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# Evidence of Long Swings from Labor-Force Data

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The conclusion regarding long swings in aggregate construction just reached on the basis of a variety of direct measures of activity can be checked by reference to the growth of the labor force attached to construction. We proceed from the hypothesis that the number of persons who, in any given year, look to a given industry or occupation for their regular livelihood depends upon the number who could actually obtain regular employment in the industry for a number of years in the past. Thus, the number of gainful workers attached to the construction industry at successive Census dates should reflect employment conditions in the industry during the intervening years. If construction activity did, indeed, grow in a series of long surges followed by protracted periods of pronounced retardation or decline, it is reasonable to suppose that this would have left its mark on the growth of the number who followed an occupation connected with construction or who otherwise looked to construction for their regular employment. We should not, indeed, expect that, in a secularly expanding industry like construction, the number of men who seek a livelihood in it will actually decline during a depression, even a protracted one. And this is particularly true if depression in construction is accompanied, as it was, by a slackening of growth in nonagricultural industries generally. If the slumps in construction were especially pronounced, however, it is reasonable to expect that the rate of growth of workers attached to the industry would have declined and that the proportion which construction workers bear to the total labor force would have shrunk. These expectations can be tested against estimates of the number of gainful

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workers attached to construction and of the ratio of these to all gainful workers.

The figures in Table 18 are drawn from estimates by Carson and Barger.<sup>1</sup> They are essentially estimates of "gainful workers" from 1870 to 1930 and of the "labor force" for 1940 and 1950. Carson refers to the figures as estimates of "economic manpower" or "force of workers." The switch from the gainful-worker to the labor-force concept in 1940 makes the comparison of 1930 and 1940 suspect, but Carson apparently considered the figures sufficiently comparable, so far as this goes; and, with some reserve, we follow his lead.<sup>2</sup> However, a fairly sizable adjustment has been made in the Carson figure for 1940. We regard this as a minimal adjustment, required because the Census figures greatly overstate the number of unemployed, and perhaps also of employed, workers attached to the industry in that year. It is reasonably clear that a complete adjustment would require a change considerably larger than the revision made here and would display the impact of the Great Depression on the number attached to construction still more forcefully. The reasons an adjustment is needed and the details of the adjustment are set forth in Appendix B. This appendix also contains comments on other problems that arise regarding the scope and movement of the manpower figures.

Subject to the adjustment in 1940, the behavior of the construction labor force is perfectly consistent with the expectations we form on the hypothesis that there were long waves in aggregate construction activity.<sup>3</sup> The growth of the construction labor force, whether measured in numbers or in percentages of its previous level, rises and falls from decade to decade in an unbroken alternation, and so does the share

<sup>1</sup>Carson, "Changes in the Industrial Distribution of Manpower since the Civil War" (10); Barger, *Distribution's Place in the American Economy since 1869* (3).

<sup>2</sup>So apparently did Fabricant in his critical article on historical estimates of the industrial distribution of the working force which accompanies Carson's article. See Fabricant, "The Changing Industrial Distribution of Gainful Workers" (17).

<sup>3</sup>In a sense, neither the lack of comparability between the 1930 and 1940 figures, due to the shift from the gainful-worker to the labor-force concept, nor the overestimate of the labor force attached to construction in 1940 can be matters of serious consequence for the interpretation we propose to place on the data. For there can be no doubt at all that the level of construction activity was much lower during the 1930's than it was during the decade preceding and that following. Table 18 is chiefly important for the light it can shed on fluctuations in construction activity before 1930.

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TABLE 18

MANPOWER IN CONSTRUCTION AT CENSUS DATES, 1870-1950

|      | Number in Construction<br>(thousands) |                      | Change Since<br>Preceding Census |                         | Share of Con-<br>struction<br>in Total<br>Manpower <sup>a</sup><br>(per cent) |
|------|---------------------------------------|----------------------|----------------------------------|-------------------------|-------------------------------------------------------------------------------|
|      |                                       |                      | Number<br>(thousands)            | Per Cent                |                                                                               |
| 1870 | 752                                   |                      |                                  |                         | 5.8                                                                           |
| 1880 | 830                                   |                      | 78                               | 10.4                    | 4.8                                                                           |
| 1890 | 1,445                                 |                      | 615                              | 74.1                    | 6.1                                                                           |
| 1900 | 1,663                                 |                      | 218                              | 15.1                    | 5.7                                                                           |
| 1910 | 2,297                                 |                      | 634                              | 38.1                    | 6.2                                                                           |
| 1920 | 2,167                                 |                      | -130                             | -5.7                    | 5.2                                                                           |
| 1930 | 3,030                                 | 3,029 <sup>b</sup>   | 863                              | 39.8                    | 6.2                                                                           |
| 1940 | 3,508                                 | (3,117) <sup>c</sup> | 479( 88) <sup>c</sup>            | 15.8( 2.9) <sup>c</sup> | 6.6(5.8) <sup>c</sup>                                                         |
| 1950 | 3,743                                 |                      | 235(626) <sup>c</sup>            | 6.7(20.1) <sup>c</sup>  | 6.2                                                                           |

Source: 1870-1940: Daniel Carson, "Changes in the Industrial Composition of Manpower since the Civil War" (10), Table 1; Harold Barger, Distribution's Place in the American Economy Since 1869 (3), Table 1.

<sup>a</sup>Gainful workers, aged ten and over, 1870-1930; labor force, aged fourteen and over, 1940 and 1950.

<sup>b</sup>This figure is the number of gainful workers aged fourteen and over and is, therefore, comparable with figures for 1940 and 1950.

<sup>c</sup>Parenthetic figures are adjusted for overestimate of public emergency workers in construction in 1940 (see Appendix B for method of adjustment).

which the labor force in construction bears to total manpower. The timing of decades of rapid and slow growth corresponds perfectly with earlier results for the decades of upswing and downswing in construction.

So far then as data of this type can, they uphold the conclusion that aggregate construction activity did, indeed, move in long waves during the period between 1870 and 1950. However, the evidence these data afford is, in some ways, of limited significance. It points toward long waves in construction activity, but it does not necessarily support the view that long upswings in construction activity were followed by long downswings in the absolute level of activity. The fluctuations in the growth of the labor force in construction may mean no more than that periods of rapid growth in the volume of construction were fol-

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lowed by periods of slower growth. The Census data reveal that long waves in manpower growth were not peculiar to the construction industry. Easterlin<sup>4</sup> shows that fluctuations of the same type, and with exactly similar timing, appear in the growth of the total labor force. Such waves in labor-force growth appear to have been a prominent feature of the general long swings in the United States economy referred to in Chapter I. Although all major branches of the economy, except agriculture, manufacturing and mining, and government, displayed fluctuations in manpower growth which were congruent with those in construction to some degree, the long waves rose and fell with regularity only in transportation, trade and finance, and professional and personal service. In none of these branches, except transportation, however, were the fluctuations in manpower growth so large as in construction. Moreover, as Easterlin points out, there is a connection between the fluctuations in construction activity and those in the growth of the transportation, trade, and service industries. The most violent long waves in construction activity are those in transportation development and in urban building. There is, therefore, a logical structural connection among these observations. Fluctuations in the growth of the labor force in transportation and public utilities ought to be accompanied by similar swings in the volume of railroad and public utility construction. Similarly, fluctuations in the growth of peculiarly urban occupations like trade, finance, and professional and personal service ought to be accompanied by similar swings in the volume of urban building. So far as manpower figures can indicate, it appears that they were.

<sup>4</sup>"Labor Force Trends and Projections" (15).