necessary, in manufacturing industries, to make goods in order to make money." In the briefer period but wider field covered by the report on "Recent Economic Changes" there are similar indications. Broadly speaking, the industries which flourished most in 1922-28 seem to have been industries with a large output, low-price policy, made possible by high technical efficiency. Of course there were also depressed industries which suffered from overproduction. The line of least resistance for them was to restrict output—if they could—and raise prices. Perhaps the rest of us need not be sorry that it is hard to organize such an industry for restriction. That condition may force the depressed branch to take the constructive but arduous line of inventing an industrial way out of their business troubles.

The technique of balance which we need must deal with business forces, because they control industry conducted for profit; but in dealing with business forces the technique of balance should aim at an ever larger per capita income reckoned in goods—not in dollars. It should get its balances by leveling up rather than down.

Having taken so much time in discussing what sort of industrial equilibrium is worth striving for, I have no time left to answer the question, whether there are practicable steps toward it. But that does not matter. All I could say is "Yes, there are such steps." I know so much because "Recent Economic Changes" tells about various measures which have been tried of late by government and by private concerns to make the business engine run more evenly. Also I recognize that a further step of great technical interest is being tried at this moment on a national scale. While a business cycle is passing over from the phase of expansion to the phase of contraction, the President of the United States is organizing the economic forces of the country to check the threatened decline at the start, if possible. A more significant experiment in the technique of balance could not be devised than the one which is being performed before our eyes.

But whatever measure of success may attend President Hoover's effort, further steps toward industrial equilibrium must be taken in the future. What they will be is not for me to say. No man without experience in industrial management is competent to form opinions upon the practicability of alleged improvements in organization or procedure. You of the Taylor Society, who combine practical experience with the analytic habit of mind, are the proper people to answer the question which the program committee put to me. I thank the committee cordially for the compliment implied, and pass the question back to you.

The Bearing of Industrial Equilibrium on Regularity of Operations and of Employment[5]

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IF THERE is anything to the notion of balance and equilibrium, then the problem of securing industrial stability and regular employment consists in the early discovery of excesses in the industrial system and in the application of measures of control. In principle such a procedure may appear simple; in practice it is surrounded with unusual difficulties—difficulties of fact and of analysis.

It is not so long ago since disturbances in the economic system were regarded as self-corrective. The interesting question now is whether we have passed much beyond that stage; and the answer to the question seems to me to lie in our capacity to analyze the experience of at least the recent past. In spite of the fact that we now know more about business and its fluctuations than at any time in the history of modern industry, it may still be a useful approach to the problems of forecast and regularization to elicit and describe factors that appear, in the past decade, to have been crucial and determining in our industrial situation.

For this purpose, further, it may be desirable to consider separately the phase of decline and revival between 1920 and 1922, and the phase of sustained business activity in the period thereafter. While many factors no doubt contributed to the swift and unexpected turn of American business after the deep depression of 1920 and 1921, the single and most effective force was, in my judgment, the speed and completeness of the business and industrial liquidation of those years. Even allowing for a great variety of essential differences in the situation, this American experience stands in sharp contrast to the course of events in England during the same period. In place of a hesitant and prolonged adjustment of costs to a new condition, such as has characterized the history of the past ten years of English industry, the American adjustment was drastic and decisive. What happened here was probably not the result of deliberate policy, but was due to the prevailing temper of the country manifested in an unusual mobility of both capital and labor.

This fact of mobility or of elasticity which seems to me to be central in accounting for both the recovery of business and for the maintenance of high levels, once they have been achieved, has persisted in the subsequent post-war years. If anything its force has been enhanced. The rising general level of education in the country, the progressive mechanization of industry, the experimental attitude of the industrial engineers and of the managers of industry, the cumulative application of invention, and the preoccupation of industry with the improvement of plant and equipment, have been the factors that have combined to accelerate the pace of our industry and to perpetuate the habit of frequent and universal change.

Associated with this pervasive, psychological attribute of our contemporary business situation are features that may well turn out to be more fundamental. They may have accounted for the recessions of 1924 and 1927 and may be the crucial factors in shaping the immediate uncertain future which we now face.

Of these the most significant appear to me to be the state of the efficiency of industry, the direction of the price level, the credit condition of the country, and the probabilities of further growth in the size of the market. I can, of course, do no more than lay these items before you and attempt to assess their importance.

Changes in the efficiency of industry reflect themselves in changes in cost. It may in general be said that a condition of falling costs in industry, that are the product of improved methods of management and invention and are not the results of reduced wages, indicate a healthy state of industry. Since 1919 such a condition has characterized the whole of American industry. But, as was pointed out in "Recent Economic Changes," the striking changes in productivity and, hence, in cost took place largely in the so-called new industries—the automobile and collateral industries, the electrical and chemical industries. We unfortunately know too little about the natural history of invention and of technological changes. Does the conception and application of invention have its ebb and flow like business itself and have we, in these new industries, reached the stage of retardation in which we can, for the time being at least, look forward to no further progressive reduction in costs? On this matter the essential evidence is lacking. As early as 1927, there were some signs of a slackening in the rate of increase of per capita output in the automobile and related industries. If these signs forecast a period of rising prices in these industries then their progress during the next few years may be different from what we should otherwise expect.

Many observers of American business have regarded the high levels of output in the automobile and construction industries as the foundation of our prosperity of these last eight years. Competent inquiries have rejected the notion that the surprising expenditures for both private and public construction did no more than make up the deficiencies in building of the war years. For lack of a better explanation, the rising tide of building has been attributed to the rising standards of living of the American consumers. In this field of industrial activity it seems impossible to explain what has happened in terms of reduced costs, although progress in management and advances in the efficiency of labor may have kept costs at a lower level than we realize. On the face of things, however, the building and automobile industries appear to have achieved expansion by different roads. How, then, account for this variety of experience, unless it be that our data of measurement are incom-

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