also to some extent there was more outside work done by the average faculty member. Relative to the whole population, and the college teacher had suffered a serious reduction in his real income and part of the explanation, of course, was the inflation to which the response of revenue had not been adequate. The public universities tend to adjust to inflation through increased tax receipts, but slowly; and the private institutions more recently have tended to invest heavily in common stock as a protection against the rise of prices. But since endowment income only yields about 6 percent of total college income, this is not a very important contribution. What is required is, of course, large increases in appropriations by State legislatures and much higher tuition fees. But the colleges are frightened of large increases in tuition fees because they fear that the net result would be a change in the type of students.

PRODUCTIVITY, PRICES, AND WAGES

In general, over our history, the increase in real wages is associated with the rise of productivity, more so than with a rise of prices. In fact, there were long periods when prices did not contribute anything to the rise of the GNP. The increase in the GNP reflects rising productivity and increases in the population more than a rise in prices. The following, from Dr. Raymond Goldsmith, discusses this issue well:[91]

> The largest variations in the average rate of change are shown by the price level, more specifically by the gross national product deflator which is a weighted average of the prices of all final goods and services produced. For the 120 years as a whole, prices have increased on the average at the rate of 1⅛ percent per year, a rate which probably now would be regarded as within the range of price rise characterizing a "creeping inflation." Price trends in the first half of the period, when the average rate of change was virtually zero, differed considerably from those observed during the second half starting in 1899, during which the rise in prices averaged 2½ percent per year, probably near the upper boundary of what is thought to be compatible with a creeping inflation. However, if subperiods of 40 years' duration are taken, prices advanced most rapidly from 1879 to 1919 when the rise averaged 1.9 percent per year rather than in the last 40 years, during which the average rise amounted to only 1.4 percent.
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> The result of these variations in rates of increase of total gross national product in current prices, in the price level, and in population is that the residual, the rate of growth in real national product per head, shows more stability within the range of 1½ to 1¾ percent than any of the other three series. The contribution of the three factors—real output per head, population, and prices—to the average rate of growth of aggregate current output thus has differed greatly in the different periods.
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> For the entire 120 years population growth has accounted for two-fifths of the total increase in the monetary value of aggregate output; the rise in the price level for one-fourth; and intensive growth, the rise in real output per head, for one-third. In some of the subperiods the change in the price level has contributed nothing to the increase in aggregate gross national product at current prices, as for instance from 1839 to 1899; or has even offset part of the increase in population and intensive growth, e.g., from 1869 to 1899. There is no period during which the rise in the price level accounted for as much as one-half of the rate of growth in total current aggregate output. During the last 40 years the rise in the price level has been responsible for fully one-third of the rate of growth of current aggregate output, while population growth has contributed three-tenths and intensive growth almost two-fifths.

However wages respond to rising prices, the history of our economy in the last 68 years shows that real hourly earnings have tended to

[91] Joint Economic Committee, hearings on "Employment, Growth and Price Levels. Pt. 2: Historical and Comparative Rates of Production, Productivity and Prices," p. 272.