The International Distribution of Economic Power

by

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Colonel Miles and gentlemen of The Army Industrial College -

I suppose you people wonder why any one wants to hear an economist talk after all that has happened in the last six or seven years and all the things the economists have told you that were not true. I sometimes wonder myself why people want to hear us talk, but they still do, and in thinking it over and trying to find an answer I always feel I ought to give a mature class like this one some kind of reason why we appear at all. I thought myself of a story I heard some years ago that probably illustrates why the people want to hear an economist talk in spite of his shortcomings. The story was told by a neighbor of mine. Coming home one night, four or five years ago, as he came up the hill toward his house, he saw a man out on the lawn, who, down on his hands and knees, seemed to be looking for something. My friend stopped and said to him: "Did you lose something?"

"Yes, I lost my watch."

"Maybe I can help you find it."

"I wish you would, I do not seem to be making any headway myself."

So they both got down on their hands and knees and pawed up the grass for quite a long ways around there, but they did not find the

watch. My neighbor did, however, discover that the man was somewhat the worse for drink, so he said: "Well, brother, let's organize this search" (I think he was an Army man) "and see if we can not make a little more headway. You try to remember where you dropped your watch and we will start there, expand our efforts, and, I am sure, find it sooner or later if we keep on long enough." The man said: "I dropped it across the street about half a block down."

"What?"

"I dropped it across the street about half a block down."

"Well! What are you looking here for?"

"This is the only place there is any light," he said.

That is about the state of the world.

In respect to economics, I am not going to confess to you how much the economists have been wrong but I will say this to you (most of you look old enough to me to have sons who are in College now or will be there presently, and I should like to tell you that after last year's talk, I gave the lecture in the spring, along toward the last of the year, a young chap came up and introduced himself; he said: "My name is Armstrong", - that did not mean anything to me, I knew lots of Armstrongs - then he said: "I knew you at Ann Arbor" - he was a student of mine - he is now an instructor at West Point in economics, I think) if some of you have sons acting as instructors in colleges, they will be busy for the next twenty years explaining why the things we thought were going to happen during these past five or six years have not happened. I mean that in all seriousness, especially

concerning the field of money. We are not going to be concerned so much with money this morning. We are going to be concerned with economic power - not with the money surface of things but with the underlying realities beneath that constitute the very essence of economic power. That is one thing we have gotten in economics, first out of the war and our experiences in '17, '18, and '19, and, especially, out of the depression. We have come to realize a little more clearly what the real problem of economics is.

Now suppose one goes at this very problem (which has been given to me for an hour's discussion; then you can ask me questions for another hour) of the international distribution of economic power, and asks: what is the root of the economic power of, say, France, Italy, Germany, and Japan as against the United States? It is a worthwhile thing to do. Just from the standpoint of economics if you leave out your own problem (of course from your own problem it is probably indispensable to make that study), even from the standpoint of general economics, it is a worthwhile thing to do because you will never quite understand how successful or unsuccessful your own industrial structure has been and how well your own industrial society functions until you get a comparison with some others. If you are doing much less well than they are it is cause for concern and for critical self examination; if you are doing very much better it is well to know it, for a great many reasons. The causes of our superiority to these other nations must be sought out, they must be protected, fostered, and maintained, and they must not be allowed to

be destroyed, etc.

In taking a big subject like this, it is always a pretty good piece of technique to ask how you would go about it if you were going to write a book on that subject. It deserves a book, and if any of you here this morning want to make yourselves famous, and I know all of you do, many of you do at any rate, that is the subject to undertake, for the reason largely that so little has been done on it. If you do undertake the subject, if you write a book or deliver a lecture or anything else, you have got to examine the relative economic power of these various nations, and of course the first thing is to get into your mind clearly what the test of economic power is, what it consists of, what it is concerned with.

Most of the stuff you hear, and read today in the papers, the New York Times, Tribune, or any of the financial papers, is concerned with money and prices, not merely with the prices of commodities but with stocks and bonds and all that sort of thing. Those are all parts, of course, of the economic structure, they are all institutions within it and have something to do with its workings, but they are not the essence of it. The essence lies much deeper than that, the essence of it lies in the production of goods, because that is what economics is about. It is concerned with the scarcity of those things that we want to maintain our standards of living, if you are looking at it from the standpoint of the general public. One of the reasons why we (you and I and all the rest of the people) do not have a better standard of living is because of the scarcity of

goods. It appears to us to be a scarcity of purchasing power to buy the goods, but that is more or less a superficial point of view from the individual's standpoint; from the standpoint of the nation it is a question of what goods are there to be given to the people to maintain a satisfactory standard of living. Looking at it from the standpoint of national defense it is a question of what flow of goods is now available or can be made available by readjusting the direction of the prosecution of the defense or offense, as the case may be.

It is an old old story. Of course economics is nothing new, although you hear a great deal more about it than you used to. If you want to illustrate how old it is sometime when you are lecturing or writing on this subject just remind your audience that the first supplication in the Lord's prayer is an economic request. Remember how it goes - "Our Father, Who art in heaven, Hallowed be Thy name. Thy kingdom come, Thy will be done on earth as it is in heaven" - what have you asked for? So far, nothing - it is a sales talk, telling Him what a fellow he is, hell of a big man. Then comes the first request, an awfully simple one. What was it? "Give us this day our daily bread." That is the fundamental human request, it is the fundamental human need, and it is the one that has to be satisfied before you can get anything else at all in the world. The world has prayed, all Christianity has prayed ever since there was any world, to its God for food, for bread, for sustenance of life, which we have to have two or three times a day - if you go without

for a week you are dead. That is the chief economic need - food.

That is economics. It goes on out to less and less fundamental needs but that is the problem of economics and it is occupying such an enormous place in our own thinking - I mean in the scientific side, our literature and our research - because over one hundred fifty to two hundred years production has increased until with the same amount of labor we are producing probably five times as much goods, all the food we need in this country, and besides that a great mass of other goods.

This whole question of economics has blown up into a big discipline in the colleges and universities, etc.; you have a division of the Army devoted to it even. So you have got to ask yourself, when you are comparing these various nations, about their relative power of production, production per capita. Obviously a nation of twice as many people, other things being equal, should produce twice as much. That is a good place to start in this problem of comparing the various nations. When you have to compare two nations, one with the other, with the view of determining their relative economic power always ask about each one of the nations first of all this question: what part of the labor power of that nation is absorbed in providing its people with food and with the elementary raw materials that go to make clothing; textile fibers and the elementary raw materials that go to provide some kind of housing - lumbering and forestry?

That is a good place to start. That is simple. So far I have not said anything that any private in the ranks could not understand. If he can understand anything he can understand that we have got to have food. That is where you start. That is where the economics of the future is going to start. In the near future I think we will have some new books on economics which will not read very much like the older books on economics. Those books were concerned with foreign trade and foreign exchange and money and prices - all of those fields.

Do not think I do not know anything about money and prices and values. That is my special field, I make my living there. I am a consulting economist, very largely practicing in the field of valuation. The editor of the Ladies Home Journal, Curtis Publishing Company, owns thirty-four hundred thousand shares of common stock. What is it worth? The Government puts that question in as a matter for state taxes - I am one of the people who goes in as an expert and values that sort of thing. I am much concerned with the money surface of things but I am never for a moment deceived into thinking that is the real problem in economics. The real problem is the production of goods, the thing we all too much forget these days.

I spoke a moment ago of the importance of food. If I may, I should like to show you what ridiculous lengths we do go to in forgetting that. I paraphrase the Italian historian, Ferrero, who has written an essay on making white bread dear or scarce. He

said that for nineteen hundred years the world prayed "Give us this day our daily bread" and finally, after some nineteen hundred odd years, the good Lord took pity on suffering humanity, or else He got tired of hearing the supplication every morning, so He said: "Alright, pick out one of these nations and give it food enough and to spare, a surplus over", and He picked out the United States of America. For a number of years we had food enough for everybody and an abundance of food for export, and the prayer was answered. You might have thought we would have had a great year of thanks giving, but instead of that Congress appropriated six hundred million dollars to see what it could do to stop it. That shows how easy it is to forget what the thing is really all about; what utter fools men can make of themselves. I know what I am talking about because I am a farmer. If I buy a farm now, when the inflation comes, if we have one (our friends say we are going to have one - I think they are smarter than I am) I can rely on the farm. By the way, I was president of an agricultural college at one time, and I know something about agriculture. But, that is lousy economics, whatever else you may say for it politically, etc.

As I said a moment ago, we should compare these nations. When you do that you at once throw this whole problem into a relative picture of the countries with which you are dealing. Let me do that for a moment. A good way of teaching a class economics is to be an economist for a few minutes. What portion of the people of the United States are required to produce our food? What number are

on the farms? We are self sufficient in the matter of food production except the few things we have to import from the semi-tropical and tropical countries. We have twenty-two per cent of our people on the land, and we do not need more than twenty per cent really. That is, twenty-two families out of a hundred in this country are on the farms and those twenty-two families raise enough food to feed us; they raise enough food for exports to pay for the food imports from tropical countries: coffee, bananas, and such things. They raise enough cotton for our needs, both for clothing and house furnishings. They raise enough cotton over and above that to clothe one hundred fifty million people abroad. Those exports of food and cotton that we send abroad pay for all the other imports of textiles, such as silk, flax, etc., and for most of the rubber. Some twenty-two per cent of our people must be set aside out of the population (war or peace, it does not make any difference except for perhaps some short periods of stoppage) to farm the land. The number of people that are left for other occupations are seventy-eight families out of a hundred, seventy-eight workers out of a hundred.

Looking at a country like Germany, which ranks next to us in general efficiency for a big nation, you find that over there it takes pretty close to forty per cent of the people to feed the nation. That does not mean that in Germany there is forty per cent of the population on the land, there is really only about thirty per cent. They do not raise all of their food and textile fibers - they have to

import a lot of that and do a lot of trading with tourists to get the rest of it, so it takes the product of another ten per cent of the population that has to be exported to get those fundamental necessities of food and raw materials.

In France that figure runs up a good deal higher, to about forty-five per cent; in Italy to sixty-five per cent; and in Russia to eighty per cent. I suppose Germany should not be quite as high as forty per cent, perhaps thirty-eight.

Now it is worth your while coming here just to see that table and to hear that said. I do not care whether or not the next fellow who comes here talks for a month all he tells you will not be as important as that for the general problem. That does not mean that I know any more than he does but that is the trick of it. However, we can say it so nobody can understand it. By that I do not mean to run down my colleagues at all, but it is a fault in our exposition - that is why we have got to do something new. Adam Smith was up against the same thing in 1776 when he wrote "Wealth of the Nations" - a good book to read. He took the stuff that they knew at that time and put it together. One of my economist friends read it and said: "My God! where has this been all the time?" He proceeded to reform the finances of Great Britain on the basis of "Wealth of the Nations", and David ~~Carter~~ RICARDO, a stockbroker, got rich. He was a Jewish boy; married a Christian girl and his father kicked him out. He went into the stock market and got rich. He found Adam Smith's "Wealth of the Nations" and read it. It illuminated the problems for him and he wrote a book that made his

name famous in British economy, money, and political problems.

In the United States there are left over for all other purposes seventy-eight people out of a hundred. I think we better change Germany to thirty-eight per cent. Germany has made a lot of progress recently in agriculture. In Germany, however, there are only sixty-two people out of a hundred left, for what? For digging other raw materials out of the ground: metal, coal, oil; for transporting the raw materials to the place where the factories are; for fabricating it into finished products of a vast diversity of quantity and quality; for transporting it back to the place where it is consumed and where it is erected into buildings; for producing services, electricity, the telephone, etc.; the professional crowd, teachers, singers, preachers, and people in the national defense, etc. France has fifty-five, Italy thirty-five; Russia about twenty. Those are the people left over for the production of other raw materials than those that are produced on the farms. That is what I mean when I say you now have a most important relative picture of these different nations. No one can add to that. It can be illuminated, critical points may be taken up, attention may be called to shortcomings in this presentation, but there is the story of the relative economic power of these different nations right there. This is the problem most of the nations are worrying about - we are the only people who have to appropriate money to keep this down. To me it is very funny. If any of you fellows are professional lecturers, write yourselves a good feature and call it "The Bright

Side of Things" - go through all this and tell people how funny it really is.

We did not always, understand, feed our people with twenty-two per cent of the population. In the year in which I was born, 1876, (I will be sixty-one years old soon - I do not look that old but that comes from living a clean life when you are young) half of the people in the United States were on the farms. We did, however, export a little more food than we do now. If you go back one hundred or one hundred fifteen years, or even as far back as the war of 1812, there must have been seventy per cent of the people on the land in this country. In the Orient, Japan has seventy per cent; China eighty-five or ninety per cent of its people on the land. The greater part of the world is trying to feed itself. None of the nations are as well supplied with food as we are in quantity and yet we do that with twenty per cent of our people. We have come from fifty per cent down to twenty-two per cent. Since nineteen hundred we have not added any people at all to the number on the farms. In nineteen hundred we had about thirty-one or thirty-two million people, which at that time was forty per cent of our population, on the farms. We had seventy-five million people all told; thirty million of them on farms, that is forty per cent. We have only just about that many now, thirty-seven years afterward, and yet we have added since nineteen hundred, when we had a population of seventy-five million people (we are now probably one hundred thirty million) some fifty-five

million people to our population. That is, we have added more people than there are in Great Britain, Ireland, and the United Kingdom, for there are only forty-five million there. We have added fourteen million people more than there are in France; more people than there are in all Italy; and ten million more than there are in Germany. We put them down in cities and towns, not on the farms because we did not need them there.

The only thing to do with surplus food is to export it. The capacity of the human stomach is limited. When a man's income increases five times he does not want to eat five times as much, he wants to go five times as fast.

In nineteen hundred, as I say, we had the same number, obviously a much higher percentage, of our people on the farms as we have now. Of course we are the most efficient agricultural nation in the world since it takes fewer people, a smaller percentage of our people, to feed us than it takes in any other nation. If we had the same percentage of our people on the farms now as we had in nineteen hundred, seventeen million people, that would mean we would have fifty-two million people living there all told, forty per cent of the population. But, we do not have seventeen million workers on the land, we have about eleven million. You may say: "Where are the other six million?" They are in the automobile industry. There was no automobile industry in nineteen hundred, the industry was just merely beginning. Today there are six million people engaged in digging out the raw material, producing the parts

and putting the machines together, selling them, building the roads for people to drive on, maintaining the garages, producing oil and gasoline, etc. There are just about six million people engaged in furnishing us all of the services that constitute the use of automobiles and trucks. They are the people who would be in agriculture if our agriculture were just as efficient and no more efficient than it was in nineteen hundred. That is progress. A man can deliver you five lectures on progress and he can not tell you any more than I have told you there. I have done that perfectly.

Emmerson always had at hand a stub pencil and whenever he came to a sentence the audience took well he put a check opposite that sentence. Consequently, when you read Emmerson's lectures you only get what was left after he eliminated all the rubbish.

That illustrates purposely the nature of progress. We have had an increase continually in the efficiency of producing the fundamental necessities, and we are becoming more and more efficient in producing them, especially those for which the need per capita is limited. When you do that, then labor is freed for other purposes. The trick is to find enough new uses for labor, find enough new production, so you can absorb that labor as rapidly as it is released from the more fundamental fields. Another thing you can do is reduce the hours of labor and give the people more leisure. That is what we have been doing. In the case of agriculture, nobody works as hard as he did in nineteen hundred, and still we

have the whole automobile business. That is a social dividend, it did not cost anything - I mean in the broad sense, in the sense from which you look at these problems. You do not look at them from the standpoint of your own careers from one day to the next, you are dealing with a problem that is continuous and everlasting and intimately concerned with the life of the nation and its continuity. From that standpoint the whole automobile service is a social dividend of progress. The population does not work as many hours as it did then, does not work as hard, has a great many more efficient machines, uses the power that resides in the coal to do its work, and yet with the same number of hours of work forty per cent of our people produce the food and the whole automobile service, not only the manufacture of the cars but the roads that you drive on, the maintenance, and all the rest of the industry. That is what we have done.

These other nations are concerned there - they are on exactly the opposite end of the teeter board from us. We are spending five or six hundred million dollars a year to see how we can keep production in check and keep a few more people on the farms. It may be warranted; it may be worthwhile paying people to go on the farms. They are not wanted in the cities and towns, they are a problem. That is why I am buying a farm. I have enough sons and sons-in-law that I am always sure of having somebody waiting for me in a depression, but all joking aside, if you want to know how to get security in this rapidly changing world that is

the one way of getting that modicum of security you can have if worse comes to worse (that is, if we have a great inflation such as they had in Germany, Austria, and somewhat in Belgium; it was not so great in France, the franc only got down to twenty-two per cent of its old value; in Germany it got down to practically nothing) - the farm is the place to get it.

Back in 1931 the people, at the end of every lecture, used to ask what would happen if Russia's five year plan succeeded, and the inflection of their voices indicated that they thought the United States would be mighty near ruined if any such plan as that succeeded in Russia. My answer was always that that would be very favorable to the business of the United States. That knocked them over so completely they did not know what to say so for the moment you had time to breathe. They expected to hear a great Jeremiah about that. Then I would tell them simply that Russia was not going to give away goods, she might sell cheaply enough abroad to get the money she needed to buy things abroad, but, buying abroad, she would buy many things from us. Russia has a wide territory, as we have, wide flung agricultural territory, and we have made a great success in flinging across the country transportation lines, cutting the country up into farms, building houses, and making a great productive nation out of it - naturally Russia needs our help. Some people worried about Russia a good deal until about 1932 or '33, at which time we had another couple of pains of our own that were so serious we did not worry about Russia any more, the question had gotten so deep.

Concerning Russia, don't you see what a problem it is generally? Before she can feed her people and get for her people half as many things, manufactured products and services, as they can use in the homes, she has got to get the number of people on farms down to fifty per cent of her population; she has got to have half of her people working in factories, mines, and other service industries. That is quite a trick, because Russia presently will have one hundred seventy-five million people, eighty per cent of that is one hundred forty million she has on farms; if she presently has, say, one hundred eighty million people, half of that many will be ninety million, and she has one hundred forty million on the farms - she can not get to a standard of living half as high as that ours? until she gets that one hundred forty down to ninety. That is, she has got to some how or other move fifty million people into cities and towns. That means she has to build fifty cities the size of Cleveland; it means she has to build a hundred cities the size of Washington, and that is not done in a day, a week, a month, a year, or even ten or twenty years. Give Russia forty or fifty years if everything goes right (she has got to stop shooting the generals, she has got to stop a lot of things, and assuming that politically they hang together, do not have any serious break up; assuming that Japan does not get at them from the east while Germany bites them from the west; assuming they keep at peace) and it is still going to be a big job to accomplish anything like that at all, and yet that is what she has got to do

before the standard of living in Russia can even remotely approach that of Germany or France. They have got to get this thing down to fifty per cent; that is, they have got to get it down from one hundred forty million people to something like eighty or ninety million people. That is the essence, that is where you begin in your progress, of course.

I have not listed Britain on here because she is not self sufficient. Britain was the first nation to learn this trick of applying (we call it the industrial revolution) the use of machinery and thus the use of power to production. She led the world in that field. She had a monopoly of it for fifty years. You men remember that Robert Fulton had trouble getting his first steam boat going and equipped. Why? He could not get a license for the export of the steam engine. You did not get engines by sending in an order, you had to have a license to export them. All these things that were used in the textile mills were secrets and Britain kept a monopoly on them and led the whole world in that. She deserves the credit for the increase in manufacturing since. Because she was the first one to start the industrial revolution she led the world. She got her food, of course, not by raising it at home but by trading her manufactured products to other people who were so much less efficient than she was in manufacturing that they were perfectly willing to trade her food and raw materials for manufactured products on an advantageous basis. As a result, Britain waxed in wealth and in economic power, but particularly in accumulation

of investments.

One of the great fallacies of the world is the fallacy that England got rich out of her colonies. If one of you men want to write a book that will startle the world, and do it a lot of good too, you might try to prove that England's colonies were never any good to her economically speaking. I think that is the truth. It may be overstated a little but generally it is the truth. There is a lack of originality on the part of the Germans in this fool talk that they must have colonies. Why do they have to have colonies? They can buy all the raw materials in the world at less than the cost to produce them - if you listen to the fellows who produce raw materials. However, they do not see any way except the way in which they think England did it. It all arises out of the fact that by a mere accident of time, around 1750, England developed this industrial revolution and at the same time acquired a great empire. Remember in history you read about a war called the French and Indian War? The treaty was signed in 1763, and England got out of that treaty Canada. Canada was French territory up to that time. You can probably give me the date, I do not know the exact date when England finally consolidated her position in India, 1740 or 50. At any rate, she got this great expanse of territory and now the sun never sets on the British Empire. That was a winner, that was perfect. It was not worth a damn as far as the economic significance was concerned, but as a boy you could see that that was a brilliant one. And people attribute that increase

in wealth, I think, that occurred in England because of her increase of efficiency in the methods of production to this great expansion of empire. I have talked with people from India, some of the radicals (I ran into them in Germany some years ago), and they believe that England is living off India. How could she be living off India? India hasn't enough to support itself. Nobody can live off a country that is barely supporting itself. These people have got to go a long long way before they even approach the thing that we have, or the thing that a country like Germany has. The German standard of living isn't more than half as high as ours even when times are good over there, and the French is less high than the Germans. That surprises most people, as you men probably know, a good many of you having been over there.

It is perfectly clear that from the standpoint of efficiency our farmers have got it all over those of any other country. There are some natural reasons for that, such as a great expanse of land and a fertile land - not that our land is so much more fertile than that of other lands. When my grandfather came over from Germany in '46 he had twelve acres of land there. He was a wagon maker too, followed both pursuits. Well, when he arrived over here he got eighty acres of land out in Michigan, which was not cleared. On the twelve acres he could afford to use one horse only. That is all you could keep and you had to work for the neighbors some of the time even then. They just could not afford to take the products of the land and use it for feeding horses, they needed it

to feed the people. Over here on eighty acres my grandfather could raise enough food for himself, for four horses, and have food left over to sell. That is why a wide expanse of land is such an advantage. The land may not be any more fertile but the farmer can augment his muscular power with that of animals. You have probably traveled through Italy in the spring and seen seven, eight, or nine men in a row, each one with a spade spading, not a garden like your grandfather used to spade or your father (some times you swear you are going out to do it but that kind of peters out) but spading a whole field. That is the economist's idea in Italy - it was when I was over there not so long ago. We augment that, you see, with the muscular power of animals, which you can afford to support when you have abundant land. Of course that is one of the reasons why we got going. Along with that we used machinery so we could use this power of the animals. It does not do any good to have four horses when you are cutting the wheat with a cradle (if you know what a cradle is). A horse can not use a cradle. So we have developed farm machinery.

I do not mean this efficiency is all to be ascribed to the superiority of our farmers. It is, however, true that America does more research in agriculture than all the rest of the world put together. I think the Department of Agriculture is a research organization which challenges comparison the world over. Certainly in the field of agriculture there is nothing that approaches it. It does more research than all the rest of the world put together.

Germany comes next. The world has just simply come to depend upon us for a very large part of its agricultural research, the results of which are seen in part in that difference between fifty per cent in 1870 (fifty per cent of the population that it took to feed us) and twenty-two per cent now.

If I were defending the farmer and trying to get five or six hundred million a year for him I would do it on the ground of his efficiency. I would not tell them he was a downtrodden cuss. If I were among the farmers and ambitious politically I would tear these people into shreds down here and call the farmers to stand up and resent being called downtrodden - "Nobody can tread us down! We want paid for what we did! We freed six million people in thirty-seven years and gave you this whole blooming automobile industry. The work of six million men at fifteen hundred dollars a year is worth nine million dollars a year and we want six hundred thousand of that, that is five one-half, six per cent of nine hundred million. If it is not worth that tell us and we will stop raising food and see how you like it." That is a respectable argument, isn't it? I think some day somebody is going to use it.

Now that isn't all the story. It is quite obvious that a farm family in the United States produces four times as much food as a family in Russia; produces twice as much almost as one in Germany or France; and three times as much as one in Italy. Our farmers are that much more efficient in the matter of the food they turn out. It is perfectly simple. The American farmer raises

enough to feed his family and three one-half other families; the French farmer raises enough to feed his family and one other family; the Italian raises enough to feed his family and half of another family; and the Russian raises enough to feed himself and a quarter of another family.

Not only have we got seventy-eight per cent of our people that are free for other purposes, that become very important to you if you get into times of actual war, but something like that same difference in efficiency exists in America as compared with these other nations in the men who are working in factories and mines. That is a most amazing thing to me. We used to hear so much in the old days, about 1910 and '12, about the efficiency of Germany, how well the men took care of their Diesel engines, etc.; she was the last word in efficiency. It was largely imaginary. She advanced in efficiency rapidly, she did very well, but it was much overdone, much overcounted in those times.

I have a friend who manufactures in Great Britain. He is in the electrical industry, a new industry not one of the old industries where old standards dominate the British laborer. They pay as wages per hour in money terms over there almost exactly one-half the wages they pay here. They are paying five dollars here per day; they pay ten shillings there. When they get that product finished, whether it is a telephone or an electric switch, whatever it may be, the difference in cost is trifling and usually the American product is turned out a little more cheaply in terms of

dollars than the British product in spite of the fact that they have to pay obviously the same amount for raw materials. That is a fact. If you go through industry you will find that that is pretty generally true.

Not the Western Electric Company, but another large electrical firm in the telephone business uses a British machine for winding armatures. They like the British machine better than any American machine so they bring them over here, rebuild them, equip them with ballbearings, and our people run them at seventy-five hundred revolutions per minute - they have never been able to get up to thirty-five hundred revolutions per minute in Liverpool. That is quite a difference, and Britain is probably nearest to us in efficiency. Germany is more efficient than France but it takes about two men in Germany to do what one man does here. Of course any of you who have had any experience with building in France - and I take it some of you did have during the war - must have learned a lot. I oftentimes wonder whether they have that bank they commenced building in 1927 finished yet. That was to be the first skyscraper in Paris, eleven stories high. They haven't finished it yet literally, actually. Now there are some lines, of course, in which they are relatively much more and others relatively much less experienced, but by and large it takes two men to do what one man does here in the mines, in the factories, or on the railroads; in Italy it takes three; and in Russia about four.

Did you read that article by McDermott in the New York

Times two weeks ago? A Cleveland claim dealer, in Russia a great deal, went into the problem of real wages there - how many rubles it takes to buy a suit of clothes. By and large it takes the wages of from four to six days of labor in Russia to buy what a man buys with one day's wages here. That is confusing when you first see it. It isn't confusing, however, when you take into consideration the efficiency of labor. That is the difference - the labor production. For every nation the great mass of the production is absorbed in the standard of living, and the amount that every family takes unto its own must be determined primarily by the volume of output per worker. We find that in Russia a man can not buy more than a fourth as much for his wages, or a third or fifth, as he can here. You can be perfectly sure that that is universal - that the production of the workers in that country is about a third to a fifth of what it is here.

You understand that these seventy-eight per cent in the United States are not all working in factories, they are the people in services, etc., they do not all work with machinery. The trouble with merchandising is that you can not use power. If you can invent a merchandising machine you can do wonders, but at the present time you can not do it. That is, the women go into the retail store, want to be waited on, you do yourself, the clerks fuss with them - you can not do it there. All those people who work in stores, in distribution, of course, are not so many times more efficient here than there. Calling that one hundred per cent in the United States, the relative

efficiency in Germany would be about fifty; in France forty; in Italy about thirty-three one-third; and In Russia twenty-five. When you take into consideration the great number of people available for services other than the production of food, do you not see that that difference expressed itself in the standard of living of these people? I am not saying that our degree of well being is directly proportionate to that increased standard of living but when you come to measure it in terms of the possibilities of economic production why there you have it, and from the standpoint of the national defense it must be enormously important as long as you are depending upon methods of defense which depend in large part upon material. I suppose Germany's plan of defense and offense now must be bottled very largely upon ways that are independent of materials. I do not know whether that is true or not - you men do, that is in your profession and not in mine. I think that would be the great thing that has happened there in the last eighteen to twenty years, or fifteen to eighteen years - they have tried chemistry, etc., to get away from enormous use of great numbers of men and great amounts of material - they are depending upon skill.

Concerning countries like Japan, of course they have made more progress than Russia; they are more efficient, but, after all, very backward. It is perfectly obvious that if they ever got into a fight with a country that was in any class from here up (indicating point on tabulation on blackboard) certainly their efficiency and economic power would become very manifest. Of course when they are

fighting with a country like China they are fighting a country even less efficient than Russia. In Japan the efficiency is somewhere around the Italian level - not quite as efficient.

There you have the picture as to the relative economic power and the distribution of economic power in these different nations. Our much greater efficiency is, by no means, to be explained by resources alone. Russia has plenty of resources. She has a shortage of rainfall, which is a difficulty from the standpoint of agriculture but even with that Russia, with anything like the efficiency that our farmers have, ought to be feeding the country with thirty-five or forty per cent of her people. They may do that in time if they have the political instinct to hold themselves together. We always assumed that political instinct was widespread among people, that all we needed to do was to embrace democracy and it would blossom forth, but we have come to believe now that that is a mistaken notion - very few people have political capacity in rare degree. Great Britain has it; Rome had it in its day; we have it in somewhat less degree. We hold together pretty well, but we have not been through many crises. Poland has almost none. I think it is still true, isn't it, that you have to have a unanimous vote of parliament in Poland to pass anything. That is individualism for you. They get nothing done, so they have a dictator - that is simple.

One word as an economist about some of the implications of all this, especially the lack of political capacity that we

discover in these nations as we separate them into groups. The implications are that we are not going to have any such period of peace in the hundred years following 1914 as we had in the hundred years preceding that date. I dare say that the period from 1815 to 1914 will always stand in the world as a remarkable period of comparable peace, particularly from about 1781 and 1782, after the Franco-Prussian War. It is quite obvious that we are in no such period as that now. I do not think there has been a moment since 1914 that two or three wars have not been going on. One can not keep track of them any more. The average man on the outside does not keep track of them at all.

Have you read "The Decline of Western Civilization"? I was not able to get through that but I did read some of it. It is in two volumes - a typical German book (by WERNER SOMBART) where they say in two volumes what they ought to have said in two essays. The author of that wrote another book in 1933 called "The Hour of Decision", which is only about two hundred fifty-four pages. He delivered lectures in '29 at the University of Berlin and then wrote this book, and let me say to you gentlemen in all confidence that you might write a history from there down to this minute from that book. Read it, it is worth reading. The point of it is that we are going to be a great deal more concerned with those political problems which are concerned with national defense, national conflict, in the next fifty or a hundred years than we were in the last hundred. This picture becomes not less important but all the more important

in view of that, you see. After all, our problem politically has probably been pretty easy. It may not be quite so easy in the future but I should guess that we are enough in the English tradition, willing enough to experiment, and have a high enough degree of well being so that we will work that off pretty smoothly.

However, in a great many of the countries there is not the political instinct to make them able to copy us. The Russians ought to get on amazingly from the technical standpoint, from mere economics, because all they have got to do is come over and study America and go and do it. That is easy. We have done the trick. Do not let any one tell you for a minute that we need to send men to foreign countries. Of course you have a fellow in the Government service, are sorry you got him up as high as you have, you want to give him something to do, what are you going to do with this man? (I will not even mention any first name to you.) You send him over to Denmark and let him study cooperation, that is a good thing. There is not a thing in it, but it gets him out of the country and he is busy. When he comes back he has to sell his manuscript to the colleges; they get out a blue pencil, and, if you want to know what happens, they cut out half of it, they fight among themselves, and the fellow finally gets around to publishing a book.

There is a lot to learn in economics, maybe something for national defense. At any rate, we are in the leadership. Germany found that out; Russia knows it. In 1922 and '23, after Germany got through with the big inflation, they thought they had a snap. Wages

per week for skilled labor were ten dollars in Germany (forty marks when the mark was on the gold standard) and we were paying thirty or thirty-five dollars a week here for mechanics in the automobile industry. They had a good reputation before the war and during the war for the manufacture of automobiles and it looked to them as though this was a cinch. The currency was on a firm foundation and they could buy copper and rubber and all the raw materials they needed. It would be easy for them to make automobiles and trucks and invade the markets and undersell the United States. We believed it, too, talked it, wrote it. Imagine the amazement of the Germans when they found that with labor at ten dollars a week they could not compete with us with our labor at thirty dollars a week. They could not make an automobile as cheaply as we could, to say nothing about the quality - ours was vastly better than theirs. A director in a German automobile factory said: "Your automobiles are not merely much cheaper than ours but they are much better." A lady friend of mine bought a Buick while I was over there in '26 or '27. She took a trip of fifteen hundred miles, came back, and said: "I had no trouble at all! Think of it!" That was marvelous. If we had trouble here in the first seventy-five hundred miles we would yell our heads off, and we should. We do not expect trouble here. Germany, to her amazement, found that we had tricks over here that she did not have at all. My friend, Koetgen, of an electrical manufacturing firm, who wrote that book "The American

Economic System" (it has never been translated and it should have been) came over personally and studied the situation. They all talked about raw materials over there and attributed our efficiency to that, but that does not explain more than twenty per cent of it and he saw it. In '24, '25, and '30 Germany attempted to take the American methods of production and incorporate them into the German situation. I dare say that their great success in planning and the increasing production over the last two years, since Dr. Schacht got at it, is largely due to what they did back there, they learned and profited by studying that. Let me say in passing that Dr. Schacht is at present Minister of Economics there. The New York Times said he was the ablest of all the central bank governors. I have known him for a good while and there is no doubt about it. He is an exceedingly able man, a combination of shrewdness, great energy, absolute ruthlessness, and absolute self confidence, and he puts the truth through.

Russia, as I say, would seem to have nothing to do except to copy us, but that perhaps is not so simple a trick. Let me give you an illustration, a very homely one. I said this five years ago about Russia. I was a skeptic on this great success of the five year plan. The German settlement where I was born and reared in Michigan was settled by Germans who came from Germany largely in '45 and '46. Those of you who are Irish remember that your grandfathers came over at the same time, when they had the Irish potato famine in Great Britain and a famine along the Rhine. There was an

Irish settlement northeast of our German settlement - grand fights too. Well, those men like my grandfather never learned to operate labor-saving farm machinery, they never learned to operate a self binder. They learned to drive horses instead of oxen, they learned to drive a two horse team and handle the modern plow but they never came to using machinery. They did not learn that. My father learned it, the younger generation. You just do not teach the industrial population all the technique we have by simply laying down a bunch of blueprints before them and putting in new machinery. Germany could imbibe it much faster and did. That case is a puzzle. There is a psychological element which besets the German people that does not beset ours. The same thing is true of England.

These figures which I have put before you in a homely and simple manner will, I am sure, give you a general and pretty actual picture of the relative distribution of economic power in the world today.

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Q. Does our efficiency in agriculture consist somewhat in utilizing one area of land and then going to another one?

A. Not generally, no. I left prep school in the spring of '94; the depression came and I taught country school winters. In those days I naturally took to books, read a good deal about agriculture. All those early discussions of the agricultural problem

were concerned with the question of exhaustion of the fertility of the soil. We felt then that we had invaded a virgin soil, as we had. Even in '46 Michigan was virgin soil, it was timber covered, it was fertile, fresh soil. That the fertility of the soil degenerates with use I think is a fallacy. Certainly in Europe the soil has gradually increased in productivity with the passage of time. It is, of course, possible to have an agriculture which does what you say, and I dare say that in the earlier days we practiced a great deal more of that than we do now. I think the south is more beset by it than the middle west and the northwest, where the Germans and the Scandinavians and the Irish settled. The people who came over from Britain: the Scotch, Irish, etc., largely went forth into that western country. They took land and when they had exhausted that took new. I think you will find an increase in the fertility of the soil - that has been the history of all civilized nations when they have an organized agriculture. I am entirely in sympathy with the work that is being done in improving the soil and soil conservation. I think it is a good thing to do from a long-run point of view. I am not concerned at all about the production because when you put these people on fewer acres, especially when you give them some little subvention for producing reduction they spend it on fertilizer and better methods of cultivation. I would predict that the growth of the output of cotton per acre in the next ten, fifteen years will be steady. I do not think we have exhausted the fertility of the soil. If we did that it would never be kept up by shifting from one point

of soil to another. That point has been over estimated - does not amount to much.

Q. I am wondering what your opinion is on that twenty-two per cent. Do you expect it to be stabilized there, go down, or go up?

A. From the technical standpoint, it ought to go down. That is, we do not need that many people.

Q. How far down?

A. I do not know. I should think it would decline pretty slowly - might get down to fifteen per cent. It is very difficult to tell how those things will work out. Once we have gotten down to twenty-two per cent we could easily go to twenty. How much further we go is undoubtedly a matter of policy. We will try to keep people on the land in this country. Furthermore, we are going to have some movement landward around the cities. Development of the automobile has made the great areas round about our modern cities available for the usual urban dweller. We are going to have some of that and we are going to have some people go on to the land for security. I shouldn't think we would greatly decrease the number of people on the land, if at all, and we might even increase the present percentage a little. We have, of course, increased some in the last few years. The question of how the percentage will run will depend largely on how rapidly the population grows. There is a lot of attraction to living in the country today. If I had to make a serious change in my profession I would go there to live because I

know the country, I know the farm. There are many elements of security there. You have to pay rent. The farmers yell their heads off about taxes, but the average taxes, shown for those farms on which the Department of Agriculture collects actual figures, have never been as high as two hundred dollars a year for the average farm. I think one hundred ninety-two dollars per year was the highest average, and that would be seventeen dollars a month - good Lord! they have a house to live in for seventeen dollars a month, and if they know anything about gardening they can raise part of their food! The farm is the place where the average man can be more secure than any place else, so I should think that the farm is going to be a pretty attractive place, and my guess would be that that condition will not change for some time.

Q. Dr. Friday, you mentioned inflation. We are personally interested more or less in that because of being in the fixed salary class. If that should come about it might hit us rather heavily. We have had inflation during the last five years when we have had expansion of Government spending. What other chances do you think we will have of continuing in a different manner?

A. What you say about inflation, I suppose back in 1932, '33 most economists would have said. That is what I referred to in the first part of my talk when I tried to cast some good natured aspersions upon the economists. We said that if we reduced the content of the gold dollar, reduced the standard, as we

did, we would have a rise in prices. We were wrong. American economists are no different than business men, or other men, and it is obvious that we have a big job in research to do concerning the standard and the price level. Let me say, to clear the ground, that since that time we have had inflation in the sense that we have had an expansion of credit due, as you said, to Government spending and to the method of the financing of that spending. The bank deposits today are practically what they were in '29. They increased from thirty-eight billion to fifty-four billion between the middle of 1933 and this time - that is a big increase, you see, an increase of sixteen billion. In order to see just how big that increase is let me say just a word about the history of credit. In 1897, at the end of that depression, we had five billion dollars of bank deposits in the United States. That was a hundred years after Washington's second term. We had worked up from two billion in 1880 to five billion. Then from 1897 to 1914 that rose from five billion to eighteen one-half billion, a rise of thirteen one half billion. Now you see we have risen sixteen billion between 1933 and '37, four years, and we have had during that time inflation in the sense that we have had a great expansion in bank credit up to the practical previous level, which was thirty-five billion in '29. We did not have a very remarkable rise in prices at that time. Of course we had a considerable rise in prices in the spring of '33, when the price level was sixty, sixty-nine, and seventy. That held until around

'34, when we had the property restriction and quota restriction in the output of agricultural production and the higher wages that were brought with the codes. Then we had the draught, so we had a great dearth of agricultural production, which put prices up to the level of eighty. They hung there. They did not go on up any more until we got into the last twelve months - they are now about eighty-six. Now that is nothing such as we had in mind in '33 when we said inflation was bound to come, is it? We had something entirely different and much more wild than that in mind in the field of price rise. Last spring people felt that we were again in for a rapid rise in prices. I did not think so. Prices got as high as eighty-eight; then drifted off to eighty-six, and we know now that we are not going to have that rise here. Over the next dozen years, between now and 1950 (assuming we have peace, of course if we have war we will have a price rise) unless we work out some means of control better than anybody has ever worked out, I should think that our price level would go from eighty-six, where it is now, and eighty-eight where it was last spring, to something like one hundred fifteen or one hundred twenty. From your standpoint that is a serious matter. If it does appear over a period of twelve years I think you will keep pace with it in some measure. That is, your salary will move up, probably more slowly than most other incomes - at least that has been the history in the past. However, you remedy that in part by men withdrawing from the service and going into business, because if you get any such

movement of prices you have, as you had after 1897, active, prosperous business, with profits good and production steadily expanding, etc.. So far we have had no inflation. We can say we have had inflation if we mean by that that the things that have happened ought to lay the foundation for inflation - expansion of bank credit. What the average person means by inflation is growth and rapid rise in prices, and that we have not had. I think we are probably starting an inflationary move right now. I think that the announcement yesterday morning that they are releasing three hundred million dollars of gold (that does not amount to anything much, but they never should have sterilized that and they ought to release all of it - it was an amateur performance, like the fellows who go to a camp for six or eight weeks and then are made officers - they have a lot of brilliant ideas about military affairs and strategy) means that they have proceeded now to expand credit. Last winter the Federal Reserve made a great mistake. They will have a lot of trouble swallowing those words, and action of putting the reserve requirement up to the full one hundred per cent. You see they have the power to move it up to one hundred per cent, they were given that power in the law of '35. They moved it up a year ago the first fifty per cent and then last December or January the other fifty. Now they are trying to undo some of the work they did by putting out this three hundred million dollars of gold, and I think they will probably put out the balance because it looks like we are slipping into a

mire of recession. The stock market has had a decline. Business will have to shrink a lot to catch up with the shrinkage in the stock market. This ought to be the end of this decline for the moment, but if we do get a million dollar recession this fall and winter we are going to try to break that up by the expansion of credit. I will make that prediction. They will give all the reasons in the world except the right one, and that is that they made a mistake last winter. These fellows are all friends of mine and I can not say anything very mean about them, but I think the one bad thing they did was to say that this had nothing to do with the decline of the stock market. Obviously that is why it went down, why shouldn't it? That is, to the principal holders of bonds who had gone to work and forced the banks to get more reserves. It is all foolishness but nevertheless I think we have the beginning of it there. We have the index of production at one hundred fourteen here (indicating); in July it was one hundred eighteen, and I had a friend call me up this morning, who is interested in such things, who thinks it is going to go down below one hundred ten the last quarter of the year. That may be, but that will not be a very serious matter - if it never gets any worse than one hundred ten or one hundred five. They will expand credit right along. They will do it in various ways, saying they are trying to make available money for crop moving. Go back to '27 and '29 and see the kind of things they say. Do not ask the Federal Reserve officer who is going to speak here about this because it will embarrass him.

If we have four or five months of mild recession and that passes and we get revival (we have got to have revival before next November, no question about that) then they will say these things, I will bet you. Of course I am up in an airplane doing stunts, I do not know that any of this I am saying is the truth, but if what you want to hear is opinion on this matter then my guess is that that is what they will do. Then they will take credit for busting up the recession - "This would have been '29 over again if it had not been for us, if we had not gone to work and checked this thing in the spring of '37." That is skating on awfully thin ice. They will not stop with that, they will come right to the rescue - "We cut the unsound elements out. We cut out price inflation and the stock market inflation that was threatening to come on in the spring of '37 - we had our operation right then and by the end of the year we had that out, expanded credit again, and broke the threatened boom and the incipient recession."

There is one very shrewd man in the Federal Reserve, who when he talks before Congressional committees talks like a pretty wild theorist, is full of wild ideas, but when he is administering the Federal Reserve act he is a good shrewd banker, who did not get into any trouble at all during the last depression with his bank, nor had his father before him. His father had a bunch of children and a few million dollars, or something like that, a very able fellow. But always what happens is that the aged man gets out, his work is done, and it will be a good time to get out after that extra

session is over. Then will come somebody no where near as able and shrewd who will believe all this thing just as though he learned it out of the Bible, and he will know it only as people know the Bible - not by experience. He will believe that all kinds of threatened depressions can be busted with credit expansion, that they have to do something to stimulate building. That is one of the reasons why we will have a recession, if we do have it. Then you are going to have a lot of fooling around with credit. I think that three years from now we may have things that will amaze you and me, but we will not say anything about them because we will probably profit by them. However, they will come to sell themselves on the notion that they can control both booms and depressions by controlling credit.

Before the last depression the people had made themselves believe there would be no more depressions, that we were in a new era.

"Unemployment?"

"There isn't any unemployment."

"Never mind, you will have it the first time you get into a major depression - you have not had one since the nineties."

But they could not see that. They had deluded themselves into the notion that some how or other the thing had been so developed, industry had been developed in such manner, that we would not have another major depression. And so these people will make themselves believe that with the use of credit they can cure it all, and when

they get to the point where we have a rather serious depression, it may be a major one (and it is not at all likely that it will be thirty years before we have the next depression, even though there were thirty-two years between the depressions of the nineties - a very unusual period to go without a major depression) they will blow her up into a big one, and that is the time we will have to get inflation. Perhaps in the meantime we will come to our senses, a wiser counsel may prevail, and various things may happen. None of this may come, but if it does come that is, I think, about the rate at which it will come. I do not see anything any faster than that, and there isn't much you can do about it - better to protect yourself - buy a farm. Perhaps that is not what you want. You know you have to argue that with your wife a good many times, too, unless she is from a farm family, but you can get the modicum of security that you can have during an inflation by being on the land. If you go into Germany or any of those European countries you will find that is the lesson to be learned. However, for the immediate future I do not have much worry about it. I will gladly offer further opinion on any other questions you have on inflation.

Q. Does the fact that the government takes away everything the peasants of Russia grow, with the exception of the amount they need themselves, have anything to do with the large percentage of the population required to be on the land?

A. If it has it is because it interferes with the peasant's productivity, takes away his incentive. I suppose when they take

the products away they pay for them -

Q. I don't believe they do.

A. They collect it as taxes, I believe. The peasants would not have the incentive under the government controlled system they would have under the system of free initiative. Our own system, which I did not brag so much about as I might have, has grown up under free competition - each man has an idea he thinks will work (a good many others think it will not work), well, you let him try it. That is what freedom of initiative means. He builds a railroad and competes with the canal; the railroad comes to prevail; then the railroad goes out of business and the automobile becomes the universal mode of transportation. Competition offers large profits to those who succeed - a good many fail, but competition does result in great efficiency and I suppose has something to do with our percentage. Of course Russia was always that way.

Q. On the table you have on the blackboard at one end is the United States with twenty-two per cent of her population engaged in agricultural pursuits and on the other end is Russia with eighty per cent. That brings the thought that perhaps all Russia, with eighty per cent of her people on the farms, has to do is to go out into the fields after the food. On the other hand, twenty-two per cent of our people are on the farms and we have to get the food to the other seventy-eight per cent. Is our efficiency

in distribution keeping pace with our efficiency on the farm and in production?

A. Distribution, so far as food is concerned, in the sense of transferring it from the land to the seventy-eight per cent of the cities, is efficient; that is, transportation, etc. The point at which you haven't an efficiency that keeps pace with it is in merchandising, after you get it into the city. In this enormous growth of cities you have a pretty expensive system, first of transporting and distributing and then of merchandising. The difficulty with increasing the merchandising is that it is a personal service. You can not do what you do in agriculture or manufacturing - you can not use a lot of power with it and not very much can be done in other scientific ways. One of the reasons for the great increase in efficiency in our agriculture is to be found in the accomplishments of plant breeding and animal breeding. The man who is at the head of the Dairy Division in the Department of Agriculture can tell a perfectly romantic story about the improvement of the dairy herd, the production of milk and butter, the quality of the milk, etc. We can not, seemingly, increase efficiency very much in distribution, at least we haven't as yet done it. However, some one may find a way of doing it.

The comparison I thought you were going to make is that the Russian farmer not only raises his own food, as of course our American farmer does, but he does other things for himself such as

make his own shoes and boots. I do not know how much mechanical work the Russian farmer does, I dare say not very much. I do not think he is very skilful. At any rate, distribution lags.

If your boy is looking about for a field to go into when he comes out of college, distribution is one of the fields. The ablest man I know of all these marketing men, a professor at Columbia, shrewd man, came from either Minnesota or South Dakota, Paul Lystrom, ablest writer on this whole field of merchandising and marketing, had his son graduate from college last year. After looking the whole field over, the son decided to go into the restaurant business. There you have what an expert did with his own boy. They have a restaurant six miles west of the western end of George Washington Bridge. The fundamental industry, after growing the food, is feeding the people. It is less subject to depression. In all of these things the difficulty in the past has been that they have always been associated with menial labor, the people of education and skill have gone very little into it. Some people are discovering that. I think it is a great field and one that probably never can keep pace with the increase in efficiency either in production of agriculture or manufacturing.

Q. To what factors do you ascribe the difference between the United States and Germany in manufacturing efficiency represented by fifty on your diagram?

A. Well, it is a puzzle. I said probably more in a concrete way about England than I did about Germany. In England

undoubtedly the whole set of standards and attitudes developed by the Labor Union Movement, which is an old and rather established development, has a great deal to do with it. I have talked it over a great deal and have been puzzled by it. Nobody has satisfactorily explained it. I think one of the most pertinent suggestions I have ever heard is what one German friend of mine said: "Well, one of the great advantages you have is that you have never had the feudal system." That is, it is a psychological element, social element attitude of a man toward his work, the incisiveness and decisiveness of the laborer. I have talked with American manufacturers who have gone over there and observed their work in precision instruments, and I said to one man: "It seems to me that you people could go over there and get those instruments at less than half what it costs you over here." He said: "It does not work out. The German laborer simply does not get the product out. He considers far too long before he finally decides he has the machine set to go, and he will not work at the speed of the American laborer." It is a whole complex of psychological factors probably going into social questions that are awfully difficult to ferret out, and nobody has ever ferreted them out. Of course under the German government since 1920 they have had the labor movement in the saddle. That is, the social democratic party was the labor party, and if you know anything at all about the legislation and the legislative restrictions on the employer that were in force in Germany under that regime you can see why that would have an effect upon the laborer. However, labor

is not my special field and I haven't any apt explanation of it, but the fact is there, proven by the output per person.

Q. My question is concerning the difference in those percentages and the fact that our people came from those European countries. Did our government permit our system to develop?

A. I think technical education is one of the things that has done it. Our engineering colleges used to be the subject of a good deal of derision, especially from the English. I think the colleges have unquestionably proven themselves. Our agriculture has agricultural education. I think, too, that the people who came away from those countries to start anew must have had an enormous amount of initiative. I think of my grandparents, married, with one child, getting on a sailboat at Rotterdam and sailing six weeks to get over here. Today it takes six days to go on a fast steamer, some go in five days, some in four - it is too much to endure six days. My grandparents were six weeks on the boat and were on their own when they got here. However, all that does not explain it. I think freedom of initiative is the whole thing.

Q. Dr. Friday, you spoke of the measures taken by the Federal Reserve Board. Do you feel that some times when they take measures, such as they did before '29, that period of the twenties, that their action, while we may have continued seeming prosperity for a time, only staves off the catastrophe and makes it worse when it finally does occur?

A. I doubt whether or not they had any responsibility

for the condition of '29. I think the catastrophe in '29, the enormity of it, is explained in considerable portion by the fact that for thirty-two years, as I said, we did not have a major depression. In that thirty-two years we had practically the complete development of the motorization of the country, not merely the rich man had an automobile but every man had one. Imagine twenty-six million of them on the road! They were not nearly all new. The big business in automobiles is done with second-hand cars. Many more second-hand cars are sold than new ones. That completely destroyed the interurban transportation, the electric railway; it did amazing things to the railroads; and, much more important than that, it did things which we are hardly beginning to study, which we have almost no practical knowledge of - namely, the destruction of land values inside the cities. In Cleveland, where the banks had a great many real estate loans on business properties, it worked havoc. I dare say that one might make a pretty good case for the proposition that the motorization of the United States was one of the chief causes for this depression. The motor people would not like that - they are good friends of mine, awfully good friends - do not tell them I said anything of this kind. At any rate, it was such a change as the world had not seen since the railroad came, and it did not take all the decades that it took to throw the railroads across the country. We did the whole blooming thing, roughly, between nineteen hundred four to nineteen twenty-nine. In nineteen hundred four we were just getting started. I was in

the Ford stock tax case. A thundering victory was won and they did not have to pay taxes of seventeen million dollars, (the lawyers took practically all of that for fees) and I learned a great deal about the motor industry. It is an amazing story. However, that is merely one thing. I have spent a lot of time on the electrical industry and on its history. The electrical industry in 1896-7 was nothing; a few hundred million dollars were invested in it; a kilowatt of electricity was still costing twenty cents, it costs four one-half cents now. That expansion was enormous. The expansion of the telephone business was comparable. (If you are hastening this meeting on my account, do not do it - I do not have to go to New York until four o'clock.)

Coming to agriculture itself, look at the changes portrayed from 1900, where thirty, thirty-one, or thirty-two million provided the food and the textile fibers for a population of seventy-five million, to 1929, when they were providing it for one hundred twenty-two million people. That is an enormous change. In the meantime other things had happened. What progress! I mean on the technical side. We laid down a second transportation system over the country. Just think of the road system and the motorization from the standpoint of your own problem of defense. In case of an invasion, if it is possible to imagine one, (we are fortunately situated so we do not have that problem in the sense that France has) you can, literally, load the whole American population on to the motor vehicles and move them at one and the same time. I would like

to see that tried. The point I am making is that we have had such an enormous period of prosperity and advance in technique. In the meantime we had a war which destroyed a very large part of the whole industrial organization of Europe and left it with problems and debts that were terrific and such as they had never dreamed of. England said: "We are not even going to pay the interest on the debt, we can not, we will not". Something new has happened in the world, hasn't it? When you consider the seriousness of the depression in '31 when England went off the gold standard, the long period with all these changes, and then a world war, all of those things together, it is not to be wondered at that we had an amazing depression. Progress involves change. You can not have progress without change and change involves great dislocation and great destruction of values - inevitably the old things go, those values are destroyed. You do not realize that, nobody does, but all these wise men tell you about mistakes that were made in the '20's.

Are we helpless in the face of all this? Undoubtedly some things could have been done to mitigate the condition. I am mixed up with the Research Organization, the great International Bureau, the kingpin and oldest of them all; I am Vice-President of the Social Science Research Council; I am connected with all those organizations where you work for nothing (that seems to be my lot), and what I tell those people is that we ought to be studying economic change. We ought to be inventorying organizations

such as your own, commerce, etc. We ought to be keeping track of changes. I do not mean they need necessarily be published forth to the world, all of them, but they ought to be studied; we ought to see what is happening, and then in some measure we ought to try to see how much of instability is being introduced into the situation. The motor industry went right on and people were worrying because so much was being spent on automobiles - people would bankrupt themselves - but there was no worry concerning the second thing, what this was going to do to the transportation system of the country and how the transportation should be adjusted. If the Interstate Commerce Commission had spent half the time they spent on other things studying the probable effect of the motorization of the world on the big transportation problem, especially the railroads, they would have done vastly more good than they have done. I am not criticising them for it because none of us realized what was going on. I hope we can do something in research for stabilization and avoid another depression like this last one.