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Volume Author/Editor: Ilse Mintz

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Chapter Author: Ilse Mintz

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Exports and Business Cycles Further Examined

The evidence so far appears to indicate that the rise and fall in U.S. exports was not related to domestic business cycles before World War I. The following analysis, however, will dig deeper and uncover that export changes and business cycles were, after all, connected in a systematic fashion before 1913 as well as after and that, accordingly, there was no sudden break in export behavior after World War I.

What caused the relation to remain hidden is its peculiar form, which defies discovery as long as attention is focused on full-cycle phases. Let us return to Charts 1, 4, and 5, and scrutinize them carefully. We note that exports frequently turned down about midway in expansions as well as contractions, or at least that retardation of growth or acceleration of decline set in at that time. Visual impression can be tested by standard National Bureau business cycle measures. We divide each cycle phase into three stages of equal duration and compare the average level of exports in the middle stage to adjacent peak and trough standings.

If exports were really not related to business cycles in 1879-1913, their movements during different phase halves should be similar, just as average changes over whole phases were found to be. But Table 5 shows that, on the contrary, there were sharp and consistent contrasts between movements during these segments of expansion and contraction.¹ In seventeen out of nineteen phases in 1879-1913 (eight of ten expansions, nine of nine contractions), exports increased more in the first than in the second half. This certainly does not indicate insensitivity to domestic business cycles. Without exception, exports rose in the first part of the nine contractions and their average rate of growth was the highest of the four

¹ See the corresponding measures for 1882-1913 in Chart 7 and Table 13; also measures for 1879-1914 in Chart D-2.

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segments, 13 per cent per year. In the second part of the contractions, however, exports fell (with two exceptions) and the average rate of decline was 7 per cent, the largest fall of the four segments. In the first part of expansions, exports rose eight out of ten times and the average rise was 10 per cent, whereas in the second part there were only five rises and they were small so that the average change was a decline of 2 per cent.

It is clear now that the similarity of export changes in expansions and contractions is not due to their lack of response to business cycles, but rather to a peculiar type of response, which involves two roughly offsetting changes in each cycle phase. The relation of export movements to business cycles thus was a systematic one, though it cannot be classified as either positive or inverse, but rather as alternately positive and inverse. That exports differ in this respect from most other economic series is not implausible in view of the peculiar, contradictory cyclical influences to which they are subject.

What formerly appeared as a sudden shift in the relation of exports to business cycles now also appears in a new light. It results from gradual changes which have not, however, upset the basic features of the earlier pattern. As positive changes grow larger and inverse ones dwindle, non-conformity is replaced by positive conformity.

This is more or less what happened.² The rate of growth in the first part of expansions in 1921-58 was 17 per cent, compared to 10 per cent for 1879-1913; the rate of decline in the second part of contractions is now 13 per cent, against the former 7 per cent. In those segments, on the other hand, in which exports previously moved countercyclically, they now show little change or even move with the cycle. Thus, the small average fall in the second expansion half of the earlier period is replaced by a near-zero change and the large increase in the first contraction half has become a small decline. Hence the difference between the two halves of each phase persists (it has grown in expansions, declined in contractions), but now the positively correlated changes are dominating.

In sum, then, the rates of growth or decline of exports have consistently varied with the business cycle throughout the eighty years spanned by the data. And not only was the pattern of the intraphase variations in the rate of growth relatively stable, but the rates themselves for the three segments from midcontraction to the peak were also quite stable. Exports, in most instances, took a considerable plunge from midcontraction to the cycle trough, prospered until midexpansion, and showed little

² The 1929-37 cycle has been excluded from the rates of change discussed below since the enormous amplitude of the anomalous export movements in this cycle distorts them. Measures including it are given in Chart D-2; measures excluding 1929-37 and also 1945-48 are given in Table 13 and Chart 7.

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change from there to the peak. It was in the fourth cycle segment that their behavior underwent a major shift, from large, absolutely regular rises to the predominance of small declines. The details of this shift will be discussed below.

TABLE 12
Timing of Turns in U.S. Exports in Relation to Domestic Business Cycles,
1879-1959

Year and Quarter	<i>Export Peaks</i>		Year and Quarter	<i>Export Troughs</i>	
	Lead (-) or Lag (+), (no. of quarters)	Location in Business Cycle		Lead (-) or Lag (+), (no. of quarters)	Location in Business Cycle
1880 II	a	M	1879 I	0	T
1883 I	a	M	1881 IV	a	T
1886 II	-4	M	1885 III	+1	T
1889 IV	a	M	1888 III	+2	T
1891 IV	a	M	1890 III	a	T
1893 III	a	M	1893 I	a	T
1898 II	a	M	1895 I	+3	M
1901 II	a	E	1898 III	a	M
1903 IV	a	M	1902 I	a	M
1908 I	+3	E	1904 II	-1	T
1913 III	+2	M	1909 I	+3	M
1920 I	0	T	1921 IV	+1	T
1925 I	a	E	1926 I	a	E
1927 II	a	M	1927 IV	0	T
1929 I	-2	M	1934 IV	+7	M
1937 III	+1	E	1938 IV	+2	T

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TABLE 12 (concluded)

Year and Quarter	Export Peaks		Year and Quarter	Export Troughs	
	Lead (-) or Lag (+), (no. of quarters)	Location in Business Cycle		Lead (-) or Lag (+), (no. of quarters)	Location in Business Cycle
1947 III	^a	M	1945 IV	0	T
1949 I	+1	E	1948 II	^a	T
1952 I	-5	M	1950 I	+1	T
1957 I	-2	T	1954 I	-2	M
			1959 I	+3	^b
Number of:					
	M	13			6
	T	2			13
	E	5			1
Total		<u>20</u>			<u>20</u>

M: Export turn is closer to midpoint of business cycle phase than to business cycle turn.

T: Export turn is closer to business cycle turn than to midpoint of business cycle phase.

E: Export turn is equidistant from midpoint and from turn of business cycle phase. See Table 1, notes 1-3.

^a No corresponding business cycle turn.

^b Not known as yet.

All this is reflected in the measures for the full period 1879-1958 (excluding 1929-37). Average growth rates of 13 and 8 per cent in the first halves of expansions and contractions contrast with rates of decline of 1 and 9 per cent in the second halves (Table 5). In twenty-five out of thirty-one cycle phases (twelve of sixteen expansions, thirteen of fifteen contractions), the rise was larger or the decline smaller in the first than in the second part of the phase.

Discussion of the timing of export turns in domestic business cycles has been deferred so far since the standard comparisons here yield meager results indeed. The findings on the pattern, however, shed at least some light on this question. The standard measures indicate that there was poor correspondence between export and business turns, except for the most recent period (Table 12). Half of the turns in exports in 1879-1938

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did not match business cycle turns and the association of others is rendered somewhat doubtful by long and irregular leads and lags. In counting, conversely, how many business turns were matched by export turns, there is evidence of a closer association in the interwar than in the preceding period, though not of a radical shift. Less than half of the peaks and troughs in business were matched by export turns in 1879-1913, while in the interwar period seven out of ten business turns had counterparts in exports. It is only since 1945 that, apart from one extra export cycle, business and export turns have corresponded regularly.

Once we know about the peculiar cyclical pattern of exports, we should, of course, not expect export turns, particularly peaks, to accompany business turns regularly. On the contrary, according to this pattern exports must turn down in midexpansion or midcontraction and up near either a general peak or trough. This is approximately what we find when export turns are classified by their location in business cycles. In Table 12 those export turns which occurred nearer to the midpoint of a cycle phase than to its end are designated by an M, those nearer to turns by a T. The result reveals that before 1913 exports turned down in nine out of eleven instances around the middle of expansions or contractions and that in 1921-59 one-half of all peaks are still in this class, while, on the contrary, only two of twenty export peaks in 1880-1959 occurred in the neighborhood of a business cycle turn. The timing of troughs is less regular than that of peaks from this point of view; still thirteen out of twenty fall near a business cycle turn as expected. No radical shift in timing occurs by this measure which agrees with the previous finding about the persistence of the pattern.

One feature of the timing which has not emerged before must still be pointed out: the tendency for exports to lag rather than to lead at business troughs. There are nine instances when exports started to rise later than domestic business, and only two (in 1904 and 1954) of the opposite kind. A lag in exports need not signify that the revival of business in the United States preceded that abroad. It could arise also when domestic and foreign business turns coincided if the average lapse of time between orders and shipments was longer in exports than in domestic business. Whether there actually is a difference in these lags, we cannot tell. It is not merely a question of the comparative order-shipment interval in the foreign and domestic business of each individual industry, but also depends on the differing importance that industries with long lags or short lags may have in exports and in domestic business. I consider it more likely, however, that the average interval between export orders and shipments does not exceed the corresponding interval in domestic business by as much as a quarter and that the lag of exports at U.S. business troughs

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probably does reflect a lag in the upturn of business in customer countries behind that in the United States.

As to the possible contribution of exports to business recoveries, it should not be ruled out by the export lag. We are dealing here only with the value of total exports. The behavior of export quantities may well be different, as may be that of important classes of commodities. We have to withhold judgment until analysis of these components is available. What explains the peculiar cyclical pattern of exports? What forces favor them when a business expansion or contraction begins and restrain them when the same cycle phase approaches its end? Are these forces found in the domestic economy? Or have variations in world demand shown similar behavior, thus causing those in exports? In the following chapter we shall try to answer this last question by comparing the pattern of world imports to that of American exports and thus determining what part of the export pattern cannot be due to similar changes in world imports. Explanation of this part by domestic factors must await the analysis of export components in a later paper. Such an explanation seems simple for expansions, but puzzling for contractions. As expansion progresses, idle capacity dwindles, delivery periods are extended, prices rise, and it is not surprising that exports tend to rise at a slower rate or even to fall. But the converse argument applied to contractions yields the wrong result: the decline of exports should moderate, not accelerate, in the later stages when lower prices, faster delivery, etc., should make goods more attractive to foreign buyers. It is likely, therefore, that adverse changes in foreign demand are associated with the later stages of United States contractions and account for the adverse development of exports in these stages. How far this is true will be examined in the following chapter.