Orders, Production, and Investment a Cyclical and Structural Analysis

VICTOR ZARNOWITZ

University of Chicago and National Bureau of Economic Research



National Bureau of Economic Research NEW YORK 1973 Distributed by Columbia University Press

NEW YORK AND LONDON

Contents

Preface	xxiii
1. Introduction	1
Problems of the Study	1
Data and Procedures	4
Plan of the Book	5

PART I. THE RELATIONSHIPS BETWEEN NEW ORDERS, PRODUCTION, AND SHIPMENTS

2.	The Role of Orders in Industrial Production	9	'
	Manufacture to Stock and to Order	9	
	Interpreting Orders Data: The Importance of Cancellations	24	
	The Variability of Orders and the Behavior of Production	42	
	Major Factors in Timing of Orders and Production	49	
	Manufacturers' Orders as Target and Tool of Forecasts	58	
	Summary	68	
3.	Size and Frequency of Fluctuations	70	
	Postwar Cycles in Comprehensive Series	70	
	Evidence for Other Series and Periods	110	
	Summary	127	
4.	Timing Comparisons	129	
	Individual Industries or Products	130	
	Major-Industry Aggregates	143	
	Market Categories	163	
	Summary	173	
5.	Regression Analysis	175	
	Estimates of Average Distributed-Lag Relations Between New		
	Orders and Shipments of Major Manufacturing Industries	176	
	Predictive Equations with Variable and Constant Lags	223	
	Summary	241	

-.

Contents

PART II. CAUSES AND IMPLICATIONS OF CHANGES IN UNFILLED ORDERS AND INVENTORIES

6.	Unfilled Orders and Industrial Activity	245
	An Historical Survey of the Principal Evidence	246
	Measures of Relative Timing	267
	Backlog-Shipment Ratios	278
	Summary	294
7.	Unfilled Orders, Delivery Periods, and Price Changes	296
	Economics of Variable Delivery Periods	296
	The Data and Their Limitations	306
	Some Tests, Estimates, and Interpretations	314
	Summary	342
8.	Orders, Production, and Inventory Investment	344
	Determinants and Patterns of Inventory Behavior	344
	Recent Work on Inventory Investment: A Survey of Findings	360
	Cyclical Fluctuations in Orders and Inventories	384
	Summary	407

PART III. THE BEHAVIOR OF INVESTMENT COMMIT-MENTS AND EXPENDITURES

9. Indicators and Stages of Investment in Plant and Equipment	411
Introduction: Some Important Aspects of the Investment Process	411
Investment Plans, Commitments, and Outlays	417
Short-Term Anticipations of Capital Outlays	433
Distributed Lags of Expenditures	442
Summary	461
10. Factors Influencing Investment Commitments and Realizations	464
A Regression Analysis of Investment Expenditures	465
An Approach to Investment-Order Analysis	482
Integrating the Results on Commitments and Expenditures	505

Summary

٤

517

х

Contents

PART IV. ORDERS AND RELATED PROCESSES DURING BUSINESS CYCLES

11.	Cyclical Conformity and Timing	523
	Introduction: Why Orders Are Expected to Lead	523
	New Orders for Major Industries and Sectors	525
	New Orders for Individual Industries or Products	541
	Relating the Timing Patterns for New Orders and Shipments	551
	Unfilled Orders: Aggregate and Individual Series	567
	Summary	585
12.	Patterns and Diffusion of Cyclical Movements	588
	Manufacturers' Orders and Production During Business Cycles	588
	Cyclical Behavior of Investment Commitments and Realizations	605
	Fluctuations in Orders, Profits, and Investment	615
	Summary	637
13.	Main Results and Conclusions	641
	Typical Developments and Relationships	641
	Other Findings	645
	Data Required for Further Research	647

PART V. APPENDIXES

A .	Time Series on Orders, Shipments, Production, and Inventories	651
В.	Supplementary Measures of Timing: Standard and Poor's Data	669
С.	Price Deflators for Selected Manufacturing Industries	683
D.	Average Monthly Percentage Amplitudes and Related Measures for New Orders, Production, and Shipments: Additional Evidence	687
Ė.	New Orders and Shipments for Industrial Subdivisions, 1948-62	693
F.	Export Orders and Shipments	713
G.	Regressions of Shipments on New Orders: First Results Based on Data for 1948-58	718
H.	Notes on Some Theoretical Aspects of Variable Delivery Periods	727
Ι.	On Some Recent Studies of Industry Output-Order-Inventory Rela- tions	732
Inc	dex	741

5