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The Transportation Industries 1889-1946

A Study of Output Employment, and Productivity

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Preface

As its subtitle indicates, this book deals with the output of transportation services, with the draft upon the labor force required to produce this output, and with the changing relationship between traffic and employment. Like others issued by the National Bureau, the volume reviews a segment of the American economy and reports upon the progress that has been made in physical efficiency since the end of last century. Concerned with global magnitudes and long-range tendencies, it complements an earlier volume focused on cyclical fluctuations, Thor Hultgren's *American Transportation in Prosperity and Depression* (NBER, 1948).

My desire has been to play no favorites, yet in the outcome the attention given to different kinds of transportation varies greatly. To some readers the choice of topics for discussion may seem arbitrary. A few words of explanation are in place.

The three chapters in Part One profess to cover the entire field of commercial or for-hire transportation, excluding only the operations of the private passenger car and the privately owned truck. Yet data for taxicabs, local trucking, and contract air carriers are not included. Failure to cover these activities, which undoubtedly fall within the scope of the study, is due simply and solely to lack of data.

In Part Two, five industries are chosen for individual consideration. The principle of selection was to treat in the body of the text only those industries for which both output and employment indexes could be constructed, so that trends in productivity might be assessed. Because no employment indexes could be constructed for buslines or for motor trucking, these two industries do not

figure in Part Two. However, motor trucking is discussed in Appendix F.

The five chapters dealing with individual industries in Part Two are of very unequal length. The scope of the discussion in each case was influenced partly by the complexity of the industry and partly by availability of data. Thus ample data and a rich technical literature prompted extended consideration of steam railroads, despite the fact that — structurally and technologically — they are relatively homogeneous. Electric railways, pipelines, and airlines are also — in their separate spheres — somewhat homogeneous; for each the data are sparse, though for the two latter now rapidly becoming more ample. For these three industries our standard measures of output, employment, and output per worker are presented; but lengthy discussion did not seem rewarding, and the chapters dealing with them are consequently brief. Waterways, on the other hand, offer the investigator a mass of material, much of it poorly organized. Moreover, waterways are in many respects far less homogeneous than the other agencies considered. These factors made for a somewhat fuller treatment of waterways.

Reference has freely been made to technological changes, wherever they seemed to illuminate trends in productivity. The neglect of technological change in water transportation is deliberate, and results from the partial character of our employment and productivity indexes in this field. Since it was impossible to measure shore employment before 1929, our index of output per worker on waterways does not reflect the advances in waterway terminals — one of the most interesting technological developments in waterway transportation. Moreover, vessel employment could not be distributed among individual waterways, whose technological characteristics differ widely. It would therefore have been quite impossible to relate technological changes to advances in productivity, as we were able to do, for instance, in the case of steam railroads.

The Appendices include basic series on output and employment for all industries considered, detailed discussion of certain points of methodology, and an analysis of the motor trucking industry which (for reasons mentioned above) was not treated in the text.

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(Resolution adopted October 25, 1926 and revised February 6, 1933 and February 24, 1941)

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Number 51

The Transportation Industries, 1889–1946: A Study of Output, Employment, and Productivity

Other National Bureau reports in this series dealing with production, employment, and productivity in American industry are:

BOOKS

**The Output of Manufacturing Industries, 1899-1937* (1940)	Solomon Fabricant
**Employment in Manufacturing, 1899-1939: An Analysis of Its Relation to the Volume of Production* (1942)	Solomon Fabricant
**American Agriculture, 1899-1939: A Study of Output, Employment and Productivity* (1942)	Harold Barger and Hans H. Landsberg
**The Mining Industries, 1899-1939: A Study of Output, Employment and Productivity* (1944)	Harold Barger and Sam H. Schurr
Output and Productivity in the Electric and Gas Utilities, 1899-1942 (1946)	J. M. Gould
Trends in Output and Employment (1947)	George J. Stigler

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**Manufacturing Output, 1929-1937* (1940)	Solomon Fabricant
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Labor Savings in American Industry, 1899-1939 (1945)	Solomon Fabricant
Domestic Servants in the United States, 1900-1940 (1946)	George J. Stigler
The Rising Trend of Government Employment (1949)	Solomon Fabricant
Employment and Compensation in Education (1950)	George J. Stigler

* Out of print.

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