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Cyclical Fluctuations in the Exports of the United States Since 1879

1

Traditional versus Expansionist Views on Export Changes During Business Cycles

This book presents an empirical investigation of the fluctuations in United States exports and of their relation to American business cycles over the period 1879–1961. Before embarking on this investigation, however, we shall consider briefly in this chapter how exports may be expected to behave during business cycles on the basis of economic analysis and of existing knowledge of relevant facts.

Textbooks may be searched in vain for a description of the cyclical course of exports—strange as this may seem, in view of the widespread concern with export performance. In contrast to the relatively simple relation between imports and the importing country's economy, that between exports and the exporting country's economy is highly complex. Some aspects have been analyzed very thoroughly, but others have only been touched upon briefly and the various strands have not been brought together.

Fluctuations in a country's economy and in its exports interact on each other. But while for domestic sales such a two-way relation results in a cumulative process, the impact of a change in exports on business is in the opposite direction to the impact of a business movement on exports. Rising exports contribute to business expansion, but, according to the most common view, that expansion in turn stifles exports.

More important, however, than these opposing direct links between exports and domestic business cycles are the indirect ones. The main determinant of exports is foreign demand and this demand again affects and is affected by the domestic business cycle. Hence, the pattern of exports during business cycles must depend in good part on the speed and power with which cycles are transmitted internationally. The closer the integration of the U.S. economy with that of the rest of the world, the more strongly will foreign demand pull exports in the direction of U.S. business cycles.

Let us now take a closer look, first at this indirect and then at the direct relations between domestic business cycles and exports.

1. *The Influence of Foreign Business Cycles on the Relation Between Exports and Domestic Business Cycles*

A country's demand for imported goods can be presumed to rise and fall with its total demand for goods. Hence a given country's exports —the imports of other countries—should have close ties with movements in foreign demand. The reactions of exports to changes in incomes abroad, i.e., import propensities and elasticities, have been thoroughly analyzed, both theoretically and empirically. Knowing that exports trace the path of foreign cycles, however, still does not inform us about their relation to the domestic ones. The missing link is the relation between cycles in buying and selling countries. There is little information and no established opinion about the extent to which cycles in different countries move in step.

Everyone would agree that cycles in any country are affected by economic developments abroad and in turn exert some influence on other countries. This international transmission occurs through trade in goods and services, through capital and money flows, and through influence on expectations. But what remains obscure is the regularity, timing, and predominant direction of these effects. Some observers believe, more often tacitly than explicitly, that business cycles are regularly and immediately transmitted from country to country so that any country's national cycles coincide with those abroad. Others regard transmission as exceptional and as characteristic of major cycles only. "Studies to clarify the international transmission of cycles have so far merely scratched the surface of a vast subject." [1]

An early exploration of the question led to the conclusion that: "There is no year of the 36 covered in which the same phase of the cycle prevailed in all of the 17 countries. Uniformity is approached, however, in 1893, 1899, 1906, 1908, 1912, 1916, 1920, and 1921; and in most years there is a marked preponderance of entries of similar tenor. . . . the existence of a general trend toward uniformity of business fortunes is plain. . . .

[1] Phillip Cagan, *Determinants and Effects of Changes in the Stock of Money, 1875–1960,* NBER, New York, 1965, p. 111. For some comment on the question, see Oskar Morgenstern, *International Financial Transactions and Business Cycles,* Princeton for NBER, 1959, pp. 3–5; and my *Trade Balances during Business Cycles: U.S. and Britain since 1880,* NBER, Occasional Paper 67, New York, 1959, p. 5.

"One's final reflection may be that the quiet business forces working toward uniformity of fortunes must be powerful indeed to impress a common pattern upon the course of business cycles in many countries. And the increasing conformity to an international pattern which the annals reveal in recent years shows that the international influences are gaining in relative importance." [2]

In the 1940's and 1950's, it was often thought that the dominant role of the U.S. economy caused cycles to agree internationally. According to this view, U.S. exports should be positively related to U.S. business cycles through the latters' effect on foreign demand.[3]

Whether or not this theory is valid for certain periods, most observers would agree today that it does not apply at other times, that the United States is usually not alone in influencing foreign demand, and that other countries—especially the European ones—generate their own cycles and have independent effects on the demand for American goods in third countries.[4]

Some go even further, stressing the lack of transmission rather than the concordance of national cycles. For example, Kindleberger finds that "since 1950, . . . the booms and depressions in the United States and Western Europe have been broadly offsetting." [5]

Or Maddison writes: "In contrast to the 1929–33 crisis when the whole world cycle was synchronized and the major country responsible for transmitting the depressing influence was the United States,

[2] Wesley C. Mitchell, *Business Cycles: The Problem and Its Setting,* NBER, New York, 1927, pp. 443 and 450. See also Mitchell's introduction to Willard L. Thorp, *Business Annals,* NBER, New York, 1926.

[3] One representative of this view of the interwar period is Chang; he interpreted his finding that the trend-adjusted annual value of U.S. exports conforms positively with a lag to the trend-adjusted annual U.S. income in 1924–38 in the following way:

"It is true that the world demand for American exports was determined by the level of the world income; but, as the U.S.A. is large in the world economy, the level of world income might, inter alia, have been determined by the supply of dollars by her to the world, that is, by her demand for imports, associated with her economic activity at home. Thus, when American business was on the upswing, her demand for imports and, hence, her supply of dollars to the world increased; and, as a result, world income was stimulated and the demand for American exports increased. The converse was true of an American business downswing." (Tse C. Chang, *Cyclical Movements in the Balance of Payments,* Cambridge, Eng., 1951, p. 91.)

[4] It is interesting in this connection that neither U.S. imports nor U.S. income are among the factors directly explaining U.S. nonagricultural exports in most econometric models, as will be seen later in this chapter.

[5] Charles Kindleberger, *Foreign Trade and the National Economy,* New Haven, 1962, p. 214.

there is now no clear originator of world trade cycles. The cycle in European countries has usually been fairly closely in phase, both in timing and intensity, but no single European country is the linchpin. In fact, there appears to be a distinctly European 'conjuncture' in both trade and income. There has been little long-term relation between European and U.S. growth rates or in the timing, frequency and amplitude of fluctuations."[6]

Our indicator—foreign imports—suggests that foreign and American cycles have indeed been out of phase a considerable part of the time. Hence, we would not expect foreign demand to bring U.S. exports into close agreement with U.S. business cycles. On the other hand, we find that periods of international cyclical concordance predominate over those of countermovements and thus expect foreign fluctuations to promote U.S. exports more often during U.S. expansions than during contractions.

2. *The Impact of Exports on Domestic Business Cycles*

The impact of exports on domestic income has been treated thoroughly in the literature.[7] The theory of the export multiplier and accelerator shows how an autonomous rise in exports causes a magnified rise in output, employment, and income in the exporting country. Similarly, an export decline exerts a downward pull on income.

The question from our point of view is how large this export-induced income change is likely to be compared with income changes induced by other economic forces. In countries where a large proportion of total output is devoted to production for export, export movements will have strong effects on incomes. Business cycles in these countries will tend to conform positively to exports. On the other hand, in those countries where an insignificant fraction of total output is sold abroad, export fluctuations are, despite multiplier effects, not likely to prevail over other forces such as domestic investment or government purchases.

Most experts agree that the United States belongs to the latter category. The swings in U.S. business activity are not usually attributed to those of exports.[8] But this does not preclude ascribing some

[6] Angus Maddison, *Economic Growth in the West,* New York, 1964, p. 161.

[7] The basic work is Fritz Machlup's *International Trade and the National Income Multiplier,* Philadelphia, 1950.

[8] The following passage from R. C. O. Matthew's well-known *The Business Cycle* (Chicago, 1959, p. 196) represents the typical view: "It is generally accepted

individual cyclical episodes to the influence of exports. Opinions differ on the frequency and importance of such cases, but they are generally considered more likely the *earlier* the period considered. Our own findings, elaborated in Chapter 5, show that exceptionally good crops at home coinciding with poor ones abroad accounted for some cyclical revivals in the 1880's and 1890's.

Observers have also found that exports played a role in a few cycles after World War I. As Hal B. Lary says about the 1920's, "an increase in foreign purchases . . . was a key factor on occasion in initiating recovery and expansion." [9]

Corner has investigated the role of exports at the U.S. business peak of 1929. Assuming a downward multiplier of 2.5, he estimates that the fall in U.S. national income induced by exports would have amounted to only 0.5 per cent and concludes: "Although of itself it is quite clear in the case of the U.S.A. that the fall in foreign demand could not have caused a recession of any magnitude, coupled with the hesitancy of demand internally, it could have been a proximate cause." [10]

No expert has, to my knowledge, claimed that the direction in which U.S. business moved after World War II was determined by exports, although some consider exports as having served "appreciably to accentuate or to moderate trends of expansion or recession." [11]

that the foreign transactions of the United States have not exerted more than a minor influence on the course of fluctuations there, at least since the Civil War."

A dissenting view on earlier cycles was held, for instance, by Timoshenko, who concludes from his analysis of the role of agricultural fluctuations in U.S. business cycles in 1879–1930: "The importance of agricultural fluctuations as a generator of cycles, as an outside impulse to business revivals and so to periods of prosperity in this country, seems unquestionable. Even when, on first sight, other factors seemed responsible for the initiation of business cycles, for instance, the fluctuations in railway development during the second half of the nineteenth century, the ultimate factor to be considered was very often the waves in the volume of agricultural production. . . . Monetary fluctuations, sudden increases or decreases in the quantity of money in circulation, may also very often be explained by fluctuations in agricultural exports resulting from the cycles in agricultural production." (Vladimir P. Timoshenko, *The Role of Agricultural Fluctuations in the Business Cycle,* Michigan Business Studies, Vol. II, no. 9, Ann Arbor, 1930, p. 65.)

[9] Hal B. Lary, *The United States in the World Economy,* Department of Commerce, Economic Series No. 23, Washington, 1943, p. 155.

[10] D. C. Corner, "Exports and the British Trade Cycle: 1929," *The Manchester School of Economic and Social Studies,* May 1956, p. 128.

[11] Frank A. Southard Jr., the U.S. Executive Director of the International Monetary Fund, at a meeting of the National Industrial Conference Board, November 19, 1959. Quoted from *International Financial News Survey,* International Monetary Fund, November 27, 1959, p. 1.

In sum, exports may at one time or another have sparked a turn or prolonged a movement in U.S. business activity, but such influence has been sporadic rather than systematic. Ordinarily, changes in exports were too small to prevail over other forces determining business swings. Hence, a regular positive relation of U.S. exports and U.S. business cycles is not to be expected from the influence of exports on U.S. business.

3. *The Impact of Domestic Business Cycles on Exports: The Traditional View*

The importance attributed by economists to the effects of exports on business cycles contrasts with their apparent lack of interest in the opposite effects—those of prosperity and depression on exports. This neglect is all the more curious since policy makers, financial writers, and businessmen often show much concern about repercussions of developments in the domestic economy on foreign sales.

In basic texts, whether on international trade or on business cycles, the influence of fluctuations in a country's economy on its exports is usually only mentioned in a few sentences. It is treated as the opposite of the effect of the cycle on imports and is often referred to briefly in an extended discussion of imports. For instance, in an analysis of the rise in imports attendant upon business expansion, it may be noted that there will also be a fall in exports, and a few words added to explain why this should be so.

Empirical studies have also shown little concern about this relationship, as will be seen below. But despite scanty knowledge, policy decisions have often been based on the traditional view that prosperity hinders and recession helps exports. Recently, however, this reliance on a rudimentary theory has been challenged and a different view has been put forward—namely, that exports flourish in a fast growing economy and slacken in a stagnating one; that a country's business swings have a positive, not a negative, effect on its exports. So far this dissident "expansionist" view has not been developed into a complete theory; rather it consists of bits and pieces of reasoning. But, like its counterpart, it receives considerable attention from policy makers.[12]

Before examining these contradictory theories, some basic concepts must be clarified. One is the meaning of the term exports in this

[12] There is also a middle ground, as will be seen below. Some observers hold that the domestic business cycle has no effect on exports one way or the other.

context. In the preceding sections, it was not necessary to distinguish between export value—i.e., the current money value of export sales—and export quantity—i.e., the "real" value of exports or their value in constant prices. The previously discussed relations running from exports to domestic business cycles hold for values as well as for quantities. But in the analysis of the effects of business cycles on exports, the distinction is essential. The theory that domestic expansion interferes with exports applies correctly to quantity only, not to value. Leaving this unsaid leads to serious confusion. A moment's reflection makes clear, however, that the adverse effect of business expansion, which is supposed to be due largely to rising export prices, will show up in a fall in export quantity but not necessarily in a fall in export value. Predicting the latter involves the special assumption that the price elasticity of foreign demand for the country's exports is greater than one. Ordinarily no assumption about demand elasticities is mentioned in this context and thus traditional theory, correctly interpreted, refers only to export quantities, not to values.

Further, the role assigned by the traditional theory to price changes requires some comment.[13] There are several reasons why export price cycles may diverge from domestic business cycles. One is the influence of world demand on such prices. To the extent that goods exported from different countries are close substitutes for each other and that transportation costs do not interfere, export prices are world prices and will not reflect an individual country's business cycles. Of course, international markets are not perfect, in most instances, and this is why there is room for influence of domestic business cycles on export prices.

Secondly, quite apart from their ties to foreign markets, export prices may fail to reflect the domestic business cycle, in the case of differentiated manufactures where producers have some control over their prices. A domestic slump may promote exports of such goods by causing producers to shorten delivery periods, provide easier credit, or improve other conditions of sales, without affecting prices.[14]

[13] See Chapter 7 for a fuller discussion; see also Robert E. Lipsey, *Price and Quantity Trends in the Foreign Trade of the United States,* Princeton for NBER, 1963, p. 75.

[14] "Though quantitative information about the various competitive factors other than price is extremely limited, there seems little doubt that, collectively, they play a major role in the changing competitive position of the main industrial countries. It is not possible to assess the relative magnitude of these nonprice

Other factors which may prevent export prices from reflecting the domestic business cycle are harvest fluctuations and governmental regulation.

In sum, the negative effect of cycles in a country's economy on its exports, as postulated by the traditional theory, will only partially show up in export prices and is not disproved when these prices fail to move in the required fashion. And conversely, where negative price-quantity relations are found, factors on the supply side rather than business cycles may be responsible.

a. THE TRADITIONAL VIEW AS REFLECTED IN ECONOMIC LITERATURE

The few quotations that follow are presented in order to convey to the reader a lively idea of the way in which the traditional theory appears in the literature. They are not supposed to represent a survey of the writings on the subject.

We may begin appropriately with a lucid statement from Mitchell's classic volume on business cycles:

"Prosperity at home tends . . . to decrease exports. For the large domestic demand and the rising prices which accompany prosperity make producers less dependent upon foreign markets. On the contrary, while depression clearly decreases imports, there is reason to expect that it should increase exports. For the lower level of prices at home and the reduced domestic demand make producers more eager to sell goods abroad." [15]

Another important work on business cycles contains this passage: "In a cyclical movement fashioned according to our pure model expectation would, if that movement were confined to one country and if the economic process in the others were stationary or merely growing, be for decrease of exports and increase of imports in the positive phase, and for the opposite behavior of both in the negative phase." [16]

In theories of international trade, the cyclical effects on exports are usually mentioned briefly as being symmetrical to those on imports which are analyzed thoroughly. Thus Kindleberger's well-known text describes the behavior of exports and imports in periods of fall-

factors, but probably the most important are the relative delivery delays between acceptance of an order and its execution, the amount and conditions of credit offered to potential overseas buyers, and the energy with which manufacturers push their sales in overseas markets." Alfred Maizels, *Industrial Growth and World Trade,* Cambridge, 1963, p. 216.

[15] Wesley C. Mitchell, *Business Cycles,* Berkeley, 1913, p. 256.

[16] Joseph A. Schumpeter, *Business Cycles,* Vol. II, New York, 1939, p. 666.

ing incomes and prices: "Partly, the decline in income reduces imports directly and releases goods previously bought in the home market for sale abroad. Partly, a reduction in prices makes the market a better one for foreigners in which to buy and a worse one in which to sell, thus assisting exports and reducing imports. Partly, in these days of administered prices, disinflation results in the cancellation of domestic orders and thus reduces delays in filling orders for export." [17]

A more detailed analysis appears in Cowden's empirical study of exports, which also has the merit of distinguishing between quantity (termed "volume") and value.

> Because values exported are in part a reflection of price changes, any apparent correlation between the value of United States exports and domestic business conditions may be due to this price factor.
>
> If there is little agreement between the timing of cyclical fluctuations in various countries, then we might expect the low prices prevailing in times of depression in the United States to stimulate the volume of exports in such periods; and high prices to discourage exports during periods of prosperity. Furthermore, if in times of business activity there is a tendency to fill American orders first, and if in times of inactive American demand there is a tendency to cut prices to foreign buyers while maintaining prices at home, we might find considerable negative correlation between the volume of exports and production in the United States. Even with good agreement in timing between American business activity and that of other countries, the offsetting factors might easily result in no appreciable positive correlation between American business conditions and the volume of American exports.[18]

A strong position on the negative influence of the home market is taken by the author of a recent study of export concentration. While export prices in his view are determined largely on world markets, "it is primarily developments within the country which determine this [export] volume. . . . Take, for instance, the economy in which, during a given period, a strong inflationary pressure is maintained. . . . It is most likely that the volume (and value) of exports of the country in question will fall during the period, whether exports consist of a single good or of many goods." Furthermore,

[17] Charles P. Kindleberger, *International Economics*, Homewood, Ill., 1963, 3rd ed., p. 521.

[18] Dudley J. Cowden, *Measures of Exports of the United States*, New York, 1931, pp. 78, 80. For the 1920's, Cowden found, however, that "The net result for all domestic exports seems to be somewhat more cyclical in nature than we should expect" (p. 84).

under such circumstances exports of manufactures, "for which a substantial market usually exists within the exporting country," should fall more than other exports.[19]

The inverse relation is also asserted in the presentation of the history of U.S. business cycles. "A depression in the United States, cet. par., ordinarily stimulates exports, although part of the gain in volume will be dissipated in lower prices." [20]

Often the theory is brought into the discussion of related matters, as in the current debate on competitiveness. "Demand for imports is likely to increase during the upward phase of a country's business cycle because demand for most products is rising. But the same boom also restricts the supply of goods available for export. The restriction in export supply, whether indicated by a rise in domestic prices or a lengthening of delays in getting orders filled, reflects a real, though perhaps temporary, decline in the competitiveness of a country." [21]

In a sense, the theory is also implied in empirical studies which include export prices or price ratios among the variables explaining export quantities. The authors expect to find inverse price-quantity relations, which—assuming that these prices or price ratios move with the domestic business cycle—means a negative relation between exports and domestic business. We shall return to these studies below.

Reference should also be made to two refinements or qualifications of the theory which form a transition to the opposite (expansionist) view. Here too the authors neither give full statements nor take issue with the basic theory but simply note their own views. Thus Lederer distinguishes between countries with considerable idle resources ("marginal supplier countries"), and countries operating close to capacity ("preferred supplier countries"). A rise in domestic demand will cause a sizable decline of exports in the latter but virtually no decline in the former, which can furnish additional goods by utilizing idle resources.[22]

Another qualified version of the theory is referred to in Kindle-

[19] Michael Michaely, *Concentration in International Trade,* Amsterdam, 1962, p. 97.

[20] Rendigs Fels, *American Business Cycles, 1865–97,* Chapel Hill, 1959, p. 217.

[21] Richard N. Cooper, "The Competitive Position of the United States" in *The Dollar in Crisis,* Seymour Harris, ed., New York, 1961, p. 142.

[22] Walther Lederer, "Effects of Changes in Domestic or Foreign Demand on the Balance of International Payments," in *Public Policy,* Friedrich and Harriss, ed., Cambridge, Mass., 1961.

berger's exposition of the foreign trade multiplier. Here exports are assumed to be "a constant at every level of national income rather than a positive or negative function of income." This assumption "is appropriate for a primary-producing country. . . . But it is unrealistic for those countries which export manufactured products, particularly consumers' goods. In Britain, exports and consumption and exports and investment are both competitive rather than independent as we show them. An increase in income under this circumstance will lower exports, and exports may be taken as a falling function of income." [23]

The unexplored state of these matters is highlighted by the contrast between this opinion (and Michaely's noted earlier) and our finding that exports of manufactures are more nearly a constant and exports of raw materials more nearly a falling function of U.S. income.

Neither Kindleberger nor Lederer go so far as to expect a positive relation between domestic business and exports, but they do consider the possibility of a neutral effect. In Lederer's case, it is the high elasticity of supply; in Kindleberger's, the low income elasticity of domestic demand for export goods which make exports insensitive to the state of the domestic economy.

b. THE TRADITIONAL VIEW AS REFLECTED IN COMMENTS ON CURRENT EVENTS

The adherence of policy makers and analysts of current events to the traditional theory could be illustrated by any number of examples, but a few will suffice for our purpose.

Nowhere has the argument had more influence on government policy than in Britain after World War II. An excellent description of this is given by Nurkse in his brilliant analysis of "the tussle between home investment and export needs" and of "the tendency . . . to treat home investment as a rival claimant whose demands are curbed in order to release more machinery and equipment for export whenever any trouble arises in the balance of payments." [24] Nurkse quotes successive *Economic Surveys* which, whether Labor

[23] Kindleberger, *International Economics*, pp. 181, 182.

[24] Ragnar Nurkse, "The Relation between Home Investment and External Balance in the Light of British Experience, 1945–1955," *The Review of Economics and Statistics*, May 1956, p. 132. Nurkse held that "the virtual standstill of British exports since 1951" was due not to the demand side abroad but to the competition of domestic investment, a competition which resulted in delivery delays, not in price increases (p. 154).

or Conservative, point to the necessity of releasing materials or diverting resources to production for exports.

Thus, in the White Paper of November 1947, Cripps announced capital cuts with the argument that more resources for the manufacture of exports could only be obtained "by postponement of certain [domestic] investment projects. The size, scope and number of these projects must, therefore, be reduced . . . to save scarce labour and materials for diversion to even more urgent uses."

"In 1951–52 . . . both Hugh Gaitskell, the last Labour government's Chancellor of the Exchequer, and his successor, R. A. Butler, again relied heavily on a policy of cutting down fixed as well as inventory investment. The 1952 *Economic Survey,* the first issued by the Conservative government, had this to say on the new program of capital cuts: 'The Government has therefore taken steps to divert resources on a large scale from supplying engineering goods to the home market to production for export . . . .' "[25]

A banker's view in a much later period is similar: "This movement [from a deficit to surplus in the balance of payments] is one more convincing demonstration of the truth that our recurring overseas crises since the war had their origin in an excess of demand at home. Conditions in the outside world did not change substantially between 1955 and 1956. The significant change lay in the steps taken to reduce the overburden on the British economy. The improvement in the balance of payments was due to the combination of two factors: a check to the rising trend of imports and an increase of close on 10 per cent in the value of our exports. Some damping down of the domestic boom was a necessary condition, both to restrain the accumulation of inventories and to release resources for the export markets." And again a few years later, "the buoyant home market diverts some resources away from exports and blunts the incentive to businessmen to look for markets abroad."[26]

Moving to this country, we cite the Department of Commerce's observation on the increase in exports during the 1960–61 business recession: "the slack in our own productive capacity in many indus-

[25] *Capital Investment in 1948,* Command Paper 7268, London, 1947, 3–4, and *Economic Survey for 1952,* Command Paper 8509, London, 1952, 18. Quoted by Nurkse, in *Review of Economics and Statistics,* May 1956, pp. 125–126.

[26] Statements by Sir Oliver Franks, chairman, at the annual general meetings of Lloyds Bank Limited, Dec. 31, 1956, and 1960. Quoted from *The Economist,* January 26, 1957, p. 329, and January 21, 1961, p. 287.

tries has provided a higher export potential and a spur to meet foreign competition in foreign as well as domestic markets." [27]

An upsurge of exports in Germany is interpreted by *The Economist* as "almost a typical state of affairs for West Germany during periods of slackening demand. German businessmen usually push hard into markets abroad for what they cannot sell at home, . . . [and it was] repeated postwar experience that any sufficiently strong and lasting squeeze on the country's internal economy would sooner or later mean increased exports." [28]

An export manager sees the situation like this: "With the domestic market booming in the post-war years . . . the automobile makers were inclined to treat their export divisions largely as nuisances. The export managers are strange fellows, always demanding something different for their export models, such as right hand drives in some countries or extra heavy shock absorbers for the poor roads in others. . . . Now, with the domestic market falling off . . . the export managers are being addressed as 'sir.' " [29]

We may fittingly conclude with Per Jacobson's world survey: "In these conditions of intense world demand, in contrast to the experience in the depression of the 1930's, it has generally been sufficient for countries to restrain their domestic demand in order to secure an increase in their exports." [30]

C. EMPIRICAL STUDIES

The comments cited above are founded on observations of actual export developments. But these observations cover only a few instances in each case and are not intended to be regarded as systematic tests of the theory that business cycles have negative effects on exports. Few such tests have been made, as far as I know, despite the importance attached to the theory by policy makers. This lack may be ascribed to the difficulty of the subject and the unexplored state of this area of economics.[31] How great this dearth of knowledge

[27] *Survey of Current Business,* June 1960, p. 24.

[28] *The Economist,* November 30, 1963, p. 941.

[29] *The New York Times,* July 7, 1954.

[30] *International Financial News Survey,* International Monetary Fund, April 19, 1957, p. 319.

[31] The difficulty of accounting for changes in exports—in contrast to imports which are relatively easily explained—is repeatedly stressed by investigators. "It is ordinarily easier to 'explain' imports . . . than it is to explain exports. . . . It is much more difficult to design appropriate indices of world economic activity

is may be illustrated by an expert's exclamation upon finding that the instability of a nation's exports and its income are not related: "This is a surprise, whether one views the main causal forces as running from exports to national income or from national income to exports." [32]

Most econometric studies of exports are concerned primarily with long-run developments rather than with cyclical movements. Some of them explain exports solely in terms of foreign demand. Others include capital flows, prices, or price ratios. The exporting countries' income or output are rarely among the explanatory variables, and their relations with exports are not dealt with. But to the extent that price changes reflect the influence of domestic business cycles, models that include prices among their variables provide some evidence on the validity of the traditional theory.

A few examples of econometric studies of exports may illustrate these points. For instance, foreign demand is the sole determinant of U.S. exports of manufactures in Neisser and Modigliani's comprehensive and ambitious model of international trade. The same is true for Polak's system of world trade.

A recent exploratory study by the Department of Commerce explains U.S. quarterly nonagricultural exports during 1956–62 by the industrial production of foreign industrialized countries and by capital flows to Canada and undeveloped countries. On the influence of fluctuations in the U.S., the authors note that they attempted to include prices among the factors determining exports but that this did not appear to add to the explanation. The possi-

and world prices to which a particular country's exports should be related. . . . The principal failing of the model . . . seems thus to lie in the underestimate of U.S. exports . . ." (Rudolf R. Rhomberg and Paola Fortucci, *Staff Papers,* International Monetary Fund, November 1964, pp. 414, 423).

A similar statement about another model informs us that, "of the major equations of the model, that for U.S. merchandise exports to Western Europe is the least satisfactory from a statistical viewpoint" and "the fit of the model is improved if the computation is made for the average of two years rather than for a single year" (which means if cycles are largely eliminated). See Rudolf R. Rhomberg and Lorette Boissonneault, "Effects of Income and Price Changes on the U.S. Balance of Payments," *Staff Papers,* International Monetary Fund, March 1964, pp. 96 and 70.

Similarly, Roger V. Anderson, discussing the determinants of Canadian exports in his export projection for the Royal Commission on Canada's Economic Prospects, notes that "the interrelationships between the various series are complex and generalization about causal influence would be both difficult and dangerous" (*The Future of Canada's Export Trade,* Ottawa, 1957, p. 31).

[32] Joseph D. Coppock, *International Economic Instability,* New York, 1962, p. 107.

bility of domestic business cycles affecting exports in ways other than through prices is not discussed.[33]

Effects of changes in export prices on export volume are measured in the Brookings Institution study of the U.S. balance of payments and in the above-mentioned International Monetary Fund models. In both instances results are based on annual data and concern is primarily with long-run movements. The finding is that changes in U.S. export prices in the 1950's affected export values only slightly, but whatever effect they had was in the direction expected by the traditional theory.[34]

One case where prices are not only included, but are found to be nearly as important as world demand, is Pesmazoglu's investigation of British exports in 1870–1913. Perhaps prices did indeed play a greater rolé in this instance than in the others mentioned. But before drawing this conclusion one should note that Pesmazoglu's finding is based—for want of a better one—on Tinbergen's world price index, which is merely an average of a few countries' cotton and steel prices.[35]

An interesting study has recently been published concerning the effects of variations in internal demand pressure on British manufactures exports, 1954–64. In addition to prices, industrial production is used in this study as an indicator of internal demand. A negative relation is found between domestic demand pressure and the *share* of British exports in world exports when trends have first been removed from all series. However, demand pressure fails to explain variations in the level or in the percentage change of the exports themselves (as distinct from their share in world trade).[36]

To sum up, the traditional theory is supported by the few econometric studies relevant to it, insofar as export prices and quantities are found to be inversely related. But thė effect of domestic business swings is found to be very much weaker (except by

[33] Hans Neisser and Franco Modigliani, *National Income and International Trade,* Urbana, 1953, p. 16, J. J. Polak, *An International Economic System,* Chicago, 1953, p. 153. Francis G. Masson and John B. Boddie, "Factors Affecting U.S. Merchandise Exports," *Survey of Current Business,* February 1963, pp. 20, 21.

[34] Walter S. Salant, *The United States Balance of Payments in 1968,* Washington, 1963. Rhomberg and Boissonneault, *Staff Papers,* IMF, March 1964, especially p. 73, Table 4.

[35] J. S. Pesmazoglu, "Some International Aspects of British Cyclical Fluctuations, 1870–1913," *The Review of Economic Studies,* 1949–50, no. 41, p. 124.

[36] R. J. Ball, J. R. Eaton, and M. D. Steuer, "The Relationship Between United Kingdom Export Performance in Manufactures and the Internal Pressure of Demand," *Economic Journal,* September 1966.

Pesmazoglu) than commonly expected. This weakness may stem from the fact that the domestic business cycle is represented by prices; or it may be due to other features of the models; it may also indicate that the theory requires qualification.

Mention should also be made of an entirely different type of empirical investigation that indirectly bears on the theory—namely, studies of the effects on exports of the movements in a country's income caused by international capital flows.

The most outstanding of these is Viner's famous analysis of the Canadian experience in 1900–13, which examines the consequences for exports of a large inflow of capital into Canada. He concludes: "Although production in general was undergoing great expansion during this period, the exports of all but a few commodities actually decreased in terms of quantities. In some cases exports declined because their prices rose in full sympathy with the general rise in Canadian prices and therefore became too high for foreign markets. In other cases exports declined because their prices did not rise in full sympathy with the general rise in Canadian prices, so that their production became less profitable. Prices rose most and exports declined most for those commodities which found a large part of their market in Canada. Throughout the range of the export commodities of which there was substantial consumption in Canada, there was convincing evidence of the restrictive influence on exports arising out of both the increased purchasing power acquired by a borrowing country and its relative rise in prices as compared to other countries." [37]

4. *The Impact of Domestic Business Cycles on Exports: The Expansionist View*

The traditional theory is under attack today. Recent developments in foreign trade seem to conflict with it and to support the appeal-

[37] Jacob Viner, *Canada's Balance of International Indebtedness, 1900–1913,* Cambridge, Mass., 1924, p. 274. See also Viner's *Studies in the Theory of International Trade,* New York, 1937, pp. 413 ff. Viner's analysis has been criticized and revised by a number of writers, but the point we are interested in has not been at issue in this debate.

Thus John A. Stovel (*Canada in the World Economy,* Cambridge, Mass., 1959, Chapter XVI and p. 207.) argues that price shifts are less and income shifts more important than Viner would have it. But we are not concerned here with the apportionment of the repressive effect between income and prices.

See also Gerald M. Meier, "Economic Development and the Transfer Mechanism ing position of proponents of rapid expansion who are inclined to reject the dismal choice between a stagnating home economy and withering exports. In the "expansionist" view, domestic prosperity, far from inhibiting exports, actually promotes them. Rising output, it is argued, reduces overhead costs per unit and thus makes it easier for business to compete abroad. Innovations and technological advances thrive in the climate of prosperity and again favor exports.

Those who espouse this view have long-run as well as cyclical effects in mind and do not always distinguish between them. This distinction will not be attempted here either in the illustrations that follow, but it will be made in the analysis in section 5.

Because of its far-reaching implications, the expansionist view has been important in discussions of economic policies, particularly in Britain. "A much debated question was [since World War II] whether a flourishing home market is an obstacle to, or a necessary condition for, a thriving export trade. The Government tried to influence exports by restricting the domestic market by purchase tax, rationing [in the earlier years] and financial and monetary restrictions. Many people opposed these restrictions of domestic purchases on the ground that they impaired exports." [38]

The dissident theory finds favor with, among others, *The Economist:* "There is by now a perfectly respectable corpus of economic theory as well as of practical experience to support expansionists who argue that, up to certain levels of total demand, exports and domestic demand are likely to move in the same direction." And even more strongly: "There is really by now not much doubt that Britain's exporting weakness has been heightened by the long years of excessive restraint in demand, in which industry has been held back from the boom-mindedness and verve required to keep it thrusting over these newest frontiers of industrial revolution." [39]

Dissatisfaction with the British and admiration for the German export performance in the 1950's provide strong support for the expansionists. Thus, Scammel speaks of "one of the great fallacies of British economic policies in the 'fifties, the belief that exports are stimulated by curtailing demand on the home market. This has been the official Treasury view and, in the supposed interest

in Canada, 1895–1913," *Canadian Journal of Economic and Political Science,* February 1953.

[38] Paul Streeten, "Commercial Policy," in *The British Economy in the Nineteen-Fifties,* Worswick and Ady, eds., Oxford, Eng., 1962, p. 85.

[39] *The Economist,* November 30, 1963, p. 890, and April 13, 1963, p. 125.

of exports and the balance of payments, the rate of growth of the British economy has been subjected to repeated checks. Rather late in the day it is being realized that, on the record, export performance has been greatest in those countries in which the general rate of economic growth has been highest. Perhaps, after all, exports grow best in an atmosphere of general expansion. . . . When the German economy expands, exports expand and the trade surplus grows." And further: "It is arguable, too, that the swift growth of industrial output may be one of the reasons for the high priority given by German industrialists to the export market. When goods are produced in volume they must be sold in volume and if not at home then abroad. No evidence can be cited that this has in fact been the case but, as a generalization, the writer finds it slightly more convincing than its British opposite, i.e., that exports are encouraged by checking the home market. The fact remains that those countries which, in the 'fifties, have had the highest rate of economic growth have shown the best export performance." [40]

Similar views are expressed by Black: "In conclusion, we find that Britain's exports have lagged behind those of her main industrial competitors during the 1950's. . . . The export performance of Britain's main rivals suggests that more production would help exports, both by improving the availability of products, and by the lowering of unit costs made possible by production in larger quantities. Export performance appears to be a reflection of the working of the economy as a whole." [41]

5. *Validity of Traditional and Expansionist Views*

In evaluating the expansionist arguments, a sharp distinction must be made between the cyclical and long-run applications of the theory. In the case we are concerned with, cyclical swings, their validity is doubtful: "In the short period, in which productive equipment is unalterable, so that lines of production will not be shut down even though fixed costs may not be covered, nor new lines opened up, a restriction of domestic sales is bound to raise the pressure to sell abroad, whether by lowering prices, or by shortening delivery periods. There is no evidence that firms raise prices

[40] W. M. Scammel, *International Monetary Policy*, 2nd ed., London, 1961, pp. 362, 364, 366.

[41] J. Black, "The Volume and Prices of British Exports," in *The British Economy in the Nineteen-Fifties*, p. 130.

when selling becomes more difficult, even though overhead costs per unit increase."[42]

The often heard argument that an increase in output means greater pressure to sell applies only where that increase is unintended, i.e., where producers have no control over supply, as in the case of an unexpectedly large crop. In a cyclical expansion, the rise in output is, of course, in response to a rise in demand.

The view that unit costs fall with rising output during cyclical expansions of business must also be questioned. The effects of upward movements in hourly earnings and prices of materials may well outweigh the savings from better utilization of plant and labor force, particularly in the later stages of the upswing. Thor Hultgren's careful study has confirmed this. It finds that "cost rises and falls with business."[43]

Some observers appear much impressed by simple positive correlations between income and exports. For instance, Black comments on a table showing British GNP and exports as follows: "One possible method is to examine year-to-year fluctuations in the level of activity in Britain, as measured by the index of industrial production, and in exports of manufactures, and to see how domestic upswings and periods of stagnation of export markets are related. Industrial production and exports of manufactures are positively, but not highly, correlated in their year-to-year fluctuations in Britain, which does not support the contention that demand inflation diverted production from export markets."[44]

Similarly *The Economist* supports its expansionist view by a chart showing industrial output and exports and comments: "Under Mr. Lloyd's theory—which is still held by some people in the British Treasury—this chart line (industrial output) should have moved in the opposite direction to the chart line of exports. . . . But it

[42] Streeten, in *The British Economy in the Nineteen-Fifties,* p. 85.

Similarly, Kahn (*Economic Journal,* June 1951, p. 280) dismisses the idea: "It is probably unnecessary to waste time on a system of thought which would be consistent with the facts only if in a depression prices rose rather than fell."

[43] Thor Hultgren, *Changes in Labor Costs During Cycles in Production and Business,* Occasional Paper 74, New York, NBER, 1960, p. 58 (with reference to labor unit cost in 1932–58). In his book, *Cost, Prices, and Profits: Their Cyclical Relations* (New York, NBER, 1965), Hultgren investigates relations between costs and output cycles in individual industries in 1948–61, but does not deal directly with the movements of costs during cycles in general business. However, computing conformity to full U.S. business cycles on the basis of his data, one obtains indexes of +67 for both coincident labor unit cost and total unit cost.

[44] Black, in *The British Economy in the Nineteen-Fifties,* p. 122.

did not; surely anybody looking at these chart lines can see that since mid-1961 they have moved, with remarkable consistency, in the same directions instead."[45]

But these arguments involve the tacit assumption that the positive relation is not due to the effect of exports on industrial output and GNP or—perhaps more important in this case—to the effect of fluctuations in world demand. However, when foreign and British cycles move together, British exports may well move in the same direction without this disproving that British expansion has an adverse effect on exports, much less proving that it has a favorable effect.

Thus neither the empirical observations mentioned nor the theoretical reasoning adduced provide convincing support for an expansionist interpretation of cyclical relationships.

But these criticisms should not imply unqualified acceptance of the traditional theory. With full employment in the exporting country and mobility of resources between export and home markets, a rise in domestic demand, other things being equal, will, indeed, cut into exports; and, conversely, a fall in domestic demand will lead to an export expansion, when resources are mobile and prices flexible. But when there is idle capacity during expansion and prices are rigid during recession, or when goods cannot in the short run be transferred from one market to the other, exports may not respond quickly and strongly to the swings in domestic business.

Thus it is plausible that domestic cycles should leave little mark on exports of manufactures from the United States. Reducing costs of export goods and transferring highly differentiated goods, whose domestic sales have fallen off, to the export market may prove a slow and difficult process, which may barely get started before a brief business recession is over.

It is this possibility of low sensitivity of exports to domestic business conditions due to high supply elasticity that creates doubts about the validity of the traditional theory and seemingly supports the expansionist view. It is mentioned by observers who would not go so far as to espouse the expansionist view. For instance, Lary, in discussing growth and the balance of payments, says that "the supply position in the United States . . . should allow room, at present [1963], for increases in both domestic and foreign sales."[46] A similar

[45] *The Economist,* November 30, 1963, p. 890.

[46] Hal B. Lary, *Problems of the United States as World Trader and Banker,* Princeton for NBER, 1963, p. 98.

position regarding the United States seems to be the basis for Lederer's analysis of "marginal supplier countries." [47]

Low export sensitivity must also be assumed by all those observers in Britain who argue that restraining domestic demand will neither help nor hurt exports. One example of this is the position taken by Ball, who concludes that credit restriction will not, in the short run, bring about an expansion of exports.[48]

Another example is the following passage, again by Streeten: "The curtailment of the home market is . . . not a sufficient condition for increasing exports. Not always are domestic goods directly exportable, and it is doubtful whether the required shift of resources can be brought about in depressed conditions. The attitudes and motives that make for successful participation in world trade are not created simply by reducing domestic demand, and periods of languishing home trade have been accompanied by languishing exports." [49]

Some interesting evidence along these lines has been brought out in an investigation of individual British export industries for 1953–59. The author shows that export models of such goods as automobiles, washing machines, toasters, etc., differ from domestic ones so that the damping down of home demand repeatedly failed to lead to an increase in exports.[50]

It is plausible, therefore, that the adverse effects of domestic business expansions on exports may be extremely weak under certain circumstances and this weakness may account for the recent doubts about the traditional theory. There is, of course, a great difference between the absence of repressive effects and the presence of stimulating effects. In examining the evidence, this distinction should be kept in mind.

NOTE ON THE VALIDITY OF THE EXPANSIONIST VIEW FOR THE LONG RUN

Although this study is not otherwise concerned with long-run movements, we shall briefly consider the validity of the expansionist view for the long run, since this may help in understanding its short-run implications.

[47] Lederer, in *Public Policy,* p. 416.

[48] R. J. Ball, "Credit Restriction and the Supply of Exports," *The Manchester School of Economic and Social Studies,* May 1961, p. 161.

[49] Streeten, in *The British Economy in the Nineteen-Fifties,* p. 86.

[50] S. J. Wells, *British Export Performance,* Cambridge, Eng., 1964, especially Chapter 5.

It will not do to argue simply—as so many do—that growth of productivity means "greater ability to export." Allocation of resources to exports depends, after all, not on absolute costs but on international differences between cost ratios which need not be affected by improved efficiency, innovations, and so forth.

A priori growth can be anti-trade biased as well as pro-trade biased or neutral. It depends, roughly speaking, on whether the productivity increase is greater in the export industries or in the import-replacing ones. If the advance in technology is concentrated in the latter industries, it will not lead to rising exports but, other things being equal, to falling imports and the usual adjustment processes will in the long run cause exports to fall also. The circumstances under which growth will or will not cause expansion of international trade have been worked out in the theoretical literature and need not be repeated here.[51] The point I want to stress is merely that either effect is possible. To assume that a country will always use its improved efficiency for export expansion is to succumb to mercantilist bias.

As to the empirical evidence, if positive correlation between growth rates and exports is indeed established, it may or may not be due to the favorable effect of the former on the latter. One may expect this favorable effect on the grounds that "faster growth tends to be associated with higher productivity and lower costs, and with an increased range and variety of new products." [52]

But, the positive association of domestic and export growth may well be due to the reverse causal process, the influence of exports on domestic business. This is all the more likely as the main countries for which this relation is believed to hold are Britain, Germany, and Japan, in all of which exports play a major role.

Furthermore, the connection between economic growth and imports can work through changes on the demand side since rising incomes are likely to raise the demand for imports more than that for exportable goods. Through the usual adjustments (shifts in prices and allocations), these higher imports will in the long run lead to an expansion of exports also.

[51] See, e.g., Harry G. Johnson, *International Trade and Economic Growth*, London, 1958, and Gerald M. Meier, *International Trade and Development*, New York, 1963.

[52] Alfred Maizels, *Industrial Growth and World Trade*, Cambridge, Eng., 1963, p. 217.

In sum, it may well be that rapid growth promotes exports. But there is as yet no conclusive empirical evidence of this effect, nor is it logically necessary.[53]

6. *Conclusion and Plan of Study*

As the preceding discussion has shown, there is no simple answer to the question of how exports in general, and U.S. exports in particular, may be expected to behave during business cycles; the task of this study to disentangle the forces which determine the cyclical pattern of exports is not an easy one.

Systematic cyclical relations between exports and the home economy depend, first, on the speed and power of the international transmission of business cycles which determines the degree to which cycles in foreign demand for imported goods run with or against the cycles in the exporting country. Second, they depend on the impact of exports on the home country's business; and third, on the effect of domestic business on exports. In the United States, the first and third of these connections are likely to be dominant. They may be expected to work in opposite directions, as cycles abroad probably make for a positive relation between U.S. export quantities and domestic business cycles, while fluctuations at home are usually expected to have inverse effects. For instance, during a typical business expansion in the United States the volume of foreign sales may be repressed by rising domestic demand and stimulated by a simultaneous upswing abroad.

But even if these two links between exports and U.S. business cycles seem the most plausible, others cannot be entirely ruled out. Throughout the study, the evidence must be examined for indications of effects of exports on U.S. business cycles and of positive

[53] For an example of the view that "technical progress in this century has been predominantly import-replacing in character and hence biased against trade," see J. Hick's pioneering article "The Long Run Dollar Problem," in *Essays in World Economics,* Oxford, Eng., 1959.

For an example of the expansionist view, see Maizels' authoritative and monumental work on growth and trade where he advances the hypothesis "that long-term shifts in relative competitive power in the widest sense may reflect changes in the rates of economic growth of the various industrial countries." (*Industrial Growth and World Trade,* p. 17.) However, Maizels also discusses the other above-mentioned possible connections between growth and trade.

See also Black, in *The British Economy in the Nineteen-Fifties,* p. 123.

effects of domestic business swings on exports, such as would be expected by those holding the expansionist view.

The principal analysis will be preceded by a description of data, methods, and some basic facts on exports and world trade (Chapter 2), and by a discussion of short-run variations in exports without regard to their relations to the domestic business cycle (Chapter 3).

The main problem will then be attacked in various ways. The relations between exports and foreign demand will be analyzed in Chapter 4, in order to find out to what extent the experience of U.S. exports simply reflects conditions abroad. The U.S. business cycle is brought in in Chapter 5, which explores the causes of turning points in exports. Chapter 6, the core of the study, analyzes the influence of domestic business cycles on the directions and amplitudes of movements in export quantities. A briefer treatment of export prices along the same lines forms the first part of Chapter 7. Finally, in the second part of that chapter, the behavior of export values is treated as the resultant of that of its price and quantity components. Since it is the dollar value of exports which matters for the balance of payments, explanation of the rise and fall in this value has been regarded as the final purpose of the study.[54]

[54] Long-run changes in exports are not dealt with in this book since they were analyzed in Lipsey, *Price and Quantity Trends,* mentioned earlier.