This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Employment in Manufacturing, 1899-1939: An Analysis of Its Relation to the Volume of Production

Volume Author/Editor: Solomon Fabricant

Volume Publisher: NBER

Volume ISBN: 0-87014-040-X

Volume URL: http://www.nber.org/books/fabr42-1

Publication Date: 1942

Chapter Title: Index

Chapter Author: Solomon Fabricant

Chapter URL: http://www.nber.org/chapters/c4887

Chapter pages in book: (p. 347 - 362)

Index

The industry titles used here are short titles; complete Census titles will be found in the index to The Output of Manufacturing Industries, 1899–1937 (National Bureau of Economic Research, 1940). N.e.c. means not elsewhere classified; n.e.m., not elsewhere made; and n.e.d., not elsewhere done.

Abrasives (see Emery wheels; Hones; Sandpaper) Adamson, R. K., 266n Agricultural implements, 51, 164, 203, Agricultural machinery, except tractors, 164 (included in Agricultural implements) Agriculture, relation to manufacturing, 163, 164, 167 Aircraft, 206 Alford, L. P., 75n Aluminum manufactures, 108, 201 Ammunition, 193 Arnold, J. R., 291n Artificial flowers, 208 Artificial leather, 48, 78, 125, 140, 187, 279 Artists' materials, 208 Asbestos products, 50, 195, 306 Asphalted-felt-base floor covering, 48, 65, 124, 140, 186, 281 Automobile repairing, 213 Automobiles, incl. bodies and parts, 40, 41, 44, 45, 51, 53, 57, 58, 60, 67-68, 73-74, 75, 78, 83, 85-86, 88n, 91, 93, 95, 96, 98, 99, 100, 104, 105, 109, 121, 122, 128, 129, 132, 138, 142, 144, 152, 154, 155, 156, 157, 159, 163, 167, 206, 207, 257, 325 Awnings, 187

Bags, paper, n.e.m., 191
Bags, textile, n.e.m., 187
Bakery products, 236 (see also Biscuits and crackers and Bread and cake)
Baking powder, 47, 183, 264
Baskets, 198
Batting, padding and wadding (see Upholstering materials, n.e.c.)

Beal, A. F., 233, 235n Beauty-shop and barber-shop equipment (included in Electrical machinery) Beehive coke (included in Coke-oven products) Beet sugar, 44, 45, 47, 53, 54, 60, 65, 68, 84, 91, 99, 100, 102, 105, 121, 123, 132, 139, 154, 156, 161, 182, 236, 266 Belting, leather, 48, 190, 291 Belting, woven, n.e.m., 187 Beney, M. A., 235n Beverages group, 29, 30, 32, 34, 36, 38, 47, 65, 78, 84, 95, 96, 102, 124, 139, 211, 218, 222, 228, 236, 257, 274-76, 335, 345 (see also separate industry and product entries) Beverages, nonalcoholic, 44, 47, 184, 236, 274 Billiard tables, 198 Biscuits and crackers, 47, 123, 139, 182, 265 Blackings, 193 Blast-furnace products, 45, 50, 53, 54, 57, 62, 67, 68, 85, 91, 99, 104, 121, 127, 135, 141, 154, 167, 199, 242, 314, 316 Blended flour, 213 Bliss, Charles A., 106n Blouses, women's (included in Clothing, women's, n.e.c.) Bluing, 193 Bone black (see Carbon black) Bolts and nuts, n.e.m., 199 Bookbinding and blank-book making, 192 Books, publishing and printing (included in Printing and publishing, book, job, music) Boot and shoe cut stock and findings (see Shoe cut stock and findings)

Bowden, Witt, 233, 235n, 323n Boxes, paper, n.e.c., 78, 191 Boxes, wooden, cigar, 50, 117, 118, 198, 310 Boxes, wooden, other, 198 Bread and cake, 47, 123, 139, 182, 265 Brick, 109 (included in Clay products, n.e.c.) Brissenden, P. F., 235n Brooms, 208, 329 Brushes, 30n, 208 Buckwheat flour, 143n (included in Flour) Bureau of Labor Statistics data on hours per week per wage earner, 233-43 index of cost of living, 105 index of wholesale prices, 105 Burns, Arthur F., 129n, 143 Business machines (included in Office and store machines, n.e.c.) Butter, 45, 47, 60, 65, 84, 91, 123, 133, 139, 182, 236, 248, 268 Butter reworking, 213 Buttons, 51, 67, 117, 128, 142, 208, 329

Candles, 193 Candy and other confectionery products (see Confectionery) Cane sugar, n.e.m., 45, 47, 53, 54, 65, 84, 91, 123, 139, 182, 267 Cane-sugar refining, 45, 47, 53, 54, 65, 85, 91, 99, 102, 123, 139, 182, 236, 265 Canned and dried fruits and vegetables (included in Fruits and vegetables, canned) Canned fish (included in Fish, canned) Canned foods (see Fruits and vegetables, canned and Fish, canned) Canned milk (see Milk, canned) Canvas products (see Awnings) Capital, 20-23, 24-25, 69, 80, 83, 93-97, 110, 159-60, 167, 253-57 Carbon black, 49, 66, 126, 140, 144, 193, 298 Carbon paper, 204 Cardboard, n.e.m., 191 Cardcutting, 191

Carpets and rugs, rag, 100, 186 Carpets and rugs, wool, 45, 48, 53, 54, 65, 84, 91, 99, 100, 102, 121, 124, 140, 156, 186, 237, 281 Carriage and wagon materials, 94, 117 Carriage and wagon repairing, 213 Carriages and sleds, children's, 51, 128, 142, 207, 328 Carriages, wagons, and sleighs, 41, 45, 51, 63, 67, 83, 85, 86, 88n, 91, 94, 114, 117, 118, 121, 128, 137, 142, 152, 207, 327 Carson, Daniel, 166n Caskets and coffins, 50, 198 Cast-iron pipe, 50, 67, 127, 138, 141, 200, 242, 313 Cement, 50, 53, 54, 67, 68, 99, 103, 109, 126, 141, 172, 195, 241, 307 Cement, non-Portland, 143n Cement, Portland, 143n Census of Manufactures, nature of employment data, 171-76, 179-230 Central-administrative offices, 216-17, 262 Cereals, 47, 123, 139, 182, 236, 269 Charcoal, 49, 117, 126, 141, 193, 303 Chawner, Lowell, 256n Cheese, 45, 47, 65, 84, 91, 123, 139, 182, 268, 269 Chemical products group, 29, 30n, 32, 35, 36, 38, 49, 66, 79, 85, 86, 95, 96, 103, 125–26, 140–41, 193–94, 211, 218, 222, 228, 240, 257, 298, 304, 335, 345 (see also separate industry and product entries) Chemicals, industrial, 45, 49, 53, 54, 66, 68, 85, 86, 91, 99, 100, 103, 105, 108n, 109, 121, 125, 140, 154, 155, 156, 159, 193, 240, 298, 299 Chewing and smoking tobacco, 40, 45, 47, 63, 65, 84, 86, 91, 102, 117, 118, 121, 124, 136, 139, 185, 237, 277 Chewing gum, 183 Children's and infants' wear, n.e.c.

(included in Clothing, women's,

China firing and decorating, n.e.d.,

Chocolate, 47, 123, 139, 183, 271

n.e.c.)

Cigar boxes (see Boxes, wooden, cigar) Cigarettes, 37, 39-40, 45, 47, 65, 102, 124, 139, 185, 237, 277, 278 Cigars, 37, 39-40, 45, 47, 63, 65, 74, 84, 91, 102, 117, 118, 121, 122, 124, 136, 139, 150, 151n, 157, 160, 185, 237, 278 Clay products, n.e.c., 50, 67, 68, 126, 138, 141, 196, 241, 308 Cleaning preparations, 193 Clerical workers (see Salaried work-Clocks, watches, and materials, 50, 202, 320 Cloth, knit, 44, 48, 186, 286 Cloth sponging and refinishing, 186 Clothing, leather and sheep-lined (included in Clothing, men's, n.e.c.) Clothing, men's, n.e.c., 20n, 48, 186, 224n, 237, 280 Clothing, men's, work, 48 Clothing, women's, n.e.c., 48, 187, 237, 284 Coats, suits, and skirts (included in Clothing, women's, n.e.c.) Cocoa (see Chocolate) Coffee and spices, 213 Coke-oven products, 22, 45, 49, 62, 67, 85, 91, 121, 122, 126, 134, 141, 195, 305 Collapsible tubes, 50, 127, 142, 202, 318 Collars, men's, 117 (see also Shirts and collars, men's) Colors and pigments (included in Paints and varnishes) Combs, n.e.c., 117, 118, 208 Compressed and liquefied gases (see Gases, compressed) Concrete products, 50, 126, 141, 196, Condensed and evaporated milk (see Milk, canned) Confectionery, 47, 123, 139, 183, 236, Cooperage, 50, 117, 198, 310 Copper, 45, 50, 53, 54, 62, 64n, 67, 85, 91, 99, 100, 104, 109, 117, 121, 127, 135, 142, 161, 201, 318 (see also Secondary metals, nonprecious)

Cordage and twine, 45, 48, 66, 84, 91, 121, 124, 129, 140, 186, 282 Cork products, 198 Corn products, 47, 65, 123, 139, 183, 267 Cornmeal, 143n (included in Flour) Corsets, 48, 117, 187, 290 Costs, manufacturing, 12-13, 80-82, 83, 97-113, 151 Cotton goods, 45, 48, 53, 54, 55n, 58, 61, 64n, 65, 68, 84, 91, 99, 100, 102, 121, 124, 134, 139, 156, 185, 237, 285 Cotton small wares, 185 Cottonseed products, 45, 49, 53, 54, 63, 66, 85, 91, 103, 117, 121, 125, 137, 140, 143n, 193, 240, 302 Creamer, Daniel, 151n Crucibles, 196 Cutlery, n.e.c., 200 Cycles in unit labor requirements, 69 - 73Cyclical fluctuations and labor per unit of output, 73 and length of work week, 14 and quality of product, 20n in manufacturing output and employment, 6, 8-11, 116, 165, 175 Dairymen's supplies, 208 Davis, Milton B., 118n, 237n, 241n, 323n Declining industries, 92, 93, 94-97, 98–113, 105n, 110, 114–52, 158, 159 Dental goods and equipment, 208 Dental laboratory work, 213 Distribution of manufactured products, employment in, 224-30 Doors, metal, 200 Douglas, Paul H., 235n, 332 Dresses, women's and misses (included in Clothing, women's, n.e.c.) Drug grinding, 193 Drugs and medicines, 193 Dyeing and finishing, 186 Elastic woven goods, n.e.m., 48, 187, Electric lamps, 205 (included in Elec-

trical machinery)

Electrical machinery, 79, 95, 96, 114, 159, 204, 257 Electroplating, 202 Embroideries, 187 Emery wheels, 196 **Employment** and growth of capital assets, 93-97 and labor per unit of output, 92-93, 111 average annual percentage changes, individual industries, 123-28 change in composition of, 3-8 changes in, selected periods, 148 definition of, 171 distinction between wage earners, salaried workers, and total employment, 46n, 173-74, 179-80, distribution among major industrial groups, see Chapter 2 during wartime, 6-8, 168 forecasting of future trends, 168 growth of, 3-8, 143-45, 148, 165-66, 230 (see also Chapter 1) in distribution of products, 224-27 index of, 9, 17, 331 (see Appendix F for indexes of wage earners for individual industries and major industrial groups) measurement of, 171-76 peaks in, 115-21, 157-58 relation to national employment, 164 - 68relation to nonfactory employment, 172-73, 224-28 relation to output, 8-12, 33-37, 83-93, 115-21, 122-47, 248 relation to stages of industrial development, 156-58 (see also Chaprelation to technology, 149-52 retardation of growth in, 122, 143-45, 157-58, 166 stagnation in, 3-8, 150-52, 159, 168 Employment, nonmanufacturing, in factories, 172-73, 224-28 Employment-output ratio (see Employment per unit of output)

Employment per unit of output alternative measures of change, 343-45 average annual rates of change, individual industries, 54, 65-67, 70-71 bias in, due to changes in industrial organization, 248-49 decline in, 23-27, 57-73, 110, 145, 153 - 54definition of, 10n effects on, of changes in composition of output, 37–42 fluctuations in, 10-12, 46 in groups of industries, 31-37, 335 (see also Chapter 2 and Appendix F) in individual industries, see Chapter 3 and Appendix F in total manufacturing, see Chapter I and Appendix F in wartime, 15 index of, 11, 19, 331 (see Appendix F for indexes for individual industries and major industrial groups) relation to capital investment, 20-22, 94-97, 159-60 relation to cyclical fluctuations, 15 relation to length of work week, 12-16, 25, 46-55, 72-73, 92n relation to output and employment, 83-89, 110, 146-47, 155-56 relation to nonmanufacturing productivity, 168n relation to stages of industrial development, 146-47, 156-58 retardation in rate of decline, 58-69.145 (see also Labor per unit of output and Manhours per unit of output) Enameling, japanning, and lacquering (included in Stamped and enameled ware) Engines and tractors, 204 Engravers' materials, 192 Engraving, other, 192 Engraving, steel and copper, 192 Engraving, wood, 117, 192

Envelopes, 191

Equivalent full-time employment, defined, 174-75
Evans, W. D., 176n
Excelsior, 50, 127, 141, 198, 310
Explosives, 45, 49, 53, 54, 91, 121, 126, 141, 193, 240, 300

Feathers and plumes, 117, 208 Feeds, 47, 182, 236, 270 Felt goods, 188 Fertilizers, 45, 49, 53, 54, 61, 66, 85, 91, 99, 100, 103, 109, 121, 126, 129, 133, 141, 164, 193, 240, 301 Field, P. M., 79n Files, 50, 200, 313 Fire extinguishers, 202 Firearms, 50, 76, 127, 141, 200, 313 Fireworks, 193 Fish, canned, 47, 53, 54, 65, 102, 123, 139, 182, 236, 271, 272 Fixed assets (see Capital) Flags and banners, 117, 188 (see also Regalia) Flavorings, 183 Flax and hemp, 213 Flour, 45, 47, 53, 54, 62, 65, 68, 84, 86, 91, 99, 100, 102, 109, 121, 123, 129, 136, 139, 143n, 182, 236, 272 Food, n.e.c., 182, 274 Foods group, 29, 32, 34, 36, 38, 40, 44, 47, 65, 78, 84, 95, 102, 123, 139, 167, 182, 211, 218, 222, 228, 236, 257, 264-74, 335, 345 (see also separate industry and product entries) Ford, Henry, 75n Forest products group, 29, 30, 31, 32, 33, 35, 36, 38, 50, 67, 85, 95, 96, 104, 127, 141, 159, 197-98, 211, 219, 222, 228, 242, 257, 310-12, 335, 344, 345 (see also separate industry and product entries) Forgings, n.e.m., 199 Foundry and machine-shop products, n.e.c., 203 Foundry supplies, 208 Friedman, Milton, 98n Fruits and vegetables, canned, 45, 47, 53, 54, 65, 84, 86, 91, 99, 100, 102, 121, 123, 139, 156, 182, 236, 270,

272

Fuel briquettes, 49, 67, 126, 141, 195, 306 Fur goods, 187 Furnishings, men's, n.e.c., 187 Furniture, 198 Furs, dressed, 187

Galvanizing, n.e.d., 199 Gas, illuminating, 213, 253n Gas machines and meters, 204 Gases, compressed, 49, 53, 54, 193, 299, 300 Glass, 45, 50, 53, 54, 57, 67, 85, 91, 99, 103, 105, 121, 126, 141, 196, 241, 309 Glass products, n.e.m., 117, 196 Gloves, knit, 121 (included in Outerwear, knit) Gloves, leather, 45, 48, 66, 84, 91, 117, 121, 125, 129, 140, 190, 292 Gloves, textile, n.e.m., 48, 187, 283 Glue and gelatin, 49, 193, 300 Glycerin (see Soap) Gold leaf and foil, 117, 202 Goldmark, Josephine C., 13n Graphite, 196 Grease and tallow, 194 Greeting cards (included in Printing and publishing, book, job, music) Grindstones, 213 Gypsum products (included in Wall plaster and board) Hair work, 117, 118, 208

Haircloth, 185 (see also Woolen and worsted goods) Hand stamps and stencils, 208 Handkerchiefs, 48, 187, 283 Hardware, n.e.c., 200 Hardwood distillation, 193 (see also Wood-distillation products) Harness (see Saddlery, harness and whips) Hat and cap materials, 187 Hats, cloth, 48, 187, 282 Hats, fur-felt, 45, 48, 53, 54, 63, 66, 84, 91, 102, 117, 121, 125, 136, 140, 187, 238, 283 Hats, straw, men's, 48, 117, 187, 282 Hats, wool-felt, 45, 48, 56n, 66, 84, 91, 121, 125, 140, 154, 187, 284

Heating apparatus, 200
Hinrichs, A. F., 233, 235n
Hones, 117, 196
Horse blankets, 117, 118, 187
Horsepower capacity, in American manufacturing, 24, 25n
Hosiery, knit, 48, 186, 238, 286
Hours of labor (see Work week)
Housefurnishings, n.e.c., 187

Ice, 45, 47, 60, 65, 84, 91, 121, 123, 129, 133, 139, 183, 236, 270 Ice cream, 47, 123, 139, 182, 236, 267 Industrial chemicals (see Chemicals, industrial) Industrial growth and unit labor requirements, 73-82 relation to capital assets, 93-97 stages of, 58–69 Ink, printing, 194 Ink, writing, 194 Instruments, professional, 30n, 77, 208 Iron and steel products group, 29, 30, 31, 32, 35, 36, 38, 50, 64n, 67, 75, 78n, 85, 95, 104, 127, 141, 199-200, 212, 219, 222, 228, 242, 257, 313-17, 335, 345 (see also separate industry and product entries) Iron and steel, welded, 213 Ivory work, etc., 117, 208 (see also Miscellaneous articles)

Jewelers' findings, 202 Jewelry, 202 Jewelry and instrument cases, 209 Jute goods, 45, 48, 66, 84, 91, 117, 121, 125, 140, 186, 282

Kettering, Charles F., 79 Knit goods, 45, 48, 53, 54, 55n, 59, 65, 68, 84, 91, 102, 120-21, 124, 130, 140, 238, 287 Knit cloth (see Cloth, knit) Kuznets, Simon, 64n, 129n, 143

Labels and tags, 191
Labor (see Employment and Manhours)
Labor displacement, 149-52

differences in, 175-76
relation to reduction in hours of
work, 14, 15, 52
(see also Employment per unit of
output and Manhours per unit
of output)
Labor per unit of output
and capital investment, 20-23, 80,

Labor efficiency

and capital investment, 20–23, 80, 93–97, 106–07, 159–60 and costs and prices, 97–113 and cyclical fluctuations, 23n and employment, 83–93 and output, 83–93, 101–13, 147 decline in, 23–27, 57–73, 145, 153–54

relation to industrial development, 73-82, 146-47, 156-58, 160-64 relation to materials consumed, 161 retardation in rate of decline, 57-69 (see also Employment per unit of output and Manhours per unit of output)

Labor productivity (see Employment per unit of output, Manhours per unit of output and Labor per unit of output)

Labor-saving developments, **24–27**, 73–82, 160–64

Lace goods, 48, 65, 124, 139, 185, 286 Lapidary work, 209 Lasts, 198

Lead, 45, 50, 53, 54, 67, 85, 91, 99, 104, 117, 121, 127, 142, 201, 319 (see also Secondary metals, non-precious)

Leather, 45, 48, 53, 54, 62, 66, 68, 84, 91, 99, 100, 103, 121, 125, 135, 140, 190, 239, 291

Leather goods, n.e.c., 190 Leather products group, 29, 32, 33, 34, 36, 38, 48, 66, 84, 95, 96, 103, 125, 140, 159, 190, 211, 218, 222, 228, 239, 257, 291–92, 335, 345

Lighting equipment, 202 Lime, 50, 53, 54, 67, 99, 100, 103, 117, 126, 141, 156, 195, 241, 307 Linen goods, 45, 48, 56n, 63, 66, 84,

Linen goods, 45, 48, 56n, 63, 66, 84, 91, 117, 121, 125, 137, 140, 154, 186, 290

Linoleum, 186, 281 (see also Asphalted-felt-base floor covering) Linseed products, 49, 126, 140, 193, Liquors, distilled, 45, 47, 53, 54, 65, 84, 91, 102, 121, 124, 138, 139, 144, 184, 236, 275 Liquors, malt, 45, 47, 65, 84, 91, 117, 121, 124, 138, 139, 144, 184, 236, 275, 276 Liquors, rectified or blended, 144 Liquors, vinous, 47, 124, 138, 139, 144, 184, 276 Lithographing, 192 Locomotives, 41, 44, 45, 51, 53, 54, 55, 56n, 67, 85, 86, 91, 104, 121, 128, 142, 154, 207, 326 Lubricants, n.e.m., 195 Luggage, 190 Lumber and millwork, 242 Lumber-mill products, n.e.c., 45, 50, 53, 54, 55n, 63, 67, 68, 85, 86, 91, 98, 99, 100, 104, 109, 117, 121, 127, 136, 138, 141, 154, 155, 156, 162, 171, 172, 197, 242, 311 Macaroni, 47, 182, 271 Machine-shop products, n.e.c. (included in Foundry and machineshop products, n.e.c.) Machine-tool accessories, n.e.c., 204 Machine tools, 77, 78, 167, 204 Machinery group, 29, 30, 31, 35, 51, 67, 75, 78, 95, 96, 128, 142, 203-06, 212, 219, 223, 228, 257, 321-24 (see also separate industry and product entries) Magdoff, Harry, 118n, 237n, 241n, 323n Malt, 47, 117, 124, 139, 184, 274 Manhours aggregate, 16-23

as measurement of labor, 12 indexes of, 17, 331 (see also Ap-

trial groups

peaks in, 119-21, 158

also Work week)

pendix F for indexes for individual industries and major indus-

per week per wage earner, 53 (see

Manhours (cont.) relation to labor per unit of output, 89-92, 110-11 retardation of growth in, 144 Manhours per unit of output and capital investment, 20-23 and cyclical fluctuations, 73 and output and aggregate manhours, 89-92 average annual rates of change, 54, decline in, 23-27, 57-73, 154 for individual industries, 52-57 in wartime, 19n indexes of, 19, 331 (see also Appendix F for indexes for individual industries and major industrial groups) relation to length of work week, 12-16, 25, 46-55, 72-73, 92n relation to unit wage costs, 101-07 retardation in rate of decline, 57-69 trends in, 16-23 (see also Labor per unit of output and Employment per unit of output) Manufacturing and the national economy, see Chapter 6 maturity of, 3, 166-68 relation to home production, 164, relation to other industries, 79, 151, 161-67Marble and granite, 94, 117, 196 Matches, 198 Materials consumed in manufacturing, 77, 107-08 changing character of, 10n, 56n, 78–79, 80, 161, 163 Mats and matting, 117, 186 Mattresses and bedsprings, n.e.c., 209 Maturity of American manufactur-ing, 3, 166-68 Measuring instruments (included in Instruments, professional) Meat packing, 44, 45, 47, 53, 54, 55n, 56, 61, 65, 68, 75, 84, 86-88, 91, 99, 100, 102, 121, 123, 134, 139, 154, 182, 236, 248, 273

Mechanization (see Technological improvements, and Labor-saving developments)

Men's, youths', and boys' clothing, n.e.c. (included in Clothing, men's, n.e.c.)

Metals, 78 (see also Nonferrous-metal products group)

Milk, canned, 45, 47, 65, 91, 123, 139, 181, 182, 268, 269

Millinery, 187

Mills, Frederick C., 104n, 148n, 248, 254n

Millstones, 213

Minerals and earths, 196

Mining, 77, 161–62, 164–65, 167, 171–72, 224

Mirror and picture frames, 117, 198 Mirrors, 196

Miscellaneous articles, 208

Miscellaneous products group, 29, 30n, 35, 51, 67, 95, 128, 142, 208-09, 212, 220, 223, 228, 257, 328-30 (see also separate industry and product entries)

Mitchell, Wesley C., 105n

Models and patterns, n.e.c., 209

Monuments, tombstones, cut-stone and stone products, n.e.c. (see Marble and granite)

Motion pictures, 213

Motor vehicles, motor-vehicle bodies, parts and accessories (included in Automobiles and automobile bodies and parts)

Motorcycles and bicycles, 51, 67, 128, 142, 206, 327

Mucilage, 194

Musical instruments, n.e.c., 30n, 208

Nails and spikes, n.e.m., 117, 199 National Industrial Conference Board, 13, 233-35

Needles and pins, 202

Nets and seines, 117, 188

Newspapers, publishing and printing (included in Printing and publishing, periodical)

Nonalcoholic beverages (see Beverages, nonalcoholic)

Nonclay refractories (included in Clay products, n.e.c., and Crucibles) Nonferrous-metal products, n.e.c., 50, 127, 142, 202, 320

Nonferrous-metal products group, 29, 35, 38, 50, 67, 85, 95, 104, 127, 142, 201-02, 212, 219, 223, 228, 257, 317-21, 335, 345 (see also separate industry and product entries)

Ober, Harry, 13n

Office and store machines, n.e.c., 204 Oilcloth, 48, 66, 124, 140, 279, 280 Oils, essential, 193

Oils, n.e.c., 195

Oleomargarine, n.e.m., 47, 123, 139, 182, 248, 271

Optical goods, 208 Ordnance, 213

Organ and piano parts, 208

Organs, 51, 67, 117, 128, 142, 208, 330 Outerwear, knit, 48, 186, 238, 285

Output, manufacturing

and employment, 8–12, 33–37, 83– 93, 115–45, 156–58, 248 (see also Chapter 5)

average annual percentage change in, individual industries, 123-28 changes in the composition of, 37-42, 56n

distinction between net and gross, 10n, 247

forecasting of future trends, 168 growth of, 115-45 (see also Chapter 1)

indexes of, 9, 10n, 331 (see also Appendix D for discussion of method of construction, and Appendix F for indexes for individual industries and major industrial groups)

peaks in, 115–21, 157–58

relation to exports, 165

relation to labor per unit of output, 83-93, 101-13

relation to manhours, 89-92, 111-

relation to national economy, 164-

retardation of growth in, 64, 122-43, 157-58, 166-67

Paints and varnishes, 45, 49, 53, 54, 66, 68, 78-79, 85, 91, 103, 121, 126, 141, 194, 240, 301 Paper, 49, 53, 191, 239, 295, 296 Paper and pulp, 45, 49, 53, 54, 59, 66, 68, 84, 91, 99, 103, 121, 125**,** 1**3**1, 140, 239, 296 Paper goods, n.e.c., 191 Paper products group, 29, 31, 32, 34, 36, 38, 49, 64n, 66, 84, 95, 103, 125, 140, 211, 218, 222, 228, 239, 257, 295-97, 335, 345 (see also separate industry and product entries) Patent medicines, 193 Paving materials, 209 Peanuts, 213 Pencils, 51, 208, 328 Pens and points, 44, 51, 209 Perazich, George, 77n, 79n, 307n Perfumes, cosmetics and other toilet preparations (see Toilet preparations) Petroleum and coal products group, 29, 30, 31, 32, 33, 35, 36, 38, 41, 49, 67, 85, 103, 126, 141, 195, 211, 218, 222, 228, 241, 257, 305, 306, 335, 345 (see also separate industry and product entries) Petroleum refining, 45, 49, 53, 54, 59, 67, 85, 86, 91, 95–96, 99, 100, 103, 121, 126, 131, 138, 141, 156, 159, 163, 195, 241, 305 Phonographs, 51, 67, 128, 142, 204, 322 (see also Radios and phonographs) Photo-engraving, n.e.d., 192 Photographic supplies, 209 Physical output (see Output, manufacturing) Pianos, 51, 63, 67, 117, 128, 136, 142, 208, 330 Pipes, tobacco, 117, 118, 209 Planing-mill products, n.e.m., 127, 141, 197, 242, 311, 312 Plastic materials (included in Chemicals, industrial) Plated ware, 202 (see also Silverware) Plumbers' supplies, n.e.c., 200 Pocketbooks, 190 Pottery, 196 Poultry, 213

Prices, 23, 39n, 81 and costs per unit of output, 107and labor per unit of output, 97-113 and output, 108-09 effect on measurement of capital, 97n, 253-54 index of, wholesale, 105 Primary nonferrous metals, 50, 201, 317 (see also Copper; Lead; Zinc) Printing and publishing, book, job, music, 45, 66, 68, 85, 91, 103, 121, 125, 140, 192, 297 Printing and publishing group, 29, 31, 32, 34, 36, 49, 55n, 95, 192, 211, 218, 222, 228, 240, 257, 297, 345 (see also separate industry and product Printing and publishing, periodical, 192 Printing materials, n.e.c., 192 Production (see Output, manufactur-Productivity (see Employment per unit of output, Manhours per unit of output and Labor per unit of output) Professional and scientific instruments (included in Instruments, professional) Proprietors and firm members, 30n, 46n, 81, 262 change in number of, 4-5, 7, 175 index of, 7 investment by, 22 number of, by industrial groups, 217 - 23reaction to reduction in hours of work, 12-13 Pulp, 49, 53, 54, 191, 239, 296 Pulp goods, 196 Pulp, other than wood, 213 Pulpwood, 213 Pumps, 204 Quality changes, 10, 18, 20n, 56-57, 80, 97, 153, 155

Power used in manufacturing, 78,

index of, 7

relation to wage earners, 179-80

Salt, 45, 49, 66, 85, 91, 121, 126, 141, Radios and phonographs, 204, 322 Railroad cars, 41, 45, 51, 53, 54, 55n, 194, 303 56, 63, 67, 85, 91, 104, 121, 128, 137, 142, 154, 207, 326 196, 309 Railroad repair-shop products, 213, 253n, 256n Saws, 200 Rayon, 49, 53, 54, 59, 78, 93, 130, 142n, 193, 240, 299 Rectified spirits, 213 Refrigerators, mechanical, 51, 59, 130, 204, 205, 323 Refrigerators, nonmechanical, 204, Regalia, 117, 188 Rents paid for property use, 254 Retardation measurement of, 142n of growth in employment, 122, 143–45, 157–58, 166 of growth in output, 64, 122-43, 157-58, 166-67 of rate of decline in labor per unit 288 of output, 58-69 Rice, 45, 47, 59, 65, 84, 91, 121, 123, 129, 131, 139, 182, 274 Rogers, H. O., 22n Roofing, 50, 195, 308 Rope (see Cordage and twine) Rosenberg, Benjamin, 77n Rubber boots and shoes (see Shoes, rubber) 323n Rubber goods, other, 49, 190, 239, Signs, 209 294Rubber products group, 29, 30, 34, 38, 49, 66, 84, 95, 96, 125, 140, 144, 159, 190, 211, 218, 222, 228, 239, 257, 293-95, 335, 345 (see also separate industry and product entries) Rules, 214 Saddlery, harness and whips, 117, 118, 190 Safes and vaults, 200 Salaried workers, 4, 30n, 46n, 173-74, 175, 262 average number of, by industrial groups, 215-20 definition of, 215

Sand-lime brick, 50, 67, 126, 138, 141, Sandpaper, 196 Sausage, n.e.m., 47, 182, 273 Scales and balances, 51, 205, 322 Schimmel, Herbert, 77n, 307n Scientific management, 75-76, 79, 161 Screw-machine products, 200 Secondary metals, nonprecious, 50, 127, 142, 200, 318 Secondary metals, precious, 201 Service industries, including trades, 79, 151, 165-66, 167, 168n, 171, 173 Sewing machines, 51, 117, 205, 324 Sheet-metal work, n.e.c., 202 Ships and boats, 41, 45, 51, 53, 54, 55, 56n, 67, 75, 85, 91, 104, 121, 128, 142, 154, 207, 327 Shirts and collars, men's, 48, 187, 238, Shoe cut stock and findings, 190 Shoes, leather, 20n, 45, 48, 53, 54, 62, 64n, 66, 68, 84, 91, 99, 100, 103, 121, 125, 135, 140, 190, 239, 292 Shoes, rubber, 45, 49, 66, 84, 91, 121, 125, 140, 190, 239, 293, 295 Shortenings, 47, 182, 264 Siegel, Irving H., 118n, 237n, 241n, Silk and rayon goods, 45, 48, 53, 54, 55n, 57, 60, 65, 68, 84, 91, 102, 105, 121, 124, 132, 140, 154, 156, 161, 185, 238, 289 Silverware, 117, 202 Sisco, F. T., 78n Smelting and refining: copper (see Copper); gold (see Secondary metals, precious); lead (see Lead); nonferrous metals, n.e.c. (see Secondary metals, nonprecious); platinum (see Secondary metals, precious); silver (see Secondary metals, precious); zinc (see Zinc) Snuff (see Chewing and smoking tobacco) Soap, 49, 53, 54, 61, 66, 99, 103, 126,

134, 141, 193, 241, 302

Soda-water apparatus, 209 Softwood distillation products, 193 (see also Wood-distillation prod-Soybean oil, cake and meal (included in Oils, n.e.c.) Spaghetti (see Macaroni) Sporting goods, n.e.c., 51, 209, 329 Springs, steel, n.e.m., 199 Stagnant industries (see Declining industries) Stagnation in manufacturing employment, 3-8, 150-52, 159, 168 Stamped and enameled ware, 202 Standardization of products, 26, 76-Stationery goods, n.e.c., 191 Statuary and art goods, 196 Steam and hot-water heating apparatus (included in Heating apparatus) Steam and other packing, 195 Steel barrels, 204 Steel castings (included in Steel-mill products) Steel-mill products, 22n, 45, 50, 53, 54, 55n, 58, 61, 67, 85, 91, 99, 104, 121, 122, 127, 133, 141, 199, 242, 315 - 16Stereotyping, n.e.d., 192 Stern, Boris, 74n, 294n Stone, clay and glass products group, 29, 35, 38, 50, 67, 85, 95, 103, 126, 141, 195-96, 211, 218, 222, 228, 241, 257, 306-09, 335, 345 (see also separate industry and product entries) Stone, N. I., 13, 75n Stoves and ranges, 200 Straw goods, 214 Structural metal work, n.e.m., 200 Sugar (see Beet sugar; Cane sugar, n.e.m.; Cane-sugar refining) Suitcases, brief cases, bags, trunks, and other luggage (see Luggage) Surgical and medical instruments (included in Instruments, professional) Surgical equipment, 209 Suspenders (see Elastic woven goods, Swackhamer, Gladys V., 151n

· Tallow (see Grease and tallow) Tanning and dye materials, 45, 49, 66, 85, 91, 121, 126, 129, 141, 194, Taylor, Frederick W., 75-76 Technological improvements, 16, 64, 112, 161 and changes in employment, 149-52, 159 and reduction in hours of work, 12 - 13and unit labor requirements, 73-82, 96-97 in service industries, 167, 168n Textile machinery, 204 Textile products group, 28, 29, 30, 31, 32, 34, 36, 38, 48, 65-66, 84, 95, 96, 102, 124, 139-40, 159, 167, 185-88, 211, 218, 222, 228, 237, 257, 279-90, 335, 345 (see also separate industry and product entries) Theatrical equipment, 209 (included in Miscellaneous articles) Thorp, W. L., 25n Tin and other foils, 203 Tin cans and tinware, n.e.c., 50, 200, 242, 315 Tinplate and terneplate, 213 Tires and tubes, 49, 61, 66, 74, 125, 133, 140, 144, 190, 239, 293–94 Tobacco manufactures (see Cigarettes; Cigars; Chewing and smoking tobacco) Tobacco pipes and cigarette holders (see Pipes, tobacco) Tobacco products group, 29, 31, 32, 33, 34, 36, 37, 38, 39-40, 41, 47, 53, 54, 57, 65, 84, 95, 96, 102, 124, 139, 159, 185, 211, 218, 222, 228, 237, 257, 276–79, 335, 345 (see also separate industry and product entries) Toilet preparations, 193 Tools, other, 200 Topkis, B. H., 22n Toys and games, n.e.c., 209 Tractors, 164 (included in Agricultural implements) Trade associations, 79, 80 Transportation equipment group, 29, 30, 31, 32, 33, 35, 36, 38, 40-41, 44, Transportation equipment (cont.) 51, 67, 85, 95, 96, 104, 128, 142, 154, 206-07, 212, 219, 223, 228, 257, 325-28, 335, 345 (see also separate industry and product entries)
Transportation industries relation to manufacturing, 56, 79, 162
Trimmings, n.e.m., 187
Turpentine and rosin, 45, 50, 56n, 67, 85, 91, 117, 121, 127, 141, 154, 198, 312
Type founding, 117, 192
Typewriters, 51, 77, 128, 142, 204, 321

Umbrellas and canes, 117, 209
Underwear, knit, 48, 186, 238, 287
Unemployment, in manufacturing, 8, 148, 166, 176
relation to reduction in hours of work, 13-14
technological, 149-52
Unit labor requirements (see Employment per unit of output, Manhours per unit of output and Labor per unit of output)
Upholstering materials, n.e.c., 117, 185

Value added by manufacture, 30-31, 247 defined, 30n per unit of output, 98-113 rélation to employment, 172 Vegetable and animal oils, n.e.c. (included in Oils, n.e.c.)

Wage earners (see Employment)
Wage earners per unit of output (see
Employment per unit of output)
Wage level, 80, 81
relation to manufacturing costs per
unit of output, 101-08
Wallis, W. Allen, 98n
Wall paper, 49, 191, 297
Wall plaster and board, 50, 195, 306
Washing and ironing machines, 51, 164, 205, 324

Waste, 188 Watch and clock materials, 117, 202 (see also Clocks, watches and mate-Watchcases, 117, 202 Weintraub, David, 77n West, M. E., 266n, 308n Wheat flour, 143n, 272n (included in Flour) Whips, 117, 190 Windmills, 117, 204 Window and door screens, 197 Window shades, 209 Wines (see Liquors, vinous) Wire, n.e.m., 50, 53, 54, 67, 104, 127, 141, 200, 242, 316 Wirework, n.e.c., 200 Woal, S. T., 307n Wolman, Leo, 235n Wood carpet, 213 Wood-distillation products, 45, 49, 66, 85, 91, 126, 129, 141, 193, 303, 304 Wood preserving, 198 Wood turned and shaped, n.e.c., 198 Wool pulling, 185 Wool scouring, 185 Wool shoddy, 48, 66, 125, 140, 188, 284 Woolen and worsted goods, 45, 48, 53, 54, 62, 64n, 65, 68, 84, 91, 99, 100, 102, 121, 124, 135, 140, 156, 185, 238, 288-89 Work week changes in the length of, 12-16, 25, 72-73, 92n, 143, 146, 147, 149, 154 distinction between nominal and actual, 14, 234-35 for individual industries, 46-55 (see also Appendix C) Wright, Carroll, 152 Wrought pipe, n.e.m., 50, 127, 141, 200, 242, 314

Yeast (see Baking powder)

Zinc, 45, 50, 53, 54, 67, 85, 91, 99, 104, 121, 127, 129, 142, 201, 319 (see also Secondary metals, nonprecious)

Publications of the

National Bureau of Economic Research

* 1	(1921), *2 (1922), INCOME IN THE UNITED STATES		
	Wesley C. Mitchell, W. I. King, F. R. Macaulay and O. W.	Knauth	
* 3	DISTRIBUTION OF INCOME BY STATES IN 1919 (1922), O. W. Knauth		
	BUSINESS CYCLES AND UNEMPLOYMENT (1923)		
	National Bureau Staff and Sixteen Collaborators		
* 5	EMPLOYMENT, HOURS AND EARNINGS, UNITED STATES, 1920-22	(1923)	
	W. I. King		
6	THE GROWTH OF AMERICAN TRADE UNIONS, 1880-1923 (1924)		
	Leo Wolman	170 pp., \$2.50	
*7	Income in the Various States: Its Sources and Distribution, 1919, 1920,		
	AND 1921 (1925) Maurice Leven		
8	Business Annals (1926)		
	W. L. Thorp, with an introductory chapter, Business Cycles as Revealed		
		380 pp., \$2.50	
9	MIGRATION AND BUSINESS CYCLES (1926), Harry Jerome	256 pp., \$2.50	
10	Business Cycles: The Problem and Its Setting (1927)		
	Wesley C. Mitchell	489 pp., \$5.00	
	THE BEHAVIOR OF PRICES (1927), Frederick C. Mills	,	
	Trends in Philanthropy (1928), W. I. King	78 pp., \$1.00	
	RECENT ECONOMIC CHANGES (1929)	2 vol.	
	(1929), *18 (1931), International Migrations, ed. by W. F. Willcox		
	THE NATIONAL INCOME AND ITS PURCHASING POWER (1930), W. I. King		
16	CORPORATION CONTRIBUTIONS TO ORGANIZED COMMUNITY WELFARE		
	Services (1930), Pierce Williams and F. E. Croxton	347 pp., \$2.00	
17	PLANNING AND CONTROL OF PUBLIC WORKS (1930)		
_	Leo Wolman	260 pp., \$2.50	
	THE SMOOTHING OF TIME SERIES (1931), Frederick R. Macaulay		
20	THE PURCHASE OF MEDICAL CARE THROUGH FIXED PERIODIC PAYMENT (1932)		
٥.	Pierce Williams		
	ECONOMIC TENDENCIES IN THE UNITED STATES (1932), Frederick C. Mills		
22	SEASONAL VARIATIONS IN INDUSTRY AND TRADE (1933)	455 mm 64 00	
08	Simon Kuznets PRODUCTION TRENDS IN THE UNITED STATES SINCE 1870 (1934)	455 pp., \$4.00	
	STRATEGIC FACTORS IN BUSINESS CYCLES (1934)	, A. F. Burns	
47	J. Maurice Clark	238 pp., \$1.50	
95	GERMAN BUSINESS CYCLES 1924–1933 (1934)	236 pp., \$1.50	
4,5	C. T. Schmidt	288 pp., \$2.50	
26	Industrial Profits in the United States (1934)	PP., #-130	
	R. C. Epstein	678 pp., \$5.00	
	* Out of print.	PP., 45.00	
	Out of prints		

- 27 MECHANIZATION IN INDUSTRY (1934), Harry Jerome 484 pp., \$3.50
- *28 CORPORATE PROFITS AS SHOWN BY AUDIT REPORTS (1935), W. A. Paton
- 29 PUBLIC WORKS IN PROSPERITY AND DEPRESSION (1935)

 A. D. Gayer 460 pp., \$3.00
- 30 EBB AND FLOW IN TRADE UNIONISM (1936), Leo Wolman 251 pp., \$2.50
- 31 PRICES IN RECESSION AND RECOVERY (1936)
 Frederick C. Mills
 561 pp., \$4.00
- 32 NATIONAL INCOME AND CAPITAL FORMATION, 1919–1935 (1937)

 Simon Kuznets 100 pp., 81/4 x 113/4, \$1.50
- 33 SOME THEORETICAL PROBLEMS SUGGESTED BY THE MOVEMENTS OF INTEREST RATES, BOND YIELDS AND STOCK PRICES IN THE UNITED STATES SINCE 1856 (1938), F. R. Macaulay 586 pp., \$5.00 The Social Sciences and the Unknown Future, a reprint of the introductory chapter to Dr. Macaulay's volume: 35 cents; in orders of 10 or more,
- *34 COMMODITY FLOW AND CAPITAL FORMATION, Volume 1 (1938)
 Simon Kuznets
- *35 Capital Consumption and Adjustment (1938), Solomon Fabricant
- *36 THE STRUCTURE OF MANUFACTURING PRODUCTION, A CROSS-SECTION VIEW (1939), C. A. Bliss
- 37 THE INTERNATIONAL GOLD STANDARD REINTERPRETED, 1914-34 (1940)
 William Adams Brown, Jr. 2 vol., 1420 pp., \$12.00
- 38 RESIDENTIAL REAL ESTATE, ITS ECONOMIC POSITION AS SHOWN BY VALUES, RENTS, FAMILY INCOMES, FINANCING, AND CONSTRUCTION, TOGETHER WITH ESTIMATES FOR ALL REAL ESTATE (1941)

 D. L. Wickens

 320 pp., 81/4 x 113/4, \$3.50
- 39 THE OUTPUT OF MANUFACTURING INDUSTRIES, 1899-1937 (1940)

 Solomon Fabricant 700 pp., \$4.50
- 40 NATIONAL INCOME AND ITS COMPOSITION, 1919–1938 (1941)

 Simon Kuznets 2 vol., 980 pp., \$5.00
- 41 EMPLOYMENT IN MANUFACTURING, 1899–1939: AN ANALYSIS OF ITS RELA-TION TO THE VOLUME OF PRODUCTION (1942) Solomon Fabricant 360 pp., \$3.00
- 42 AMERICAN AGRICULTURE, 1899-1939: A STUDY OF OUTPUT, EMPLOYMENT AND PRODUCTIVITY (1942)

 Harold Barger and Hans H. Landsberg 435 pp., \$3.00

FINANCIAL RESEARCH PROGRAM

- I A Program of Financial Research
- 1 Report of the Exploratory Committee on Financial Research (1937) 91 pp., \$1.00
- 2 Inventory of Current Research on Financial Problems (1937)
 253 pp., \$1.50
 - * Out of print.

II	Studies in Consumer Instalment Financing			
1	PERSONAL FINANCE COMPANIES AND THEIR CREDIT PRACTICES (1940)			
	Ralph A. Young and Associates	170 pp., \$2.00		
2	SALES FINANCE COMPANIES AND THEIR CREDIT PRACTICES (1940)			
	Wilbur C. Plummer and Ralph A. Young	298 pp., \$3.00		
3	COMMERCIAL BANKS AND CONSUMER INSTALMENT CREDIT (194	0)		
	John M. Chapman and Associates	318 pp., \$3.00		
4	INDUSTRIAL BANKING COMPANIES AND THEIR CREDIT PRACTICE	es (1940)		
	R. J. Saulnier	192 pp., \$2.00		
5	GOVERNMENT AGENCIES OF CONSUMER INSTALMENT CREDIT (19	940)		
	J. D. Coppock	216 pp., \$2.50		
6	THE PATTERN OF CONSUMER DEBT, 1935-36 (1940)			
	Blanche Bernstein	238 pp., \$2.50		
7	7 THE VOLUME OF CONSUMER INSTALMENT CREDIT, 1929–38 (1940)			
	Duncan McC. Holthausen in collaboration with			
	Malcolm L. Merriam and Rolf Nugent	137 pp., \$1.50		
8	RISK ELEMENTS IN CONSUMER INSTALMENT FINANCING (1941)			
	David Durand	101 pp., \$1.50		
	Technical edition,	160 pp., \$2.00		
9	CONSUMER INSTALMENT CREDIT AND ECONOMIC FLUCTUATIONS	(1942)		
	Gottfried Haberler	230 pp., \$2.50		
III	Studies in Business Financing			
	TERM LENDING TO BUSINESS (1942)			
	Neil H. Jacoby and R. J. Saulnier	163 pp., \$2.00		
	Financing Small Corporations in Five Manufacturing Industries, 192			
	36 (1942)			
	Charles L. Merwin	172 pp., \$1.50		
	ACCOUNTS RECEIVABLE FINANCING	11		
	R. J. Saulnier and Neil H. Jacoby	157 pp., \$2.00		
_	•	••		
Conference on Research in Income and Wealth				
STUDIES IN INCOME AND WEALTH				
	Vol. I (1937), 368 pp., \$2.50; Vol. II* (1938); Vol. III (1939), 500 pp., \$3.50;			
	Vol. IV: OUTLAY AND INCOME IN THE UNITED STATES, 1921-1938 (1942)			
	Harold Barger	391 pp., \$2.50		
	VOL. V: INCOME SIZE DISTRIBUTIONS IN THE UNITED ST			
(in press)				
Co	Conference on Price Research			
1	l Report of the Committee on Prices in the Bituminous Coal Industr			
	(1938)	144 pp., \$1.25		
2	TEXTILE MARKETS-THEIR STRUCTURE IN RELATION TO PR	ICE RESEARCH		
	(1939)	304 pp., \$3.00		
3	PRICE RESEARCH IN THE STEEL AND PETROLEUM INDUSTRIES (1939)			
		224 pp., \$2.00		
	* Out of print.			

CONFERENCE ON RESEARCH IN FISCAL POLICY

FISCAL PLANNING FOR TOTAL WAR (1942)

W. L. Crum, J. F. Fennelly, L. H. Seltzer

361 pp., \$3.00

NATIONAL BUREAU OF ECONOMIC RESEARCH

1819 Broadway, New York, N. Y.

European Agent: Macmillan & Co., Ltd.

St. Martin's Street, London, W.C.2