits, 198
- coupon payments, bond, 142
- CPI (Consumer Price Index)
 - forecasting, 94–95
 - forming, 87–92

- criminal behavior
 - confessing versus remaining silent, 271
 - cost and benefit modeling, 322
 - dominant strategy, determining, 272–273
 - duopoly, 270
 - lousy outcome, realizing, 273
 - payoff matrix, 271–272
 - threats shifting payoff, 274–275
 - Croesus, King of Lydia, 81
 - cross-price effects, 191
 - currency
 - coins and paper money, development of, 81
 - fiat system versus gold standard, 81
 - printing, problem with, 82, 137
 - cycle, business, 98–99
- D •
- dampening inflationary expectations, 147–148
 - deadweight loss
 - described, 230
 - monopolies, harm caused by, 255–256
 - price ceiling, dissecting from, 231–232
 - of taxes, 232–235
 - Debreu, Gerard, 320
 - decision-making
 - marginal revenues and marginal costs, 207–208
 - utility-maximizing consumer, 180
 - decreasing marginal revenues, 245–249
 - deductibles, auto insurance, 308
 - deferred payment, standard of, 86
 - deficits, budget. *See* budget deficit.
 - deficits, trade. *See* trade deficit
 - demand. *See also* aggregate demand.
 - curve, drawing, 19–20, 21–22
 - defined, 152
 - diminishing marginal utility, 188–192
 - downward sloping, 282–283
 - elasticity, defining, 157–159
 - excess, 167–168
 - failure to stimulate, 131–134
 - full-employment output, 124–126
 - graphing, 154–156
 - increased, 168–169
 - inflation risk, 126–130
 - marginal revenues, deriving from, 246–248
 - models and graphs, 18–22
 - money supply and inflation, 78–79
 - monopolies, 245–246
 - normal goods, 153
 - opportunity costs, slope of curve, 156–157
 - plotting data, 19–20
 - predictions based on, 20–21
 - price changes affecting, 189–192
 - prices, inverse relationship with, 19, 153–154
 - profit maximization, 252–253
 - quantity demanded, 153
 - recessions, ending by stimulating, 124–126
 - table for sample, 18–19
 - democracy, 11, 334
 - depreciation, 67–68
 - depression
 - gold standard and, 139
 - Keynesian theory, 112–122
 - differentiation, product, 280–281
 - diminishing marginal utility
 - complementary and substitute goods, 192
 - consumer choices, 177–180
 - demand curves, deriving, 188–192
 - diminishing returns
 - output, cost per unit of, 201–202
 - production possibilities, 38
 - unavoidable nature of, 14
 - discrete goods, measuring, 225–226
 - disposable income, 66–67
 - dollar amounts, confusing, 33
 - downward sloping demand, 282–283
 - downward wage stickiness, 131
 - duopoly
 - defined, 270
 - dominant strategy, determining, 272–273
 - lousy outcome, realizing, 273
 - payoff matrix, 271–272
 - threats, 274–275

• E •

- economic costs, 199
- economic growth
 - assets, 61
 - calculating, 14
 - circular flow diagram, 62–63
 - equation, 65–71
 - equilibrium with sticky prices (Keynesian model), 121–122
 - exclusions from, 58–59
 - importance, 58
 - income, 60–61
 - increasing, 64
 - innovation and, 334
 - production, counting as, 63–64
 - tallying, 59–60
- economic profit, 198–199, 236
- education, living standards and, 11, 334
- efficiency
 - allocatively efficient profit-maximizing firms, 16
 - problems in monopolies, 256
 - production inefficiency, 284–286
 - productive versus allocative, 44–45
- elasticity
 - of demand, defining, 157–159
 - of supply, perfect, 164
- electromagnetic spectrum, 164
- employees. *See* labor
- employment
 - foreign wages, low, 329–330
 - inflation, aiding, 133
 - layoffs versus cutting wages, 110
 - lump of labor fallacy, 325–326
 - output, trying to increase beyond full, 127–128
- enforcement
 - cartel quotas, 278–279
 - threats in Prisoner's Dilemma, 275
- entry and exit, firms
 - in competitive free market, 237–242
 - lag in, 242
 - profit limits, 281, 283–284
- environmental problems, 297–298, 335
- equality, 322
- equation, GDP
 - C (consumption expenditures), 65, 66–67
 - G (government purchases of goods and services), 66, 69–70
 - I (investment expenditures), 65, 67–69
 - NX (net exports), 66, 70–71
- equations
 - Fisher nominal interest rate formula, 93
 - inventory adjustments, 117–119
 - marginal revenue curve, 249
- equilibrium
 - decreased supply, 170
 - excess demand, 167–168
 - excess supply, 166–167
 - finding, 164–166
 - firms entering and exiting, 283–284
 - increased demand, 168–169
 - interest rate, 141, 143
 - price ceilings, raising, 171–172
 - price floors, raising, 173–174
 - socially optimal outcomes, 288–289
 - supply and demand interacting, 164–168
- equilibrium with sticky prices (Keynesian model)
 - GDP, boosting, 121–122
 - government policy, 113
 - Great Depression, 112–113
 - inventory adjustments, 114–121
- equipment, capital, 61, 145
- excess demand, 167–168
- excess supply, 166–167
- exchange rates, 330
- excludable goods, 336
- expected rate of inflation, 93
- expenditures
 - actual and planned, 115–116, 119–120, 122
 - autonomous, 118
 - C (consumption expenditures), in GDP, 65, 66–67
 - I (investment expenditures) equation, 65, 67–69
 - induced, 118
- expert opinions, 304–305
- externalities
 - costs imposed on others, 290–291
 - described, 287–288, 289
 - negative, handling, 293–294

- externalities (*continued*)
 - overproduction of negative, 291–292
 - positive amounts of negative, 292–293
 - positive and negative, 290
 - subsidizing things causing positive, 295–296
 - underproducing things causing positive, 294–295
- extinction, animal, 297
- **F** ●
- face value payment, bonds, 141
- fallacies
 - composition, 328
 - foreign wages, low, 329–330
 - free market instability, 329
 - labor, lump of, 325–326
 - marginalism, 328–329
 - overpopulation, 326
 - protectionism, 327–328
 - sequence, confusing with causation, 327
 - tax rates and work effort, 330–331
 - unintended consequences, 331
- farming
 - competition, 195
 - inflation, 84
 - price supports, 174
- Federal Reserve Bank
 - defined, 81
 - government bonds, purchasing, 144
 - inflation, preventing, 337
 - money supply, increasing, 146–147
 - stagflation and, 148
- fiat money
 - benefits, 138–140
 - U.S. conversion to, 81
- financial markets
 - circular flow in GDP, 62
 - exclusions from GDP, 63
- firms
 - assets, valuing, 61
 - capital spending, 61, 145
 - cutting wages versus cutting workers, 110
 - dominant in oligopolies, 279
 - in GDP, 59
 - limited liability corporation, 11
 - monopolies, breaking into several competing, 262–263
 - ownership, 60
 - public goods, providing, 336–337
 - rational expectations, raising prices and, 133
 - used car, reputation building and, 304
- firms, entry and exit of
 - in competitive free market, 237–242
 - lag in, 242
 - profit limits, 281, 283–284
- firms, profit-maximizing
 - average total cost and marginal costs, monopolies, 250–251
 - competition, 195–199
 - demand and, 252–253
 - long-run shutdown condition, 216
 - marginal revenues and marginal costs, 207–214
 - market price, 217–218
 - monopolies, 251–252
 - price setting, 251
 - reasons to study, 193–194
 - short-run shutdown condition, 214–216
- fiscal policy
 - budget deficits, 136–138
 - components, 134
 - described, 15, 123
 - government spending, increasing, 134–136
 - macroeconomics, 15
 - recessions, fighting, 15
- Fisher, Irving, 93
- fishing industry, 297–298
- fixed costs, 199
- fixed prices, short-run dealings with, 105–107
- floors, price, 173–174
- flow diagram
 - GDP, 62–63
 - households and firms, 59
- forecasts. *See* predictions
- foreign trade
 - assets, 73–74
 - benefits of, 336
 - comparative advantage, 74–76
 - competition, protectionism and, 327–328
 - deficits, 71–72
 - free trade, 76, 336
 - low wages, 329–330
 - NX (net exports), 66, 70–71, 119

- France, unemployment in, 325–326
- free markets
- benefits of, 219–220
 - causes and consequences of, 235–236
 - costs and benefits, comparing through supply and demand, 222–223
 - deadweight losses, 230–235
 - gains, total surplus measuring, 225–230
 - process, 236–238
 - profits guiding firm entry and exit, 238–242
 - properly functioning, prerequisites for, 220–222
 - public goods, providing, 336–337
 - socially optimal output level, 224
 - unstability, 329
- free trade
- as good thing, 336
 - output, 76
- freedom, enrichment through, 334
- frictional unemployment, 99
- Friedman, Milton, 320
- full-employment output
- demand, stimulating, 124–126
 - real wages, 128–129
 - recession, 99–100
- future
- inflationary expectations, 147–148
 - long-run price adjustments, 103–104
 - recession in long run, 101
 - resources, use of, 12
 - tax revenues and budget deficits, 136–137
- **G** ●
- G (government purchases of goods and services), 66, 69–70
- gains, total surplus measuring, 225–230
- game theory, 270
- gasoline market, 280–281
- GDP (gross domestic product)
- assets, 61
 - circular flow diagram, 62–63
 - equation, 65–71
 - equilibrium with sticky prices (Keynesian model), 121–122
 - exclusions from, 58–59
 - importance of calculating, 14, 58
 - income, 60–61
 - increasing, 64
 - production, counting as, 63–64
 - tallying, 59–60
- The General Theory of Employment, Interest, and Money* (Keynes), 65
- generosity, 25–26
- Germany, Weimar hyperinflation in, 82, 83
- gold standard
- farmers and, 84
 - Great Depression and, 139
 - Nixon and, 81
- good, self-interest promoting common, 26
- government bonds
- Federal Reserve bank purchase of, 145
 - government borrowing through, 69, 135–137
 - monetary policy, 141–142
 - price link to interest rates, 142–143
- government intervention
- command economy, 47
 - constrained maximization, 321
 - consumers as sophisticated planners, 322
 - drawbacks, 50
 - equilibrium with sticky prices (Keynesian model), 113
 - forms, 49–50
 - free markets needing, 334
 - inflation and, 14
 - lobbying and, 49
 - monopoly prices, regulating, 260–261
 - price ceilings, 171–172
 - price floors, 173–174
 - problems with markets, 48
 - pros and cons, 45–46
 - public goods, providing, 309–313, 336–337
 - sticky prices, 111
 - subsidies for positive externalities, 295–296
- government purchases of goods and services (G), in GDP, 66, 69–70
- government spending
- benefits, 134–135
 - borrowing, 135–136
 - increasing, 134–136
 - paying for, 135

graphing
 abstracts, 18
 cost structure, crossing, 205–207
 demand, 18–22, 154–156
 GDP circular flow diagram, 62–63
 inventory adjustments, 119–121
 marginal revenue and marginal cost
 crossing point, 208–210
 money supply increases, 146–147
 plotting data, 19–20
 price changes on demand curve, 190–192
 production possibilities, 39–42
 supply curve, 159–163

Great Britain
 corn law trade issue, 74
 as owners of U.S. property, 73

Great Depression
 equilibrium with sticky prices (Keynesian
 model), 112–113
 gold standard, 139
 as monetary disaster, 320

Greece, innovation in, 11

Griffith, Griffith J. (philanthropist), 310

gross domestic product. *See* GDP

grouping individuals for insurance,
 306–307, 308

Gutenberg printing press, 311

• H •

happiness, maximizing
 altruism and generosity, 25–26
 self-interest promoting common good, 26
 utility measuring, 25

history
 ancient living standards, 10
 hyperinflation, 83
 institutions that improved living
 standards, 11–12

Hitler, Adolf, 83

Hope Diamond, 164

households
 consumption, 66–67
 CPI inaccuracy, 91
 defined, 59
 firms, ownership of, 60

hyperinflation
 in history, 83
 lending and, 86

money, loss of effectiveness of, 86
 occurrence of, 77
 printing money, 81–82

• I •

I (investment expenditures) equation, GDP,
 65, 67–69

imports
 assets, counting, 73–74
 benefits of, 71–72
 in NX (net exports), GDP, 70–71
 politics, 73

income
 consumption and, 66
 GDP, 60–61

increased demand, 168–169

increasing and decreasing returns, 201

indexes, price. *See* price indexes.

individuals, grouping for insurance,
 306–307, 308

induced expenditures, 118

inefficiency, production, 284–286

inelastic supply, 163–164

inflation
 allocation in real world, 182
 barter system, 80
 budget deficits, 137
 causes, 77
 CPI, calculating from, 90
 demand, stimulating, 126–127
 ease of preventing, 337
 effects, tallying, 85–87
 employment, aiding, 133
 expectations of, 147–148
 farmers and, 84
 hyperinflation, 77
 importance of calculating, 14
 interest rates, nominal and real, 92–95
 money supply and demand, balancing,
 78–79
 output, trying to increase beyond full-
 employment, 127–128
 politics of, 82–83
 price indexes measuring, 87–92
 quantity theory of money, 320
 rate, calculating in price indexes, 89
 real wages, tracing movement of, 128–130

- risk of stimulating demand, 126–130
 stimulating economy with, 83–85
 temptation, giving in to, 80–85
- institutions that improved living standards,
 11–12
- insurance
 adverse selection, avoiding, 307
 asymmetric information, 305–308
 grouping individuals, 306–307, 308
 moral hazard, mitigating, 308
- intellectual property rights, 11, 335
- interaction, strategic in oligopoly, 266–267
- interest rates
 bond price link, 142–143
 capital equipment costs, 61, 68–69
 cash, disadvantage of holding, 140–141
 Great Depression and, 320
 inflationary expectations, affect on, 147
 lowering to stimulate economy, 145
 money supply and, 138
- interest rates, nominal and real
 defined, 92
 expected rate of inflation, 93
 Fisher equation, 93
 predictions, limitations on, 94–95
- inventory adjustments
 equations, 117–119
 expenditures, planned and actual,
 115–117
 graphing, 119–121
 novelty of, 114
 output, increasing or decreasing, 115
 target level, 114–115
- inverse relationship
 money value and prices, 79
 quantity demanded and price, 19,
 153–154
- investment
 actual and planned, 117
 capital equipment, 61, 145
 in GDP, 65, 67–69
 patents encouraging, 257
 investment expenditures (I) equation, GDP,
 65, 67–69
- invisible hand theory
 competitive markets, 16, 222, 224
 mathematical proof of, 320
 property rights and, 287
- irrationality
 consumer choices, 32–34
 marginal and average, confusing, 33–34
 percentages and dollar amounts,
 confusing, 33
 sunk costs, 32–33
- *J* •
- Japan, U.S. trade deficit, 73
 job-seekers, 99
- *K* •
- Keynes, John Maynard
 equilibrium with sticky prices, 112–122
 fiscal policy, 15
*The General Theory of Employment,
 Interest, and Money*, 65
 importance of, 319–320
- Kublai Khan, 81
- *L* •
- labor
 average total costs, movement of,
 204–205
 average variable costs, 202–203
 cutting wages versus cutting workers,
 110, 133
 diminishing returns, 201–202
 downward wage stickiness, 109, 131
 foreign wages, low, 329–330
 income flow, 60
 increasing and decreasing returns, 201
 lump of, 325–326
 nominal wages, raising while prices stuck,
 129
 tax rates and work effort, 330–331
 women, movement into, 322
- Labor Statistics, Bureau of, 88
- lags, firm entering and exiting, 237, 242
- land, demand for, 164
- Law of Demand, 18–19
- Law of Unintended Consequences, 331
- laws, negative externalities and, 293

- layoffs, 110, 133
- leisure, value of, 64
- lenders
 - hyperinflation and, 83
 - money standard of deferred payment, 86
 - national debt, 136
- life expectancy, 10
- limitations
 - opportunity cost, 28–29
 - resource constraints, 27
 - technology constraints, 27–28
 - time constraints, 28
- limited liability corporation, 11
- literacy, widespread, 11
- Littlefield, Henry, 84
- living standards
 - ancient, 10
 - CPI, calculating rise in, 91
 - education raising, 334
 - institutions that improved, 11–12
 - price indexes, determining real, 91
 - technology and, 321
- lobbying for government intervention, 49
- long run
 - average growth, 99
 - price adjustments, 103–104
 - recession, 101–103
 - shutdown conditions, 216, 217
- long-run aggregate supply curve. *See* LRAS
- loss
 - firms exiting at, 241–242
 - marginal revenues and marginal costs, 213–214
- loss, deadweight
 - described, 230
 - monopolies, harm caused by, 255–256
 - price ceiling, dissecting from, 231–232
 - of taxes, 232–235
- LRAS (long-run aggregate supply curve)
 - aggregate demand shock, 104–105, 125
 - described, 102–103
 - output, increasing beyond full employment, 127–128
 - price adjustments, 104
 - prices, short-run fixed, 105–107
 - SRAS and, 107–109
- Lucas, Robert, 322
- M •
- macroeconomic measurement
 - GDP, 58–64
 - international trade, 71–76
 - reasons for, 57
- macroeconomics
 - consumption model, 66–67
 - defined, 13
 - measuring economy, 14
 - monetary and fiscal policies, 15
 - recessions, causes of, 14
- Malthus, Thomas, 326
- marginal costs
 - average, confusing, 33–34
 - decision-making, 207–208
 - described, 205
 - losses, visualizing, 213–214
 - marginal revenue, equaling, 208–210
 - monopolies, 250–251
 - pricing, 262
 - profits, visualizing, 210–212
- marginal propensity to consume (MPC), 67
- marginal revenues
 - decision-making, 207–208
 - decreasing, production increases and, 248, 283
 - demand curve, deriving from, 246–248
 - higher output and lower prices, 249
 - losses, visualizing, 213–214
 - marginal costs, equaling, 208–210
 - monopolies, demand in, 245–246
 - profits, visualizing, 210–212
 - total revenue and, 248
- marginal utility, 31
- marginal utility, diminishing
 - complementary and substitute goods, 192
 - consumer choices, 177–180
 - demand curves, deriving, 188–192
- marginalism, 328–329
- market basket price indexes, 87–88
- market failure, asymmetric information
 - described, 17, 299
 - insurance, 305–308
 - trade, limiting, 300–301
 - used car market, 301–305

- market failure, public goods and, 299–300
- market price
 - downward sloping demand, 282
 - firm entry and exit, determining, 237
 - profit-maximizing firm, 217–218
- markets
 - failures, common, 17–18
 - forces of production, 45–48
 - intervention, 45–48
 - regulation needed by, 334
 - socially optimal outcomes, 288–289
 - supply and demand, 152
 - transactions in circular flow diagrams, 62–63
- Marshall, Alfred, 319
- Marx, Karl, 318–319
- maximum output, full-employment
 - versus, 99
- measuring economy
 - continuous goods, 226–228
 - discrete goods, 225–226
 - GDP, 58–64
 - inflation with price indexes, 87–92
 - international trade, 71–76
 - macroeconomics, 14
 - producer surplus, 228–229
 - reasons for, 57
- mercantilism, 318
- metallic standard, 139
- microeconomics
 - competition, 16
 - consumption decisions, 66
 - defined, 13
 - failures, common market, 17–18
 - problems without competition, 16–17
 - property rights, 17
 - scope of, 16
 - supply and demand, balancing, 16
- minimum cost production, 240–241
- minimum output requirements,
 - monopolies, 259–260
- mining, 327
- mixed economy, production in, 50–52
- models
 - abstracting, 18
 - consumer choices, 24
 - demand curve, 18–22
 - supply and demand, limitations of, 151
- monetary policy
 - bonds, 141–142
 - cash, holding, 140–141
 - components, 138
 - described, 15, 123
 - fiat money, identifying benefits, 138–140
 - interest rates and bond prices, 142–143
 - lowering interest rates to stimulate economy, 145
 - macroeconomics, 15
 - money supply, changing to change interest rates, 143–144
 - printing money, 83–84
 - rational expectations and, 145–148
 - recessions, fighting, 15
- money, quantity theory of, 320
- money supply
 - changing to change interest rates, 143–144
 - graphing increases, 146–147
 - inflation, 78–79, 337
 - rational expectations, 145–146
- monopolies
 - breaking into several competing firms, 262–263
 - competition, absence of, 195
 - competitive firms and, 253–256
 - deadweight loss, 255–256
 - decreasing marginal revenues, 245–249
 - defined, 17
 - efficiency problems, 256
 - Marx's theory, 318–319
 - minimum output requirements, 259–260
 - natural, keeping costs low, 258
 - output level maximizing profits, 250–253
 - patents, 257
 - pricing, regulating, 260–261
 - problems caused by, 244
 - profit maximization, 251–252
 - pros and cons, 243
 - redundant competition, reducing, 257–258
 - subsidizing to increase output, 259

monopolistic competition
 described, 195, 266
 product differentiation, benefits of,
 280–281
 profit limits, facing, 281–286
 moral hazard, mitigating, 308
 MPC (marginal propensity to consume), 67

• N •

national debt, 136
 National Income and Product Accounts.
See NIPA
 natural gas monopolies, 258
 natural monopolies, 258
 negative demand shock, 104, 124
 negative externalities
 described, 290
 handling, 293–294
 positive amounts of, 292–293
 property, 287–288
 neoclassical synthesis, 321
 net exports (NX) equation, 66, 70–71, 119
 newspapers, 311
 Nigeria, farming in, 174
 NIPA (National Income and Product
 Accounts)
 assets, 61
 circular flow diagram, 62–63
 defined, 57
 exclusions from GDP, 58–59
 higher GDP, 64
 income flow, 60–61
 production, counting, 63–64
 tallying GDP, 59–60
 Nixon, Richard, 81
 nominal interest rate, 93
 nominal prices, 91
 nominal wages, raising while prices stuck,
 129
 nonexcludable public goods, 309
 nonprice factors, demand curve shifts,
 155–156
 nonrival public goods, 309
 normal goods, demand for, 153
 NX (net exports) equation, 66, 70–71, 119

• O •

Oil Producing and Exporting Countries
 (OPEC)
 collusion, difficulties of, 268–269
 trapped in Prisoner's Dilemma, 277–278
 oligopoly
 antitrust laws, 279–280
 collusion and competition, outcomes of,
 267
 competition, 195
 described, 17, 265
 dominant firms, 279
 interaction, strategic, 266–267
 omerta, in Prisoner's Dilemma, 271,
 274–275
 open-market operations, 144
 opportunity cost
 demand, slope of curve, 156–157
 as limitation, 28–29
 profits, 198
 optimization, constrained, 176
 ordinal utility, 177
 outcome
 lousy in Prisoner's Dilemma, 273
 payoff matrix, 271–272
 output
 cost structure per unit of, 200–202
 equilibrium value of, 119
 higher with lower prices, 249
 increasing or decreasing to adjust
 inventory, 115, 121
 increasing with monopolies, 259
 labor costs per unit of, 330
 level maximizing profits in monopolies,
 250–253
 marginal cost equals marginal revenue,
 214
 minimum requirements, 259–260
 monopolies versus competitive firms,
 253–255
 overproduction as negative externality,
 291–292
 quotas in cartels, 268

socially optimal, 220, 224
 trying to increase beyond full-
 employment, 127–128
 overgrazing commonly owned field,
 296–297
 overpopulation, 326
 overproduction, 291–292

• p •

paper money, 81
 participation in markets, guaranteeing, 221
 patents
 comparative advantage, 75–76
 full-time inventors and, 11
 innovation and investment, encouraging,
 257
 private goods, 312
 pay. *See* wages.
 payoff
 matrix, Prisoner's Dilemma, 271–272
 threats altering, 274–275
 per dollar marginal utility, equalizing,
 186–188
 percentages, confusing with dollar
 amounts, 33
 philanthropy, 310
 planned expenditures, 115, 119–120, 122
 planned investment, 117
 plotting data, 19–20
 politics
 foreign trade, 72–73, 76
 government spending, 69, 134–135
 inflation, 82–83
 lobbying, 49
 money, standards for, 84
 work effort and tax rates, 330–331
 pollution, 292, 297–298, 335
 poor quality, used car market, 301–302
 positive demand shock, 104
 positive externalities
 described, 290
 property, 287–288
 subsidizing things causing, 295–296
 underproducing things causing, 294–295
post hoc ergo propter hoc, 327
 predictions
 demand curve, 20–21
 limitations, nominal and real interest
 rates, 94–95
 price ceiling
 deadweight losses, dissecting from,
 231–232
 government intervention, 171–172
 price indexes
 inflation rate, calculating, 89
 market basket, 87–88
 problems, 91–92
 setting up, 89–91
 standard of living, determining real, 91
 price takers, 196–197, 221, 236
 prices. *See also* inflation
 agricultural supports, 174
 allocation and inflation in real world, 182
 ceiling, 171–172
 changes affecting quantity demanded,
 154, 189–192
 competitive markets, 221
 demand, inverse relationship with, 19,
 153–154
 floor, 173–174
 lower with higher output, 249
 marginal cost, 262
 money, value of, 79
 monopolies, regulating, 260–261
 monopolies versus competitive firms,
 253–255
 sales, production cost versus, 160
 setting to maximize profits, 251
 supply curve shifts, 161
 printing money, 82, 137–138
 printing press, 311–312
 Prisoner's Dilemma
 cartels, 275–279
 confessing versus remaining silent, 271
 dominant strategy, determining, 272–273
 duopoly, 270
 lousy outcome, realizing, 273
 payoff matrix, 271–272
 threats shifting payoff, 274–275
 private goods
 patenting, 312
 public goods, selling related, 311
 producer surplus
 defined, 225
 measuring, 228–229

- product differentiation
 - described, 266, 280–281
 - downward sloping demand curve, 282
 - Wendy’s commercial, 285
 - production
 - efficient profit-maximizing firms, 16
 - GDP, counting as, 63–64
 - government intervention, 49–50
 - increases and decreasing marginal revenues, 248
 - lower, monopolies and, 255
 - market for factors of, 62
 - market forces, 45–48
 - mixed economy, 50–52
 - negative externalities, 290, 291–292
 - positive externalities, 294–295
 - possibilities, determining, 36–44
 - productive versus allocative efficiency, 44–45
 - technology and innovation, encouraging, 53–54
 - production cost
 - perfectly inelastic supply and, 164
 - sales price versus, 160
 - supply curve, shifting, 161–163
 - zero and minimum, 240–241
 - production possibilities
 - allocating resources, 39
 - classifying resources, 37
 - diminishing returns, 38
 - graphing, 39–42
 - technology, improving, 42–44
 - profit
 - cartels sharing, 268
 - economic, 199
 - entering firms, 238–240
 - exiting firms, 241–242
 - flow to owners, 61
 - marginal revenues and marginal costs, 210–212, 214
 - monopolies versus competitive firms, maximizing, 254–255
 - opportunity costs, 198
 - zero and minimum cost production, 240–241
 - profit limits
 - competition, new, 281
 - downward sloping demand, 282–283
 - firms entering and exiting, 281, 283–284
 - inefficiency, production, 284–286
 - profit maximization
 - average total cost and marginal costs, monopolies, 250–251
 - competition, 195–199
 - demand and, 252–253
 - long-run shutdown condition, 216
 - marginal revenues and marginal costs, 207–214
 - market price, 217–218
 - monopolies, 251–252
 - price setting, 251
 - reasons to study, 193–194
 - short-run shutdown condition, 214–216
 - property rights
 - environmental problems and, 335
 - intellectual, 11, 335
 - microeconomics, 17
 - positive and negative externalities, 287–288
 - protectionism, 327–328
 - public goods
 - described, 18
 - free enterprise providing, 336–337
 - market, killing with, 299–300
 - nonrival and nonexcludable, 309
 - philanthropy to provide, 310
 - private good, selling related, 311
 - taxing, 309–310
 - technology, ranking new, 311–313
- *Q* •
- quality
 - asymmetric information about, 300
 - CPI, 92
 - poor, in used car market, 301–302
 - quantity demanded
 - inverse relationship to price, 19, 153–154
 - normal goods, 153
 - price changes affecting, 189–190
 - quantity makers, 196–197

quantity theory of money, 79, 320
queues, limited supply, 171–172
quotas, cartels enforcing, 277, 278–279

• R •

racial discrimination, 322
rate of return, bond, 142
rational expectations
 graphing money supply increases,
 146–147
 inflationary expectations, 147–148
 money supply and, 145–146
 policy changes, affect on, 15
 price stickiness, 133–134
real wages
 anticipation, 132
 full-employment output and, 128–129
 nominal wages, raising while prices stuck,
 129
 original, moving back to, 130
recession. *See also* fiscal policy; monetary
 policy
 aggregate demand shift, adjusting to,
 104–105
 business cycle, 98–99
 causes of, 14
 defining, 113
 ending by stimulating demand, 124–126
 equilibrium with sticky prices, 112–122
 fighting with monetary and fiscal
 policies, 15
 fixed prices, short-run dealings with,
 105–107
 full-employment output, 99–100
 GDP, limits of measuring, 64
 inflation, too much stimulation and,
 126–134
 long run, 101
 long-run price adjustments, 103–104
 macroeconomic causes of, 14
 preventing or shortening, 97
 price adjustments, 100–101
 shocks, combined long- and short-run,
 107–109
 short run versus long run, 101–103
 sticky prices, 109–111
recoveries, business cycle, 98
redundant competition, 257–258
regulation
 free markets needing, 334
 monopoly pricing, 260–261
 oligopolies, 277
rents
 in GDP, 60
 government control of, 171–172
reputation, building, 304
research, subsidizing, 312–313
resources
 constraints, 27
 future, use of, 12
 production possibilities, 37, 39
 property rights, 297–298
restaurants
 prices, 281
 variety, 286
retirement systems, 326, 328
returns, increasing and decreasing, 201
revenues
 total and marginal, 248
 total costs exceeding, 216
 variable costs exceeding total, 214–216
revenues, marginal
 decision-making, 207–208
 decreasing, production increases and,
 248, 283
 demand curve, deriving from, 246–248
 higher output and lower prices, 249
 losses, visualizing, 213–214
 marginal costs, equaling, 208–210
 monopolies, demand in, 245–246
 profits, visualizing, 210–212
 total revenue and, 248
Ricardo, David, 74–75, 318
rights. *See* property rights
rising prices, 131
Robinson, Joan, 281, 283
Rockefeller, John D., 270

• S •

safety

airline, 328–329

innovations, marginalism and, 328–329

sales price, production cost versus, 160

Samuelson, Paul, 321

savings

cash, holding, 140–141

hyperinflation and, 82

scarcity, 13–14, 23

selection, adverse, 307

self-interest

behavior, analyzing, 24

benefits of, 333

common good, promoting, 26

sequence, confusing with causation, 327

services, asset flow of, 61

Sherman Anti-Trust Act, 279–280

shocks

aggregate demand, 104–105, 125

combined long- and short-run, recession and, 107–109

inventory and, 115

negative demand, 104, 124

positive demand, 104

short run

recession, 101–103

shutdown condition, 214–216, 217

short-run aggregate supply (SRAS) curve

aggregate demand shock, 125

intersecting with LRAS, 107–109

shutdown conditions

long-run, 216, 217

short-run, 214–216, 217

silence, Prisoner's Dilemma, 271, 274–275

silver standard, 84

Smith, Adam, 16, 222, 224, 317

social optimality

altruism, 25–26

common good, self-interest promoting, 26

insuring individuals, 305–306

invisible hand theory, 16, 224

outcomes, 288–289

output level, 220, 224

soft drink market, 265, 266–267

Solow, Robert, 321

Soviet-style command economy, 47

specialization, comparative advantage, 75

spending

actual and planned, 115–116, 119–120, 122

autonomous, 118

C (consumption expenditures), in GDP, 65, 66–67

I (investment expenditures), in GDP, 65, 67–69

induced, 118

SRAS (short-run aggregate supply curve)

aggregate demand shock, 125

intersecting with LRAS, 107–109

stable equilibrium interest rate, 141

staff members. *See* labor

stagflation, 148

standard of deferred payment, 82

Standard Oil Company, 279

statistical discrimination, 308

step function, 225

sticky prices

cost of profits and wages, 110–111

cutting wages versus cutting workers, 110

described, 97

downward wage stickiness and, 131

GDP, boosting, 121–122

government intervention, 111

government policy, 113

Great Depression, 112–113

inventory adjustments, 114–121

rational expectations and, 133–134

recessions and, 14, 100–101

stimulus, anticipating and undermining, 131–132

upward movement, 131

wage resistance, 110

Wal-Mart's flexibility, 107

stimulating economy

anticipation, 131–132

inflation, 83–85

interest rates, lowering, 145

strategic situations, 267

- subsidizing
 - monopolies to increase output, 259
 - research, 312–313
- substitute goods, 192
- sugar production, 174
- sunk costs, 32–33
- supply
 - decreased, 170
 - defined, 159
 - elastic, perfectly, 164
 - excess, 166–167
 - graphing curve, 159–163
 - inelastic, perfectly, 163–164
- supply and demand
 - costs and benefits, comparing, 222–223
 - interacting for equilibrium, 164–168
 - markets, 152, 319
 - microeconomics balancing, 16
 - model, limitations of, 151
 - of money, balancing, 78–79
 - socially optimal outcomes, 289
 - theorist, 319
- supply curve
 - prices shifting, 161
 - taxes shifting, 232–233
- supply, money
 - changing to change interest rates, 143–144
 - graphing increases, 146–147
 - inflation, 78–79, 337
 - rational expectations, 145–146
- surplus
 - computing total, 229–230
 - consumer, 225–228
 - contemplating total, 230
 - excess supply, 166–167
 - government budget, 69
 - negative externalities, 290
 - taxes creating, 233–234
 - trade, 71–72
- synthesis, neoclassical, 321
- **T** •
- takers, price, 196–197, 221, 236
- target level, inventory, 114–115
- tariffs, 74, 331
- taxes
 - consumption and, 66
 - deadweight losses, causing, 233–235
 - future revenues, budget deficits and, 136–137
 - inflation as, 86–87
 - negative externalities, 293
 - public goods, 309–310
 - raising, 135
 - rates, work effort and, 330–331
 - supply curve, shifting, 232–233
- technology
 - constraints, 27–28
 - economic growth and, 334
 - full-employment output, 100
 - intellectual property rights, 335
 - living standards, improvement in, 10, 321
 - new products lagging CPI, 92
 - patents encouraging, 257
 - production, encouraging, 42–44, 53–54
 - ranking new as public goods, 311–313
 - telephone monopoly, 262–263
- television, 257, 311
- temptation, inflation and, 80–85
- threat, payoffs of Prisoner's Dilemma, 274–275
- time constraints, 28
- total costs
 - average, 204–205
 - exceeding total revenues, 216
- total revenue, 248
- trade, asymmetric information, 300–301
- trade balance, 71
- trade barriers, 327
- trade, barter system, 80
- trade deficits
 - assets, counting, 73–74
 - benefits, 71–72
- trade surplus, 71–72
- Tragedy of the Commons
 - environmental problems and poor property rights, 297–298
 - overgrazing commonly owned field, 296–297
- transfer, money from one person to another, 70
- trash hauling monopolies, 257

Treasury notes

Federal Reserve bank purchase of, 145
government borrowing through, 69,

135–137

monetary policy, 141–142

price link to interest rates, 142–143

trusts, 279–280

tuna, 297–298

two goods, allocating money between,
183–186

• U •

unemployment

frictional, 99

output and, 124

in recession, 110

uninformed decision-making, 31–32

unintended consequences, 331

unit of account, money as, 85–86

upward price stickiness, 131

U.S.

Bureau of Labor Statistics CPI Web site, 88

Federal Reserve Bank, 144, 145

fiat system, 81

trade deficit with Japan, 73

used car market

asymmetric information, 301–305

expert opinions, getting, 304–305

poor quality, reasons for, 301–302

reputation, building, 304

warranty, offering, 303–304

utility-maximizing consumer

buying as much as you can, 181–183

cardinal versus ordinal utility, 176–177

constrained optimization, 176

decision-making, 180

diminishing marginal utility, 177–180

measuring utility, 25

per dollar marginal utility, equalizing,
186–188

two goods, allocating money between,
183–186

• V •

value

money and price, inverse relationship
of, 79

money as store of, 85

variable costs

average, 202–203

exceeding total revenues, 214–216

structure, 199–200

• W •

wages

cutting versus cutting workers, 110

downward resistance, 109, 131

income flow, 60

Marx's theory, 318–319

nominal, raising while prices stuck, 129

upward freedom, 131

Wal-Mart, 107

warranty, 303–304

Weimar hyperinflation, 82, 83

welfare economics, 319

Wendy's commercial, 285

wheat market, 195–196

work effort, tax rates and, 330–331

work week, reducing, 325–326

workers. *See* labor

• Z •

zero production cost, 240–241

zero unemployment rate, 99

zero-coupon bond, 142