Economic History Association

The Past Quarter-Century as Economic History and the Tasks of International Economic Organization

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Source: *The Journal of Economic History*, Vol. 30, No. 1, The Tasks of Economic History (Mar., 1970), pp. 150-187

Published by: [Cambridge University Press](#) on behalf of the [Economic History Association](#)

Stable URL: <http://www.jstor.org/stable/2116729>

Accessed: 31/01/2014 11:14

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The Past Quarter-Century as Economic History and the Tasks of International Economic Organization

INTRODUCTION

I WAS assigned for this occasion a rather substantial—one might almost say grandiose—subject. I would not deny responsibility, because I accepted it. But in view of its scope I should first explain how I have tried to render it manageable, with respect to both theoretical structure and mode of exposition.

With respect to theory, I approach my assigned related topics with two judgments: first, contrary to Keynes' dictum, in the long run we are all alive, that is, the Marshallian long period is with us every day; and, second, orderly disaggregation—down to the particular sub-sectors on which technology and the income and price elasticities of demand have their direct and secondary impact—is required to come to grips with certain dynamic, sectoral forces which, along with others, determine fluctuations, trends, and growth in post-Newtonian nations of the present as well as the past, rich as well as poor.

In surveying the rich literature on the post-1945 period in the Atlantic world and retrospective views of the interwar period, it is a striking fact that economists have returned to classic long-run issues in dealing with advanced as well as developing nations, bringing the economist and economic historian closer together than was often the case in the past. To name only six of many distinguished efforts, one cannot complain that changes in population, the size and quality of the working force, technology, and the quality of entrepreneurship are omitted from studies of Svennilson,¹ Maddison,²

I am greatly in the debt of colleagues who commented on an early draft of this paper, notably: Rolf Henriksson, Forest Hill, Albert Kervyn, C. P. Kindleberger, S. S. Kuznets, M. M. Postan, Austin Robinson, P. N. Rosenstein-Rodan, and P. A. Samuelson. I am also grateful to V. R. Fuchs and Daniel Creamer for clarifying conversations on their published work.

¹ Ingvar Svennilson, *Growth and Stagnation in the European Economy* (Geneva: United Nations Economic Commission for Europe, 1954).

² Angus Maddison, *Economic Growth in the West* (New York: Twentieth Century Fund, 1964).

Kuznets,³ Denison,⁴ Kindleberger,⁵ and Postan⁶—despite important differences in approach, emphasis, and diagnosis. No longer can it be said that Book IV of Marshall's *Principles* is being ignored in analyses of the contemporary scene, developed or developing.

But we have further to go, I believe, in isolating sharply and measuring the sub-sectors critical to growth and fluctuations and relating them to the other variables which play their part in the complex interacting process which determines the pace and contours, possibilities and problems of the growth process viewed as a whole—a theme which emerges later as central to this paper.

With respect to exposition, we shall proceed as follows: First, I shall define five clusters of leading sectors.⁷ Second, I shall use these five leading sector complexes to recall the interwar years and to sketch briskly the evolution of affairs in the world economy since 1945. Third, I shall discuss four major growth problems that emerged in the 1960's involving the transition from one leading sector group to another—problems whose resolution may be critical for the contours of the world economy in the decade ahead. Fourth, I shall discuss a central issue of theory and data organization embedded in this analysis, namely, the relation between the sectoral complexes and the larger aggregates conventionally used in growth analysis—notably, the productivity and level of investment. Fifth, against this background I shall try to fulfill my obligation to the

³ Simon Smith Kuznets, *Modern Economic Growth* (New Haven: Yale University Press, 1966).

⁴ Edward Fulton Denison, *Why Growth Rates Differ* (Washington, D. C.: Brookings Institution, 1967).

⁵ Charles Poor Kindleberger, *Europe's Postwar Growth* (Cambridge: Harvard University Press, 1967).

⁶ Michael M. Postan, *An Economic History of Western Europe, 1945-1964* (London: Methuen, 1967).

⁷ The foundations for this kind of analysis of sectors, with their built-in capacity to lead and then decelerate the growth process as a whole, are to be found in: S. S. Kuznets, *Secular Movements in Production and Prices* (Boston and New York: Houghton Mifflin, 1930); A. F. Burns, *Production Trends in the United States Since 1870* (New York: National Bureau of Economic Research, 1934); W. G. Hoffmann, *The Growth of Industrial Economies* (Manchester: Manchester University Press, 1958), a translation of his 1931 *Stadien und Typen der Industrialisierung*; the author's *Process of Economic Growth*, Second Edition (Oxford: Clarendon Press, 1960) (especially Chapters 4 and 11); *The Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960), especially pp. 12-16; and the more full elaboration "Leading Sectors and the Take-Off" in *The Economics of Take-off into Sustained Growth*, edited by the author (New York: St. Martin's Press, 1963). The interested reader should also note the discussion of the problem of dating precisely when a rapidly growing sector becomes a "leading sector," pp. xvi-xx.

second question posed for me, that is, the tasks of international economic organization that lie ahead.

FIVE SECTORAL COMPLEXES

I turn now to isolate the five clusters of leading sectors.

In doing so, I would underline that the use of leading sectors in no way implies that ultimate causation is to be found within them. They play their part in an interdependent dynamic system. As I wrote on another occasion: “. . . these rapid growth phases in the sectors derive not merely from the discontinuity of production functions but also from high price- or income-elasticities of demand. Leading sectors are determined not merely by the changing flow of technology and the changing willingness of entrepreneurs to accept available innovations: they are also partially determined by those types of demand which have exhibited high elasticity with respect to price, income, or both.”⁸

“Leading Sectors” of the Preconditions for Take-Off

By definition the “leading sectors” of the preconditions period do not generate the scale and spreading effects to move an economy into self-sustained growth. But they can be—and have been—not merely the basis for later sustained industrialization but also for considerable current economic and social progress. Typically those sectors are: expanded domestic and foreign commerce; physical infrastructure; education; food and drink; building materials.

In the past generation, nations in the preconditions period could be observed in the less developed portions of Asia, the Middle East, Africa, and Latin America; but the region most characterized by this stage in recent years is Africa south of the Sahara (excepting Rhodesia and South Africa). (And one should add, because of its size and importance, Indonesia.)

When, in 1959, the United Nations Department of Economic and Social Affairs surveyed Africa since 1950, its analysts identified the major industrial groups with forward momentum, in the period 1948-1957, as: food, beverages, tobacco, cement, and bricks.⁹ These typical industrial sectors of the preconditions period—not powerful enough in their direct and indirect effects to initiate a take-off—

⁸ *The Stages of Economic Growth* (Cambridge: Cambridge University Press, 1960), p. 15.

⁹ *Economic Survey of Africa Since 1950*, United Nations Department of Economic and Social Affairs (New York: United Nations Publication, 1959), p. 135.

constituted at that time, along with such infrastructure sectors as transport, education, electric power, and the traditional mineral and agricultural export sectors, the basis for forward movement in Africa. The survey concluded:

The economic development programmes at present in operation are essentially pre-industrialization programmes. They aim at providing the proper framework of basic facilities and social services (accounting together for 80 percent of expenditure under the plans) in the hope that this will induce spontaneous private investment, particularly in industry, but also in agriculture and other directly productive fields.¹⁰

A few years later, surveying developments through 1963 in West Africa, the situation was, of course, similar; but the beginnings, at least, of the more advanced import substitution industries could be detected in certain areas,¹¹ as well as new emphasis in thought and planning on import substitution industries in textiles, fertilizers, and other fields.

Import Substitution for Manufactured Consumers Goods

In the contemporary developing world, manufactured, generally non-durable consumers goods, produced in substitution for imports, have been the classic leading sectors in take-off. Examples can be found, again, in all the developing continents, but the most substantial concentration of cases has been in Latin America in the twenty years or so, starting in the mid-1930's, when the impact of the Great Depression on Latin American balance of payments, and, then, the Second World War, brought about the first sustained phase of Latin American industrial development.¹² Modern textiles, along with food processing, and other light industries (for example, cigarettes, shoes, hand tools, flashlights, alarm clocks, etc.) led the way with clear evidence of waning strength in these sectors towards the end of the 1950's and universal acknowledgement of this fact in the 1960's.¹³

¹⁰ *Ibid.*, p. 187.

¹¹ *Economic Survey of Africa* (Vol. 1. *Western Sub-region, Republic of South Africa*), United Nations Department of Economic and Social Affairs (New York: United Nations Publication, 1966), Part 1, Chapter IV, pp. 39 ff.

¹² For a vivid analysis of this phase of growth in a major Latin American country see Celso Furtado, *The Economic Growth of Brazil* (Berkeley and Los Angeles: University of California Press, 1963), especially pp. 217 ff.

¹³ See, for example, *Economic Survey of Latin America 1964* (New York: United Nations Publication, 1966), pp. 150-52; and *Economic Survey of Latin America 1966* (New York: United Nations Publication, 1968), p. 251. Reliable and consistent time series for the industrial sub-sectors of Latin American countries are difficult to come by, although the general sequence of sectoral development is quite clear. In the case of Mexico, for example, some typical preconditions industries were established before

The Heavy Industry and Fabricating Complex

The central sectors in this complex (which has marked what I call the drive to technological maturity) have been metal fabrication (coal, pig iron, steel, general purpose machine tools, bicycles, etc.) plus certain industrial chemicals (notably, fertilizers, pulp, and paper) and the electricity industry. With a strong military impulse converging with their natural stage of growth, these sectors and those related to them were central to Japanese and Soviet growth in

the 1910 revolution, under Porfirio Díaz; for example, glass, papermaking, brewing, tobacco, as well as modest beginnings in textiles, iron, and steel. In the 1940's and 1950's, consumers goods import substitution rapidly increased, as described, for example, by Glade [W. P. Glade, Jr. and Charles W. Anderson, *The Political Economy of Mexico* (Madison: University of Wisconsin Press, 1963), p. 87]: "... A nucleus of enterprises in iron and steel, cement, paper, and in textiles, shoes, beer, tobacco, soap, sugar refining, and flour milling had been substantially expanded from their Porfirian base, and new enterprises, both domestic and foreign in ownership (e.g., Ford, Simmons), had arisen to produce rubber items, household furnishings, metal goods, window glass, foodstuffs, and other products. An expanded resource base and higher income levels provided the elements for rising amounts of domestic capital formation, while a new pattern of investment opportunities was beginning to pull that capital into fields with a higher potential for long-run productivity increases and reinvestment." As Vernon observes: "By the late 1950's . . . the easy opportunities for domestic investment in import-substituting manufactures seemed to be reaching an end. Consumer goods were no longer being imported into Mexico in very large amounts; less than one fifth of all Mexican imports fell in the consumer category. Substitution from this point forward would have to take place mostly in intermediate goods—in steel instead of bed springs, in aluminum instead of kitchen pans, in engine blocks instead of assembled cars, and so on. Such substitution usually involved larger investment, more difficult technology, and a more difficult market structure; from all points of view, therefore, it represented much more forbidding terrain." [Raymond Vernon, *The Dilemma of Mexico's Development* (Cambridge: Harvard University Press, 1965), p. 117.]

Nevertheless, the transition to the post-take-off sectors was begun in directions summarized by Ernesto Fernández Hurtado: "Although figures are not available for the period from 1930 to 1950 that would show the increase in the output of consumer goods as compared to producer goods, there is a noticeable trend in the Mexican manufacturing industry to extend production beyond nondurable consumer goods to durable consumer goods and capital equipment." (In *Mexico's Recent Economic Growth: The Mexican View*, Introduction by Tom E. Davis, Translated by Marjory Urquidi, Published for the Institute of Latin American Studies [Austin: University of Texas Press, 1967], p. 66.) The scale and timing of the shift is suggested by these index numbers for steel and chemical production:

	<i>Steel</i> (1940 = 100)	<i>Caustic Soda</i> (1950 = 100)	<i>Fertilizers</i> (1950 = 100)
1940	100	—	—
1950	260	100	100
1960	1,048	825	581
1967	2,096	1,482	2,301

(Victor L. Urquidi, *Ibid.*, p. 186. The 1967 figures have been added from United Nations sources. See, also, Urquidi's perceptive discussion of problems in moving into these post-take-off sectors, pp. 186-90.)

the 1930's.¹⁴ It is also possible, of course, to absorb these technologies with a different output mix, including a higher component of consumers goods than in Japan and Soviet Russia of the 1930's. The major Latin American countries, for example, are now in the process of doing so.

The Automobile and Related Sectors

Starting with the United States in the 1920's, there emerged a new sectoral complex, first clearly delineated by Fabricant,¹⁵ embracing the automobile industry itself plus strip steel and other specialized metal inputs; a very high proportion of the petroleum and rubber industries; and substantial requirements from others (plate glass, nonferrous metals, electrical equipment, etc.).

With the automobile, of course, massive requirements were also set up for roads, suburban housing, and services (gas stations, auto

¹⁴ For Japan, see, especially, K. Ohkawa, *The Growth Rate of the Japanese Economy Since 1878* (Tokyo: Kinokuniya Bookstore Co., Ltd., 1957), Part II, Section II ("Secondary Industry"), and tables, pp. 83 and 88-89; and H. Rosovsky, *Capital Formation in Japan, 1868-1940* (Glencoe: Free Press, 1961), especially table XI-I, pp. 328-36. For the U.S.S.R., see, especially, G. Warren Nutter, *The Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962), Table 37, p. 165, covering annual average rates of growth for 1928-1945. The high rate of growth in consumers durables is set aside by Nutter because of the extremely low level of the base figure for 1928. Note also Nutter's observations on the relation of economic developments in the 1930's to the state of war preparation, pp. 210-13. Also, see below, pp. 158-60.

¹⁵ S. Fabricant, *The Output of Manufacturing Industries, 1899-1937* (New York: National Bureau of Economic Research, 1940), especially pp. 9-22, 102-3, and Chapter 21 ("Transportation Equipment"). In the following table Fabricant (p. 102) demonstrated the rise and fall of the automobile and carriage sectoral complexes, respectively.

MANUFACTURING OUTPUT
Value Added as a Percentage of Value Added in All Manufacturing Industries

	1899	1909	1919	1929
<i>Automobile and related industries</i>				
Automobiles (incl. bodies and parts)	.06	1.47	4.88	6.66
Petroleum refining	.46	.47	1.65	2.02
Lubricants, not elsewhere made	.01	.01	.02	.10
Tires and tubes, and other rubber products	.46	.68	2.05	1.57
<i>Carriages and related industries</i>				
Carriages, wagons and sleighs	1.31	.78	.16	.03
Carriage and wagon materials	.26	.21	.05	.00
Saddlery, harness and whips	.33	.29	.14	.03
Horse blankets	.01	.02	.01	.00

In the present context the automobile complex is, of course, defined in wider terms than in Fabricant's table, above.

dealers, etc.) necessary to support radically expanded automobile usage. Concurrently, durable consumers goods and canned (later, frozen) foods came into their own. This complex of sectors has spread from the United States (and Canada) to other nations of high average GNP, including Western Europe and Japan in the postwar years.¹⁶ In this paper the notion of automobiles as a leading sector is used in this wide sense.

The Quality Sectors

As the impulse of the automobile sectors gradually waned, in an environment where rising income per capita was maintained, there has been a movement, notably in the United States, towards rapid expansion in certain outlays for public and private services:¹⁷ education, health, welfare, modernized urban and suburban infrastructure on the public side, as well as foreign and domestic travel, recreation, boats, etc., on the side of private expenditure. There is every reason to believe from recent empirical studies that this trend will characterize other nations reaching similar levels of income per capita, although the composition of the expanding service sub-sectors may well differ in the future as they have in the past.

As we turn, against the background of this kind of sectoral analysis, to the main themes of this paper, a practical problem should be noted.

Statistical data are conventionally presented in categories which make it difficult to isolate and measure the scale and relative rate of growth of these sectoral complexes. As Fabricant demonstrated, one finds extremely diverse movements within the conventional categories;¹⁸ and it is only when one has examined the expanding and

¹⁶ For Western Europe, see, for example, M. M. Postan, *op. cit.*, p. 190, Table 20; *Economic Survey of Europe in 1962*, United Nations (New York: United Nations Publication, 1963), Chapter 11, p. 8; *Economic Survey of Europe in 1966*, United Nations (New York: United Nations Publication, 1967), Chapter 1, pp. 29 and 39; A. J. Youngson, *The British Economy* (Cambridge: Harvard University Press, 1960), pp. 205-207.

¹⁷ See, for example, the rise in services from 34.3 percent to 37.1 percent of disposable personal income in the United States between the 1956-58 average and 1967 (estimated), in *Economic Report of the President and Annual Report of the Council of Economic Advisers*, Washington, D. C., February 1968, p. 49. Note also p. 48, the rise in state and local government expenditures from 7.5 percent of GNP in 1954 to 11.1 percent in the fourth quarter of 1967. For a general survey of shift to the service sector, see V. R. Fuchs, *The Service Economy* (New York: National Bureau of Economic Research, 1968; distributed by Columbia University Press); S. Kuznets, *Modern Economic Growth* (New Haven: Yale University Press, 1966), pp. 143-53. The implications of this movement are discussed further below, pp. 163-7.

¹⁸ S. Fabricant, *op. cit.*, Part Two, "The Output of Individual Manufacturing Industries," pp. 123 ff. The charts on pp. 136-7, 154, 162, 172-3, 192, 201, 208, 222-3,

contracting sub-sectors (and established appropriate linkages among them) that one can come to grips with the dynamic forces at work on the composition of manufacturing output.¹⁹ Much the same is true of services.²⁰

Thus, the complex intellectual and bureaucratic history which determines the form in which statistical data are collected and regularly published yields less solid and consistent time series than we would wish to have for this exercise. Nevertheless, the broad implications of these sectoral complexes for patterns of development within the world economy can be traced out.

THE INTERWAR BACKGROUND

We shall now use these five sectoral complexes to illuminate some aspects of interwar and post-1945 economic history.

In the 1920's the United States moved forward rapidly after the initial postwar recession on the basis of the automobile and related sectors—notably, suburban housing.²¹ America's historically high level of income per capita made it natural that the United States lead the way in a phase of growth in which modern industrial technology was converted to consumers goods and services. The relative impact of the First World War on the United States and Western Europe widened the older gap and brought American income per capita to the point where the automobile complex, in its widest sense, could take firm hold.²²

Although the beginnings of a transition in this direction could be detected in Western Europe during the 1920's, a shift in leading sectors did not take place fast enough to prevent relative overall

244, 254, 263, 276, 292-3, 304-5, and 318, show well the heterogeneous fate of the sub-sectors which renders of doubtful meaning the averages for the sectors as a whole.

¹⁹ See, notably, for a kindred disaggregated view, M. M. Postan, *An Economic History of Western Europe, 1945-1964* (London: Methuen, 1967), especially pp. 128-33, including note 1, p. 129, with observations on divergent movements within the U.K. textile index. See also Postan's observation on the ambiguity of "tertiary industry," note 1, p. 191.

²⁰ In services, a task of disaggregation not unlike Fabricant's in manufacturing has been performed for private consumption expenditures by H. S. Houthakker and L. D. Taylor in *Consumer Demand in the United States, 1929-1970* (Cambridge: Harvard University Press, 1966). For further observations on services, see below, p. 164.

²¹ See, for example, A. H. Hawley, *The Changing Shape of Metropolitan America* (Glencoe: Free Press, 1956), Table 4 and Figure 4 (pp. 14-51) for striking shift to suburbia in the 1920's.

²² See, for example, Colin Clark, *The Conditions of Economic Progress*, Second Edition (London: Macmillan, 1951), pp. 46-7 and 63 for comparison of U.S. and U.K.

sluggishness in the Western European versus the United States economy.²³ As Svernilson has said:

Indeed, the unused stock of new techniques and innovations on which post-war progress could be built was very large. The extent to which it was applied varied with its dependence on the growth of output of the respective industries, or on the rise of incomes and the level of employment. A delay in application was indicated by the fact that little expansion beyond pre-war levels was taking place in many important sectors of the economies, and that per capita incomes had stagnated or had only risen moderately above the levels reached before the war. In this way, the rise in the demand for new products such as private motorcars and household appliances was being delayed as compared with developments in the United States. . . .

What was needed in order that economic growth could be resumed was a complete transformation of the economic structure, including a development of new industries, and a modernization of stagnating industries in order to squeeze out resources, including labour, that could be used more effectively in new fields. This transformation could not be completed overnight. The task was so great and the resistance to change in stagnating industries so strong that a considerable time would in any case be needed in order to carry transformation to a satisfactory end. A gradual adjustment in the right direction would, however, facilitate the continued transformation process. As resources were transferred to expanding industries, national income would rise, stimulating demand for some products and a labour-saving modernization of production.²⁴

On the other hand, dependence of these new leading sectors on a high and expanding level of consumers income per capita made the depression peculiarly intractable for the United States, since incomes policy was not applied in a sufficiently substantial and confident way by the Roosevelt Administration to set the automobile sectoral complex into motion again.

In the 1930's the European movement to this sectoral complex did begin to take firmer hold, yielding some relative catching up of production between Western Europe and the United States by 1939, in aggregate terms as well as in the automobile sectoral complex.²⁵

Japan and the Soviet Union (whose take-offs stem from the 1880's as opposed to the earlier periods which marked Germany, France, Belgium, Britain, and the United States) still had a backlog of heavy industry to install during the interwar years, as opposed to the over-capacity left by the First World War in Western Europe. As

²³ For the U.K., see, for example, A. J. Youngson, *op. cit.*, pp. 46-9. And for an earlier analysis, R. S. Sayers, "The Springs of Technical Progress in Britain, 1919-1939," *Economic Journal*, LX (June 1950), 275-91.

²⁴ *Op. cit.*, pp. 46-7.

²⁵ I. Svernilson, *op. cit.*, Table 40, p. 149.

TABLE 1
GROSS VALUE OF JAPANESE FACTORY PRODUCTION, MINISTRY OF FINANCE'S ESTIMATE (1930-42)
(MILLION YEN)

	Textiles	Metals	Machinery	Ceramics	Chemicals	Wood and Wood Products	Printing and Binding	Food and Beverages	Miscellaneous	Gas and Electricity	Total
1930	2,173.5	509.3	694.7	162.4	901.8	162.6	192.1	954.4	193.8	370.7	6,315.8
1931	1,926.8	431.4	498.0	144.7	813.0	146.9	176.7	837.7	184.4	359.7	5,519.5
1932	2,914.1	878.6	888.1	220.7	1,288.0	158.7	177.7	893.4	237.2	369.2	6,338.3
1933	2,212.0	591.1	598.8	161.7	937.9	189.5	181.5	1,017.3	278.7	397.8	8,254.6
1934	3,167.7	1,496.7	1,159.1	251.9	1,480.7	228.8	203.8	1,046.3	335.0	441.6	9,812.1
1935	3,352.5	1,881.7	1,462.5	283.1	1,813.8	248.6	222.9	1,168.4	381.7	500.1	11,315.9
1936	3,654.8	2,208.8	1,716.3	329.3	2,110.9	280.2	234.9	1,259.6	440.6	545.7	12,781.5
1937	4,239.0	3,502.0	2,557.2	405.2	2,900.7	379.4	273.2	1,474.1	596.5	588.4	16,916.1
1938	3,984.8	4,687.1	3,821.8	403.6	3,460.5	457.3	281.1	1,786.2	737.1	648.8	20,268.8
1939	4,813.7	5,580.9	5,591.8	581.6	4,275.3	733.3	349.7	2,334.1	532.2	919.5	25,712.5
1940	4,874.3	5,572.8	6,772.5	677.1	4,734.5	1,011.5	342.1	2,465.1	642.4	937.7	28,030.4
1941	4,840.9	6,065.3	9,053.9	725.9	4,997.1	1,158.9	385.1	2,502.5	727.6	1,004.4	31,462.0
1942	3,969.4	7,008.8	10,604.8	708.9	5,011.6	1,126.4	400.9	2,481.9	723.3	1,107.5	33,146.9

RELATIVE EUROPEAN-U.S. AUTOMOTIVE PRODUCTION, 1929 AND 1938
(IN THOUSANDS)

Year	Passenger Cars		Commercial Vehicles		Total	
	Four leading European producers	United States	Four leading European producers	United States	Four leading European producers	United States
1929	—	4,587	—	771	702	5,358
1938	877	2,001	204	488	1,081	2,489

noted earlier, it was these heavy industry sectors (notably metals and machinery) which led the way in Japanese²⁶ and Soviet²⁷ growth in the 1930's, as Tables 1 and 2 suggest.

TABLE 2
AVERAGE ANNUAL GROWTH RATES OF INDUSTRIAL PRODUCTION,
BY INDUSTRIAL GROUP: SOVIET UNION, 1928-1940
(PERCENT)

All products	9.9
All civilian products	8.5
Intermediate products	11.9
Ferrous metals	12.8
Nonferrous metals	19.8
Fuel and Electricity	15.5
Chemicals	11.9
Construction materials	6.6
Civilian machinery and equipment	18.9
Transportation equipment	27.7
Agricultural machinery	-0.1
Consumer goods	4.8
Food and allied products	5.3
Textiles and allied products	3.7
Consumer durables	25.0

Meanwhile the major and medium-sized Latin American economies moved forward into take-off during the 1930's on the basis of the consumers goods import substitution complex, against a general background of severe protectionist policies.

In Asia and Africa there was some slow progress under colonialism in the leading sectors which mark the preconditions for take-off.

THE POSTWAR YEARS

After an initial phase of postwar reconstruction, Western Europe moved forward with great vigor in the 1950's on the basis of the

²⁶ K. Ohkawa, *The Growth Rate of the Japanese Economy Since 1878*, Tokyo, Japan, 1957, Table 3, p. 83.

²⁷ G. W. Nutter, *Growth of Industrial Production in the Soviet Union* (Princeton: Princeton University Press, 1962), Table 37, p. 165. The high rate of growth of consumers durables in this period reflects the low initial figure for 1928 rather than a substantial role in Soviet growth before 1940.

DIFFUSION
of the
PRIVATE AUTOMOBILE

automobile sectoral complex, and it was shortly joined by Japan, as the accompanying chart suggests.²⁸ Italy (whose take-off comes towards the end of the nineteenth century) lagged in terms of level of diffusion, but then joined in this general movement with an exuberance surpassed only by Japan.

With the wartime boom and continued postwar relative full employment, the United States pushed forward this complex to a point, towards the mid-1950's, where it was possible for a number of observers to conclude that the automobile sectoral complex would not be capable, to the same degree as in the past, of maintaining ade-

²⁸ For statistical data see Appendix A.

quate forward momentum in the United States economy in the time ahead.²⁹ Meanwhile, powerful forces operated to shift employment to service sectors: virtually the total increase in United States employment between 1947 and 1965 (13 million) was in the service sector of the economy.

The Soviet Union resumed strongly in the 1950's its forward momentum, with increasing industrial sophistication responding to new military weapons systems. The heavy industry complex remained central in Soviet plans, but subject to natural deceleration. Soviet projections of the late 1950's clearly foreshadowed a radical deceleration in the heavy industry complex in the 1960's.³⁰ Consumers industries, in general, fared better than in the 1930's, but not on a scale equivalent to the earlier (1920's) surge in the United States or the contemporary expansion in Western Europe.

Meanwhile, in Latin America, as the 1950's waned, it was increasingly clear that in the more advanced industrial countries the consumers goods import substitution complex could not continue to support forward momentum at previous rates. The new heavy and fabricating industrial sectors (which in the Latin American literature are sometimes called "dynamic") began to come in, moving at higher rates than the consumers goods import substitution sectors (now sometimes called "traditional"); but progress was irregular and unsatisfactory.³¹

²⁹ See, for example, the author's discussion in *The United States in the World Arena* (New York: Harper, 1960), pp. 444-8 and quotation from S. H. Slichter's March 3, 1958, address to the Associated Industries, p. 466. Some data relevant to this judgment are presented in Appendix B.

³⁰ See, especially, Soviet projected sectoral growth rates for 1957-72, *Economic Survey for Europe in 1957* (Geneva: United Nations Economic Commission for Europe, 1968), Chapter 1, p. 31, and the author's observations in *The Stages of Economic Growth*, pp. 102-3. Also, G. Warren Nutter, *op. cit.*, pp. 222-4, on "The Years Since 1955."

³¹ For a typical assessment, see *Economic Survey of Latin America, 1966*, United Nations (New York: United Nations Publication, 1968), p. 251: "This gradual relative decline in the growth rate of manufacturing has been accompanied by a tapering off in efforts to modify its internal structure. Over the period 1955-60, annual rates of expansion had averaged 4.4 percent in the food, beverages and tobacco industries, 3.2 percent in the case of textiles, 10 percent in the chemical industry, and 15 percent in those manufacturing metal products, machinery and transport equipment. Thus, the dynamic industries considerably increased their share in total manufacturing activities during the second half of the fifties. In the five-year period 1960-65, annual growth rates fell to 4 percent in the food, beverages and tobacco industries and 2.8 percent in the textiles industry, while in the chemical, metallurgical and metal-transforming industries they decreased to 8.8 percent, 8.1 percent and 7.3 percent respectively. Thus, although the structure of the industrial sector continued to change, it changed much more slowly, and its slow pace persisted in 1966."

Elsewhere, a new class of take-off countries began to emerge in the 1950's and the 1960's, mainly, again, on the basis of import substitution industries: South Korea, Taiwan, Thailand, Malaysia, Pakistan, India, Iran, and the Central American Common Market taken as a whole.

In some cases the take-off was at least temporarily aborted; for example, in Communist China, after the failure of the Great Leap Forward, the withdrawal of Soviet aid, and the Cultural Revolution; in the UAR, because of its external diversions of resources, talent, and attention, with all their costly consequences. The Indian take-off was distorted by under-investment in agriculture and dangerously affected, against that background, by the droughts of 1966-1967. In the time ahead, India's capacity to generate foreign exchange via expanded exports and international lending will be critical. But history is likely to record that the quarter-century before 1970 saw the largest group of human beings move into an environment of sustained national growth, outstripping the potential rival periods: the quarter-century before 1870 when northwestern continental Europe moved into take-off; and the quarter-century before 1900 when, notably, Japan and Russia moved into take-off.

FOUR GROWTH ISSUES OF THE 1960's

The interwar and postwar sectoral sequence outlined above posed, in the course of the 1960's, a series of questions for which clear answers are not yet available, but on which a good deal of future economic and political history will depend. And the answers we devise or fail to devise will help shape the institutions of international organization in the years ahead. In different ways, these questions all stem from the problems inherent in the structural

"Although similar changes took place in all the countries of the region, they were on a larger scale and assumed different forms in a few countries. For example, in Argentina, Brazil and Mexico the traditional industries contributed less to total manufacturing: their participation dwindled from 54-57 percent to 40-47 percent between 1955 and 1965. Food, beverages, tobacco and textiles were most affected. On the other hand, the dynamic industries increased their share from 43-46 percent to 53-60 percent of the total, with the largest increases in the chemical, petroleum refining and metallurgical industries, and in the manufacture of machinery and transport equipment.

"In a second group of countries—Chile, Colombia, Peru and Venezuela—similar but less radical changes occurred, with the traditional industries retaining a somewhat larger share in total manufacturing (between 50 and 60 percent in 1965). The changes were primarily in the metallurgical industries and the manufacture of machinery and transport equipment, and the chemical industry made only a slightly higher contribution to the total."

shift from one leading sector complex to another in the course of the process of growth.³²

First, some possible implications of the shift from high mass-consumption to the search for quality: from the automobile complex to certain service sub-sectors.

The United States, so far as the level of employment and rate of growth are concerned, moved forward in the 1960's on the basis of a series of acts of public policy which kept effective demand high and encouraged certain new service leading sub-sectors, both private and public.

On the private side a determined effort to isolate movements in and prospects for the service sub-sectors had been made by Houthakker and Taylor.³³ On the basis of budget shares for eighty-four categories of private consumption expenditures, they conclude as follows when projected to 1970 in standard (1954) dollars:

... we see that the most significant change in budget shares is the share for food and tobacco (Group I). It is projected at about 25½ percent of total expenditure (in 1954 dollars), down from 27.1 percent in 1961. The share for clothing, accessories, and jewelry (Group II) is the only other group to show a noticeable decline in 1970, while the shares for personal care (Group III), housing operation (Group V), medical and death expenses (Group VI), private education and research (Group X), religious and welfare activities (Group XI), and the foreign sector (Group XII) show moderate increases. The projected shares of the remaining groups, housing (Group IV), personal business (Group VII), and transportation (Group VIII), are about the same as they were in 1961.³⁴

At a still higher level of aggregation, they conclude as follows on the rise in budget shares for total personal consumption expenditures over the period 1954-1970 in constant and current dollars:³⁵

Distribution of Total Personal Consumption Expenditures
(Budget Shares)

Category	1954 dollars					Current dollars				
						1970				
	1954	1956	1958	1960	1961	4%	5%	1961	4%	5%
Durables	.136	.144	.130	.142	.137	.140	.138	.130	.119	.121
Nondurables	.501	.493	.488	.474	.471	.452	.452	.459	.437	.436
Services	.363	.363	.382	.384	.392	.408	.410	.411	.445	.443

³² For a brief discussion of these structural transitions, see "How Self-Sustained is Self-Sustained Growth," in *The Economics of Take-off into Sustained Growth*, edited by the author (New York: St. Martin's Press, 1963), pp. 9-11.

³³ *Ibid.*, see especially Chapter 5.

³⁴ *Ibid.*, pp. 159-60.

³⁵ *Ibid.*, Table 5.5, p. 161.

On the public side, the following table shows the net scale and composition of federal expenditure increases from the fourth quarter of 1960 to the fourth quarter of 1967.³⁶

Federal Fiscal Action in Two Periods Since Fourth Quarter 1960
(Billions of Dollars, Seasonally Adjusted Annual Rate)

<i>Item</i>	<i>1960 IV to 1965 II</i>	<i>1965 II to 1967 IV¹</i>
Federal expenditure increases ²	25.5	48.0
Defense purchases	3.5	25.0
Other purchases	7.5	1.5
OASDHI ³ benefits	5.0	10.0
All other ^{2 4}	9.5	11.5

¹ Preliminary.

² Includes adjustment in unemployment insurance benefits for change in unemployment rate.

³ Old-age, survivors, disability, and hospital and related insurance (OASDHI).

⁴ Consists of transfers other than OASDHI, grants, interest, and subsidies.

On an annual basis state and local government purchases of goods and services rose from \$46.1 billion in 1960 to \$86.4 billion in 1967.

Clearly, both federal and state outlays have been expanding disproportionately to the growth of the economy as a whole, quite aside from movements in military expenditures; while, in parallel, private outlays for health, education, and travel (among others) have exhibited a persistent tendency to relative expansion.

It has been well established that the other advanced nations of the world are moving along paths of consumption outlays similar to that of the United States, depending mainly on levels of income per capita and relative prices.³⁷

The pressures for increased public expenditures were, indeed, already evident at the state and local level in the 1950's; and the expansion of such outlays undoubtedly cushioned to some extent the forces of deceleration at work in the United States at that time. The acceptance during the 1960's of new federal responsibilities in the field of education and the radical expansion in the fields of medical services, welfare, and housing, formed the basis for contin-

³⁶ *Op. cit.*, *Economic Report of the President*, February 1968, Table 6, p. 67.

³⁷ See, for example, Royal Commission on Canada's Economic Prospects, "The Service Industries" by the Bank of Montreal, March 1956; Milton Gilbert, et al, "Comparative National Products and Price Levels" (Paris: O.E.E.C., 1958). For more recent estimates, see Maurice Lengellé, *The Growing Importance of the Service Sector in Member Countries* (Paris: O.E.C.D., 1966); Houthakker and Taylor, *op. cit.*, for a comparison of their findings with those of J. Sandee (ed.), *Europe's Future Consumption* (Amsterdam: North-Holland Publishing Company, 1964); and the discussion of comparative patterns of service outlays in V. R. Fuchs, *op. cit.*, pp. 24-31.

ued full employment in the time ahead, if public decisions on expenditures in these new sectors continue to give them their head.

Although, as Kuznets emphasizes,³⁸ we still have more to learn about productivity in the service sub-sectors, the presumption, on the basis of existing experience (as summarized, for example, by Fuchs³⁹), is that the expansion of resources in the service sectors yields lower productivity than in manufactures.

The question, therefore, arises as to whether the movement of the United States, earlier and more massive than that of other more advanced nations, into these service sub-sectors will damp the relative increase in United States productivity in such a way as to increase or exacerbate balance of payments difficulties. The entrance of the United States into the automobile sectoral complex in advance of others brought with it leadership in a range of industries, embracing relatively new technologies, that helped support American productivity and its balance of payments position. The absorption of these technologies under conditions of market efficiency by Western Europe and Japan has already put severe pressure on the United States trade surplus.

The question I pose is: Will the shift to services, in the international sequence in which it is now taking place, raise further major problems for the United States?

This question has not yet been subjected to systematic analysis; and no dogmatic answer to it is yet possible. But three observations appear justified.

First, as Fuchs points out, the possibilities for introducing new technology into the service industries are not, by any means, precluded. And in an economy as vast and resourceful as that of the United States, there may well be untapped potentialities for increasing productivity in services, as we have already demonstrated in agriculture. There are, for example, potentialities for the use of television and other mass educational devices whose surface has only been scratched; and there may be in medicine and in the layout of hospitals significant possibilities of economy in resources and personnel, although in both education and in medicine powerful conservative forces appear to resist technological change. And the transatlantic race in a new generation of commercial aircraft may determine where the balance of payments burden falls in the face of the almost universal impulse to expand foreign travel.

³⁸ *Loc. cit.*, p. 151.

³⁹ *Op. cit.*, pp. 3-6.

Second, the overall potentialities of the United States economy with respect to exports have by no means been fully exploited. But an effective policy to expand United States exports on the requisite scale is likely to involve not merely a spread in export-mindedness within the economy but also more powerful tax incentives, improved export financing, and measures to reduce transport costs.

Third—and perhaps most fundamental—the structural shift towards certain service sectors heightens the already strong rationale for effective wage-price guidelines in the American economy. The American wage-price performance of 1961-1965, relative to others, constituted a kind of devaluation badly needed at that time. It was reinforced by actions of the federal government which provided important incentives for the modernization of the American capital stock. It permitted the United States to persist in a domestic expansion and an increase in foreign aid and military outlays abroad at a critical interval. The breaking of the wage-price guidelines since 1965 appears a luxury the United States could ill afford.

In Western Europe the 1960's saw the end of the honeymoon period of postwar growth. In the early 1960's Italy ceased, economically, to be the two kingdoms.⁴⁰ The drawing of labor from southern Italy to the northern cities and from Italy, as a whole, into Western Europe, yielded bargaining leverage and a rise in real wages which, temporarily at least, upset the equation of growth of the 1950's in which a lag of money wages behind productivity increase yielded powerful profit incentives to expansion. A structural adjustment to this emerging new situation was weathered; but the Italian economy came, perhaps once and for all, to be more nearly like that of Western Europe as a whole.

Meanwhile, growth rates elsewhere in Europe slowed down. West Germany accepted a relative slowdown in the mid-1960's and a higher order of wage discipline than most others, moving into a massive balance of payments surplus which, of course, burdened the accounts of others.

I shall not attempt to assess here⁴¹ whether Professor Kindleberger is correct in attributing both the super-growth rates of the 1950's and the slowdown of the 1960's to the abnormal inflow of labor to Western Europe and the finding of its technical and political limitations.

⁴⁰ For an excellent brief analysis, see C. P. Kindleberger, *op. cit.*, pp. 36-41.

⁴¹ For further observations, see below, pp. 173-4.

Nor is it clear whether European geography (or tastes) will set a lower limit on the diffusion of the automobile—and, therefore, on the duration of the automobile sectoral complex as a leading sector—than in North America.

But, soon or late, Western Europe, as well as the United States, is likely to move into an era where public and private services—including, perhaps, increased leisure, plus efforts to resolve problems of pollution, parking, and other blights of the automobile age—become central to employment and, perhaps, the rate of growth.

Although Japan, with its extraordinarily low rate of security expenditures and abnormally high rate of investment, still may take some time to catch up with Western Europe and the United States, it will also confront, in time, the problem of structural transition from the automobile leading sector complex to the service and quality sectors beyond—a phase about which we have still much to learn.

What is at stake here is not, then, the broad directions in which the income elasticity of demand will move the more advanced economies: depending on differences in history, geography, and tastes, they are all likely to shift towards certain services as leading sectors. It is the differential timing of this shift and whether or not efforts are successfully made to increase productivity in these sectors, which may raise or exacerbate certain balance of payments problems—notably, for the United States.

A second growth problem of the 1960's was the deceleration of the Soviet economy and the economies of the more advanced countries of Eastern Europe.

The Soviet Union experienced in the 1960's the deceleration its planners had foreshadowed. Soviet public policy decreed a very gentle transition, at best, towards the automobile and all its works. The cost has been a rise in the capital-output ratio which has not been overcome by efforts at greater efficiency within the existing pattern of major sectors. The potentialities for a surge of Soviet growth and productivity are, however, still there if the leaders in Moscow are prepared to accept the evident passion of the Soviet consumer for a dacha and a Moskvich.⁴² The commitment to the Fiat

⁴² Housing, of course, carries with it a high marginal capital-output ratio. One cannot, therefore, predict confidently the direction in which the Soviet capital-output ratio would shift if consumers' sovereignty were to reign as, for example, in Western Europe. Expanded housing outlays might raise the capital-output ratio. The turning of the heavy industry complex to automobiles and other fabricated products would lower the capital-output ratio. The most important potential factor in determining

plant may well take them down this road; although profound and difficult changes in attitude and organization, in distribution, maintenance, etc. will be required before the Soviet Union and Eastern Europe can enjoy efficiently the ambiguous blessings of the age of high mass-consumption.

At the moment the Soviet authorities appear content to see a decline in the rate of increase in GNP at the expense of the investment rate, with a heavy continued emphasis on military expenditures and slowly measured concessions to the consumers—notably in consumers durables.⁴³

Chemicals maintain a high rate of increase as efforts continue to increase agricultural productivity within the framework of a collective agriculture.

Thus, the uneven growth pattern of the 1950's—with the U.S.S.R. and Western Europe moving ahead faster than the United States—has become more uniform in the 1960's, with a convergence of the GNP expansion rates at 4-5 percent, in real terms, as the United States made a structural transition to new public and private service sub-sectors; the automobile complex decelerated in most of Western Europe; and the U.S.S.R. accepted lower growth rates from its wan-

the upshot for GNP, however, might be a rise in labor productivity with more powerful incentives available in the form of ample supplies of durable consumers goods and improved housing.

⁴³ Soviet sectoral targets for 1970 are given in the following table from *The European Economy in 1966* (Geneva: United Nations Economic Commission for Europe, 1967), ch. 2, p. 48.

SELECTED OUTPUT TARGETS OF SOVIET INDUSTRY

	1958	1965	1970
Electric power (billion kWh)	235.0	507.0	830-850
Oil (million tons)	113.0	243.0	345-355
Gas (billion m ³)	29.9	129.0	225-240
Coal (million tons)	493.0	578.0	665-675
Steel (million tons)	54.9	91.0	124-129
Passenger-cars and trucks (thousands)	511.0	615.0	1,360-1,510
Tractors (thousands)	220.0	355.0	600-625
Mineral fertilizers (in conventional units, million tons)	12.4	31.3	62-65
Textile fabrics (billion m ²)	5.8	7.5	9.5-9.8
Leather footwear (million pairs)	356.0	486.0	610-630
Granulated sugar (million tons)	5.2	8.9	9.8-10
Radio receivers (millions)	3.9	5.2	7.5-8.0
Television sets (millions)	1.0	3.7	7.5-7.7
Refrigerators (millions)	0.4	1.7	5.3-5.6

Source: Directives of the 23rd Congress of the CPSU for the Five-year Economic Development Plan of the Soviet Union for 1966-1970 and Mr. Kosygin's introductory statement.

ing heavy industry complex rather than unleash the full powers of the automobile sectoral complex.

If the Soviet Union is making its way through an awkward transition from the heavy industry to the automobile and durable consumers complex, the Latin American position, as a whole, can be understood as an even more awkward transition from the consumers goods to the heavy industry and fabricating complex as a leading sector—a third major problem which emerged in the 1960's and which will strongly affect the outcome for the world economy in the 1970's.

Here, once again, major issues of public policy are involved. It is increasingly clear that to move successfully into the steel, metal-working, engineering, and chemical sectors, which lie at the heart of this complex, radical improvements in efficiency are required.⁴⁴ But the framework of tariff protection inherited from the import substitution stage of industrialization, combined with the small size of many Latin American national markets, inhibit rational investment, production, and market policies in these capital intensive industries. The lack of clear and reliable policies towards the role of private foreign investment has also inhibited progress in those sectors, since, in many cases, the rapid, efficient introduction of these technologies requires a phase of foreign capital and, at least, elements of foreign management.

A perception that the structural shift to the heavy industry and fabricating complex is urgently needed, is the basis of the drive of many Latin American leaders for economic integration, since that appears the least painful common route to enforce the degree of competitive efficiency, quality control, and export-mindedness required. Overcoming the protectionist and monopolistic heritage of the first phase of its industrialization—and finding acceptable terms both ways for the exploitation of foreign capital, management, and technology—will clearly be a major test of Latin American economic policy in the 1970's.

As for Africa (and Indonesia), the question that lies ahead is whether the 1970's will see the beginnings of take-off, probably also based on import substitution of manufactured consumers goods

⁴⁴ For data on some heavy industry and fabricating sectors in key Latin American countries during the 1960's see *United Nations Monthly Bulletin of Statistics* (New York: United Nations Publication, December 1968), pp. 52-4 (fibres), 56 (news-print), 60-4 (chemicals), 68-71 (pig iron, ferro-alloys, and steel). Progress will be seen as generally irregular, excepting the case of Mexico.

but, one would hope, also on the further refinement within Africa of its agricultural and raw material products.⁴⁵

THE LINK OF SECTORAL COMPLEXES TO THE AGGREGATES

I turn now to a major analytic problem raised by this mode of analysis.

If leading sector complexes are to be accepted as a critical dimension of growth analysis, the sequence of leading sector complexes must be related to the aggregates in terms of which most growth analyses—or measurements of the consequences of growth—proceed; notably the productivity and level of investment.

So far as productivity is concerned, for the United States we have the distinguished studies of the National Bureau of Economic Research, which confirm the instinctive feeling of historians and other analysts that it is the coming in of new sectoral complexes, linked to new technologies, which tends to keep down the capital-output ratio in the face of the effects on productivity of the aging of older sectors.⁴⁶ For example, Fabricant concludes his sensitive analysis of this problem with a hypothesis which he could then only advance tentatively:

Technological progress induces growth, and growth leads to lower costs and thereby to further growth which may stimulate additional technological advances, and so on. If any factor has been taken as prime it is technological progress in the early stages of an industry's growth—particularly as the consequence of invention. This consideration suggests, in turn, that a more or less typical chronological pattern of the cost and price of an industry's output may be followed during an industry's growth and maturity. Since growth is most rapid in the early stages of an industry's life, declines in unit costs and prices also tend to be greatest at that time. As the industry approaches maturity, its unit costs and values decline less rapidly and tend to become subject to influences more important, at that stage, than technological progress.

At this time we cannot tell how closely the complex of hypotheses outlined here resembles the facts. The relation between the size of an industry or a

⁴⁵ It may be that Africans might do best by studying not the more obvious models from the advanced industrial world but that of Sweden which built its modern economy by the purposeful elaboration of its limited natural resources, applying modern technology to successive processing stages. *Pan-Africanism Reconsidered*, edited by the American Society of African Culture (Berkeley: University of California Press, 1962), p. 161.

⁴⁶ As noted previously, the technological content of the rapidly growing service sub-sector is still to be determined; but the emerging phase of economic history could run counter to past experience of new sectoral complexes, since it may not involve the introduction of new high productivity technologies.

business enterprise and the level of costs, the relation between costs and prices, and the relationship between prices and sales are all largely matters of conjecture, and a resolution of these problems still waits upon the future.⁴⁷

In broad terms, the study of *Capital in Manufacturing and Mining* by Daniel Creamer, S. P. Dobrovolsky and Israel Borenstein, confirms this conclusion in the sense that the greatest declines in the capital-output ratio, within the overall declining tendency after 1919, were in the most dynamic sectors:

Industries having the highest relative rates of growth or the lowest relative declines in output, as the case may be, are those in which worker-output and capital-output ratios declined the most. In other words, intensive use of capital and of labor is positively correlated with higher rates of growth in production.⁴⁸

Lomax concludes his analysis of British industrial growth and productivity in a similar vein:

The rates of change have risen quite markedly in the most recent post-war period. The well known phenomenon of productivity advance being closely associated with production growth is again apparent. The period of most rapid growth of productivity has also been that during which output has most increased. Productivity rarely seems to rise when the economy is stagnant or in recession. Performance in the individual groups has mostly been as expected although there is much scope for analysing and explaining individual industry movements in a detail which would be out of place here. The new developing industries and those in which there have been important technological changes show up in the most favourable light. The consistently high rate of productivity growth in Vehicles and also, to a rather lesser extent, in Paper and Printing are examples. The rapidly accelerating movement in Chemicals and, again, in the Utilities group are striking cases of productivity in newer industries following the production growth pattern.⁴⁹

To these technical factors must be added the possibility of systematic movements in the quality of entrepreneurship and management. Are potential innovations more vigorously introduced in the early stages of the life of a sector than its later, slower moving stages? Merton raised this question in general; and Postan has posed it with respect to postwar Europe.⁵⁰

⁴⁷ S. Fabricant, *op. cit.*, p. 120.

⁴⁸ Princeton, 1960, p. 106.

⁴⁹ K. S. Lomax, "Production and Productivity Movements in the United Kingdom Since 1900," *Journal of the Royal Statistical Society*, Part 2, Vol. 122, p. 203.

⁵⁰ R. K. Merton, "Fluctuations in the Rate of Industrial Invention," *Quarterly Journal of Economics* (1934-5), pp. 465-8; M. Postan, *op. cit.*, especially, pp. 265-302. See also the author's *Process of Economic Growth*, Second Edition (Oxford:

The actual determinants of both the average and incremental capital-output ratios are, of course, much more complex than suggested by the Fabricant-Creamer-Lomax-Postan proposition, as these authors would, of course, fully recognize.⁵¹ The complexities include the overall composition of capital investment (for example, the proportion required for housing in different climates), the average age of the capital stock and the degree of utilization of the capital stock. Moreover, the very early stage of the introduction of new capital-intensive technologies may see a rise in the capital-output ratio, with subsequent decline as economies of scale and lesser refinements in efficiency are exploited.

Nevertheless, one can conclude tentatively, at least, that economies caught up in the transition between a group of leading sectors whose momentum has waned and which have not yet achieved an economic and/or political setting which will set in motion the next complex of leading sectors, are likely to experience a decline in the productivity of investment.

What about the level of investment? In a post-Keynesian world it is possible to assume, as, for example, Kindleberger does in his analysis of *Europe's Postwar Growth*, that full employment is universally attainable within developed nations; that the working of private markets will generate a roughly appropriate composition of output; and that the rate of growth can be related, therefore, to the level of input of labor and capital, without regard to the sectoral composition of output or the sequence of leading sector complexes. And there is, surely, an important element of Europe's story in the 1950's which can and should be linked to changes in the size of the working forces in the face of virtually universal policies of relatively full employment.⁵²

But there is also a link to be made between the coming in of

Clarendon Press, 1960), pp. 101-3, on the range of factors determining sectoral retardation.

⁵¹ See, for example, discussion of postwar European capital-output ratios in M. M. Postan, *op. cit.*, pp. 115 ff; also A. Maddison, *Economic Growth in the West* (New York: Twentieth Century Fund, 1964), especially Chapter III, "Investment and Growth."

⁵² Governmental policies of relatively full employment may have had an important indirect as well as a direct effect on the outcome via the expectations of private investors. Growing confidence that governments would not pay the severe political penalties of severe unemployment and that they knew how to maintain the level of effective demand may have induced investment policies in the private sector geared to long run growth, with diminished sensitivity to short-run fluctuations in the economy as a whole.

new leading sector complexes and the overall scale of private investment. The forces in Latin America, for example, which now inhibit the rapid introduction of the heavy industry complex, clearly also damp the overall level of private investment in Latin America if for no other reason than rapidly growing private sectors generally follow policies of plowing back a high proportion of profits. And to take a positive case, the high levels of investment in Europe of the 1950's were surely related to the successful release of the automobile durable-consumers complex, just as the lower interwar rates of investment are linked to the sluggishness of the transition which Svernillson describes. The labor that flowed to Western from Southern Europe in the 1950's would not have gone (nor been accepted, if it had) unless an extraordinary surge of expansion had been under way.

Postan puts the case for the dynamism of the new industries as a cause of high investment rates as follows:

. . . the links between investment and technology will also have to be dealt with here, if only because they may help us to identify some of the 'other' factors behind the high rate of post-war investment.

What these factors were and how they were linked with technological change is suggested by the very order in which industries arranged themselves for their demand for new capital. In almost every European country the industries heading the lists, i.e., those with the largest infusion of capital, were the 'modern' or the modernized industries. The chemical and petroleum industries, with their joint offspring in petrochemicals, plastics, and man-made fibres, developed a voracious appetite for new capital as they grew and renewed their equipment. Equally voracious for capital were the engineering and metal-working industries, especially their newer branches, such as electro-mechanical, electronic, and motor-car. On the other hand, new investment was low relatively to output, and also grew rather slowly, in such industries as cotton and wool, coal-mining (except where they were in the process of wholesale modernization as in the United Kingdom), wood-working or in such older branches of the engineering and metal-working industry as manufacture of railway equipment and milling machinery.⁵³

How do these linkages between the leading sectors and the level and productivity of investment relate to Denison's analysis of relative European and United States growth rates in recent times? At first glance it would appear that he has "explained" the differences in terms of broad categories of inputs, without recourse to the sectors, on the implicit assumption of homogeneous production functions.

⁵³ *Op. cit.*, p. 128; see also, pp. 163-6.

But, at a crucial point, the central role of the automobile and durable consumers goods breaks through Denison's analysis as it ultimately did Svernilson's analysis of the earlier period:

What distinguishes postwar Europe is that increases in output in the fast-growing countries have systematically been particularly marked in those products that Europe produced only on a small scale and at high cost compared to the United States in the early 1950's, and for which techniques for lowering costs with an increase in the scale of production already existed in the United States and did not need to be developed gradually and expensively as markets expanded. As incomes rose in Europe, demand for and production of these income-elastic products rose sharply and their unit costs were reduced by applying American techniques that could not have been adopted until per capita incomes were sufficient to provide a market. Some adaptation to European conditions was often made, but this was a much less difficult process than new development. In rather a large number of cases the transference of technology was carried out by American firms themselves, but this was not an essential ingredient of the process. The foregoing argument presupposes that in a given state of knowledge further gains from scale economies typically decline as output of individual products increases. It also presupposes that the 'state of knowledge' is at least as advanced in the United States as in Europe. Both presumptions seem to correspond to reality.

Automobiles and consumer durables provide classic and obvious examples of the process but it was quite pervasive and, I believe, applied to a great range of detailed products.⁵⁴

The factors listed in Denison's summing up⁵⁵ can for the most part be linked to the fact that in the course of the 1950's European income levels came to a point where a whole range of highly productive industries could surge ahead on a basis of efficiency previously denied them. These were the industries in which history had afforded the United States prior advantage. The upshot was high levels of investment in which the capital-intensive nature of the industries concerned was substantially offset by greater efficiency in the use of existing plants; for there are important economies of scale in automobiles and the durable consumers goods sectors. The resulting boom drew labor from agriculture and from the poorer nations of the south to Western Europe. This is the heart of Denison's tale of "the reduction in the costs of misallocation of resources" in Western Europe. It was the pull of the age of high mass-consumption—and the economies of scale that go with it—that mainly did

⁵⁴ E. F. Denison, *Why Growth Rates Differ* (Washington, D. C.: Brookings Institution, 1967), pp. 236-7. See, also, pp. 252-5 on relative U.S. and European automobile ownership and economies of scale in distribution.

⁵⁵ *Op. cit.*, pp. 296 ff., especially pp. 337-42.

the job, once European incomes came to a level where the appropriate income elasticities of demand could operate strongly on the key sectors.

One can conclude, then, that the data exist and can be at least roughly isolated to give some statistical content to the notion of leading sector complexes, if one is prepared to break through the conventional categories in which production and service data are presented; and that important tentative links can be established between the leading sector complexes, on the one hand, and the productivity and scale of investment, on the other.

The emphasis here on leading sector complexes would not, of course, deny the legitimacy of other factors determining the contours of growth and other forms and devices of measurement. But, if we start by viewing modern growth as the progressive introduction of new technologies,⁵⁶ growth analysis without attention to the leading sector complexes is *Hamlet* without the Prince; for it is through the leading sectors that, historically, major blocks of new technology actually have been brought into the productive process efficiently. Without the leading sectors one tends to examine the results of growth—the statistical reflections of growth in certain aggregates—not the growth process itself.

In short, a leading sector approach is a necessary but not a sufficient condition for growth analysis.

TASKS OF INTERNATIONAL ECONOMIC ORGANIZATION

We return now to our main themes.

We have looked at the contemporary world as made up of nations and economies, ranging from those still constructing the preconditions for take-off to those groping to create an environment of quality in societies which have already substantially absorbed what contemporary modern industry can provide by way of consumption. We have focused, in particular, on four problems of transition from

⁵⁶ In general terms the proposition would be almost universally agreed. But Professor Rodan makes an important three-way distinction among: the actual introduction of new technologies; the transition from inefficient to efficient operation of known technologies; the diffusion of old and familiar technologies to economies which have not yet applied them. The second concept is of particular importance: the problem of interwar Europe and contemporary Latin America is not so much a lack of technological knowledge as the lack of a market environment which would permit industries, rooted in those technologies, to expand rapidly. As noted above, pp. 174-6, the point is highly relevant to relative U.S.-European growth rates in the 1950's and 1960's.

one stage to another, conscious that these do not exhaust the agenda; for example, the fate of the abortive take-off in mainland China is not examined. Nevertheless, the problems considered permit us to pose this broad question: What are the tasks of international economic policy and organization that lie before us if this arena of nations, at different stages of growth, is to move forward to satisfy its hopes, aspirations, and ambitions in tolerable harmony?

It is one of the minor miracles of history that men and nations of this generation appear to have learned something from mistakes of the past in terms of international economic policy and organization. Starting with the Hot Springs conference in February 1943 on the postwar food problem, the international community has erected a remarkable network of global and regional economic institutions. It set about to create a rational monetary and trading environment for the world economy; to accelerate growth in developing nations; and to harmonize growth in the more advanced nations.

Looking back at the record of the past quarter-century, with all its inadequacies, one cannot help feeling a certain pride in our profession—as well as in the political leadership of the non-communist world—that we have come so far.

We have sustained a remarkable expansion in international commerce on reasonably liberal terms. In monetary policy the United States pursued a rational and wise policy when it was in chronic surplus; and, thus far at least, we have all moved forward in a precarious transition to a world where deficits and surpluses are likely to shift as among the major monetary powers—weathering some dangerous crises along the way.

Having accepted the challenge of making the 1960's the Decade of Development, we have achieved limited but real success. That success does not mean that as the 1960's draw to a close all the poor nations are now rich. It does not even mean that all the poor nations have firmly entered the take-off into self-sustained growth. It does mean that in each of the developing regions of the world there are demonstrations of success such that no nation need despair of finding a pathway to economic and social modernization consistent with its own history and culture and its own ambitions. The road ahead will be long, rocky, and uncertain—notably with respect to the course of birth rates; but if one compares the anxieties of the late 1950's with performance in the 1960's and the possibilities—as well as the problems—that lie ahead, there is reason for the international

community to persist in its common effort and to persist with temperate optimism.

To deal with these tasks we have in being an impressive array of global and regional institutions. They embrace monetary affairs, trade, and development. In the latter case, we have a network of consortium and consultative arrangements that provide for a meaningful multilateralization of the assistance process. And, as a political community, the world has quietly moved towards federalism with the rise of regional and sub-regional institutions, except in the Middle East.

But clearly if the analysis presented here is roughly correct, the international institutions—and the national policies that lie behind them—will be tested severely in the 1970's.

International Monetary Policy

We have scrambled through the adjustments to the British devaluation of November 1967, the two-price gold system of March 1968, and the French crisis of November 1968. In every case, the international community stared at situations which, if not handled with loyalty to the international monetary system, could have led us down the road of 1929-33. In each case, a rational *ad hoc* solution was found on a common basis in which nations subordinated, in degree at least, national policies to the minimum requirements for maintaining the international system.

But, evidently, this is not good enough. We need urgently not merely the IMF Special Drawing Rights but a deeper commitment to the principle of adjustment by surplus as well as deficit nations on behalf of the international system. Whether those adjustments are via trade, limited exchange rate flexibility, or both, is of secondary importance.

The differential timing of deceleration in the automobile sectoral complex and the relative shift to certain service sub-sectors will impart a special heightened importance to intensive monetary co-ordination among the more advanced industrial societies.

Incomes Policy

It is also, however, clear that the international monetary system will not prove viable unless nations are prepared increasingly to treat their domestic dispositions with respect to wage and price policy as a matter of international responsibility. Again, this dimen-

sion of policy will be particularly important if the more advanced nations move in the decade ahead—at different times and rates—towards increasing outlays in certain service industries, including, perhaps, an expansion of time for leisure, and this movement proves a force damping the rate of productivity increase. It is not difficult to understand the German feeling in the summer of 1968 that they were being put under international pressure, because their wage-price discipline was better than that of certain other nations. I agree with the sense of Aubrey Jones's article, in *The Economic Journal* of December 1968,⁵⁷ that the advanced democracies of the world have no other rational course than to create, as soon as dogged education and advocacy make possible, the deep understandings within their societies required for carrying out the type of guidelines set out, for example, in the Economic Report of the President to the Congress in February 1968.⁵⁸ I do not believe conventional fiscal and monetary policy, operated without wage-price guidelines, can steer successfully along the delicate line bounded by a politically unacceptable level of unemployment and an economically unacceptable rate of inflation. These sensitive domestic issues will have to become, in an important sense, international issues before the world monetary system is firm and stable. The acceptance of this doctrine—among advanced as well as developing nations—will prove, I suspect, one of the most challenging tasks of international organization in the decade and generation ahead.

Latin America

The problem of Latin America, in its transition to the heavy industry and fabricating complex and a successful drive to technological maturity, must be solved primarily by Latin Americans. Only Latin Americans can break down the complex of protectionist and monopolistic barriers with which history has saddled that region. (One often thinks of how lucky Japan was to have imposed upon it, for a critical formative period, foreign restrictions on its power to impose tariffs.) But, if there is a will in Latin America to create the conditions for efficient capital-intensive industry—for high standards of productivity and quality control—the international community could help substantially accelerate a transition already too long delayed: by measures of development assistance which would

⁵⁷ "Prices and Incomes Policy," pp. 799-806.

⁵⁸ *Op. cit.*, pp. 119-28.

help cushion possible adjustments within Latin America, as intra-regional tariff barriers are removed; by investment policies in the private sector, which make foreign private investment more clearly a net national advantage to the recipients; and by import policies for Latin American goods, which encourage those who strive and finally achieve the requisite productivity, price, and quality standards in the new sectors.

Africa

It is time for Africans, with the help of the international community, to define a strategy for the first stage of industrialization which, as suggested earlier, would not merely encourage import substitution industries but, also, through the progressively more refined processing of agricultural and mining products, leave in Africa a higher residue of value added. This strategy has important implications for the design and balance of African educational and training policies; for advanced processing sets up large requirements for engineers, technicians, and managers. One would also hope that as Africa entered its take-off it would study carefully the prompt movement into manufactured exports of Japan, Taiwan, South Korea, and Hong Kong, under relatively mild tariff protection, as opposed to the vicissitudes imposed upon contemporary Latin America by the excessive protectionism of earlier times. These are, as well, the broad challenges faced in Indonesia, where the ease of smuggling may render difficult an import substitution policy behind high tariff barriers.

Foreign Assistance

With respect to levels of economic assistance, we must somehow generate a new political and psychological base for holding—and even enlarging—the flow of development resources. The additional amounts required are not large in relation to the GNP now enjoyed in the more developed parts of the world; and the United States, in particular, has fallen shamefully back in its relative contribution to the development effort.⁵⁹ Moreover, what once had to be argued on the basis of theory and faith can now be argued on the record; namely, that the task is not endless; that self-sustained growth and removal from the list of those requiring assistance on special terms is an attainable goal. To achieve the political basis for a second

⁵⁹ See, for example, *Development Assistance, 1968 Review*, Report by Edwin M. Martin (Paris: O.E.C.D., December 1968), Table 1, p. 225.

wave of commitment to the international development process will require, however, not merely efforts by enthusiasts in the developed world but also the formulation and effective projection of rational and attractive development strategies in those parts of the world which ought to have more resources. For example, India and Pakistan ought to be able to present to the international community a strategy of moving towards a normalization of their economic relations; joint development projects; restraints on military expenditures; and determined efforts in the field of family planning. Latin America, for example, ought to link its claim for a continuation of the Alliance for Progress at a high level of external assistance with an effective strategy for the trade and physical integration of that continent, as well as a more reliable, mutually agreed policy with respect to foreign private investment. Asia must clearly develop a strategy for the post-Vietnam period, based on intensive regional cooperation, including a radical expansion in the now inadequate Japanese contribution. The Middle East, now, in part, frustrated by internecine conflict and generally fragmented in its development efforts, must, in time, develop a regional strategy which would bring to bear a margin of local oil revenues in support of regional development, as well as a scheme for bringing the Arab refugees fully into the stream of citizenship and development.

Europe and the Atlantic

As befits a world where economic and political authority has, for a generation, become progressively more diffused, the responsibility for dealing with these tasks of monetary, trade, and development policy and organization is widely spread throughout the non-communist world. But if one factor above any other is likely to tip the outcome favorably or unfavorably, in the time immediately ahead, it is whether post-de Gaulle Europe moves forward to enlarge and strengthen its economic institutions, embracing Britain along the way.

If negotiations fail in the months ahead, the outcome is unlikely to be a return to the *status quo ante* for two reasons.

First, a certain nationalist fragmentation of the Common Market is already latent: recriminations pursuant to a failure of the London-Brussels negotiation could exacerbate them, unless the fault lay unambiguously with British policy.

Second, the capacity of the United States to continue to play a constructive role in the Atlantic—and in the world as a whole—is,

and has been, linked for some time to the capacity of others to assume what we Americans regard as an equitable share of the burdens of the world community. That is why the rise of regionalism—in Latin America, Africa, and Asia, as well as in Europe—has played so important a role in recent American policy.

A movement of Western Europe away from that unified organization which alone promises to permit it to play an effective partnership role with the United States might well tip American policy towards increasingly nationalist policies, with profound consequences for the still precarious and fragile international economic system we have built over this quarter-century out of our memories of the disaster of the 1930's.

On the other hand, if Europe succeeds in moving forward, it is likely to: (1) solve its own problems in relation to monetary, trade, and development affairs on "liberal" rather than nationalistic lines; and (2) encourage the United States to do the same.

Thus, as opposed to what happened in the critical years a generation ago, initiative and responsibility for international economic policy and organization now lie more substantially with London and Brussels than with Washington, although the American role in the outcome will be important; and what is at stake is the survival of the inadequate but promising system of international economic organization we have built since Bretton Woods.

The Communist World

As for the nations under Communist rule (excepting Yugoslavia), there is now relatively little the non-Communist world and its institutions can do unless cooperation is sought. The transition of the Soviet Union and Eastern Europe to their own versions of the age of high mass-consumption is obviously a problem which they must work out and a task which they have the resources to accomplish, if they can develop the political will. If and when mainland China decides to concentrate on its economic modernization, after a decade of relative stagnation, there could be, as with North Vietnam, important possibilities for external assistance.

A view of the last twenty-five years in the world economy—where we are and what we face—leaves us, then, with a good many of the critical economic questions in the hands of politics and politicians; but that is nothing new for economic historians.

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APPENDIX A
TABLE I
PRIVATE AUTOMOBILES IN USE IN CERTAIN COUNTRIES, 1900-66
(THOUSANDS)

<i>Year</i>	<i>United States</i>	<i>Canada</i>	<i>France</i>	<i>Great Britain</i>	<i>Germany</i>	<i>Italy</i>	<i>Japan</i>	<i>Russia</i>
1900	8	—	3	—	—	—	—	—
1901	15	—	—	—	—	—	—	—
1902	23	—	—	—	—	—	—	—
1903	33	—	—	—	—	—	—	—
1904	55	1	—	8	—	—	—	—
1905	77	1	22	16	—	—	—	—
1906	106	1	—	23	—	—	—	—
1907	140	2	—	32	—	—	—	—
1908	194	3	—	41	—	—	—	—
1909	306	5	—	48	—	—	—	—
1910	458	9	54	53	—	—	—	—
1911	619	22	—	72	—	14	—	—
1912	902	36	—	88	—	17	—	—
1913	1,190	54	91	106	50	20	1	7
1914	1,664	74	108	132	—	22	—	—
1915	2,332	95	—	139	—	23	1	—
1916	3,368	128	—	142	—	21	1	—
1917	4,727	204	—	110	—	17	1	—
1918	5,555	277	—	78	—	7	3	—
1919	6,679	342	—	110	—	24	4	—
1920	8,132	409	135	187	—	31	6	—
1921	9,212	423 ^b	173	246 ^a	61	34	8	—
1922	10,704	462	217	315 ^a	83	41	10	—
1923	13,253	515	266	384	100	54	12	—
1924	15,436	574	352	474	132	57	15	7
1925	17,440	640	453	580	175	85	21	7
1926	19,221	736	541	676	207	105	28 ^a	8
1927	20,142	821	643	778	268	119	35	8
1928	21,308	921	758	877	351	144	47	9
1929	23,060	1,014	930	970	433	170	52	11 ^a
1930	22,973	1,047	1,109	1,042	501	183	56 ^a	10
1931	22,330	1,024 ^a	1,252	1,076	523	186	64	11 ^a
1932	20,832	945	1,279	1,119	497	188	67	15
1933	20,586	917	1,397	1,196	522	219	68	26 ^a
1934	21,472	952	1,432	1,298	675	236	76 ^a	34
1935	22,495	990	—	1,477 ^a	810	244	83	44

TABLE I (Continued)

Year	United States	Canada	France	Great Britain	Germany	Italy	Japan	Russia
1936	24,108	1,042	1,687	1,643	960	222	—	45
1937	25,391	1,103	1,721	1,798	1,126	271	60 ^b	65 ^a
1938	25,167	1,160	1,818	1,944	1,300	289	59	85
1939	26,140	1,190	2,020	2,034 ^a	713 ^b	290	—	—
1940	27,372	1,235	—	1,423	—	270	—	—
1941	29,524	1,280	—	1,503	—	97	—	170
1942	27,869	1,217	—	858	—	74	—	—
1943	25,913	1,194	—	718	—	—	—	—
1944	25,466	—	—	755	—	—	—	—
1945	25,691	1,160	—	1,487	—	—	—	—
1946	28,100	1,234	1,550	1,770 ^a	—	150	20	150 ^b
1947	30,719	1,370	—	1,944	187	184	28	—
1948	33,214	1,497	1,519	1,961	215 ^a	219	30	—
1949	36,312	1,672 ^a	1,520	2,131	352	267	36	—
1950	40,185	1,907	—	2,258	516	342	43	—
1951	42,525	2,098	1,600 ^a	2,380	682	425	58	180
1952	43,654	2,296	1,800	2,508	900 ^a	510	88	180
1953	46,289	2,514	2,020	2,762	1,126	613	115	225
1954	48,324	2,688	2,677 ^a	3,100	1,393 ^a	744	139	225
1955	51,989	2,935	3,016	3,526	1,663	879	153	350
1956	54,004	3,187	3,477	3,888	2,030	1,051	181	400
1957	55,693	3,375	3,972	4,187	2,436	1,237	219	415
1958	56,871	3,574	4,414	4,462	2,940	1,410	226	500
1959	59,567	3,795	5,578	4,981	3,715	1,663	319	575
1960	61,684	4,001	5,576	5,650	4,504	2,000	457	638
1961	63,275	4,303	6,842	6,127	5,356	2,444	664	638
1962	65,929	4,536	7,813	6,706	6,340	3,007	889	876
1963	69,027	4,830	7,075	7,547	7,756	3,864	1,234	871
1964	71,950	5,122	7,960	8,436	8,690	4,632	1,672	926
1965	75,261	5,279	8,778	9,131	9,719	5,469	2,181	926
1966	78,354	5,539	9,635	10,747	9,891	6,322	2,833	995

^a Change in series.^b Major change in series.

Source: Figures updated from *Stages of Economic Growth*, pp. 168–71, from *Auto Facts and Figures*, The Automobile Manufacturers Association, Inc., Detroit, 1958–68.

APPENDIX A
TABLE II
PRIVATE AUTOMOBILES IN USE PER MILLION POPULATION,
IN CERTAIN COUNTRIES, 1900-66

<i>Year</i>	<i>United States</i>	<i>Canada</i> ^a	<i>France</i>	<i>Great Britain</i>	<i>Germany</i>	<i>Italy</i>	<i>Japan</i>	<i>Russia</i>
1900	100	—	80	—	—	—	—	—
1901	190	—	—	—	—	—	—	—
1902	290	—	—	—	—	—	—	—
1903	410	—	—	—	—	—	—	—
1904	670	86	—	220	—	—	—	—
1905	920	100	560	410	—	—	—	—
1906	1,240	230	—	600	—	—	—	—
1907	1,610	330	—	830	—	—	—	—
1908	2,190	470	—	1,030	—	—	—	—
1909	3,380	710	—	1,200	—	—	—	—
1910	4,960	1,320	1,370	1,310	—	—	—	—
1911	6,590	3,020	—	1,760	—	400	—	—
1912	9,460	4,930	—	2,150	—	480	—	—
1913	12,200	7,130	2,290	2,560	740	580	20	52
1914	16,800	9,420	2,710	3,160	—	610	—	—
1915	23,200	—	—	—	—	—	—	—
1916	33,000	—	—	—	—	—	—	—
1917	45,800	—	—	—	—	—	—	—
1918	53,800	—	—	—	—	—	—	—
1919	63,900	41,200	—	—	—	670	70	—
1920	76,400	47,800	3,460	4,440	—	870	100	—
1921	84,900	48,100 ^b	4,410	5,660 ^a	970	900	140	—
1922	97,300	51,800	5,500	7,320 ^a	1,340	1,070	170	—
1923	118,000	57,200	6,670	8,870	1,610	1,390	210	—
1924	135,000	62,800	8,730	10,900	2,110	1,460	250	47
1925	151,000	68,800	11,200	13,300	2,770	2,160	350	53
1926	161,000	77,900	13,200	15,400	3,250	2,650	460 ^a	54
1927	169,000	85,200	14,700	17,600	4,180	2,980	580	56
1928	177,000	93,700	18,500	19,800	5,460	3,570	760	57
1929	189,000	101,000	22,600	21,800	6,690	4,170	820	69 ^a
1930	186,000	103,000	26,700	23,300	7,700	4,460	880 ^a	61
1931	180,000	98,700 ^a	29,900	24,000	7,990	4,490	980	68 ^a
1932	167,000	90,000	30,600	24,800	7,570	4,510	1,010	92
1933	164,000	86,200	33,300	26,400	7,910	5,200	1,020	157 ^a
1934	170,000	90,900	34,100	28,600	10,200	5,560	1,120 ^a	201

TABLE II (Continued)

<i>Year</i>	<i>United States</i>	<i>Canada</i>	<i>France</i>	<i>Great Britain</i>	<i>Germany</i>	<i>Italy</i>	<i>Japan</i>	<i>Russia</i>
1935	177,000	91,300	—	32,400 ^a	12,100	5,700	1,200	260
1936	188,000	95,100	40,300	35,900	14,300	5,160	—	270
1937	197,000	99,900	41,900	39,100	16,600	6,250	850 ^b	380 ^a
1938	194,000	104,000	44,100	42,100	19,000	6,610	830	500
1939	200,000	106,000	49,000	43,600 ^a	17,800 ^b	6,710	—	—
1940	207,000	—	—	—	—	—	—	—
1941	222,000	—	—	—	—	—	—	930
1942	—	—	—	—	—	—	—	—
1943	—	—	—	—	—	—	—	—
1944	—	—	—	—	—	—	—	—
1945	—	—	—	—	—	—	—	—
1946	201,000	100,000	38,300	37,300 ^a	—	3,240	—	1,100 ^b
1947	214,000	109,000	—	40,600	4,160	4,020	360	—
1948	227,000	117,000	36,700	40,500	4,650 ^a	4,730	380	—
1949	244,000	124,000 ^a	36,500	43,800	7,480	5,750	390	—
1950	266,000	139,000	—	46,100	10,700	7,310	520	—
1951	277,000	150,000	37,900 ^a	48,600	14,100	9,010	680	1,000
1952	280,000	159,000	41,300	51,100	18,500 ^a	10,800	1,020	—
1953	292,000	169,000	47,200	56,100	23,000	12,900	1,320	1,200
1954	300,000	175,000	62,100 ^a	62,800	28,000 ^a	15,500	1,560	—
1955	316,000	186,000	69,300	71,100	33,100	18,200	1,710	1,800
1956	323,000	197,000	79,300	78,100	40,000	21,700	2,000	2,000
1957	327,000	203,000	89,700	83,600	47,300	25,500	2,410	2,000
1958	327,000	210,000	100,000	89,100	55,100	29,200	2,490	2,500
1959	327,000	218,000	125,000	96,400	68,300	34,100	3,470	2,750
1960	344,000	224,000	123,000	109,000	81,900	39,400	4,930	3,060
1961	342,000	238,000	150,000	120,000	96,400	48,100	7,090	2,980
1962	355,000	249,000	169,000	127,000	113,000	59,600	9,520	3,990
1963	357,000	265,000	149,000	147,000	136,000	77,600	12,900	3,280
1964	372,000	268,000	165,000	158,000	157,000	89,900	17,400	4,090
1965	385,000	269,000	179,000	165,000	171,000	106,000	22,300	4,020
1966	400,000	272,000	194,000	178,000	175,000	120,000	28,700	4,250

^a Change in series.^b Major change in series.

Source: Figures updated from *Stages of Economic Growth*, pp. 168–71, from *Auto Facts and Figures*, The Automobile Manufacturers Association, Inc., Detroit, 1958–68.

APPENDIX B
 DIFFUSION OF CERTAIN DURABLE CONSUMERS GOODS
 IN THE UNITED STATES, 1957-1968
 PERCENTAGE OF ALL WIRED HOMES WITH

<i>Year</i>	<i>Auto- mobiles^a</i>	<i>TV^b</i>	<i>Refrig.</i>	<i>Freezers</i>	<i>Vacuum</i>	<i>Washers</i>	<i>Dryers</i>	<i>Air Cond.</i>
1957 ^b	75	81.0	96.0	18.9	66.7	76.8	11.9	7.6
1958 ^b	73	86.0	97.3	19.2	68.3	78.5	13.7	9.6
1959	74	89.0	97.7	21.0	70.9	80.9	15.6	11.7
1960	77	89.9	98.0	22.1	72.5	83.1	17.8	12.8
1961	76	89.4	98.2	23.4	74.3	85.4	19.6	15.1
1962	74	89.3	98.3	24.7	76.4	85.7	21.1	17.0
1963	80	92.7	99.0	25.6	78.2	86.2	22.9	18.8
1964	78	93.4	99.1	26.4	79.5	86.5	23.5	19.4
1965	79	94.1	99.3	26.7	81.2	86.9	24.2	20.2
1966	79	97.1	99.5	27.2	83.5	87.4	26.4	24.2
1967	78	97.8	99.6	27.5	90.6	88.2	30.5	29.9
1968	—	98.1	99.7	27.2	92.0	94.3	34.6	36.7

^a *Auto Facts and Figures*, The Automobile Manufacturers Association, Inc., Detroit, 1958-68.

^b From Research Editor of *Merchandising Week*, in private communication.

Source: "1969 Statistical and Marketing Report," *Merchandising Week*, New York, Feb. 1969.