

that the best government is the least governing. So there would be a number of things that drive in at first hand approach to the feasibility of the working out of such a scheme as this.

I don't mean to imply from this that I think it is hopeless. It struck me, as I have tried to give the best consideration I could to Professor Friday's work, that it has been one of the biggest approaches to healing the fundamentals of economic life that I have any cognizance of in the last fifty years.

DR. N. I. STONE¹: I think Professor Friday is quite correct in stating that nothing particularly useful comes out of the quinquennial census. That is extremely poorly done; is prolific with mistakes. That is probably the chief feature of our statistics of manufactures as we get them every five years.

About four years ago some of us who were engaged in government work in Washington tried to arouse the interest of those concerned in production statistics. Our commercial statistics are only one degree better than the industrial statistics. As regards our foreign commerce we have monthly statistics of exports and imports. For domestic commerce, we have just a sort of embryonic beginning so far as the Interstate Commerce Commission publishes them. There was a small division in the Bureau of Statistics of the Department of Commerce conducted by one man who tried to get something out of the traffic reports to build up statistics of domestic commerce and that died a premature death after struggling for a few years.

We had an interdepartmental committee created of representatives of the Treasury and Commerce departments that struggled with the subject for two or three years and made some constructive suggestions in a report submitted to the heads of the departments. It died a peaceful death in 1912 at the time of the change of administration, and nothing has been heard since except that recently the Chamber of Commerce of the United States approved a new method of classification of our statistics of imports which may be perhaps a little more scientific than what we have had. Really, there has been no beginning, except that feeble voice that we raised in Washington eight years ago.

We had a joint committee of the American Economic Association and American Statistical Association and some of us advocated a special commission to be created by the President with a sufficient ap-

propriation from Congress to work out a comprehensive scheme of statistics covering the entire industrial and commercial field. Some of us felt that we shall never have decent statistics until we have some such commission, because our statistics in Washington just "grew like Topsy." Here and there a bureau is created, somebody has an idea or some special need for the creation of a bureau, but there is duplication and groping and we haven't an organized comprehensive scheme of statistics covering our national economy such as a well-organized corporation has to account for its business. In other words, we have no national bookkeeping worthy of the name, and it would be a very happy thing indeed if the Taylor Society were to show an interest in the subject and if we could get what we have vainly tried to get; if we could enlist the interest of the engineering societies, of the business organizations and even of the labor organizations to start a real national movement of all the producing elements to urge upon Congress the seriousness and importance of this problem.

While I am on my feet I should like to say that the brilliance of Professor Friday's suggestion of having a national insurance of industrial risk is exceeded only by the importance of his suggestion for better statistics of production as the first foundation stone that would have to be laid, for without such a foundation no scheme of the gigantic proportions he suggests would be conceivable any more than life insurance without the actuaries' data. We need the actuarial statistics of business.

We do have some statistics of production which are got out by private effort. We have organizations like Dun's and Bradstreet's which give us some statistics of the mortality of business enterprise—probably the best statistics we have of risks in industrial business. That is probably the most solid contribution that is made; yet it is wholly due to private initiative, and while a very good piece of work it can't be as absolutely comprehensive and reliable as government statistics would be. Then we have the statistics secured by various commercial bodies which again are only illustrative, each being rather indicative of the volume of business but not comprehensive or exhaustive.

Professor Friday's suggestion as to monthly statistics I think is a very valuable and a very important one. I think when we get going in this field we certainly ought to have monthly statistics. You may be interested to know that the State of New York made a very feeble beginning back in 1913 or 1914, when

we had unemployment to a very appalling extent in this city and elsewhere. Some of us were interested in this problem of unemployment and got the Bureau of Labor Statistics interested, and since then it has been publishing a very simple and yet very interesting and instructive set of figures. They are very easy to get at, and at very small expense. Some of you may know the monthly labor market bulletin published by the Bureau of Statistics at Albany. That contains just two sets of figures; total amount of payroll, total number of employees and a curve indicating each. That is published monthly and the cumulative figure, the total curve that has been built up for the last fifty or sixty months, is very instructive. Outside of that I don't know of anything worth while.

MORRIS L. COOKE¹: The suggestion of Professor Friday's that taps my imagination more than any other was the one with regard to inventory statistics. It seems to me that a nation that shuts down in order to take stock is not in position to provide inventories monthly.

Now I have a very simple suggestion that I think may turn the trick. During the war, during the time when the railroads were staggering under their heav-

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ENGINEERING vs. HUNCH

THE past ten years have seen a remarkable advance in the application of business research and statistics. Whereas business men once depended to a considerable extent upon a tradition of personal genius in business, the modern tendency is more impersonal, more statistical and more departmental.

Disillusionment about mystically successful business men came some years ago when in notable instances the makers of millions were found to be so powerful not because of their marvelous individual business genius, but because of secret rebates, political intrigue, child labor exploitation, monopolistic advantage and other methods now outlawed legally and morally. Efficiency and technical thoroughness thereafter gained ascendancy, and these demanded the application of more of engineering exactness to business method; depended less upon privilege, graft and intrigue and more upon analytical ability, preparation, delicate adjustment and detailed knowledge. Thus was the way cleared and the secure place made in

business, a very ingenious suggestion was made by Mr. Titsworth of the Storage Committee, and worked over by his associates, providing that every manufacturer should, the moment he booked an order, book it by volume and weight in addition to money. Every manufacturer books his orders by money. Why? Because periodically he has to put his little book under his arm and go down to the bank and show them what he has in the way of orders, to get some money. It is a great deal easier to book orders by volume and weight. The thought was; we could start in a center like Indianapolis and have every manufacturer in that district send in to the Government once a week—oftener if necessary—a list of the volume and weight of all orders on hand with the prospective delivery day. I won't follow this out, but with your own imagination you can put those data on Hollerith cards—information as to volume, weights, kinds of goods, destinations, delivery dates, and so on—and have something to assist the railroads to route their freight better and determine the probable requirements of cars and other service.

If it is ever done for the railroads it seems to me it will give in very simple form just the data that Professor Friday requires.

business for commercial research and statistics. Quite true, the rapid advancement of research in other lines, in chemistry, metallurgy and electricity, for instance, influenced business men, for it was not a difficult gap to bridge in their minds between appreciation of success in factory research and research in sales and administrative problems.

Information, consensus of opinion, comparison, fact and figure about business matters are now in a very fair way to be recognized as commodities quite as tangible in value and importance as wood and iron or steel. Policies and plans must be built upon a foundation of fact before they can be regarded as sound or businesslike; therefore the business of fact-getting, fact-weighing and fact-comparison is of quite primary importance in business, and must become increasingly more so as the men who operate business increase their respect for facts and seek them as underpinning for more and more of their business judgments. (J. George Frederick in *Business Research and Statistics*, p. vi.)

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