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THE USE OF CURRENT BUSINESS STATISTICS

A Talk by L. Seth Schmitman, Chief of Division, "Survey of Current Business," before the Army Industrial College, ~~for~~ delivery on the morning of January 21, 1929.

American business is gradually, but unmistakably, coming to a factual basis. When this country entered the great conflict in 1917 there came the first real appreciation for the need of business statistics. Some historians tell us that even then we, unlike that food for the great conflict, these statisticians stood by their guns and proclaimed that statistics won the war. Indeed all of these factors, and others, had their part.

Without adequate data the control of war supplies would have been practically impossible. Hence, immediate steps were taken by the Federal government during those troublous days to set up the necessary machinery for the collection and interpretation of current statistics on such basic commodities and war necessities as cotton, petroleum, leather, wool, and vegetable oils.

At the time of our entry into the war there were indeed several important trade associations which were already collecting data covering the operations of their respective industries. All of these ladly aided the Federal government in its new and necessary statistical needs, so that now, after a decade of peace and a period of unprecedented industrial prosperity, business statisticians and business leaders are agreed that business statistics are of far-reaching importance and afford the only means upon which to base executive policies.

We are now able to appraise the usefulness and value of business statistics after more than ten years of conscious effort in building up a store of current industrial and commercial statistics. The steel manufacturer finds in the statistics covering the production of steel ingots the measure of activity of the steel industry; he may compare current figures with those of previous months or better still, since the steel industry is quite seasonal, with the corresponding month of preceding years. Thus at a glance he knows just how far a certain trend, whether of advance or decline, has gone. Or let us take for example an industry which is even more seasonal than steel, the cement industry. Or flour milling. Here it is not only desirable to compare a given month with the corresponding month of the previous year but perhaps with an average for the same month covering several years to determine the relationship which exists between a given current month with the average month. This, in a word, is how the manufacturer of a given industry may follow the production trends of his industry.

Can you think of anything that is manufactured that does not contain steel or which, in the process of manufacture, has not found use for some steel product? For this reason, the steel industry has come to be known as a barometer of general business and in like manner similar general barometers have been built up around such basic industries as automobiles, building, electric power, petroleum, coal, copper, etc. As these industries go, so goes general business.

Current production figures with reference to a given industry are only of small use if such other factors as shipments, orders, prices, and stocks are not available statistically. Thus, in the example of the steel industry, though production data themselves are valuable, their value is materially increased by available figures covering such items as the percentage of plant operations and unfilled orders. In the case of the cement industry, production data are supplemented by shipments, stocks and prices, and so on down through other industries for which current data are now available.

Where obtainable, capacity figures for an industry are more valuable in connection with production statistics. Statistics on an industry's capacity provide, first, a basis for gauging the relationship which our post production bears to capacity, indicating the extent to which production may be increased without the necessity of plant extensions. Thus an individual manufacturer, on the basis of this knowledge, would not be justified, even though his plant may be working at capacity, in expanding his facilities if the industry as a whole were engaged at only a fraction of capacity. Steel production, with the growth of the country and expanding demand for the product, naturally shows growth over a period of years. By relating the production figures to the changing capacities of the industry over the same period, one may readily see the true trend of the industry. Thus, though steel production from the point of view of tonnage is very much larger now than before the war, the relationship that means the most to the steel man is whether or not the increased production is in proportion to the greatly increased capacity of the industry.

Where production figures measure plant activity, statistics on shipments roughly indicate the rate of consumption. Hence, shipments are more regular month by month than is production. Comparison of shipments with production quickly indicates whether an industry is producing more or less than consumptive requirements, according as production is greater or less than shipments. In this comparison, of course, it is necessary to give due weight to normal seasonal conditions in the respective industries.

Shipment figures afford a striking means for measuring local markets. Thus, cement shipments, available by states of destination, indicate the consumptive requirements by geographical distribution. These data, taken together with other general statistical measures, such as building contracts, bank clearings, postal receipts, newspaper advertising, etc., afford a useful measure for checking the progress of the nation's business on a local basis.

From the point of view of providing an inventory of material, data on stocks at periodic intervals are indispensable. Figures showing stocks of raw materials held by manufacturers are valuable as indicating the extent to which a given industry is supplied with the necessary materials for use in manufacturing. Stocks are the supply side of the supply-demand equation. Thus, a large demand from an industry for raw materials, where statistics show the stock of those materials to be at a low ebb should tend to cause prices to rise and manufacturers to scramble in the bidding-up process. On the other hand, where figures indicate large supplies, manufacturers would doubtless stay out of the market and buy from hand to mouth only to meet immediate requirements. Here, too, allowances must be made for seasonal influences where such occur. This

is especially true regarding agricultural commodities such as sugar, wheat, cotton, etc. Raw material stocks also indicate, when divided by the average daily consumption of a given commodity the number of days' supply on hand and any changing practices such as hand to mouth purchasing can be shown by comparison of these averages over a period of years.

Stock figures provide the safety-valve of industrial statistics, since, when they are high for a given manufactured commodity, a lessened demand is indicated and forward-looking business executives will on these data dictate curtailed production schedules. Nothing can so quickly wreck the confidence in underlying business conditions as large stocks of commodities incapable of relatively quick absorption. On the other hand, small stocks would naturally dictate broader production schedules to provide for normal or increasing demands.

Just as capacity figures are essential for gauging correctly the productive activity of an industry which may have shown great growth over a relatively short period, so the ratio between stocks and shipments of a given commodity provides a better means for gauging conditions in an industry than either measure could singly afford.

The petroleum industry, where incessant demands for its products occasioned by the widespread use of automobiles has necessitated large stocks, is a case in point.

As production is necessary before shipments, so the receipt of orders is necessary before production occurs, except, of course, in such

industries which produce largely for stock purposes. Thus, statistics of new orders forecast the prospective volume of output.

New orders, therefore, represent the best barometer for a given industry because they almost exactly reflect business sentiment. Production figures in any particular month may consist of orders received some months previous, while shipments in turn may comprise goods produced at some previous time and shipped from stock, but orders immediately register the mass sentiment of consumers. Indeed, production and shipments in any one month are limited by plant capacity, railroad and other facilities. As respects orders, there are no limits unless, of course, individual companies refuse to receive new bookings after having filled their productive capacities for several months ahead, and even in this case the orders are likely to go to other companies and thus appear in the aggregate statistics for the given industry.

Figures on machine tools may be used to illustrate the general barometric value of new order data. New orders for machine tools were exceptionally heavy during late 1927 and all of 1928, indicating, barometrically, the general business prosperity for which the year just closed must stand. The turn of the year indicates a continuation in the demand for manufactured products for the early months of the present year. Order figures may also be compared to advantage with production and shipments to indicate whether the demand is above or below productive activity or consumptive requirements. Care must, of course, be taken to allow for seasonal conditions in the receipt of orders which may be different from the seasonal movement of production or shipments.

Just as figures on stocks at once disclose the current results of productive and shipping operations of a given industry, so unfilled orders at the end of a given period show the net result of the receipt of orders and their fulfillment. The amount of unfilled orders for an industry indicates exactly how long that industry can operate without receiving further orders. If an industry is situated as were the locomotive manufacturers early in 1923, when their unfilled orders represented eight to ten months work ahead, the individual manufacturer could afford to take on new business only at increased prices, but conditions in this industry have changed since 1923, as statistics covering shipments and unfilled orders of railroad locomotives will show. Railroad efficiency, longer hauls, greater utilization of rolling stock have made it pretty hard sledding for locomotive manufacturers over the past three or four years, but there seems now to be in evidence a growing demand for the iron horse now that the railroads of necessity must come to market. Here the question of hand to mouth buying must receive more than passing notice because with the increased efficiency of distribution facilities, especially the railroads and the increased utilization of motor trucks in short hauls, there has grown up the hand-to-mouth buying habit which, within a short space of time, has almost completely revolutionized the method of placing orders for long-time forward delivery. During the hectic buying orgies of late 1919 and early 1920, with a shortage of transportation facilities and with less management efficiency all along the line, frenzied buyers pyramided orders on rising price levels. Now with greater control, largely as a result of accurate statistical measures, manufacturers, in the knowledge that railroad facilities are ample, buy only

enough to insure relatively even productive activity. Thus the figures on unfilled orders today have much less significance if compared with similar data of five years or more ago, but compared with the same data for a year or two previous, none-the-less still afford a useful check upon industrial activity.

So much for the discussion of the use of industry statistics to individuals within the industry covered. Important though it is to know the statistics of one's own industry, it is often of equal or greater importance to understand the statistical position of one's chief markets. Steel mills may be prospering but if railroad statistics indicate a lean year for the carriers, the steel man knows that it will affect his profits because the railroads represent one of the principal consumers of steel. Or if prospects in the automobile industry are not good, then the copper producers or the steel producers or the manufacturer of pyroxylin-coated textiles or perhaps the now-famous "Duco," or a thousand other items entering into the automobile will know to expect lessened activity in his own industry and prepare for it accordingly. Statistics, therefore, provide not only a means for minding one's own business, but a medium for minding everybody else's business. And today, minding one's own business necessitates minding one's neighbor's business. The business and industrial structure of to-day is so complex, has grown to such proportions, that hardly one industry can say that its success depends upon its own internal condition. The relationship between one industry and another and all industry will continue to become more pronounced. Thus it has already been proved that the curve of new orders for clay fire

brick, which, incidentally is used to line blast furnaces, predicts by from three to six months the trend of pig-iron production which itself has long been considered a barometer of industrial activity. By the same token, building-construction figures seem to reveal most accurate indicators for the demand for furniture six months hence. I could go on indefinitely to cite instance upon instance where statistics are being used to decided advantage in setting up sales and advertising programs, in providing the basis for important executive policies, in bringing greater efficiency and lower production costs -- in affording facts where guesswork was once the basis.

Developments over the past few years have almost conclusively proved that the old time cycle of booms and slumps, of famine and feast, as our cartoonists have pictured them -- are giving way to a more orderly business scheme. Slumps in business have been largely due to wastes, extravagance, inflation, speculation and inefficiency in production developed during boom periods. I think we may now say that where the Federal Reserve System has, in the field of finance, provided a great stabilizing influence, statistics have afforded the great stabilizer to business, since they have provided to producers, distributors, consumers and the banks the basis for more constructive and sober policies. Give the average American business man the facts and figures upon business and America need no longer fear the recurrences of the one-time dreaded business cycle with all of its attendant tolls.