

But one of the things that at least is worthy of our attention is the fact, for instance, that Mr. Keynes, who analyzed in such an acute and mathematical way the effect of investment and savings on the volume of business and the price level, is one of those who are convinced that the price level itself may be safely manipulated, controlled and stabilized. That is one of the most important questions for us to consider at this present moment. If we could be sure that the fall in prices had been stopped, if we could be sure that we could raise the general price level 10 or 15 per cent, this pathological condition of fear would immediately vanish. If we could be sure of that, we could know that the present value, at least, of our collateral was going to hold good, and we could adjust ourselves to it. We could begin to have some courage and pay out money to buy this, that and the other thing. We could begin to invest.

We know well enough, as an extreme case, that if our government should suddenly decide to go crazy and print paper money at the rate at which it was done in Germany, Austria and Russia after the war, not merely would people begin to invest, but they would be frantic to invest. The fear would be of the other sort, that they could not buy real goods with unreal money quickly enough. Now I do not want anyone to get the idea that I recommend that the printing presses at Washington work overtime for the next several months. I only mention that to show that there are psychological possibilities in the other direction as well as the one in which we are headed now. The fear could be turned in the other direction if that were necessary, but it should not be necessary.

As to the possibility of safely manipulating the price level, economists are divided. The group of economists who believe that it can be manipulated and controlled are so important that the onlooker must listen to them. Those who believe that it cannot be manipulated are also important. In general the bankers of this country believe that the price level cannot be directly manipulated. In general both economists and bankers in England believe that it can be. We are met with a complete division among experts. Nevertheless, the body of opinion behind the possibility is so important that it would seem to be a major object of those responsible for our financial policy, both governmental and banking, to see if there is not some means by which the price level can be controlled in the interest of stability.

To go on to another engineering approach to the

problem of stability, the other day Professor Raymond presented a paper which purported to be a mathematical analysis of the problem of equipment replacement, before a meeting of the American Society of Mechanical Engineers. It was intended to be, and I believe was, a fundamental paper applicable to all sorts of problems. It is, in other words, a mathematical analysis of the desirability of new investment. The use of such an engineering approach to the problem of investment does not, of course, completely solve the whole problem. There are external conditions involved, as well as internal, which cannot be measured mathematically. There are questions of the character and ability of people who are responsible for using the investment after it is made. Everything cannot be done by mathematics, but so far as the problem can be investigated in an engineering and mathematical way, it is Professor Raymond's belief that he has covered the whole subject.

One of the possibilities for this engineering approach, and the major problem, is that it can be used by engineers to point out to those who hold money places where savings can profitably flow into investment. If, for instance, Mr. Drury's thesis is true, the time is coming when bankers will be anxiously asking engineers to use that formula. They put their money in the call market at one-half of one per cent when they have nothing else to do with it. The banking fraternity should be asking the engineering fraternity where it can put money that will earn 30 per cent, or 10 per cent, or even 5 per cent. It is possible right at this moment to put money in places where it will earn 15 per cent, or 30 per cent. If the banking fraternity will organize to meet an engineering fraternity prepared scientifically to estimate the safety and profitability of investment, then the flow of savings into investment, and consequently the maintenance of a desirable volume of business, will be more easily maintained.

Here is another thing which also involves the engineering approach and is at the same time fundamental. We have a highly elaborated scientific approach to modern business. That approach began with Frederick Taylor in the American Society of Mechanical Engineers on specifically engineering and machine-shop management problems, but on principles so broad that they have spread into every kind of business and into every land in the world. Those principles have been applied by men who do not even know Mr. Taylor's name, and perhaps in ways of which he would not

always have approved; but his influence is clearly felt. Besides the Taylor Society, such mediums as the Management Division of the American Society of Mechanical Engineers, the American Management Association, the National Association of Cost Accountants, and dozens of others devoted to business procedure, are based on those principles.

One of the engineering practices which is coming to be recognized in this country is long-time budgeting. The place where it is most needed is in governmental practice. For the sake of control of the business cycle it needs to be applied to the practices of the United States Government, of the separate states and of the municipalities and smaller subdivisions of government.

What is meant by long-time governmental budgeting? It means that throughout the period of the business cycle there is a time to tax and a time to relieve taxation, a time to borrow and a time to repay, a time to spend and a time to retrench, a time to expand the currency and a time to contract it. It does not mean that the budget must be balanced within a given fiscal year. When the principles of long-time budgeting are applied to government, they can be applied in such a way that the price level will be restrained from rising when it should not rise and encouraged to rise when it is falling; that money will be plenty when it should be plenty and scarce when it should be scarce; that taxation will be heavy when the taxing is good and relieved when the taxing is not so good. Those same principles, if carried out, would, I think, put the quietus on the sales tax and many other plans which penalize business operations in the attempt to make taxation equal at all times to the necessities of expenditure—which is not only impossible, but would be undesirable if it were possible.

Today is the time to borrow rather than the time to tax. The time to tax and not to borrow was in 1929. It would have been a whole lot better to tax until it hurt then than to give until it hurts now, and it would have had a much better effect.

There is just one other item, that I am going to mention, and that is a piece of national bookkeeping which is being disregarded. Modern accountancy goes back to scientific management for a great deal of its interest and many of its principles. The balance sheet of these United States in their outside relations should be looked at in the same careful way in which the balance sheet of the individual firm is scanned.

The annual report in the Year Book of the Department of Commerce gives this in the balance of inter-

national payments. That is an exceedingly significant and neglected document. That balance sheet shows that we have exported a certain amount and imported a certain amount; that we have loaned this much and had this much of our loans repaid; that we have received this much gold and shipped this much gold; that the various "invisible" items, like the amounts paid out in foreign travel and freight to foreign shipping concerns, are entered on their appropriate side of the balance sheet. Until this last fiscal year the thing has been balancing to within a comparatively small amount, \$25,000,000 to \$30,000,000. Unfortunately, for purposes of control, this last national balance sheet showed a discrepancy of some \$347,000,000. That discrepancy should have been of as much concern to us as though we had been unable to close our own private bookkeeping by a similar amount.

This discrepancy was a serious thing and recognized as such. It resulted in the resignation of the man who made up the balance sheet, and who thought he knew what the trouble was and wanted to fix it. It is now being examined by a committee of the American Economic Association.

Let me point out the significance of that balance sheet. A glance of the same sort that the ordinary manufacturer would give to the balance sheet of his own organization would have indicated the impossibility of certain international financial transactions in which we have been engaged. One of the things we should have seen was that when we were financing our Allies, ten or fifteen years ago, we were not lending them money but goods. At the present time we refuse to receive goods because we do not see how it can be done safely. We insist on receiving gold. We have received about all the gold that the world can possibly spare, and there is no more. Therefore, unless we are willing to receive goods, in a very large quantity indeed, those debts will not be paid. That is one thing that we learn from looking at that balance sheet. It is either money or goods, or a third thing, titles of ownership in European factories, mines, railroads or other investment securities. To my mind that last would be an exceedingly dangerous procedure. It would foment discontent, and even hostility, on the part of the people whose resources we were owing.

A look at that national balance sheet would have indicated to international bankers in the last three or four years that it would be impossible for us ever to recover, by any means which we were willing to use, the loans that have been made since that time.