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Appendix B

SOURCES FOR ALL ANALYZED NON-OHIO SERIES, LISTED BY SERIES NUMBER[1]

Series Number	Title and Source
0001-0009	Number of houses erected or for which building plans were approved: for various municipalities, Great Britain. *Source:* Basic work sheet of B. Weber of annual entries for number of residential houses "erected" or "planned" in thirty-four cities. For description of sources and methods used see [284, pp. 107–8, 129 f.]. The annual entries are the original crude data adjusted to a calendar year basis and made available for this research by A. K. Cairncross.
0010	Percentage of Unoccupied Dwelling Houses, London. *Source:* Calculated by J. C. Spensley, as given in [46, Table 32, p. 153].
0011	Value of Plans Passed for Warehouses, Stores and Workshops, Glasgow, Great Britain, 1873–1936. *Source:* From NBER file 2,71b; Office of Public Works, City Chamber of Glasgow. Memorandum of Linnings Granted by the Dean of Guild Court.
0012	Permits Granted for New Streets, Glasgow, Great Britain. *Source:* From NBER file 2,71c; same as for 0011.
0013	Percentage of Unoccupied Dwelling Houses, Glasgow, Great Britain. *Source:* [46, Table I, p. 16].
0014	Average Cost per Room, Residential Building, Glasgow, Great Britain. *Source:* [46, p. 16].
0015	Number (in thousands) of Houses Erected in Great Britain, 1856–1950. *Source:* [284, Appendix, p. 131, col. 2].

Series Number	Title and Source
0016	Brick Production, Great Britain. *Source:* From NBER file 2,72; [231, pp. 316–17].
0017	Imports of Deals and Fir Timber, Great Britain. *Source:* [11, Table 10, p. 188].
0018	Urban Residential Building Index (1890 = 100), Germany. *Source:* See Appendix H.
0019	Building Materials Price Index (1913 = 100), Germany. *Source:* [144, p. 82].
0020	Index of Cost of Building (1890–99 = 100), Germany. *Source:* Unweighted average of index relatives (1890 = 100) of our series 0019 and average hourly wage rates of building workers (three cities) 1871–1913 [34, p. 335].
0021	Net Change Mortgage Holdings Prussian Urban Savings Banks (Sparkasse) and All-German Mortgage Banks (Hypothekenbanken). *Source:* [136, p. 61, cols. 2, 9]. Hunscha data extended only to 1870. The series was extended back to 1864 on the basis of a mortgage lending series in [219, Table XXII, p. 143].
0022	Net Construction Dwelling Units, Berlin, Germany, 1841–1894 (new construction minus demolition). *Source:* [219, Table XIII, pp. 134–35]. From 1896–1909, linked (in NBER file 2,81) to comparable series from [15, p. 303].
0023	Number Vacant Dwelling Units, Berlin, Germany. *Source:* [219, Table III, p. 126 for years 1841–95; Table V, p. 128 for years 1896–1910].
0024	Net Annual Migration, Berlin, Germany. *Source:* [219, Table I, p. 124, col. 3, "Mehrzuzug"].
0025	Average Annual Rental per Occupied Dwelling Unit, Berlin, Germany. *Source:* For the years 1841–95 Total Rent Income (Mietwert) was divided by number of occupied dwelling units [219, Table II, p. 126, cols. 2, 4]. The division was performed by Reich but inaccurately (see her col. 6 "Mietwert einer Wohnung"). Rents were extrapolated to 1909 on the basis of index relatives

Series Number	Title and Source
	derived from a related series [219, Table V, p. 128, col. 4, "Nutzertrag der im Laufe des Jahres benützt. Wohn. und Gelasse"].
0026	Fire Insurance Values as Per Cent of Selling Price of Sold Properties, Berlin, Germany. *Source:* [219, Table XVIII, p. 137].
0027	Mortgage Loan Recordings, ("Eintragungen") Berlin, Germany. *Source:* [219, Table XX, p. 139, col. 1].
0028	Forced Sales, Berlin, Germany. *Source:* [219, Tables XVII, XVIII, pp. 137–38]. From 1867 to 1906 series represents the number of forced sales in improved property ("Zwangsversteigerung," col. 4). To this was linked in 1868 by use of index relatives an overlapping series of "Subhastationen" (sheriff sales) (col. 3) for 1843–68.
0029	Number of Vacant Dwellings as Per Cent of All Dwellings, Hamburg, Germany. *Source:* [136, p. 60, col. 7, "Anzahl in v.H. Aller Lokalitäten"].
0030	Net Annual Change Dwelling Stock, Hamburg, Germany. *Source:* [136, p. 60, col. 14, "Lokalitäten überhaupt"].
0031	Average Annual Occupied Dwelling Rental, Hamburg, Germany. *Source:* [136, p. 60, col. 9 "je Lokalität in Gebrauch"].
0032	Average Annual Rental of Unoccupied Dwellings, Hamburg, Germany. *Source:* [136, p. 60, col. 10, "je Lokalität leerstehend"].
0033	Number of Non-Residential Buildings Constructed, Hamburg, Germany. *Source:* From NBER file 2,81e; [121, 1890, p. 87; 1920, pp. 131–32; 1925, p. 114; 1935/36, p. 70].
0034	Number of Residential Buildings Erected in Bremen, Germany. *Source:* From NBER file 2,81h; [30]. The years 1855–1911 and 1902–35 are from two different official agencies, both segments being simultaneously re-

Series Number — Title and Source

ported. Years 1855–1911 are new buildings (residential) erected; 1902–37 are new residential buildings inspected and approved. For 1902–27, second segment also in [29, p. 31]; for 1932 see [31, Dec. 1932, p. 345]; for 1933–35, see [32].

0035 Building Activity Index (1909–13 = 100), Paris, France.
Source: [93]; supplemented by private communication to M. Gottlieb supplying index numbers. The index was derived from building materials used.

0036 Real Estate Price Index Residential Property, Net of Depreciation (1939 = 100), Paris, France.
Source: Index derived from index relatives of price change for structurally identical residential properties sold twice or more within a set of successive 20-year periods. The individual indexes for a given year were lined up in an array from which was selected the median of the interquartile range. The medians were joined by a three- to five-year moving average. Allowance was then made for depreciation calculated from prices of property per square meter sold in 1939, classified by period of construction. This yielded a value shrinkage per decade of 23.08 per cent though a more "moderate" decade allowance of only 16.7 per cent was finally used. As presented here, the gross index of sale price was adjusted or "rectified" by allowance for depreciation. For details see [75, pp. 170–79].

0036-1 Residential Vacancy Rate, Paris, France.
Source: Statistical estimates on the percentage of vacant to total dwelling units were available between 1879 and 1913 for six years from census surveys, for 22 years and 10 years, respectively, by two types of property taxation, "la contribution foncière" and "la contribution mobilière." Using estimates from "la contribution foncière" as a base, an index of uncertain quality was pieced out. Data was graphed in the article by Flaus [93] and actual data communicated in a letter to M. Gottlieb.

Series Number	Title and Source
0037	Annual Tax on Number of New Residential Buildings, Paris, France (Fluctuations du principal de l'impot foncièr relatif aux maisons nouvellement construites). *Source:* Albert Aftalion, by private communication, from tax administration as disclosed in [6, p. 13]. Series extended to 1914 on the basis of a parallel series of number of new buildings constructed, NBER file 2,77.
0038	Number of Marriages, Stockholm, Sweden. *Source:* For 1867–93, [264]; for 1894–1948, [241, Table 39, p. 41].
0039	Permits Residential Building Rooms, Stockholm, Sweden. *Source:* [241, Table 132, p. 124, col. 9 (Summa eldstäder)].
0040	Vacancy Rate, Stockholm, Sweden. *Source:* [241, p. 124, col. 28 (Ledighetsprocent. Eldstäder)].
0041	Number of New Rooms Added, Sweden. *Source:* [139, Part II, Table 109, p. 340, col. 8, "The Statistically Recorded Production of Dwelling Houses"].
0048	Number Permits New Building, Montreal, Canada. *Source:* [35, pp. 140–41].
0049	Index Urban Building Activity, (1900 = 100), Canada. *Source:* [35, pp. 140–42].
0050	Number Dwelling Units Completed, Canada. *Source:* [89, p. 299]. The years 1896–99 were developed by M. Gottlieb from Buckley (our series 0049), using Firestone's series with 1900 as index base.
0052	Number Residential Buildings Authorized, Amsterdam, Netherlands. *Source:* Bureau of Statistics, Amsterdam; letter from Netherlands Central Bureau of Statistics, Dec. 30, 1960. Data from 1903–35 compiled by taking average per cent of residential to total (88.31 per cent for preceding four years).
0053	Number Nonresidential Buildings Authorized, Amsterdam, Netherlands.

Series Number	Title and Source
	Source: Bureau of Statistics, Amsterdam; letter from Netherlands Central Bureau of Statistics, Dec. 30, 1960. Years 1903–8 estimated as 11.69 per cent of total authorized.
0054	Increments of Population, Amsterdam, Netherlands. *Source:* Bureau of Statistics, Amsterdam; letter from Netherlands Central Bureau of Statistics, Dec. 30, 1960.
0055	Value of Building, Denmark, 1870–1913. *Source:* Data communicated by letter May 28, 1953 from Det Statistiske Department, Denmark.
0056	Value of Building, Denmark, 1921–39. *Source:* Same as for 0055.
0057	Private Nonagricultural Construction, Argentina. *Source:* [12; years 1900–15 from Table V, p. 291, col. 2; years 1915–55 from Table IV, p. 290, col. 9].
0058-0061	Brick Production, States and Commonwealth as designated, Australia. *Source:* Before 1906 various state statistical registers; since 1906 Commonwealth Bulletins. Taken from [120].
0062-0074	Gross Private Capital Formation, by Category as designated, Australia, (1936–39 prices). *Source:* [44, Table II]. These figures were divided by cost index communicated by letter from Reserve Bank of Australia for the years 1861–1939.
0075	Brick Residential Rooms Added, Victoria, Australia. *Source:* [43, Table L, p. 50]. Derived by Butlin from Building & Loan Societies, trade journals.
0076	Average Cost New Brick Rooms Built, Victoria, Australia (average of urban and rural). *Source:* [43, Table L, p. 50].
0077	Residential Brick Rooms Added, Urban Area (Sydney) of New South Wales, Australia. *Source:* [43, Table N, p. 56].
0078	Cost of Building New Residential Brick Rooms, New South Wales, Australia. *Source:* [43, Table N, p. 56].
0079	Total Number New Rooms Added, Sydney, Australia.

Series Number	Title and Source
	Source: [43, Table O, p. 59, col. 3]. Derived by Butlin from metropolitan water receipts (flat charge per room).
0080	Vacancy Ratio, St. Louis, U.S. *Source:* [224]; made available through M. Abramovitz' NBER series 000641.
0081	Number of Family Accommodations Built, St. Louis, U.S. *Source:* [224]; made available through M. Abramovitz' NBER series 000621.
0082	Foreclosure Rate, St. Louis, U.S. *Source:* [224]; made available through M. Abramovitz' NBER series 000632.
0083	Rent, Four-Family Flat, St. Louis, U.S. *Source:* [224]; made available through M. Abramovitz' NBER series 000651.
0084	Value Building Permits, St. Louis, U.S. *Source:* NBER files, 2,50.
0085	Value of Total Building Permits, Chicago, U.S. *Source:* From NBER file 2,47. Original source: Building Department of Chicago *Reports, Chicago Tribune, Chicago Daily News Almanac,* as reported for years 1854–1933 in [134]; years 1934–43 from *The Economist, Annual Reviews.*
0086	Approximate Number of Acres Subdivided in 1931 City Limits of Chicago, U.S. *Source:* From NBER file 2,67; [134, Table XC, pp. 479–80].
0087	Length of Pavements Laid (3-year moving average), Chicago, U.S. *Source:* From NBER file 2,94b; for 1915–18 [53, p. 40]; for 1916–30, [54, p. 52]; for 1931–35, see [55, 1931, p. 272; 1932, p. 278; 1933, p. 223; 1934, p. 373; 1935, p. 364; 1936, p. 360]. Smoothed into 3-year moving average for this research.
0088	Increments Annual Population (3-year moving average), Chicago, U.S. *Source:* [134, Table XCIII, p. 483]. Increments computed by M. Gottlieb and smoothed by 3-year moving average.

Series Number	Title and Source
0089	Number Real Estate Instruments, Chicago, U.S. *Source:* [134, Table LXXX, p. 470].
0090	Value of Manufactures, Chicago, U.S. *Source:* [134, Table XCI, p. 481]; using figures obtained from the U.S. Census Bureau and the *Chicago Tribune*. These figures from 1879 onward were deflated by Warren & Pearson Wholesale Price Index (1910–14 = 100) as given in [262, p. 231]. Years 1872–78 were adjusted to currency from gold basis by using the Warren & Pearson index of gold discount [279, p. 351].
0091	Value of Building Plans Filed for Total New Building, New York City (Manhattan), U.S. *Source:* From NBER file 2,44. N.Y.C. *Record* for 1868–80; for 1881–92, N.Y.C. *Annual Report of the Fire Dept.;* for 1893–1901, N.Y.C. *Record;* for 1902–44, N.Y.C. (Manhattan) *Annual Report of the Dept. of Buildings* (esp. 1910, p. 6, which gives 1868–1910); for Bronx data, 1902–20 from N.Y.C. (Bronx) *Annual Report of the President;* for 1936–44 *Records of the Dept. of Housing and Buildings*. The entire series runs from 1868 to 1944, with the period 1902–44 covering the area of Manhattan only. For 1868–97 the data cover Manhattan and such portions of the Bronx as were annexed from time to time. For the years 1898–1920 data cover Manhattan plus the entire Bronx. (For the period 1898–1901 data were not separable for these two boroughs. Therefore for 1902–20 data were here computed by adding figures for Manhattan to those for the Bronx to retain comparability.) In our present use of this series, the data for both Manhattan and the Bronx were used to 1918 for purposes of long-cycle analysis, and to 1920 for short cycles. Thereafter the data for Manhattan alone continued.
0092	Value of Building Plans Filed for New Residential Buildings, New York City (Manhattan), U.S. *Source:* From NBER file 2,53. For 1868–80, N.Y.C. *Record;* for 1881–92, N.Y.C. *Annual Report of Fire*

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Dept.; for 1893–1901, N.Y.C. *Record* and *Annual Report of Building Dept.;* for 1902–35, N.Y.C. (Manhattan) *Annual Report of the Dept. of Buildings;* for Bronx data, 1902–20, N.Y.C. (Bronx) *Annual Report of the President;* for 1936–44, *Records of Dept. of Housing and Buildings* (municipal building). Data for residential were computed, NBER, by adding dwellings (detached), flats, tenements; frame and brick are included and hotels and boarding houses are excluded. The entire series runs from 1868 to 1944, with the period 1902–44 covering the area of Manhattan only. For 1868–97 the data cover Manhattan and such portions of the Bronx as were annexed from time to time. For the years 1898–1920 data cover Manhattan plus the entire Bronx. Figures for 1898–1901 are here estimated: residential for 4 boroughs (excl. Brooklyn) multiplied by the ratio of "Total New Building for Manhattan and Bronx" to "Total New Building for 4 Boroughs." Figures for 1902–20 are here computed by adding items for the Bronx and Manhattan in order to continue first segment for overlapping purposes. In our present use of this series, the data for both Manhattan and the Bronx were used to 1918 for purposes of long-cycle analysis, and to 1920 for short cycles. Thereafter the data for Manhattan alone continued.

0093 Value of Building Plans Filed for New Commercial and Industrial Buildings, New York City (Manhattan), U.S.

Source: From NBER file 2,56. For 1868–80, N.Y.C. *Record;* for 1881–92, N.Y.C. *Annual Report of Fire Dept.;* for 1893–1901, N.Y.C. *Record* and *Annual Report of Building Dept.;* for 1902–35, N.Y.C. (Manhattan) *Annual Report of the Dept. of Buildings;* for Bronx data, 1902–09, N.Y.C. (Bronx) *Annual Report of the President;* for 1936–44, *Records of Dept. of Housing and Buildings.* Data for commercial and industrial were computed, NBER, by adding stores, office buildings, stables, manufactories and work-

Series Number | Title and Source

shops, and beginning 1931, warehouses. The entire series runs from 1868 to 1944, with the period 1902–44 covering the area of Manhattan only. For 1868–97, the data cover Manhattan and such portions of the Bronx as were annexed from time to time. For the years 1898–1920 data cover Manhattan plus the entire Bronx. Figures for 1898–1901 are here estimated: "Commercial and Industrial" for 4 boroughs (excl. Brooklyn) multiplied by the ratio of "Total New Building for Manhattan and Bronx" to "Total New Building for 4 Boroughs." Figures for 1902–20 are here computed by adding items for the Bronx to Manhattan in order to provide an overlap. In our present use of this series the years 1921–44 (Manhattan only) were raised by the ratio of Manhattan and Bronx data to Manhattan alone data for the year 1920 (1.0998 per cent) so as to include the Bronx.

0094 Total Pavements Laid, New York City (Manhattan), U.S.
Source: From NBER file 2,94a. For 1871–82, N.Y.C. *Dept. of Public Works,* 1882, p. 18; for 1883–88, 1895–96, *Dept. of Public Works,* individual issues. For 1889–94, 1896–99, N.Y.C. *Annual Report of Dept. of Highways.* For 1900–1935, N.Y.C. *Annual Report of the President,* 1935, p. 38.

0095 Average Consideration per Conveyance, Manhattan 23rd & 24th Wards, U.S.
Source: [204, pp. 157–59].

0096 Value Real Estate, Manhattan Island, U.S.
Source: Lawyers Title Corp. of New York, from assessment and sales records, as given in [262; Table A100, p. 12].

0097 Building Material Prices (1910–14 = 100), New York City, U.S.
Source: Warren and Pearson, as given in [204, Table L1–14, p. 232, col. 10].

0098 Value of Building Permits, New Buildings, Detroit, U.S.
Source: From NBER file 2,49a. For 1878–1907, City of

Series Number	Title and Source
	Detroit *Annual Reports, Fire Marshall Reports*. For 1908–44, correspondence with Detroit, Dept. of Buildings and Safety Engineering.
0099	Increase in Number of Lots in Detroit Area, U.S. *Source:* From NBER file 2,68; [190, p. 43].
0101	Number of Deeds Recorded, San Francisco, California, U.S. *Source:* Made available through M. Abramovitz' NBER series 000352.
0102	Number of Deeds Recorded, Alameda County, California, U.S. *Source:* Made available through M. Abramovitz' NBER series 000372.
0103	Number of Lots Added Grand Rapids Area, Michigan, U.S. *Source:* Made available through M. Abramovitz' NBER series 000522.
0104	Number of Lots Added, Milwaukee Area, Wisconsin, U.S. *Source:* Made available through M. Abramovitz' NBER series 000542.
0106	Number of Lots Added, Ann Arbor, Michigan, U.S. *Source:* Made available through M. Abramovitz' NBER series 000502.
0107	Number of Rural Residential Brick Rooms Added, New South Wales, Australia. *Source:* [43, Table N, p. 56].
0108	General Economic Pattern, Ohio Valley, U.S. *Source:* [16]; actual index relatives of "General Economic Pattern" given on pp. 409, 434, 470. Berry compiled a "general economic pattern" using the median link relatives of nine basic time series (described on p. 554). Three series wholly or primarily refer to western activity (nos. 1, 3, 6). Three series (nos. 4, 5, 7) are wholly nationwide in impact. The other three series are of mixed character.
0130	Number of Marriages, Cook County, Ill., U.S. *Source:* [264, Part II]; [262].
0131	Number of Marriages, Paris, France

Series Number	Title and Source
	Source: [9, pp. 14–15].
0132	Rent Index Vacant Dwellings (1914 = 100), New York City, U.S. *Source:* [218, Table 32, "Rent Indexes for Six Cities," p. 97; and Table 35, "Comparison of Rent Indexes, Three Cities," p. 101].
0133	Rent Index Vacant Dwellings (1914 = 100), Chicago, U.S. *Source:* [218, pp. 97, 101].
0134	Rent Index Vacant Dwellings (1914 = 100), St. Louis, U.S. *Source:* [218, p. 97].
0139	Gross Investment, Italy (1938 prices). *Source:* [143, p. 266, col. 4].
0140	Gross Residential Construction, Italy (1938 prices). *Source:* [143, p. 266, col. 1]. Only a general description of the sources and research methods used was provided. See [143, pp. 99–102] (supplemented by a letter from the director of the research, Prof. A. Giannone, Sept. 3, 1960). It appears that from 1913 onward an index of residential building activity was constructed from building permit reports from a sample of leading cities (eight in number for the early years). Before 1913 an annual series was constructed from decennial benchmark returns of number of rooms interpolated by population and density coefficients (coefficienti di affollamento) into an annual series [143, pp. 100–3]. To this physical unit series there were applied estimates of per room value derived from "sporadic information" about average room prices and qualitative information from provincial towns (p. 102). Prof. Giannone advised in his cited letter that "data concerning building material and the number of those engaged in building activity" was too fragmentary to permit a check on the estimates before 1917. Sources for total construction were somewhat more adequate, especially after 1896. Hence, it is not surprising that one well-informed Italian economist has seen fit to use the investment estimates only from 1895 onward [212, p. 477 and n.

Series Number	Title and Source
	17]. On the other hand, Italian scholars have begun to make use of the newly released statistics and a systematic investigation into "building cycles" was directly stimulated [244; 113].
0141	Total Nonresidential Construction, Italy (1938 prices). *Source:* [143]; the implicit price index of housing (pp. 264, 266) was computed and applied to construction values in current prices (p. 219).
0142	Value Gross Construction, Italy (1938 prices). *Source:* [143, pp. 266–67].
0143	Index House-Building (1901–10 = 100), South Wales Coalfield, Great Britain. *Source:* [169].
0144	Index House-Building (1901–10 = 100), Manchester Conurbation, Great Britain. *Source:* [169].
0145	Index House-Building (1901–10 = 100), Great Britain. *Source:* [169]. Years 1852–55 derived from unweighted index of nationwide building; thereafter derived from weighted index.
0155	Number Nonfarm Permanent Housekeeping Residential Dwelling Units Erected, U.S. *Source:* [109].
0156	Price of Pine Timber, 4-City Average, U.S., quarterly. *Source:* For New Orleans, yellow pine; Cincinnati, clear pine; Charleston, white pine; N.Y.C. and Philadelphia, mixed. From 1819 to 1824 based on Philadelphia, Charleston, and New York City; New Orleans included in 1825. From 1843–55 Charleston is excluded and Cincinnati is added. For 1856–60, based on Philadelphia, New York, and New Orleans, adjusted to 4-city average by use of 3-city index using Jan. 1856 = 100 [61, pp. 186 ff.]. The data for these cities were logarithmically averaged and the cities given equal weighting. An extension of three quarters beyond Oct. 1860, was made by extrapolation on the basis of building material price behavior in order to provide a long-cycle reference date.
0160	Population Growth, 17 Cities, U.S.

Series Number	Title and Source
	Source: [206, Table X, p. 72].
0161	Building Permits Divided by Building Costs, 17 Cities (1913 = $1 million), U.S.
	Source: [206, p. 72].
0167	Building Cost Index (1913 = 100), U.S.
	Source: Computed by J. R. Riggleman from various sources and used in deflating building permit expenditures from 1830 to 1933. See [222, App. L, from 1830 to 1851].
	Riggleman's building cost index 1913 = 100 was compiled from the following:
	I. *1830–51.* Constructed by combining on the basis of equal weights an index of building trade wage rates with an index of average wholesale prices of softwood lumber.
	Wage rate 1840–51 = the average wage rate for bricklayers in New York state, carpenters in Massachusetts and New York, masons in Massachusetts, painters in New York, and plasterers in Pennsylvania.
	Source: Wage rate 1830–51. 1. [63, p. 86]. 2. [266, pp. 57, 58, and 153–205].
	Lumber prices 1830–39. 1. From Department of Agriculture—prices of merchantable pine in the New England market.
	Lumber prices 1840–51. 2. From Department of Agriculture index of average wholesale prices of upper grades softwood in Eastern markets, converted to a comparable basis.
	Source: Lumber prices 1830–51. 1. [267, pp. 119–23]. 2. "Timber Depletion, Lumber Prices," etc., [267, pp. 40–48].

Series Number — Title and Source

II. *1852–1903.* American Appraisal Company's cost of industrial buildings in Eastern cities includes:

1. Indexes of frame building costs.
2. Indexes of brick mill costs.

added in 1890 3. Indexes of iron-clad buildings.

added in 1890 4. Indexes of steel iron-clad buildings.

added in 1890 5. Indexes of reinforced concrete construction.

added in 1890 6. Indexes of concrete and steel construction.

The above combinations were made on a weighted average basis.

III. *1904–33. Engineering News-Record* construction cost index with modifications for 1904–33 is composed of four weighted components:

		Weights
Materials	1. Structural steel at Pittsburgh	2500 lbs.
	2. Cement at Chicago	6 barrels
	3. Lumber at New York	600 feet
Wages	4. Average for common labor in 20 cities	200 man-hours

Riggleman's reservations on the construction cost-index in *Engineering News-Record,* pages 30–31:

> In using the above index of construction costs, it is recognized that its basis is limited to building material prices and labor rates and that it may not represent any of the other changes that take place in building costs, such as in contractor's overhead and profits, financing charges, architect's fees, technical improvements in machinery, economy in design, greater prefabrication of materials, and cyclical and secular variation in the efficiency of labor and management. These factors may vary considerably from time to time and changes may not correspond to the changes in building-material prices and in total construction costs. If a synthetic index of this type does not properly reflect the changes in the efficiency of labor and management and the

Series Number | Title and Source

improvements in the use of materials, its use may cause an appreciable error in the secular trend, as discussed later in the chapter.

Riggleman states that the slight upward trend in building permits per capita for the whole period 1830–1933 may not really be significant but may be due to the following:

1. The synthetic cost index based on fixed amounts of labor and materials.
2. "It is probable that an extension of the period, either backward or forward, or the addition of cities in the earlier parts of the period, might cause some changes in the slope. . . .

"If a cumulative upward bias does exist in the cost index used, it would mean that the per capita trend from 1830 would have a slightly greater upward slope.

"The above qualification applies to any interpretation that might be made of the secular trend. The objective of this particular study, however, is to show cycles, and the secular trend has been eliminated. Since any trend that has been indirectly eliminated by a steadily accumulating bias in the cost index simply reduces the trend that is directly eliminated, the cycles in as erratic a series as the one under consideration would not be affected to any practical extent by a secular bias in the cost index."

0267 Differential Between Mortgage Rates (M) and Bond Yields (r), Germany ($M-r$, in basis points).
Source: Mortgage yield in Germany was represented by the average interest rate for "Pfandbriefe" (interest-bearing depositor certificates issued by German mortgage banks). Bond yield was represented by yields on long-term securities (Rendite festverzinsliches Papiere) [73, pp. 98–99]; [136, p. 60].

0268 Differential Between Mortgage Rates (M) and Bond Yields (r), U.S. ($M-r$, in basis points).
Source: [114, Table 0-1, cols. 1, 6].

Series Number	Title and Source
0270	Value Total Nonfarm Building, U.S. *Source:* [110].
0271	Value Nonfarm Residential Building, U.S. *Source:* Same as for 0270.
0272	Value Nonfarm Nonresidential Building, U.S. *Source:* Same as for 0270.
0273	Price Vacant Land, Paris, France. *Source:* [75, pp. 184–88]. In 1939, 32,000 square meters of vacant land were sold for a total return of 9,250,000 francs (p. 188). This return was the base of a series of index relatives of median prices for the sale of identical sites sold at different time periods. These index relatives were the smoothed 3- to 5-year moving average of the weighted mean indexes for sales of identical properties sold in different base periods (1939, 1920, and 1900).
0274	Unit Cost Standard Building (1910 = 100), London, England. *Source:* [148], as arranged in [46, p. 157].
0275	Index of Price Series of Building Materials (1910 = 100), England. *Source:* Same as for 0274.
0277-0280	Marriages per Capita, for Designated Countries. *Source:* [275, pp. 404–5].
0281	Marriages per Capita, Six States, U.S. *Source:* [248, p. 189].
0281-A	Estimated Number of Marriages per 1000 Estimated Midyear Population, U.S. *Source:* [262, Table C77, p. 49].
0282	Marriages per Capita. England. *Source:* [248, p. 189].
0300	Scotch Mortgage Yield Differential. *Source:* "Interest received on sums invested in landed securities" minus yield on 3 per cent consols. Both series were analyzed for cyclical characteristics by A. Gayer, W. Rostow, and A. J. Schwartz in [97]. The series were obtained from the manuscript tables and texts were kindly made available by Mrs. A. J.

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Schwartz (Tables 190, 187, Part IV Typescript, p. 589). The "landed securities" rate is derived from Giffen [102,p. 136]. He quotes from a memorandum obtained by him on rates of interest on mortgages in Scotland:

> The Commissioners at Edinburgh are a body representing the Writers to the Signet, Solicitors before the Supreme Courts of Scotland, Chartered accountants, and Ministers of Scotland Widows' Fund. Perhaps there may, from the constitution of this body be rather a leaning towards borrowers, as the interest of the Lawyers is to cultivate that connexion [*Ed.*: i.e., the Commissioners are partial to borrowers in fixing the rate]. The Insurance Companies were at one time parties in fixing the rate, but from some cause or other ceased to be so. They, however, do lend on the terms fixed by the Commissioners, though wherever there is any specialty in the nature of the loan (such, for instance, as loans for drainage, farm-buildings, etc.), a somewhat higher rate is charged. It may also be mentioned that the large monied bodies, especially the Insurance Companies, now lend to Poor-Law Boards, School-Boards, Municipal Corporations, etc. a good deal of money which formerly would have been invested in loans on land. These loans are negotiated at higher rates.

Giffen concludes that the interest received by the Widows' Fund of Writers to the Signet is "a correct statement of the rate at which money was lent on first-class landed security for the time specified." The time specified, however, raises some difficulties. The Edinburgh Commissioners, who fixed the rate twice yearly, met regularly at Martinmas and Whitsuntide. One year the date of meeting occurred at Lammas. Giffen lists the interest rate as of these periods of the year. In converting the time unit of the data into calendar years, Martinmas was dated the end of November, Whitsun, the beginning of June, and Lammas, the beginning of August. In years when the rate changed an average of the monthly rates was computed.

0301 Migration to Extra-European Countries from United

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	Kingdom (includes Irish, Scotch, English, Welsh and aliens leaving from English ports). *Source:* Analyzed in [97, Table 255].
0302	Marriage Rate in England and Wales per 1000 Inhabitants. *Source:* Analyzed in [97, Table 279].
0310	German Overseas Migration. *Source:* [88, I, p. 697; II, pp. 333, 335].
0311	Outward-Bound Passengers, English and Welsh Nationals, to Extra-European Countries. *Source:* [51, Table C(1)]. Figures include migrants and transient passengers leaving for overseas ports excluding Europe. Before 1876 aliens other than Irish or Scotch are included in the returns.
0312	Immigrant Arrivals from Overseas, U.S. *Source:* [263, Series C88-114, pp. 56–59]. From 1820 to 1867 figures represent other passenger arrivals. In later years, variation is involved regarding minor classes of immigrants. Beginning in 1894, European emigrants who arrived at Canadian ports were included.
0313	Hourly Earning Differential, U.S. Building Trades and Manufacturing. *Source:* The series is a set of percentage terms expressing the value of hourly earnings of building trade workers as a percentage of hourly earnings of workers in manufacturing. The bases of the series were the percentage differentials derived from the Aldrich Report for 1860–1890 as reported by Clarence D. Long [175, Table A-10, p. 152]. This series was the longest continuous series and was free from questionable performance. Similar percentage differentials were then computed from the average hourly earnings series as prepared by Douglas for 1890–1926 [263, Table D, pp. 589–602]. The Douglas series for manufacturing workers was extended forward to 1939 by using a lower level set of earning figures (adjusted upward at the splicing point) for 1927–39 [263, Table D, pp. 626–34]. The Douglas hourly earnings for building trades was extended to 1939 on two bases: union wage rates between

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	1927 and 1934 and experienced hourly earnings 1934–39 [263, Table D, pp. 642–53, Table D, pp. 669–84]. The whole set of extended 1890–1939 per cent differentials was then reduced (by multiplying .89323) to adjust to the lower Aldrich level, which unlike the Douglas level was not primarily based upon union rates. If we accept as rock bottom the Aldrich differential and that reported from BLS experienced hourly earning surveys, which for the building trades commence in 1934, then the union-based segment of our series (1890–1934) gave it an upward bias of 14.2 per cent in 1939, i.e. our terminal differential was that amount higher than the differential reported by the BLS earning figures. Substantially this means that the differential end 1939 is nearly at the same magnitude as between 1860–70.
0314	Consol Yields, England. *Source:* Approximate yield on 3 per cent funds. Reciprocals of the average annual prices of the 3 per cent stock [11, Table 9, p. 187].