

Index

- ADP (Automatic Data Processing, Inc.), 182
- Adult Education Act, 1984, 358
- Adult education and training, 356-359
technologies, 359-361
vocational and paraprofessional, 359
- Affiliates, overseas, revenues, 191, *see also* Foreign affiliates
- Alvey program, U. K., 306, 307-309
- American universities:
engineers, scientists, 198, 199
- Antitrust enforcement, U. S., *see also* AT&T breakup
and licensing agreements, 203
illegal licensing practices, 215-216
- Arms-length licensing, 193-194
U.S. to Japan, 201-203
- Army Corps of Engineers
construction technology R&D, 148-151
- Artificial intelligence, 261, *see also* Expert systems
expert systems in construction, 139
- Assets, world's largest banks, 86
- AT&T breakup, 18, 29, 30, 158, 216, 244, 313, 352, 368
impacts of antitrust policy, 216
international repercussions, 171
- Automation, and services employment, 229
- Baker Plan, loans to developing countries, 111
- Banker's acceptances, 98
- Banking and financial services
congressional options, 27, 348-351
expert systems, 91
fee-earning services, 87, 96-99
foreign regulatory policies, 312, 314
innovations, 94-95
international competition, 79-116
international, data for analysis, 111-112
major banks, international assets, 11
new and growing product markets, 94-99
policy, U. S., and international competitiveness, 348-352, 349
retail, overseas, 100-101
trade and competition, summary, 10-13
U.S. banks, foreign branches, 87
U. S., international competitiveness, 12, 84
U.S. international competitiveness, priorities, 349-351
- Banking regulations
international coordination, 13, 83, 110-113, 351-352
- Banking regulations, U. S., 12, 108-111
commercial v. investment banking, 108-109
interstate, 109
- Banking, U. S., infrastructure, 109-110
- Banks, income
fee v. interest, 93
profitability, 94
- Basel Committee, 83-84, 351-352
- Bidding, engineering and construction, 123
- "Big Bang," U. K., 114, 313, *see also* Deregulation
- Biotechnology, 120
engineering and construction, opportunities, 145, 146
overseas licensing, 210, 212
- Brazil
perspective on liberalization, 70
telecommunications, regulation, 174-175
- Bretton Woods Agreement, 77
- Bridging, international competition, 143
- British Telecom, 174
- Bundespost, 172
- Bureau of Economic Analysis
improved trade data, 337
international banking data, 349, 350
licensing, data, 195-197
procedures, 25
royalties data, 191
services, U.S. imports and exports, 58
trade data, inadequacy, 341
- Bureau of Labor Statistics, 228
- Canada, U.S. banks in, 100-101
- Capital
commercial v. investment banking, 108
external markets, 82
- Carl D. Perkins Vocational Education Act, 1984, 356, 357
- Carter Administration, antitrust standards, 215-216
- Cash management services, banks, 92-93
computers, 113
restrictions, 93
- Center for Building Technology, National Bureau of Standards, 29
Federal support, 149
- Center for Fire Research, Federal support, 149
- Central office (CO) switching equipment, 157
New York Telephone, 244
- "Channelization" or product organization, 281, 282-283
- CHAPS, 91
- CHIPS (Clearing House Interbank Payments System), 91, 110
- Claims adjustors, insurance, computer use, 264-265
- Coalition of Service Industries, 335
- Commercial banking, *see also* Banking and financial services
competitive strategy, 101
onshore retail banking, 100-101
profitable markets, 100-103
- Commercial lending, 101
Japan, 101

NOTE: Page numbers appearing in *italics* are referring to information mentioned in the tables or figures.

- Commercial technologies, 361-365
 R&D diffusion, 216
 support, Administration, 363, 364-365
- Communications systems, *see also* Telecommunications applications and use, 263-272
 effects on international banking, 81
 strategic applications, 269
- Competition
 effects on U.S. employment, 231-232
- Computer-aided design/manufacturing, 188, 274
- Computer-aided design and drafting (CADD)
 engineering and construction, applications, **120, 139**
 partially automated fine grading, 141
 piping in construction, 125
- Computer hardware
 international standards, 271
- Computer industries
 foreign government support, 309-310
- Computer-integrated production, new model, 261, *see also* New-model firms
 implications, **285-286**
 macro level, 268, 269, 269-272
 macro level, U.S. firms, 271
 micro level, 268, 269, 272
- Computer languages
 international standards, 316
- Computers
 applications in engineering and construction, 139-141
 management decisions on, 260-261
 technology/science base for the services, 38-39
 technology, uses, 39-41
- Computer software, *see* Software
- Computer systems
 applications and use, 39, 139-141, 263-272
 business applications, 265-266
 corporate networks, 270, 270
 in banking, 91-93
 insurance industry, 263, 264-265
 links between firms, 268-269
 occupations, characterization, 275, 277, 278, 278
 systems design and people's skills, 272-278
 technological advances, 267
- Computer technology, effects on international banking, 81
- Comsat, 170
- Concrete technologies, 143
- Congress
 domestic banking legislation, 111
 education, reevaluation, 356
 education and training, 356-361
 international banking, 348-352
 involvement in trade negotiations, 335-337
 ISDN, 369
 policy options, 327-376
 R&D and technology development, 362-369
 recent trade bills, 334, 373
 summary, 330, 331
 telecommunications, 353-354
 trade data analysis, 339, 340-341
 USTR, 340-341, 343
- Construction
 international market, 130-132, 131
 labor costs, 136
 overview of the industry, 124-127
 productivity, 141-143
 U.S. competitiveness, 132
 U.S. firms as technology brokers, 143-144
 U. S., new, 126
- Construction technologies, 120
 R&D support, 148-151
- Contingent workers, 227, 243-249, 255-256
 manufacturing, 247
 part-time, 246, 248-249
 self-employment, 246, 248
- Contractors
 international, 126, 129
 U. S., largest, 131
- costs
 computer applications, strategy, 267-269
 determining international competitiveness, 47-49
 shifts, in new-model organizations, 284
- Counterfeiting of products, 318-321
- Credit card services, international, 100
- Credit-generating innovations, 50-51
- Credit-risk-transferring instruments, 50
- Cross-1 licensing agreements, 209, 211
- Currency, home, advantages of dealing in, 97
- Custom programming, Japan, 163-164
- Database and information services, **183-186, 183, 184, 186**
- Data processing, 181-186
 Citibank, 282-283
 corporate, early years, 266
 firms, examples, 182
 industry revenues, 159, 181, 183
 international opportunities, 181-183
 services, industry, 181-183
 strategic applications of systems, 269
 technological advances, 267
- Dematuration of industries, 188
- Department of Defense
 R&D funding, 305
 R&D in construction, 138
- Deposit insurance, 110-111
- Deregulation, 22
 and U.S. policymaking, 340
 forcing new technologies, 72
- Deregulation, financial industries, 11
 and bank profitability, 94
 and innovation in banking, 50, 51, 95-96
 barriers between commercial and investment banking, 109
 effects on international banking, 81
 financial markets, 114
 impacts, 373
 Japanese banks, 96, 114-115
 limits of, 108

-
- Deregulation, telecommunications, 158, 170, 171-175, 188
 - New York Telephone reorganization, 244-245
 - Design and construction, examples of American projects, 122
 - Design-bid-build contracts, 122-123, 143
 - technical qualifications, 138
 - Design-construct contracts, 122-123
 - Design firms
 - international business, 124, 126, 133, 134
 - U. S., computer use in international competition, 139-141
 - U. S., overseas work, 132-133, 132, 134
 - Design, in engineering and construction, 121
 - Design of work
 - rigid v. adaptive, 275, 277, 278, 278
 - Development strategies, 302
 - policy tools, 311-321
 - Doctoral degrees, science and engineering, 198, 199
 - Dollar
 - role in international banking, 97
 - Earnings, 233, 235, 236
 - by industry, 238
 - pay scales in new-model organizations, 281
 - service jobs, 253
 - unreported, see Underground economy
 - Economic adjustment, service industries, 76-78
 - government policies, 77
 - EDS (Electronic Data Systems)
 - General Motors corporate computer network, 178
 - Education, see also Adult education and training and career mobility, 253-254
 - and earnings, 234
 - career prospects for service workers, 236
 - credentials for new service industries, 287
 - entry-level employees, 240-243
 - foreign engineering students in U. S., 198, 199
 - future demands, 261
 - instructional technologies, 359-361
 - Japan, engineering graduates, 204-205
 - R&D, funding, 360-361
 - reevaluation, 355-359
 - training for high-skill jobs, 275
 - Education and Training for American Competitive-ness Act, 1987, 358
 - Electronic databases, 159-160
 - Electronic funds transfer, 81
 - automated clearinghouses, U. S., 92
 - Electronic networks, banking, 91-93
 - Employment, U. S., 223-256
 - career prospects for new service workers, 240
 - characteristics by occupation, 239
 - dependence on trade in services, 5
 - growth by industry and sex, 231
 - immigrants, mobility, 251, 252
 - mobility, 238-243
 - part-time workers, 248-249
 - self-employment, 246, 248
 - shifting patterns, 255
 - temporary, 247-248, 247
 - trends, 225-256, 229
 - women, 231, 253
 - Engineering and construction, 7, 13-16
 - competitive future, summary, 13
 - competitive strategies, 136-148
 - contract linkages, 127-128
 - foreign firms, computer use, 139
 - foreign firms in the U. S., 120, 135-136, 136
 - industry structure, 121-136
 - international competition, 119-153
 - international market, 124, 128-136
 - new technologies, examples, 140-141
 - specialization, 121
 - Engineering and construction, U.S. firms
 - competitiveness, 13-16, 119-153
 - contracting practices, 147-148
 - international consortia, 120
 - managerial expertise, 120
 - new products, 146
 - professional services, 119
 - projects, examples, 122
 - strategies, 144, 145-147, 150-153
 - tax policies, U. S., impacts, 374-375
 - technology, competitiveness, 14, 150
 - Engineering Research Centers, National Science Foundation, 29, 365
 - Equity, stock
 - onshore markets, 87, 88
 - ESPRIT (European Strategic Program for Research in Information Technology), 306, 307, 309-310
 - Eureka, 306, 310
 - Eurobonds, 10, 96
 - by country, 97
 - Euroequity, 87
 - Euromarket, 81, 87, 95, 99
 - Euronotes, 96
 - Europe, technology development, 200-203, 205-206
 - European Community
 - technology development, 305-306
 - U.S. service exports, 60
 - European Patent Convention, 206
 - Euroyen market, 104
 - Expert systems, 161, 267
 - application to design and construction, 139
 - investment decisions, 261
 - Export financing, 346-347
 - Export-led growth, national development, 302
 - Export-Import Bank of the U. S., 137, 346-347
 - Exports, U.S.
 - BEA figures, 58-59, 59
 - composition, figures, 61
 - confusion with foreign revenues, 63
 - controls, 215
 - promotion, 345
 - External patenting, 205-206, 206
 - Fabricated steel structures, international competition, 143
 - Feasibility studies, 121

- Federal Deposit Insurance Corporation, **83**
 - deposit insurance, 110-111
 - dual role in U.S. banking, 109-111
 - services to U.S. banks, 109-110
- Federal Highway Administration, construction technology research, 149
- Federal Republic of Germany, see West Germany
- Federal Reserve Board, 83, 109, 113
 - decisions, investment banking, 99-100
 - monetary policy, 108
- Federal Technology Transfer Act, 1986, 29, 360, 362, 365
- FedWire, 92, 110
- Fiber-optics, 175, 180
 - competition for satellite circuits, 170
- Fifth-generation computer project, Japan, 163, 165-166, 217
- Financial services firms, see Banks
- Financial services, U.S. tax policies, impacts, 374
- Financial system, safety and stability, 110-111
- Financing
 - engineering and construction, 136-137
- FIRE (finance, insurance, and real estate) industries
 - education of workers, 234
 - new jobs, 233, 234
- Flexibility, organizational
 - competitiveness, 260
 - computer systems design, 273
 - contingent workers, hiring, 243-246
- Floating rate notes, 96, 108
- Floats, 92
- Food and Drug Administration, 212
- Foreign affiliates
 - in service industries, 35
 - revenues, 191
 - sales, 62-65
 - to serve foreign markets, 46
- Foreign bonds, onshore markets, 87
- Foreign direct investment, 194, 201
 - coverage in GATT, 299
 - government objectives and policies, 299
 - Japanese expansion in international banking, 106
 - negotiations in GATT, 338-339
 - risks and technical licensing, 208-209, 211
- Foreign government policies, 22, 293-325
 - and international construction market, 132
 - and U.S. licensing strategies, 208
 - developing world, strategies, 302
 - economic policymaking structures, 31
 - effects on U.S. trade policy, 334
 - foreign direct investment, 218-219
 - intervention in engineering and construction contracting, 135, 137, 147-148
 - Japanese Government, banking concessions, 102
 - procurement, European telecommunications equipment market, 171, 175
 - regulatory policies, 312-315
 - technical standards in services industries, 316-318
 - technological innovations, 303-306
 - technology, 305
 - technology licensing, 218-219
 - trade and investment barriers, 74-75, 296-298
- Foreign nationals, in U.S. engineering work force, 198-200
- Foreign-owned banks in the U. S., 90, 114
 - lending, 88
 - reasons for investment in U. S., 90
- Foreign revenue services, OTA estimates, 63, 67
- Foreign students, engineering degrees in U. S., 198, 199
- Foreign technology
 - licensing by U.S. firms, 18-20, 214
 - payments by U.S. firms, 197
 - purchase by U.S. firms, 192
- Fourth-generation software, 161, 285
- France
 - technology development policies, 306, 309-310
 - telecommunications, regulations, 172-173
- Franchising, foreign, in U. S., 54
- GEISCO (General Electric Information Services Co.), 182
- General Agreement on Tariffs and Trade (GATT), 4, 25, 46
 - Agreement on Government Procurement, 311-312
 - escape clause, 77
 - problems of non-tariff barriers, 74
 - services discussions, opposition, 298-300
 - strengthening by Uruguay Round, 339
 - U.S. concessions, 332
 - U.S. services initiative, 298-300
- General Motors, 33
 - corporate computer network, 178
- Glass-Steagall Act, 99, 100, 108, 109
- Goods, U.S.
 - exports, for overseas construction projects, 127-128, 128
- Grade-Way Construction Co., 140-141
- Greene, Harold, U.S. District Court Judge, 315, 353
- Health services, job creation, 233
- High technology, Uruguay Round, 295-296
- Human capital, 287, 332-333
 - U.S. competitiveness in services, 20-22, 260, 354-361
- Human resources
 - policies, 23, 24, 334-361
- Illegal immigration, 251-252
- I-Match, 345
- Immigrants in the U.S. labor force
 - by occupation and industry, 250-251
 - illegal aliens, 250, 251-252
 - professionals, 250
- Immigration and Nationality Act, 250
- Import substitution, national development, 302
- Imports, U.S.
 - BEA figures, 60-61, 61
- Independent contracting, 248

- India, software industry, 168
- Industry Sector Advisory Committees, 23, 343
- InfoBase Corp., 185-186
- Information flows, computer application, 269-270, 270
- Information services, 16-18, 159-160, *see also* Database and information services; Information technology
 - new markets, 185-186
 - products, 183
 - U.S. markets, 183
 - U.S. tax policies, impacts, 375
- Information technology, services industries, 157-188
- Innovation, financial services industry, 50-51, 114
- Institute of New Generation Computer Technology (ICOT), Japan, 165
- Insurance industry
 - automation, 231
 - computer systems, 263, 264-265
- Integrated production systems, 262, 285-287
 - new model, 278-282
- Integrated Services Digital Networks (ISDN), 17-18, 29, 158, 177, 187, 267
 - congressional options, 363, 367-369
 - international standards, 316-317
- Integration and expansion, 53-55
 - common management structure, 54
 - global, U.S. firms as leaders, 54
- Intellectual property protection, 196, 215
 - international, 318, 321, 324
 - software, 318-321
 - trade issue, 319-320
- Intelsat, 170
- Inter-American Development Bank, financing of design contracts, 122
- International Banking Act, 1978, 90, 112, 312-313
- International competitiveness, U.S.
 - determinants, 45, 47-52
 - service industries, major influences, 49
- International consortia, U.S. engineering and construction firms in, 147-148
- International financial services, 10-13, 81-116
 - assets of largest world banks, 86
 - growth and competition, 85-94, 101-102
 - growth compared to world trade, 85
- International Organizations for Standardization (ISO), 315
- International Telecommunication Union (ITU), 18, 25, 170, 316
- International Trade and Investment Act, 335, 370
- Interstate banking, 109
- Investment banking, 99-100
 - Glass-Steagall Act, 99
 - growth, 84
 - separation from commercial banking, 108-109
- investment income, 65
- Invisibles
 - account, components, 59, 62, 64
 - account, contribution to total U.S. exports, 32
 - surplus, 58
- Involuntary part-time employment, 225-226
- Japan
 - banking deregulation, 96
 - challenge to U.S. banks, 82-83
 - competition in the financial services industry, 84-85
 - computer utilization, 260
 - external patent applications, 205-206, 206
 - future competition in services, 7-9
 - information technology, government support, 309-311
 - international technical licensing, 204
 - licensing from U. S., 202-203
 - services deficit, 70
 - software industry and market, 163-166
 - software technology, 164-165
 - technology development, 200-208
 - technology imports, 201
 - technology imports into U. S., 220
 - technology, policymaking, 303-305
 - telecommunications equipment, 173
 - telecommunications, regulation, 173-174, 314
 - trade barriers, software, 166
- Japanese banks
 - banker's acceptances, 98
 - expansion abroad, 106
 - international competitiveness, 104, 106
 - scenarios for future competition, 102-108
- Japanese corporations
 - computer applications, 271-272
 - computer integration, micro level, 272
 - desire for deregulation, 104
 - expansion abroad, 106
 - financing, 102
 - multinationals, 54-55
 - work organization, 284
- Japanese Government, *see also* Ministry of International Trade and Industry; Ministry of Finance
 - financial liberalization questions, 107
 - role in competitiveness of Japanese banks, 103-108
 - telecommunications regulation, 173-174
- Japanese language, software difficulties, 164-165
- Japanese Technical Literature Act, 1986, 29, 362, 365-366
- Job creation, 253
 - by industry, 232, 233-237
 - by occupation, 237-238
 - competition and structural change, 231-232
 - dynamics, 232-233
- Job Training Partnership Act, 1982, 356
- Joint development, engineering/construction and manufacturing, 147-148
- Joint ventures, U.S. firms
 - in construction, 137
 - motives, 213-214
- Kiosque*, 172-173
- Knowledge-based industries
 - foreign revenues, 63, 67
 - integrated production systems, 278
 - new-model organizations, 278-282
 - poor services trade data, 63-64
 - stratification in jobs, 254

- Knowledge-based services characteristics, 36, 37
 - jobs, compared with high-technology manufacturing, 262
 - OECD nations, 71
 - shift in U.S. strength toward, 46
- Labor
 - constraints on U.S. construction firms, 144-145
 - construction costs, 136
 - overseas hiring for construction projects, 127
- Labor force, U.S.
 - characteristics, 233, 235, 238, 239
 - contingent workers, 227, 243-249, 255-256
 - demands of flexibility and efficiency, 261
 - growth, 231
 - immigrants, 250-252
 - job creation, 230-238
 - jobs in the services, 223-256
 - mobility, 238-243
- Labor unions
 - and new forms of work organization, 282
 - decline, 225
 - non-manufacturing employees, 236
 - representation by industry, 236
- Less developed countries (LDCs)
 - concerns over services liberalization, **300**
 - construction financing, 136-137
 - economic growth, 128-130, 130
 - engineering and construction firms, 119
 - engineering and construction market, 128-130
 - intellectual property protection, 318-321
 - lending risks, 85
 - lending to, history, 102
- Letters of credit, 97
- Liberalization, trade in services
 - and national development strategies, 302
 - benefits, 46, 72-73
 - Brazil's perspective, 70
 - effects on U.S. current account, 71
 - indirect benefits to U. S., 75-76
 - possible gains through, 70-75
 - sectoral questions, 71-73
- Licensing, technical, 191-221
 - arms-length, 193-194, see *also* Arms-length licensing
 - international, 194-197
 - pricing, 195, 196
 - protection for intellectual property, 196
 - revenues, reasons for increase, 195
 - the license agreement, 196
 - U.S. international competitiveness, 192-194
- Licensing agreements
 - management attention, 196
 - restrictive clauses and antitrust enforcement, 215-216
- Licensing, European firms, 201
- Licensing fees
 - U. S., international, 191-192, 191
- Licensing strategies, 208-214, 220-221
 - integration, 208-212
 - joint ventures, 213-214
 - licensing foreign technologies, 214
- Licensing, U.S. firms, 189-221
 - circumstances of overseas licensing, 209, 210-212
 - complex strategies, 220-221
 - illegal practices, 215-216
 - newly industrializing countries in Asia, 206-207, 207
 - policy environment, 215-216
 - pricing, 202-203
 - response to Japanese competition, 212
 - revenues, 210
 - revenues and R&D spending, 210, 211
 - strategies, see Licensing strategies
 - to Japan, 202-203
 - U.S. receipts and payments, 191-192, 195-197, 197
- Liquidity-enhancing products, 50
- Litigation
 - and cross-licensing, 211-212
- Local area networks (LANs), 158
- Macy's, restructuring and employment, 242-243
- Management technologies
 - construction, 125
 - consulting, 57
 - in transition, MetroBank example, 288-291
 - strategies for U.S. engineering and construction firms, 146
- Manufacturing jobs, 253, 262-263
 - vertical/lateral mobility, 238-243
 - worker earnings by age, sex, and education, 233-236
- Merchandise, downstream linkages in design and construction, 127-128
- Mercury, U.K. telecommunications, 174
- MetroBank, reorganization, 263, 283, 288-291
 - changing jobs, 288-289
 - computer enhancement of people's skills, 273
 - new products, 288-289
- Microwave transmission, 158
- Ministry of Finance, Japan
 - liberalization of financial markets, 104
- Ministry of International Trade and industry (MITI), Japan, 104, 301
 - and technological innovation, 303-305
 - technology support, 310-311
- Ministry of Research and Technology, West Germany, 306
- Mixed credits, 346-347
 - construction financing, 137
- Models, mathematical, in service industries, 38
- Monetary Control Act, 1980, 110
- Multinational corporations
 - cash management services, banks, 92-93
 - computer applications, 267-269
 - foreign direct investment and foreign governments, 218-219
 - information flows, 270
 - licensing, 191, 192-194, 208-214
 - U.S.-based, competitive advantages, 55
- National Science Foundation, 29, 217
 - construction technology, support, 149
 - R&D statistics, 308

- National security and technology trade, U.S. policy, 215
- Naturalized citizens in U.S. engineering work force, 198
- Negotiations
 international forums, 321-323, 323
 objectives, banking, 111-112
- New Austrian Tunneling Method, 140
- Newly industrializing countries (NICs)
 Asia, technology development and licensing, 206-208
 concerns over services liberalization, 300
 engineering and construction firms, 119
 intellectual property protection, 318-321
 lending risks, 85-86
 R&D spending on technology, 207-208
 services in development strategy, 302
- New-model organizations, 278-282, 283
 characteristics, 261, 279-281
 cost structure, changes, 284
 impacts on competitiveness, 282-283
 knowledge/skill requirements, 279-280
 macro, micro levels, 285
 manufacturing firms, 279
- New York Telephone, organizational changes and employment, 244-245
- Nippon Telegraph & Telephone Corp., 166
 preferential purchasing policies, 311
 regulation, 173-174
- Non-tariff trade barriers, 9, 74-75, 296-298
 and negotiations, 297, 345
 effects on transfer of knowledge, 72
 examples, 296-297
 professional licensing, 317-318
 rationales, 297
 regulations as, 312-313, 312
 standards and licensing requirements, 315, 315
 types, 74-75, 297-298
 U. S., as trade issues, 338
- Off-balance-sheet items, banking, 99
- Office of International Banking and Portfolio Investment, 350
- Offshore banking, 87-89
 definition, 87
- Offshore production, 231, 232
- Offsite prefabrication construction, 141-143
- Oil prices and engineering and construction projects, 119
- Onshore banking, 82, 87-89
 definition, 87
 direct investment, 88-89, 88
 retail, 100-101
- Open Systems Interconnection (OSI), 316-317, 368
- Operations and maintenance services, opportunities for engineering and construction firms, 145
- Organization for Economic Cooperation and Development (OECD), 9, 15, 25
 design and engineering, market among members, 133
 growth in international banking, 85
 services exports and imports by member nations, 66, 69
 telecommunications issues, 304
 world service exports, 65, 68
- Packaged software, 157-158
 benefits, 160
- Packet switching, 304
- Partially automated fine grading, 140-141
- Part-time work, 248-249, 249, *see also* Contingent workers
 by industry, 249
 involuntary, 248
 Macy's, 242
- Passenger fares
 export figures, 59
 imports, 60, 64, 65
- Patents
 international, 205, 206, 206
 in U.S. by foreigners, 200
 in U.S. by Americans, 200, *zoo*
 licensing rights, 196
 software, 320-321
- Pay and benefits, 225
 service jobs, 225
- Personal computers, 259
 business purchases, 266
 market in Europe, 168
 software, 157-158
- Piping, management technologies, construction, 125
- Pharmaceutical industry, licensing, 210
- Policy, foreign government, *see* Foreign government policies
- Policy, trade, *see* Trade policy
- Policy, U. S., 22-31, 327-376
 affecting U.S. competitiveness in international banking, 82-83
 banking, future, 111-113
 consistent position in negotiations, 322-323
 development and integration, alternatives, 371
 development of human capital, 287
 domestic and trade, linkage, 296
 financing of engineering and construction projects, 120-121
 handicaps, 325
 industrial and technology, 361-369
 information technology, 186-188
 institutional memory, 341
 linkage of foreign and domestic, 322-323
 linkages with international competitiveness, 23, 24, 27, 49, 52, 108, 330, 333, 348-354, 373
 organization and effectiveness, 369-372
 R&D, technology, 193, 197, 216-217, 361-367
 services, coordination, 332, 336, 370
 short-term view, effects, 339-340
 subsidized financing for international projects, 152
 tax, examples, 374-376
 technical licensing, 215-217
 technology development, options, 23, 24, 30, 203, 215-217, 305

- telecommunications, 353-354
- trade, services in, 333-348
- Post, telegraph, and telephone authorities (PTTs), 18
 - competition from, 179-180
 - telecommunications tariffs, 304-305
- Postal savings system, Japan, 104, 115
- Postwar period
 - foreign investments by U.S. firms, 195
 - growth of international banking, 81, 113
- Pound, British, 97
- Price-risk-transferring products, 50
- Problem loans to developing countries, 111
- Procurement, Federal Government, 366-367, 369
 - and U.S. competitiveness, 367
- Product-centered organizations, 281
 - Citibank, 282-283
- Production costs, and international competitiveness, 47
- Productivity
 - and employment, services, 229-230
 - computer software, 161
 - construction, 141-143
- Professional jobs, services, 226
 - v. manufacturing, 262
- Professional services, engineering and construction, U.S., 119
- Protection for intellectual property, see Intellectual property protection, Patenting
- Qualitative comparisons, services, 48
- Reagan Administration
 - R&D funding, commercial v. military, 217
 - R&D support, 149
- Reciprocal market access, Japan, 107
- Regulatory policies, foreign government, 312-315
- Relationship banking, 102
- Reputation
 - advantages in integration and expansion, 54
 - in selling services, 48
- Research and development
 - comparative funding, U.S. and foreign firms, 19
 - construction-related technologies, Federal support, 149
 - construction technology, Japan, 144
 - construction technology, U. S., 144
 - engineering and construction, 15, 121, 138
 - engineering and construction consortia, 151
 - foreign, 200-208, 217, 307
 - international cooperation, 324-325
 - international joint ventures, 213
 - joint industry/government, Japan, 165-166
 - productivity, 193, 200
 - proprietary technology, 192-193
 - services, U.S. spending, 39, 308, 309
 - software, 161-162
 - spending, Japan, 201, 203-205, 205
 - spending, other nations, 201-205, 205, 306-311
 - tax credits, 363-364
 - U. S., 198-200, 199, 216-217, 361-367
 - U.S. policy, 361-367
 - U.S. military, 30, 148-151, 216-217, 366-367
- Responsibility, employee and new-model organizations, 279-281, 285-287
 - MetroBank example, 289-291
- Retailing, career paths, 242
- Royalties and licensing fees
 - data needed, 342
 - regulation by foreign governments, 218-219
 - U. S., international, 191-192, 191, 202-203
- Second-sourcing, microelectronics, 210-211
- Securities Industry Association, 99
- Securitization, 10-11, 82, 89, 93
 - changes in competitive environment, 84
 - reduced demand for traditional financial services, 89
- Self-employment, 246, 248
- Service industries
 - competitiveness, 47-57
 - economic adjustment, 76-78
 - employment, 225-256
 - employment stratification, 241-245
 - growth and new jobs, 254
 - high-growth, 234
 - U.S. national study for GATT, 298
 - vertical/lateral job mobility, 238-243
- Service occupations
 - employment, 225-256
- Services
 - deindustrialization, 301
 - development strategies, policy tools, 296, 311-321
 - dominance in new jobs, 232-233, 232
 - exports, expansion, 58
 - external purchases, 56-57
 - foreign revenues, 63
 - government monopolies, 75
 - heterogeneity, 35-36
 - imports, by region, 65
 - in the world economy, 43-78
 - leading exporters, 66, 69
 - leading importers, 69
 - need for a foreign presence in marketing, 52-53
 - negotiation forums, 4, 321-323
 - OTA import/export estimates, 62, 66
 - policies affecting, 296
 - post-industrial view, 301
 - providers, classified by markets, 36
 - public procurement, 311-312
 - R&D spending in U. S., 308, 309, 361-367
 - trends in employment, 228-230
 - U.S. balance of payments surplus, 61
 - U.S. comparative advantage, 70
 - U.S. political agenda, 334-335
 - world trade, 65-69, 68, 69
- Services and goods
 - evolving industrial structure, 31-42
- Service sector advisory committees, 343-344
- Services exports
 - definition, 57

- distribution by region, 60, 63
- OTA estimates by industry, 62, 66
- Services trade
 - balance, U. S., 65
 - barriers, 73-75
 - data, 61, 63, 112, 341-342
 - data, OTA estimates, 61-65
 - database, options, 341-342
 - measuring, 57-59
- Service workers
 - earnings by age, sex, and education, 233-236
 - skills, 237-238
- Sheltered industries, effects of liberalization, 72
- Site management, construction, 123-124
- Skills, 276-277
 - computers, job deskilling, 273
 - computers, job upskilling, 273-275
 - data gatekeeper jobs, 278, 279
 - lateral job movement, 240
 - Macy's restructuring example, 242-243
 - MetroBank example, 289
 - new-model organizations, 261
 - service jobs, 226, 237-238
 - social, 276
- Small businesses
 - {commercial lending to, 101
 - overseas licensing strategies, 208
- Societe Internationale de Telecommunications Aeronautiques (SITA), 177, 179
- Software, 10, 157-169
 - benefits of liberalization for U. S., 71-73
 - copyrights, 166
 - European market and industry, 166-168, 167
 - foreign competition, 162-163
 - France, market, 166, 167
 - intellectual property protection, 166, 318-321
 - international standards, 271
 - Japanese language, 164-165
 - Japan's industry and market, 158, 163-166
 - pirating, 318, 320-321
 - productivity in generation, 161-162
 - R&D, 161-162
 - standardized applications packages, 157-158, 266
 - technological advances, 39, 267
 - trade barriers in Japan, 166
 - U.S. competitiveness, 16-18, 73
 - U.S. firms in Europe, 166-168
 - [J. S. industry, 162-163, 162
 - West Germany, market, 166-167, 167
 - world market, competition, 168-169
- South Korea
 - engineering and construction, 119, 132, 133
 - technology development and licensing, 206-207
 - U.S. joint ventures, 213
 - U.S. technical licensing, 212
- Specialists
 - external, services purchased, 56
- Specialization
 - purchases of overseas technology, 214
 - U.S. engineering and construction firms, 138
- Specialized skills
 - hiring patterns, **240**
 - new-model organizations, 279
- Standby letters of credit, 98, 99, 110
- Stevenson-Wydler Technology innovation Act, 1980, 29, 360, 364-365
- Strategic Defense Initiative, 188, 306
- Stratification
 - knowledge-based service industries, 254
 - labor market, services, 226
 - new-model organizations, 261, 287
- Supercomputers, 267
 - data processing, 181
- Super-regional banks, 109
- Swaps, 98, 99
- SWIFT (Society of Worldwide Interbank Financial Telecommunications), 91, 177, 179, 316
- Systems design, 285
 - and people's skills, **272-278**
- Tax payments, foreign, 374
- Tax policy, U. S., effects on international competitiveness in services, **374-376**
- Tax Reform Act, 1986, provisions, 374-376
- Technical licensing, 18-20, 191-221
 - U.S. tax policies, impacts, 375-376
- Technology
 - computer applications in the services, 257-291
 - construction productivity, 141-143
 - engineering and construction, 14, 138-144
 - foreign, access to, 365-366
 - in banking, 50, 81, 91-93
 - international standards, 315-317, 324
 - military R&D and civilian benefits, 366-367
 - R&D, U.S. policies, 361-367
 - science base in the services, 37-38
 - standards, U.S. policy, 363, 367-369
 - U.S. advantages, 37-42, 197, 198-208
 - use, summary, 37-42
- Technology brokering
 - U. S., (construction, 143-144
- Technology trade, 189-221
 - licensing strategies, 208-214
 - [J. S. licensing overseas, 204
 - U.S. licensing with Asia, 206-207, 207
 - U.S. receipts and payments, 195-197
- TELEBRAS, 174
- Telecommunications, 169-180
 - banking, 89, 91-93
 - benefits of liberalization for U. S., 73
 - competitive environment, 169-175
 - domestic policy and international competitiveness, 349, 352-354
 - deregulation, 158, 170
 - equipment market, Japan, 173
 - foreign regulatory policies, 172-175, 313-315, 314
 - General Motors/EDS planned network, 178
 - international tariffs, 304-305
 - international standards, 354
 - management decisions, 260-261

- market changes and New York Telephone, 244
- multinational banks, 92
- pricing, volume-based v. time-based, 304-305
- revenues, international, 169
- suppliers, procurement policies, 171, 175
- technology, history, 176
- U.S. trade policy, 180
- Temporary employment, 56, 247-248, *see also* Contingent workers
 - by industry, 247
 - Federal Government, 247
- Telenet, 176, 179
- Teletel/Minitel, 159, 171, 172-173
- Teletext, 159, *see also* Videotex
- Tertiary services, 20, 36, 37
 - foreign revenues, 63, 67
 - industries, 228
 - technology, 262
 - work reorganizations, 286
- Texas Instruments, 211-212
 - cross-licensing with Japan, 220
- Tokyo Round negotiations, 4
 - congressional involvement, 335
 - non-tariff barriers for goods, 75
- Tokyo Stock Exchange, 312, 313
- Tourism, 53
 - import figures, 60, 64
- Trade and Development Program, 26, 345, 347-348
- Trade and Tariff Act, 1984, 335
- Trade barriers, *see also* Non-tariff barriers
 - licensing strategies, 208
 - lower, adjustment to, 77
 - services, effects, 73-75
- Trade financing, 96-99
 - letters of credit, 96-97
 - standby letters of credit, 98
- Training technologies, 359-361
 - Department of Defense, 359-360
- Transborder data flows, 17, 187
 - international issues, 304-305
- Transportation
 - export figures, 59
- Travel
 - export figures, 59
- Turn-key projects, 122
- Underground economy, 249, 252-253
 - categories, 252
 - size, 252-253
- United Kingdom
 - Alvey program, 306, 307-309
 - technology policies, 306
 - telecommunications regulations, 174
- United Nations Industrial Development Organization, 300
- United Nations Council on Trade and Development, 300
- Universal banks, 99
- Unreported earnings, *see* Underground economy
- Up/Down construction, 140
- Uruguay Round, 3, 4, 23, 32, 70
 - foreign direct investment, 299
 - foreign government policies, 293-325
 - intellectual property protection, 215, 318
 - trade barriers in the services, 73
- U.S. and Foreign Commercial Service (US&FCS), 23, 26, 345-346
- U.S. balance of payments, 58-61
 - history, 58
 - OTA estimates, 61
 - services v. goods, 6, 8
- U.S. banking regulations
 - impacts on U.S. international competitiveness, 82
 - shifts, 83
- U.S. banks
 - future outlook, 115-116
 - restriction abroad, 112
- U.S. construction firms, international market, 130-132, 131
- U.S. economy
 - employment and structural change, 228-238
 - jobs, 225-226
 - occupations, 230
- U.S. International Trade Commission, 127, 212
- U.S. Trade Representative, 10, 25, 26, 322, 325
 - congressional options, 336-337
 - resources for Uruguay Round, 342-345, 344
 - policy, 16
- Value-added networks (VANS), 159, 176-180
 - foreign government restrictions, 179-180
 - in banking, 91
 - markets, 176-180
 - ties with database services, 183
- United Kingdom, 174
- U.S. firms, 177-179
- Value-added services, 176-180
- Videotex, 159, 180, 183
 - Teletel/Minitel, 171, 172-173
 - United Kingdom, 174
 - U. S., 180
- Western Electric, 171
- West Germany
 - services deficit, 70
 - telecommunications regulations, 172, 314
- Word processors, Japanese language, 165
- Work organization, 257-291
 - and deskilling/upskilling, 278
 - groups, supervisory control, 280-281
 - macro level, 260
 - micro level, 260
 - rigid v. adaptive, 275, 277, 278, 278
 - tasks, jobs, and skills, 276-277
 - trends, 285-286
- Work reorganization
 - Citibank, 282-283
 - insurance industry, 264
 - Macy's, 242-243
 - MetroBank, 263, 288-291
 - New York Telephone, 244-245

-
- World Bank, 111
 disbursements for construction, 133, 135
 financing of design contracts, 122
- World economy
 benefits of reductions in trade barriers, 46
 change, effects on U.S. trade policy, 333-334
 services in, 43-78
- World Intellectual Property Organization (WIPO), 9, 25, 319-320
- World services trade, 65-69, 68, 69
 exports, by type, 69
 exports, origin by region, 68
 individual countries, 66, 68, 69
- Yen, 97
 growing prominence, 107
 in international transactions, 104