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BABSON STATISTICAL ORGANIZATION

Lecture

by

Mr. Ralph B. Wilson,
Vice President,
Babson Statistical Organization

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Gentlemen

I think the best thing for me to do is to assume that you are business men and since you are in school to assume that you are here to learn and not be entertained. With that assumption I will try to give you the inside information as to how we arrive at business conditions, commodity prices and various economic situations. Two or three years ago a young lady came to my desk - she had been sent to the United States from the Government of Ireland to find out how to determine business conditions in Ireland. That was a pretty big order. Suppose for instance that Colonel Carr were to assign you the task of finding out what the business conditions in the U. S. are How would you go about it? Where would you start? When you did start out you would be surprised how much of it would unfold as you went along, but you can imagine the task this young lady had before her - coming over here without any preconceived idea of business conditions.

There are in the statistical field numerous theories of determining actual business conditions. Each man has a certain plan by which he determines the actual conditions. Colonel Ayres in Cleveland measures the condition by the number of iron furnaces that are in operation Others use what they call the lag theory. Our particular theory differs from those. We were taught back in college that in order to draw certain conclusions you must spread your observations over a sufficient area to justify the conclusion - that you cannot go out and smell one rose and draw the conclusion that all roses smell sweetly. You might run into a skunk cabbage.

You probably remember that years ago a man by the name of John Saxe wrote a poem about the six blind men who went to see the elephant. The blind men would approach the elephant, come into contact with certain portions of his anatomy and make observations, and each man drew his own conclusions as to what it was. The man who grasped the elephant by the trunk said it was just like a snake. He was right according to his observations. The man who got hold of the tusks said that this animal was like a spear, and the man who ran into the elephants side said it was like a wall, and everyone of them was absolutely right and so reported to his family, but all of them were wrong because they did not grasp the elephant in its entirety.

To ascertain business conditions you have got to see them in their entirety. The average business man judges business conditions by his particular industry. If he is a banker and money rates are good and he is making money he assumes that business is good and from the standpoint of the banker today business <u>is</u> good. The man in the manufacturing business - the textile industry - assumes that all business is bad because his industry is depressed. The man in the traction business - "Business is bad". In the large corporation business is good. Each according to that part of the anatomy of business with which he comes in contact. How are you going to determine whether business is good or bad? The way we do it is to take certain representative fundamental business conditions and add those fundamental conditions together by mathematical and statistical formulae, and then having added them together, find out whether or not the sum total of these fundamental business activities is at a norm or whether it is below or above it. Back in 1904 the norm was established, after careful consideration, at X (Volume of Business) From that norm every week we added up the sum total of business activities and we found that business was either above or below that normal. If it was above we would make a little dot on the chart that would indicate where business was and those dots would keep coming down until eventually they met the normal line and then they began to go up. Each one of these pieces represents a dot until we have an area composed of a myriad of dots. Then we blacken that area and that is known as the period in our economic history in which the sum total of business conditions was above the normal line. Then for some reason or other those dots began to go below the line and they went down and then back up and so eventually we had this area and we blackened that. The first area is a period of business over-expansion, when business is above normal. The second we call the period of readjustment, when business is below normal These are sometimes called periods of prosperity and depression. When area "D -" on the chart was completed Mr. Babson was showing it to Prof Swain and Professor Swain noticed that area D + and D - were apparently equal and he asked the question as to whether Newton's law of action and reaction was applicable to business conditions just as it is to physical conditions. Mr. Babson followed that up - he went to England and studied - and found that Newton had prophisied that some day the law of action and reaction would be regarded as applicable to social, business and even religious conditions.

Now it is interesting to note that these periods of readjustment do follow periods of over-expansion with consistent regularity A great many people argue that we will never have another period of depression. They said that same thing at this peak (G +). It is interesting to note that for every period of over-expansion there has been, up to the present time, a period of readjustment and this is true for this country and for other countries as well.

I want to explain various other lines here. These black areas are simply periods when our business conditions were either above or below normal. The solid red line is the price trend of 40 selected bonds on the New York exchange. This broken red line is the stock market line of 50 selected stocks, on the New York Stock Exchange This (lower black line) is the commodity price line - the trend of the basic raw materials. The X Y line is the normal growth line and is determined mathematically and statistically. That goes into higher mathematics. It is determined by a statistical formula. There was a young man with the Edison Company in New York who kept statistics of his own and made a chart on business conditions After he had kept it for a few years he discovered that his chart ran so closely to ours that it was not worth the time and cost for him to keep it A chart cannot be absolutely correct unless you put every known industry on it and there are sufficient industries on that to warrant our conclusions. After all, it is simply to give us a picture of the conditions and not to measure them absolutely, because in the field of economics you cannot make a positive statement. If you do you have to deny it in the next sentence. There are two methods of talking about economics. The methods are called didactics. Dr. Taussig of Harvard represents one method and Dr. Marshall of England the other. Dr. Taussig realizing the peculiarities of economics makes his statement as if it were true. You know where he stands. Then he goes on for sixteen chapters and tells you why that does not work Dr Marshall does the other thing. He talks for 16 chapters but when he gets thru you don't know what he believes. Anyway they stimulate your mind to thinking.

In the field of economics you do not have an exact science as you have in physics or chemistry. If you put a drop of water in the rain barrel you can swear to a rise in the level of the water. You can't do it in economics You make a statement but so many things can happen while you are making it that it works just the opposite. The trouble is that you cannot isolate a man in his activity like you can the ingredients in a test tube and subject them to certain conditions. In the test tube you expel all the extraneous matter and then make the experiment with certain ingredients. Years ago economists tried to see what a man would do if you isolated him but the only record they had was of Robinson Crusoe and for years we had Robinson Crusoe economists. If he dug clams with his hands, they were wages, and if he made a hoe that was capital and so on.

We like this chart (Babsonchart) because it shows us so many things For instance, you can see where the stock market is at the present time. You can see how the present stock range compares with previous periods in our stock market history. There are stocks at the present time on the New York Stock Exchange selling gor 49 times their dividend rate and 24 times their earning capacity. That is anticipating the future at a fairly exaggerated rate. There is a banking house in New York that has a list of 180 securities that are selling for over 20 times their earning capacity. Ten times their earning is considered a fair and average estimate of capitalization. You can see that the stock market has gone up steadily in the last seven years. You can see where bond prices are at the present time If the question were asked "How long has it been since prices were as high as this"? you can see that in 1910 they were. It has been 18 years since bonds were as high as at the present time. If you had a chart that went on back you would see that that fundamental decline in bond prices has been going on since 1878 and that this low point (marked, bonds) is the lowest that bonds had reached in 40 years. When bonds were at this low point (1920) we told business men that if they would sell out their business and put their money in good bonds and go to Florida or California or Europe they would be better off than if they stayed in business. It was absolutely true because business deflated and bonds increased.

This (Commodity Price Line) shows you the range of increase during the war, the effect of Governmental stabilization of prices, post-war rise of 224% higher than before the war, then this precipitous decline and then the recovery, the pressure on the downward side. the outlook for the next 10 to 20 years - that is, barring any more World Wars or unusual upheavals,- considering that we go along in our peaceful ways - the outlook for commodity prices for the next 10 to 20 years is downward. The pressure is on the downward side.

Here is a chart of Commodity prices from way back in 1790, showing how commodity prices went up to that high peak at the close of the Napoleonic wars in 1820 - commodity prices going up to that point for 20 years and then after the wars declining for a period of 40 years, from 1812 to 1850. 40 years downward and then 20 years up again to a peak at the close of the Civil War. Then down again for 30 years to the beginning of 1900 and then a 20 year rise until the close of the World War. If history repeats itself it will go down and it is interesting to see the similarity of this fundamental downward trend.

The question I want to ask you and let you argue about is whether or not wars cause the commodity prices to go that way or do the commodity prices make us go to war. Those prices, insofar as is ascertainable, contain all the statistics available and there are sufficient statistics in them to make them fairly approximate.

Question - Are they war prices or do they include tariff?

A. If you have got goods coming into this country with tariff on them the price does include the tariff. The statisticians do eliminate as much as they can. You all remember Royal Meeker. I heard him make a statement the importance of which I did not realize at the time. He had been trying to find out the cost of living at that time and he was talking to the Statistical Association of America and he came to the particular commodity known as the potato. He said "Some people thing the potato is a vegetable. It is an institution of the devil". This statement was made because of his difficulty in getting statistics on potato prices.

Everything that is possible to take out of actual prices has been taken out to give us a represent tive picture and bear in mind that you can tear it all to pieces but when you get through you have something very near to the truth.

Assuming that this chart is reasonably correct, did the low prices for commodities cause the Napoleonic wars and the competition of nations or did the competition of nations cause these prices, and was our Civil War occasioned by commodity prices or did the war cuase them? And the World War?

There is another chart that is very interesting because it is the basis of all of our farm problem talk and the difficulty in all of these problems that are mooted in our Congress halls is in regard to the "facts" What are the facts? Years ago the boy orator of the Platte talked in a strange language about the free and unlimited coinage of gold and silver. He advocated numerous changes in our Government and everything that he advocated has come to pass - adopted now as conservative, economic, political policy, with the exception of free silver. Why did Bryan advocate the free and unlimited coinage of gold and silver? Because at that time there was not enough gold being produced to perform the money functions of this Government, and that being true, Bryan was absolutely right. But at the moment he was making that statement the output of gold was being increased in sufficient quantities to perform the money function and God did for the U. S. what Bill Bryan was trying to do.

We have tried many times in this country to regulate prices - to interfere with the economic laws. One little legislator in Mexico had heard something to the effect that bad money drove out good money and he proposed a measure to annul Gresham's law. They told him "why you can't annul that, that is a natural law". "Well," he said, "let's suspend it for a while anyway."

You will notice that these three lines (live stock, farm products and industrial commodities) bore a relationship with each other before the war, - a very close relationship, and that was maintained during the period prior to the war. You will also notice that when prices began to rise that relationship was still maintained and they kept that way until the break came. Then live stock broke first, going down precipitously to pre-war price, live stock selling in 1921 at a price just as low as in 1912 or 1910. Then farm products broke - just simply dropped the bottom out of them, but stopping a little above the live stock. However, when industrial commodities broke they went down part way and stopped and then went back up. That spread for 1921, 22, 23 & 24, between what the farmer got for his farm products and his live stock and what he had to pay for industrial commodities, is the farm problem. What happened was that they kept up this relationship and when they broke they stripped their gears. A man in my town took a **calf** to the meat market and he got a certain price for it and then before he went home he stopped at the butcher shop to get a steak off the same calf and owed the man money. He got a certain price for his products and paid an enormously higher price for his consumable goods, such as clothing, shoes, meats, etc. There is your farm problem You will notice that live stock has been going back up and has gone above the industrial commodities - now falling back down again Because the farm crops this year are about 5% larger than they were last year the price is going to be a little bit lower. Therefore farm products have fallen off but the income of the farmer on account of the large volume of his crop is going to be about 100 million dollars more this year and his debts will be a little less than they were last year. He is a little bit better off. While the farmers continue to leave the farms until there are no more than is necessary to meet the demands - that is the process that is going on and the consequent readjustment of those prices is going to solve the farm problem. Of course Mr. Hoover is committed to farm legislation and there are a great many constructive things that can be done - cooperative methods of marketing, diversification of crops etc.

In England they tried to regulate the price of rubber. They had a scheme whereby they would ship only a certain amount and if the price went below a certain amount they would not ship it. They were going to regulate the price of rubber. Last fall she gave it up. Why? When she had passed her Stevens law she controlled 75% of the world's rubber market. Last year when she abolished it she had dropped to only 50%, because in restricting the amount that went out she forced companies in this country into the rubber producing business. In legislation, attempt should be made to cooperate with economic laws - not against them - that is constructive legislation.

Now in the field of labor. There is a ray of hope in the labor situation. Some very highly intelligent labor unions are getting as leaders industrial engineers instead of the walking delegate. There is a wonderful opportunity among the labor ranks for intelligence A labor union cannot raise wages - all that it can do is to compel the employer to pay the laborer a little bit sooner than he otherwise would what competitive conditions will force him to pay later. The intelligent industrial engineer at the head of certain labor groups is the best - the most constructive step that labor has ever taken.

Question. I live in the state of Arizona where there is a large production of copper and they settle the question of wages according to the price of copper. An agreement was entered into several years ago between the laborers and the mine owners. When copper is at a certain price - say when copper is 13 cents, they receive $5.00 a day. When copper goes to 13½ cents, there is a 10% increase. When it drops, wages are automatically decreased. That causes no labor disputes - no labor troubles whatsoever.

Mr. Wilson Has the method to your knowledge been subjected to a declining copper price or has it been all on the upside?

Both ways. Now it is on the upgrade. Some three months ago the wages were raised 10%

Mr. Wilson An arrangement of that kind might work out satisfactorily if the price kept going up. However, if, after a steady rise of 10 years it then turned abruptly and dropped about 20% I do not know whether labor would accept that reduction as readily as they did the increase. That is the trouble about profit-sharing schemes They are workable as long as you make good profits but the moment you get into difficulties and ask the same ones who received the profits to share the losses, my experience has been that they do not share them.

During the war in the U S. we expanded our plant and equipment to meet a war demand for our goods. When the war stopped we were left with a producing capacity to practically supply the world with goods and our foreign demand fell off. We have in practically every line of industry an excess producing capacity. That excess producing capacity has caused severe competition and severe competition has caused commodity prices to decline, and declining commodity prices have narrowed the margin of the business man's profit. This has made him substitute new methods of economy, like the greater application of machinery in production and better methods of distribution, such as the chain store. Excess producing capacity, severe competition, declining commodity prices, narrowing margin of profits, installation of machinery, new methods of distribution - this is the chain of results.

I want to show you where business is today as compared to what it was in war time. At the peak of the war boom in 1919 in the U. S only 6,000 firms failed Business conditions changed from over expansion to drastic deflation. In 1921, 20,000 firms failed and instead of their liabilities being 113 million dollars they were 700 million dollars. Competition has been so keen in the past seven years that 140 thousand firms have failed. The liabilities of those firms amounts to 5 billion dollars. For the past seven years 43% of the firms in business have shown deficits instead of profits In 1926 out of 460 thousand corporations, 197 thousand have shown deficits and those records are taken from the tax returns here in Washington. The losses to business in the past seven years thru failures amounts to 21 billion dollars. That is three billion dollars greater than the national debt. That is a gloomy picture Who is making the money? 5% of the corporations in the U S. are producing 68% of all the product and employing 58% of all the people Out of 460 thousand corporations in 1926, ?14 corporations less than $\frac{1}{4}$ of 1%, made 36% of all the profit I though that probably the large scale corporation - the monoply - would be the issue in the last political campaign. It was mentioned but the thirst problem shifted it to the side lines. In 1932, unless some other problem that comes nearer to our stomachs shoves it out, this monopolistic control - the gigantic corporations - is going to be the problem.

We have got a situation in which machines have been put into industry to such an extent that the Government of the U. S. itself estimates that in the past seven years two million jobs have been displaced, abolished - done by machinery. The railroads in the country in the past five years have laid off 183,000 men and they are handling sixteen billion ton miles of freight more.

That is what is happening in the field of production.

In the field of distribution chain stores have come in. The chain store and the machine is not the cause of the present economic order, the utilization of the machine and the chain stores are the result of the present order. Competition, declining commodity prices and narrowed margin of profit have compelled corporations to combine in greater units than ever before- have compelled them to utilize every method of efficiency. The keen competition has compelled stores to combine to be able to sell their goods cheaper, with the result that we have 1,500,000 unit retail stores in the U. S. We have 4,000 chain store and department store companies and they have approximately 100,000 stores. The 100,000 chain stores are doing 1/3 of all the business. The retailers have got to combine They must either combine or they must devise a peculiar kind of service that will bring people to their stores to shop Individual stores can grow in the face of chain stores but they have got to render service.

Take the automobile industry. Statisticians have been looking for the saturation point of the automobile industry for the last five years. There are 24,750,000 automobiles in the U. S today. There are six million more automobiles in use than there are telephones in use. With the saturation point staring us in the face, last November we produced 98% more automobiles than we did in the preceding November and I see an estimate of 7,000,000 to be produced this year. There may be a saturation point somewhere and competition is certainly going to be keen. Some of the weaker companies will be crowded out - some will be picked up by the stronger ones Ford has been out of production for a year. Now he is going strong. Chevrolet has apparently given Ford the 4-cylinder market. The foreign market is probably our outlet. There are only 31,000,000 automobiles in the world and 78% of them are in the U.S., so the foreign outlet is the best. There will be severe competition. You can get better value for your money in the automobile today than in any other commodity.

The building situation. For the past 5 years we have produced almost 7,000,000 dollars worth of buildings per year. We have been looking for something to happen in the building trade. We have a surplus of apartment buildings and small stores. Building is going on and should continue at a relatively high rate.

I want to leave this last thought with you. I do not want you to think I am "Bearish". I am extremely optimistic and the intelligence of the American people is going to meet the production problems and the unemployment problem. We have less than 6% of the world's land area in the U. S. We have less than 7% of the world's population and we do more than $\frac{1}{3}$ of the world's business. We are a business people. Every year there are 1,250,000 new homes started - 2,250,000 babies are born - 400,000 girls and boys graduate from high school. The market is continually growing and business men must be continually alert to this increasing demand. We are living in a period when a man must be a manager. He must buy carefully, he must sell at a profit. He must have efficient labor, he must reduce his overhead expenses and put on top of that a certain amount of honest-to-God service and remember there is no saturation point to honest value.