Volume Title: American Exports During Business Cycles, 1879-1958

Volume Author/Editor: Ilse Mintz

Volume Publisher: NBER

Volume ISBN: 0-87014-390-5

Volume URL: http://www.nber.org/books/mint61-1

Publication Date: 1961

Chapter Title: Exports and Output, 1879-1958

Chapter Author: Ilse Mintz

Chapter URL: http://www.nber.org/chapters/c0535

Chapter pages in book: (p. 8 - 12)

2

Exports and Output, 1879-1958

Are the varying fortunes of exports related to the tides of American business activity? If so, have exports helped recoveries or prolonged recessions, contributed to booms, or softened depressions? To what extent have foreign cycles been transmitted to the United States through foreign purchases? What shifts have occurred in all these respects over the last eighty years?

To examine these and similar questions is the purpose of this paper. It is a portion of a larger study of cycles in foreign trade which in turn is part of the National Bureau's systematic investigation of business fluctuations. The report is limited to the analysis of the total value of United States exports. Fluctuations in export prices, quantities, and commodity classes will be dealt with in a subsequent study.[1] Our object is to reveal and measure the typical swings in U.S. exports. We are quite aware, of course, of the numerous forces—some very powerful—that affect individual export cycles. But to evaluate the impact of such forces as, for instance, changes in trade barriers, in exchange rates, and in technology, we need information on the usual—the characteristic—movements of exports. As a first step, the present paper examines the relations between each pair of three variables: U.S. exports, U.S. business cycles, and world import cycles (Chapters 3 through 6). Chapters 7 and 8 present two approaches for distinguishing between export changes due to movements in world imports and those accounted for by domestic factors.

Our data are the official series for total value of exports, adjusted for 1933-38 for the devaluation of the dollar in order to preserve comparability to foreign values. The series for world imports was constructed by

[1] An earlier study dealt with the American and British trade balances; see Ilse Mintz, *Trade Balances during Business Cycles: U.S. and Britain since 1880*, Occasional Paper 67, New York, National Bureau of Economic Research, 1959. Secular changes in foreign trade are discussed by Robert Lipsey in a manuscript on U.S. exports and imports.

us for 1881 to 1928 and adapted from League of Nations and United Nations series for later years. This series is discussed in the above-mentioned paper on trade balances where it was first used. The data are monthly or quarterly and have been adjusted for seasonal variations. (For a detailed description, see Appendix A.)

Our starting point was a chapter on "Foreign Commerce" in an unpublished manuscript on business cycles by Wesley C. Mitchell (circa 1933), and we use the concepts and methods which he and Arthur Burns forged for such purposes.[2] Appendix B gives information on this aspect.

Some indication of the place of exports in the American economy may provide a useful background for the analysis of export cycles in the body of this study. However, it should be understood that the comparisons in this chapter are to be regarded with caution. The existing output statistics are, unfortunately, not consistent in definition and valuation with the export data and any measures of relationship are thus somewhat problematic.[3]

A very rough idea of the role of exports may be obtained from their ratio to gross national output which is frequently used. This shows exports as a small and diminishing part of the economy. Even in the earliest period covered, 1879-1913, foreign sales amounted to less than 7 per cent of the total national output in the United States. In the interwar period

[2] A. F. Burns and W. C. Mitchell, *Measuring Business Cycles*, New York, NBER, 1946. The empirical study of international aspects of business fluctuations is far less advanced than that dealing with national business cycles. As to U.S. exports, in particular, basic facts about their typical cyclical behavior still have to be brought out. We do not know, for instance, whether turns in exports are usually related to turns in domestic business; nor in what period exports came to conform to changes in domestic business conditions; nor whether they should be expected to rise most vigorously at the beginning of a business expansion or toward its end. The flexible method devised by Burns and Mitchell is well suited to reveal such essential facts. Once they are known, it may be possible to set up the kind of hypothesis, implying quantitative relationships without substantial variations in timing associations, which is required for multiple correlation analysis. Provided the problems posed by strong and shifting trends and by the intercorrelation of domestic and foreign business cycles can be coped with, it will be possible to apportion more exactly the effects of the various forces.

[3] Robert E. Lipsey comments on this problem in his manuscript: "The absolute levels of these ratios cannot easily be translated into measures of the importance of foreign trade to the economy. There are differences in valuation, for example, foreign trade prices probably lying somewhere between the producers' prices of the Shaw data and the purchasers' prices of the Kuznets data. And there are difficulties in choosing a concept of output: for individual commodities and narrowly defined industries, gross output is the closest to exports and imports, but becomes inflated by duplication as these are combined into larger industries or total output. Exports and imports are free of duplication in the sense that a product exported in crude form will not be exported again as a manufactured item, although it is true that a product imported as a crude material may be exported in processed form. The use of an unduplicated total such as finished manufactures is an imperfect solution because many exports and imports are in a crude or semimanufactured state. Value added, another possible denominator, is an attribute of industries rather than commodities."

the average share of exports was reduced to somewhat over 5 per cent (more exactly, 6 per cent in 1919-30 and 3.6 per cent in 1931-38) and from 1949 to 1958 it was only 4.6 per cent.

Since services constitute a large part of total output while services sold abroad are excluded from exports, commodity output seems more meaningful, for comparison to exports, than total output. But the share of exports is modest and declining by this standard also. It was 11.5 per cent before World War I, 9 per cent in the interwar period (i.e., 10.6 per cent in 1919-30 and 6 per cent in 1931-38), and 7.5 per cent in 1949-58.[4]

More relevant, for our purposes, than the *level* of the export-output ratios are their cyclical *fluctuations*. What part of the cyclical variation in output is accounted for by export changes? We shall not attempt to answer this question for the cycles before World War I. In those years exports followed a complex cyclical pattern which precludes simple generalizations. Moreover, appropriate quarterly output series are lacking.

After World War I the situation is different. Quarterly output series are available and exports usually do rise and fall with general business activity. We can thus compare export and output changes during business cycles (Table 3). What do we find?

In the seven peacetime business cycles since 1921 the average cyclical change (rise plus fall) in the gross national product amounted to $62.9 billion. The corresponding fluctuation in exports was $3.6 billion, or 5.8 per cent of that in total output. Hence the portion of output changes accounted for by export changes was larger than the share of exports in output, which was only 4.2 per cent on the average during the same seven cycles.[5] Yet, this portion was still much smaller, for instance, than the share of variations in other types of final demand such as construction, which accounted for 9.4 per cent of output changes, or producers' durable equipment, which accounted for 12.6 per cent.[6]

An interesting feature shown by Table 3 deserves to be mentioned here. The contribution of exports to cyclical instability was larger after World War II than before, despite the above-mentioned decline in the relative level of exports.

In the three cycles since World War II, 6.1 per cent of output changes have taken the form of variations in foreign sales, as against 5.0 per cent

[4] Following Lipsey, we use Simon Kuznets' output series from *Capital in the American Economy: Its Formation and Financing* (in press). Kuznets' series were extended from 1955 to 1958 by Lipsey.

[5] For comparability to the amplitude measures, this ratio is based on the Department of Commerce's gross national product. Hence it is lower than the ratio given in a preceding paragraph which was based on the smaller Kuznets gross national product for comparability to earlier years.

[6] It may be noted that allowing for average leads or lags in exports would not raise the average ratio of export changes to output changes.

TABLE 3

U.S. Gross National Product, Two of Its Components, and Exports: Changes During Domestic Business Cycles, 1921-58

	Average Change in Billion Dollars			*Average Change as Percentage of Change in Gross National Product*		
	Expansion	Contraction	Full Cycle	Expansion	Contraction	Full Cycle
			1921-38, 1945-58			
Gross national product	+49.2	−13.7	62.9	100.0	100.0	100.0
New construction	+5.0	−0.9	5.9	10.1	6.8	9.4
Producers' durable equip.	+5.0	−2.9	7.9	10.2	21.2	12.6
Exports	+2.3	−1.3	3.6	4.7	9.6	5.8
			1921-38			
Gross national product	+20.0	−16.2	36.3	100.0	100.0	100.0
New construction	+1.6	−1.9	3.5	8.0	11.8	9.7
Producers' durable equip.	+2.5	−2.3	4.8	12.5	14.2	13.2
Exports	+0.8	−1.1	1.8	3.9	6.5	5.0
			1945-58			
Gross national product	+88.1	−10.3	98.4	100.0	100.0	100.0
New construction	+9.5	+0.4	9.1	10.8	−3.9	9.2
Producers' durable equip.	+8.3	−3.7	12.0	9.5	35.9	12.2
Exports	+4.4	−1.7	6.0	5.0	16.2	6.1

See Table 1, notes 1 and 3.

SOURCE: Gross national product and components for 1921-38: Harold Barger, *Outlay and Income in the United States, 1921-1938,* New York, National Bureau of Economic Research, 1942; for 1945-58: Department of Commerce.

Exports: Table A-1 except that here all data are in current dollars.

in the interwar period. The contribution of exports to output fluctuations thus moved closer to those of construction and producers' durable equipment which recently have been declining. There is a suggestion here, which will be supported by other findings, that exports were less stable in 1945-58 than previously while the domestic economy became more stable. This seems plausible enough considering the contrast between the recent advances of domestic countercyclical policies and the impact on foreign trade first of the aftermath of World War II and later of such upsetting events as the Korean War or the Suez crisis. Even so, the share of exports in cycles of total output is still not large.

The picture is different when we examine business contractions as opposed to full business cycles (Table 3). Here exports play a much more substantial role, particularly after World War II. In the recessions of 1948-49 and 1957-58, the decline in export sales accounted for 26 and 21 per cent, respectively, of the total drop in output. And the average contribution of exports during the three business recessions between 1948 and 1958 was as high as 16 per cent, despite their exceptional countercyclical rise in the 1953-54 recession. These are sizable percentages, even if we keep in mind that investment as a rule also accounts for a much larger portion of the decline in output during business contractions than of its rise in expansions. Thus the share of producers' durable equipment in the three output contractions was 36 per cent, or more than twice that of exports.[7] Even if not among the largest, exports were certainly a considerable factor in business contractions.

Nevertheless, when all the above findings are taken together, they may seem to conflict with the importance attributed to exports by many observers. But there are good reasons why the cyclical role of exports may be greater than our ratios indicate. One is their relatively independent, exogenous character. Another is that the importance of exports does not lie exclusively, or even predominantly, in their contribution to national output. Their function as source of finance for payments abroad—the balance of payments aspect—is the main reason for their prominence. This was quite obvious before World War II; and after having been pushed into the background in the era of so-called dollar shortage, this aspect is vigorously reasserting itself today.

[7] This asymmetry results from the strong upward trend of some GNP components. Consumer services, for instance, have shown large rises during business expansions but no—or merely a small—decline in contractions.