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APPENDIX F

EXPORT ORDERS AND SHIPMENTS

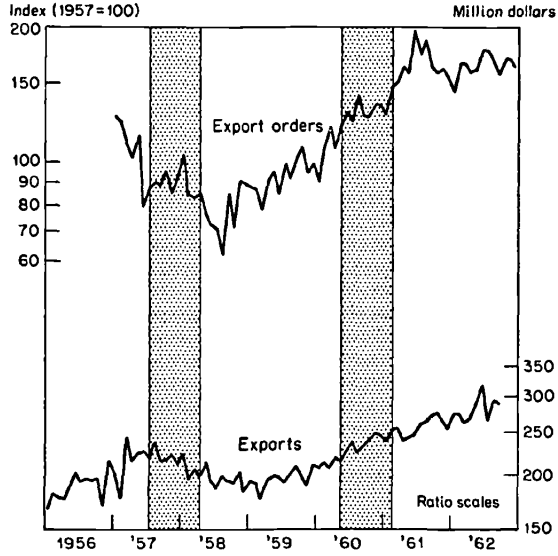
INFORMATION ON EXPORT ORDERS can be helpful for an analysis of foreign trade problems and outlook. Also, separation of home orders from foreign orders is desirable, since the former should be more valuable as tools and guides for the appraisal of domestic economic developments than are the aggregates that include both categories.

Although this study is not concerned with foreign trade problems as such, it is of interest here to examine the relation between foreign orders and shipments and to compare it with the relation between domestic series for these variables. Data available for such comparisons, however, are limited to certain types of capital equipment and to the recent postwar years.[1]

Since 1957, the economics department of the McGraw-Hill Publishing Company has compiled monthly indexes of export orders for nonelectrical machinery. The goods covered by this series comprise about 15 per cent of the value of U.S. exports (about $3 billion out of a total of some $20 billion in 1961). The sample of reporting firms is said to be small, but the index behaves sensibly in the light of the evidence on actual exports of nonelectrical machinery as reported by the Commerce Department. The curves in Chart F-1 for export orders and exports suggest a relationship similar to that observed for the longer and more comprehensive series on capital goods orders and deliveries. It indicates that both the longer swings and the short irregular movements tend to be much larger in orders than in exports. Indeed, some distinct but short movements, such as those in the second half of 1957 and of 1961, are entirely "smoothed out" in the export series.

[1] The relation between export orders and exports is discussed in Hal B. Lary, "The United States in a Changing World Economy," *Forty-second Annual Report of the NBER*, June 1962, pp. 96–99. The analysis that follows is based in part on Lary's study.

Chart F-1
Export Orders and Exports, Nonelectrical Machinery, 1956–62



Note: Shaded areas represent business cycle contractions in the United States; unshaded areas, business expansions. Series are seasonally adjusted.

Source: Export orders: McGraw-Hill Publishing Company. Exports: U.S. Department of Commerce (derived from the foreign trade statistics by selection of items represented in the export series).

The movement of the curves also suggests that exports of the machines lag behind new orders by substantial intervals.[2]

Monthly data on export orders for machine tools are prepared by the National Machine Tool Builders' Association. They go back to 1946 for the metal-cutting type and to 1956 for the metal-forming type. This compilation relates to a small subgroup of the products covered in the McGraw-Hill sample (exports of machine tools, mostly metal-cutting, amounted to little more than $200 million in 1961), but it offers series extending over a longer period, and not only for gross orders, but also for shipments and cancellations. The NMTBA export orders and shipments data are highly erratic but are also subject to

[2] The series are too short to offer conclusive evidence. Nevertheless, it is clear that orders led exports at the 1957 peak, since they were falling at the beginning of the year and exports did not start declining steadily until August (after having reached an isolated peak in March). Orders also show a sharp trough in August 1958, exports a shallow trough in March 1959 (Chart F-1).

pronounced longer fluctuations. Chart F-2 shows them in the form of four-month moving averages of the seasonally adjusted figures.[3]

An outstanding feature of recent developments in machine tool export orders was their sharp increase in 1950 and an equally sharp decrease in 1951—a movement due mainly to large orders placed here by the United Kingdom for rearmament purposes after the start of the Korean War. The corresponding movements in shipments followed with long lags of 18 to 24 months (the latter figure measures approximately the distance between the peaks). It is clear that the flow of orders underwent much dampening in the production-scheduling process.

Before and after the disturbing impact of the Korean crisis, the lag of export shipments behind new orders was quite regular: about six to nine months in the smoothed or eight to ten months in the unsmoothed data. Even smaller movements such as the double-turn patterns at the peaks of 1956–57 and 1960–61 and at the troughs of 1958–59 were transmitted from new orders to shipments with stable lags, suggesting fairly uniform average delivery periods in the export business of this rather closely defined industry.

Except in the Korean period, fluctuations of export orders do not seem to be very much larger than those of export shipments for the machine tools. It should be noted, however, that the unsmoothed series show larger amplitude differences between orders and shipments than do the moving averages plotted in the chart.[4]

Changes in export orders and in home orders for machine tools show considerable similarity on several occasions. Both series rose to sharp wartime peaks in February 1951 (compare Charts F-2 and 2-3). The declines that followed ended in 1954—in July for gross domestic orders and in September for gross export orders. The two series reached their next peaks again two months apart in the same sequence (domestic

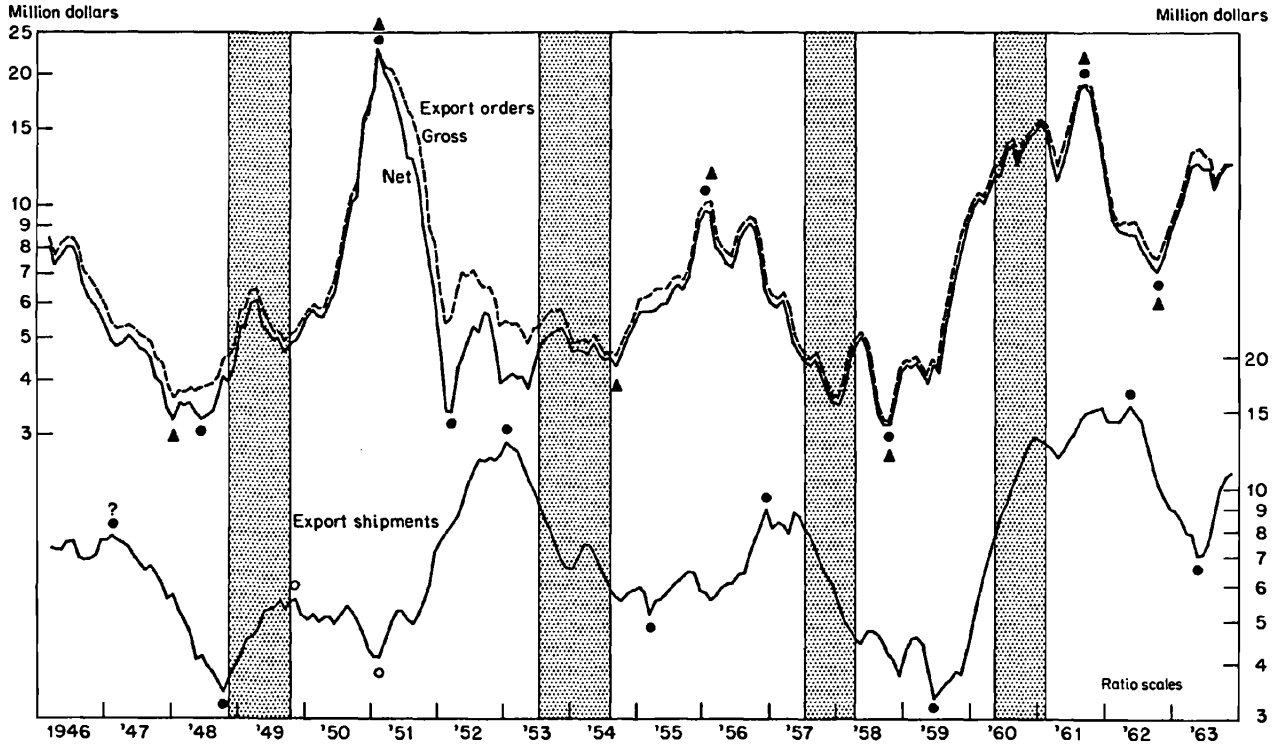
[3] The MCD (months required for cyclical dominance) index is four months for these series. See Chapter 3 for an explanation of this measure.

[4] Smoothing reduces the amplitudes more for export orders than for export shipments because the short-period variability is greater in orders than in shipments. Although the MCD's are the same for orders and shipments, the more sensitive amplitude measures show the differences in variability to be considerable. The summary figures are as follows (using symbols explained in Chapter 3):

	$\overline{Cyl}$	$\bar{l}$	$\overline{Cy}$	$\bar{l}/\overline{Cy}$	ADR	MCD
Gross orders	20.4	19.0	5.4	3.5	1.78	4
Net orders	23.5	21.7	5.8	3.7	1.78	4
Shipments	13.4	12.4	3.9	3.2	1.77	4

Chart F-2

Gross and Net Export Orders and Export Shipments, Metal-cutting Machine Tools, 1946–63



Note: The series are four-month moving averages of seasonally adjusted figures. Shaded areas represent business cycle contractions; unshaded areas, expansions. Dots identify peaks and troughs of specific cycles in net new orders and shipments; triangles, gross new orders. Circles identify minor turns in shipments.

Source: National Machine Tool Builders' Association.

orders in December 1955, foreign orders in February 1956), and the same happened once more at the following troughs (in August and October 1958). However, at other times, divergent rather than correlated demand conditions at home and abroad are indicated. In particular, domestic orders declined in 1959–60, matching, with a lead, the 1960–61 business recession in the United States, while foreign orders reached high levels during that recession. On the other hand, foreign orders contracted in 1961–62, while domestic orders expanded.