

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

Volume Title: The Volume of Residential Construction, 1889-1950

Volume Author/Editor: David M. Blank

Volume Publisher: UMI

Volume ISBN: 0-87014-454-5

Volume URL: <http://www.nber.org/books/bln54-1>

Publication Date: 1954

Chapter Title: Front matter to "The Volume of Residential Construction, 1889-1950"

Chapter Author: David M. Blank

Chapter URL: <http://www.nber.org/chapters/c7007>

Chapter pages in book: (p. -11 - 0)

1954

**The Volume of
Residential Construction, 1889-1950**

DAVID M. BLANK

Institute for Urban Land Use and Housing Studies
Columbia University

TECHNICAL PAPER 9

STUDIES IN CAPITAL FORMATION AND FINANCING

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC. 1954

This paper is derived from a joint study of capital formation and financing in residential real estate by the Institute for Urban Land Use and Housing Studies, Columbia University and the National Bureau of Economic Research, Inc. The study is part of a large investigation of trends and prospects in capital formation and financing made possible by a grant from the Life Insurance Association of America.

Price: \$1.50

COPYRIGHT, 1954, BY
NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.
1819 BROADWAY, NEW YORK 23, N. Y.
ALL RIGHTS RESERVED
Library of Congress Catalog Number: 54-6462
TYPOGRAPHY AND PRINTING BY THE JOHN B. WATKINS COMPANY

NATIONAL BUREAU OF ECONOMIC RESEARCH

OFFICERS, 1953

Harry Scherman, *Chairman*
C. C. Balderston, *President*
Percival F. Brundage, *Vice President*
George B. Roberts, *Treasurer*
W. J. Carson, *Executive Director*

DIRECTORS AT LARGE

Donald R. Belcher, *Assistant Director, Bureau of the Budget*
Wallace J. Campbell, *Director, Cooperative League of the USA*
Albert J. Hettinger, Jr., *Lazard Frères and Company*
Oswald W. Knauth, *Beaufort, South Carolina*
H. W. Laidler, *Executive Director, League for Industrial Democracy*
Shepard Morgan, *New York City*
C. Reinold Noyes, *Princeton, New Jersey*
George B. Roberts, *Vice President, The National City Bank of New York*
Beardsley Ruml, *New York City*
Harry Scherman, *Chairman, Book-of-the-Month Club*
George Soule, *Bennington College*
N. I. Stone, *Consulting Economist*
J. Raymond Walsh, *New York City*
Leo Wolman, *Columbia University*
Theodore O. Yntema, *Vice President-Finance, Ford Motor Company*

DIRECTORS BY UNIVERSITY APPOINTMENT

E. Wight Bakke, <i>Yale</i>	Gottfried Haberler, <i>Harvard</i>
C. C. Balderston, <i>Pennsylvania</i>	Clarence Heer, <i>North Carolina</i>
Arthur F. Burns, <i>Columbia</i>	R. L. Kozelka, <i>Minnesota</i>
G. A. Elliott, <i>Toronto</i>	Paul M. O'Leary, <i>Cornell</i>
Frank W. Fetter, <i>Northwestern</i>	T. W. Schultz, <i>Chicago</i>
H. M. Groves, <i>Wisconsin</i>	Jacob Viner, <i>Princeton</i>

DIRECTORS APPOINTED BY OTHER ORGANIZATIONS

Percival F. Brundage, *American Institute of Accountants*
S. H. Ruttenberg, *Congress of Industrial Organizations*
Murray Shields, *American Management Association*
Boris Shishkin, *American Federation of Labor*
W. Allen Wallis, *American Statistical Association*
Frederick V. Waugh, *American Farm Economic Association*
Harold F. Williamson, *Economic History Association*

RESEARCH STAFF

Solomon Fabricant, <i>Acting Director of Research</i>	
Geoffrey H. Moore, <i>Associate Director of Research</i>	
Moses Abramovitz	Daniel M. Holland
Harold Barger	Thor Hultgren
Morris A. Copeland	Simon Kuznets
Daniel Creamer	Clarence D. Long
David Durand	Ruth P. Mack
Milton Friedman	Raymond J. Saulnier
Raymond W. Goldsmith	Lawrence H. Seltzer
Millard Hastay	George J. Stigler
W. Braddock Hickman	Leo Wolman
F. F. Hill	Herbert B. Woolley

RELATION OF THE DIRECTORS
TO THE WORK AND PUBLICATIONS
OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the National Bureau is carried on in strict conformity with this object.

2. To this end the Board of Directors shall appoint one or more Directors of Research.

3. The Director or Directors of Research shall submit to the members of the Board, or to its Executive Committee, for their formal adoption, all specific proposals concerning researches to be instituted.

4. No report shall be published until the Director or Directors of Research shall have submitted to the Board a summary drawing attention to the character of the data and their utilization in the report, the nature and treatment of the problems involved, the main conclusions and such other information as in their opinion would serve to determine the suitability of the report for publication in accordance with the principles of the National Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the Board. For each manuscript to be so submitted a special committee shall be appointed by the President, or at his designation by the Executive Director, consisting of three Directors selected as nearly as may be one from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the summary and report described in paragraph (4) are sent to him. It shall be the duty of each member of the committee to read the manuscript. If each member of the special committee signifies his approval within thirty days, the manuscript may be published. If each member of the special committee has not signified his approval within thirty days of the transmittal of the report and manuscript, the Director of Research shall then notify each member of the Board, requesting approval or disapproval of publication, and thirty additional days shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire Board and a two-thirds majority of those members of the Board who shall have voted on the proposal within the time fixed for the receipt of votes on the publication proposed shall have approved.

6. No manuscript may be published, though approved by each member of the special committee, until forty-five days have elapsed from the transmittal of the summary and report. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the Board has read the manuscript, or that either members of the Board in general, or of the special committee, have passed upon its validity in every detail.

7. A copy of this resolution shall, unless otherwise determined by the Board, be printed in each copy of every National Bureau book.

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

ACKNOWLEDGMENT

THE AUTHOR is indebted to the many people who have been of assistance in the preparation of this paper. In particular, he wishes to express his appreciation to H. E. Riley, Chief of the Division of Construction Statistics, Bureau of Labor Statistics, for the opportunity to make use of the unpublished historical data on building permits, which are the basis for the new estimates of residential construction presented here, and to Henry F. Haase, of the Division of Construction Statistics, who supervised the transcription and summarization of the permit data for this project and whose knowledge and experience in the field of construction statistics aided immeasurably in the development of the new series. Marvin Wilkerson of the Division's staff and Milton Lipton of the New York office of the Bureau of Labor Statistics also made many helpful suggestions.

The author is grateful to Allan F. Thornton, Director of the Division of Research and Statistics, Federal Housing Administration, for permission to use unpublished FHA data on deeds recorded in three California counties.

W. Braddock Hickman of the National Bureau of Economic Research gave generously of his time in supervising the IBM tabulation of the building permit and population data. Clarence D. Long, Jr., Millard Hastay, Raymond W. Goldsmith, Geoffrey H. Moore, and Solomon Fabricant of the National Bureau aided greatly in improving the manuscript. The charts were drawn by H. Irving Forman.

The author's thanks are also due to the members of the Institute for Urban Land Use and Housing Studies: to Ernest M. Fisher, Director of the Institute, for encouragement in pursuing this project; to Leo Grebler, whose careful review of the estimating procedures and the final manuscript enabled the author to avoid many pitfalls; to Louis Winnick and Chester Rapkin for many valuable suggestions as to method and analysis; and to James B. Hendry of the Institute staff, who performed the bulk of the computations and whose unfailing energy and conscientiousness were of invaluable aid.

The author, of course, is solely responsible for any errors of technique or interpretation which may remain in the paper.

D. M. B.

CONTENTS

INTRODUCTION	1
1. PURPOSE AND SCOPE	5
2. THE BEHAVIOR OF RESIDENTIAL CONSTRUCTION, 1889-1950	9
Number of New Housekeeping Dwelling Units Started	9
Changes in Type of Structure	12
Expenditures for New Housekeeping Dwelling Units	14
Average Expenditure per New Housekeeping Dwelling Unit	17
Expenditures for New Nonhousekeeping Residential Facilities	18
3. SUMMARY OF ESTIMATING TECHNIQUES	21
4. COMPARISON OF NEW FINDINGS AND EARLIER ESTIMATES	25
Dwelling Unit Estimates	25
Estimates of Expenditures for Housekeeping Dwelling Units	31
5. DERIVATION OF THE NEW ESTIMATES	33
Estimates of Urban Residential Construction Based on Population Relationships	35
Estimates of Urban Residential Construction Based on Change in Population Relationships	37
Comparison of Urban Estimates with Basic Sample Data	42
Estimates of Nonfarm Dwelling Units Started	45
Two Basic Assumptions in Expansion Procedure	48
Estimates of Permit Valuation of Nonfarm Dwelling Units Started	49
Adjustment for Undervaluation	52
Adjustment for Preliminary and Other Costs	53
Conversion to Work Put in Place	54
Lags, Lapses, and Under-reporting	55
Estimates of Nonhousekeeping Residential Construction Expenditures	56
The Problem of Linking the Series	58
Linking the Housekeeping Residential Construction Series	58
Linking the Nonhousekeeping Residential Construction Series	63
Extrapolation of Series	64
Type of Structure Estimates	65

APPENDIX

A	Tables on Residential Construction, 1889-1950	67
B	Description of Procedure for Obtaining Estimates of Urban Residential Construction Based on Population Relationships	79
C	Derivation of Decade Population Change Estimates	80
D	Derivation of the Annexation Adjustment	82
E	Description of Procedure for Obtaining Estimates of Urban Residential Construction Based on Population-Change Relationships	86
F	Description of Adjustment for Lapses in Permit Applications	89
G	Analysis of Wickens' Estimating Technique	92
H	Regional Estimates of Urban Residential Construction	93

CHART

A	New Private Permanent Nonfarm Housekeeping Dwelling Units Started, 1889-1950	10
B	New Private Permanent Nonfarm Housekeeping Dwelling Units Started, by Type of Structure, 1900-1950	12
C	Percentage Distribution of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, by Type of Structure, 1900-1950	13
D	Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, in Current and in 1929 Dollars, 1889-1950	14
E	Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, in Current and in 1929 Dollars, 1889-1950	18
F	Average Expenditure per New Private Permanent Nonfarm Housekeeping Dwelling Unit, in Current and in 1929 Dollars, 1889-1950	19
G	Annual Estimates of the Number of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, 1900-1919	27
H	Annual Estimates of Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, 1900-1914	31
I	Indexes of Number of Urban Dwelling Units Started, 1890-1929	43
J	Indexes of Permit Valuation of Urban Dwelling Units Started, 1890-1929	44

TABLE

1	Annual Average Number of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, by Decades and within Long Cycles, 1890-1950, and Amplitude of Long Cycles, 1892-1950	11
2	Turning Point Dates in Long Cycles in Housekeeping Residential Construction	15
3	Annual Average Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, by Decades and within Long Cycles, in Current and in 1929 Dollars, 1890-1950	15
4	Amplitude of Long Cycles in Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, in Current and in 1929 Dollars, 1889-1950 and 1892-1950	17
5	Ratio of Expenditures for New Private Nonhousekeeping Residential Facilities to Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, by Decades, 1891-1950	20
6	Annual Estimates of the Number of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, 1900-1919	26
7	Decade Estimates of the Number of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, 1890-1919	28
8	Annual Estimates of Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, 1900-1914	30
9	Number of Reporting Cities in Building Permit Survey, and the Proportion of Total Urban and Total Nonfarm Population Accounted For by Such Cities, Benchmark Dates, 1890-1925	35
10	Estimates of Urban Residential Construction in the United States, 1890-1929	41
11	Indexes of Number and Permit Valuation of Urban Housekeeping Dwelling Units Started in Reporting Cities, and Number of Cities Underlying Index Values, 1870-1929	42
12	Ratio of Average Value per Rural Nonfarm Dwelling Unit to Average Value per Urban Dwelling Unit, 1890, 1920, 1930, 1940	51
13	Estimates of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, 1920-1929	59
14	Estimates of Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, 1915-1929	60
15	Estimates of Expenditures for New Private Nonhousekeeping Residential Facilities, 1915-1929	62

TABLE

16	Number of New Private Permanent Nonfarm Housekeeping Units Started, 1889-1950	67
17	Number and Percentage Distribution of New Private Permanent Nonfarm Housekeeping Dwelling Units Started, by Type of Structure, 1900-1950	68
18	Expenditures for New Private Permanent Nonfarm Housekeeping Dwelling Units, in Current and in 1929 Dollars, 1889-1950	69
19	Average Expenditure per New Private Permanent Nonfarm Housekeeping Dwelling Unit Started, in Current and in 1929 Dollars, 1889-1950	70
20	Expenditures for New Private Nonhousekeeping Residential Facilities, in Current and in 1929 Dollars, 1891-1950	71
21	Residential Construction Cost Indexes, 1889-1950	72
22	Proportion of Urban Population in City Size Classes and Geographic Divisions Accounted For by Reporting Cities, Benchmark Dates, 1890-1920	73-74
23	List of Reporting Cities in Building Permit Survey and Years for Which Permit Data Are Available	75-78
24	Estimated Number and Permit Value of Lapsed Units in Multi-family Structures, New York City Boroughs, by City Size Classes, 1902-1929	90
25	Indexes of Estimated Number of New Private Permanent Urban Housekeeping Dwelling Units Started, Selected Geographic Divisions, 1890-1929	94
26	Indexes of Estimated Permit Valuation of New Private Permanent Urban Housekeeping Dwelling Units Started, Selected Geographic Divisions, 1890-1929	95