

Inderstanding Macroeconomics

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Understanding Macroeconomics

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The trend of things— a first look at macroeconomics

How shall we begin to study macroeconomics? The best way is to get acquainted with the thing that macroeconomics is about—the overall working of the economy as it generates growth and prosperity or inflation and unemployment. Therefore we are going to jump right into the center of the main problems with which macroeconomics is concerned. Later we shall study the nature of these problems in careful detail. But it will give use a sense of familiarity if we start off by acquainting ourselves with the big issues and pressing problems of our subject. When you have finished this first chapter you will not really have begun your study of macroeconomics. But you will be ready to begin.

The Trend

Let us imagine that we could look at a series of photos of our national economy—a series that started back in 1900 and that showed us the changing scene, as a photo album would show the changes in a family. There is no doubt about the first impression we would gain. Everything would be getting larger. Business firms would be growing in size. Labor unions would be bigger. There would be more households, and each household would be

richer. Government would be much larger. And underlying all of this, the size of the economic system itself would be steadily increasing.

Growth is not, of course, the only thing we would notice. Businesses are different as well as bigger when we compare 1975 and 1900: there are far more "incorporated" businesses now than in the old days, far more "diversified" businesses, fewer family firms. Households are different because more women work outside the home. Labor unions today are no longer mainly craft unions, limited to one occupation. Government is not only bigger but has a different philosophy.

Total output Nonetheless, it is growth that first commands our attention. The camera vision of the economy gives us a picture that keeps

widening. It has to widen, to encompass the increase in the sheer mass of output. Hence the first major impression we gain is that growth lies at the center of our macroeconomic concerns.

This gives us a foretaste of problems to come. Clearly we must trace the sources of the tremendous increase in our total output. We will have to look into the reasons why growth proceeds faster in some periods, slower (or not at all) in others. We will have to consider whether growth can go on forever. But at this juncture it is enough to identify the fact of growth as the main subject of our study. We can also take a moment to learn the name for the flow of total output whose trend we are about to study. We call it gross national product (GNP), a term we will define more carefully in our coming chapters. Here we need only note that it

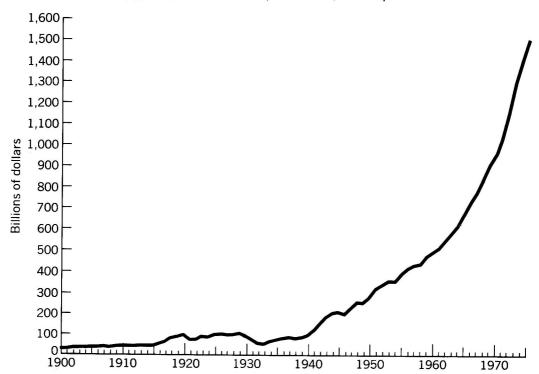


FIG. 1 • 1 Value of GNP, 1900-1975, current prices

You should be warned that there is no entirely satisfactory way of wringing price increases out of the hodgepodge of goods and services called GNP, because different items in this collection of goods rise or fall in price in different degrees. There is always a certain element of arbitrariness in correcting GNP for price changes. Different methods, each perfectly defensible, will yield somewhat different measures of "corrected" GNP.

Isn't there some way of getting around the problem of dollar values when we compare GNPs? One way is to measure actual physical volumes. When certain kinds of outputs, such as foodstuffs, bulk very large in GNP, as they do in India or China, we sometimes measure growth just by adding up the tonnages of food production.

VOLUME AND VALUE

The problem, of course, is that the composition of these tonnages may change—more wheat one year, more rice another—which gets us into another comparison problem. And then such a measure ignores entirely the outputs of nonagricultural goods. (We meet the same problem if we try to measure growth by tonnages of freight, metal production, etc.)

A more defensible way might be to consider GNP as a sum total of labor time, the embodiment of so many million hours of work. Even this does not get us around the measurement and comparison problem, for we use different kinds of labor as time goes on. Therefore, we have to make the difficult assumption that all kinds of labor, skilled and unskilled, trained and untrained, can be "reduced" to multiples of one "basic" kind. That basic labor, in turn, would have to boil down to some constant unit of "effort." But does the unit of "effort"—of human energy—remain constant over time?

In the end, the task of measuring an aggregate of different things can never be solved to our complete satisfaction. Any concept of GNP always has an element of unmeasureableness about it. Growth is a concept that we constantly use, but that remains tantalizingly beyond precise definition.

refers to the dollar value of our annual production of final goods and services.

Figure 1.1 gives us a graphic representation of this increase in yearly output.

Correcting for inflation d

As we can see, the dollar value of all output from 1900 to

1975 has grown by a factor of almost 100. But perhaps a cautionary thought will have already struck you. If we measure the growth of output by comparing the dollar value of production over time, what seems to be growth in actual economic activity may be no more than a rise in prices. If the economy in 1975 produced no more actual tons of grain than the economy in 1900, but if grain prices today were double those of 1900, our GNP figures would show "growth" where there was really nothing but inflation.

To arrive at a measure of real growth, we have to correct for changes in prices.

How we do so is a complicated matter that you can study in a course on statistical methods. But the basic idea is simple. Essentially, we take one year as a base and use the prices of that year to evaluate output in all succeeding years.

Here is an elementary example. Suppose that our grain economy produces 1 million tons in 1900 and 2 million tons in 1975, but wheat sells for \$1 in 1900 and \$2 in 1975. Our GNP in the current prices of 1900 and 1975 is \$1 million for 1900 and \$4 million 75 years later. But if we evaluate the GNP using only the 1900 prices (i.e., \$1 per bushel), our GNP is reduced to \$2 million in 1975. This constant dollar GNP is often referred to as the real GNP, while the current dollar GNP is called the nominal GNP. We can use the prices of any year as the "base." The important thing is that all outputs must be evaluated with only one set of prices.

Figure 1.2 shows us the much reduced growth of output when output is measured in 1958 dollars.

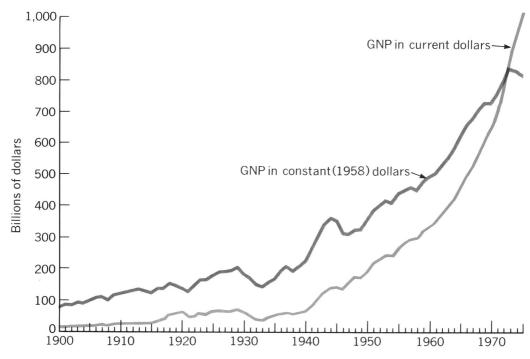


FIG. 1 · 2 GNP in constant (1958) and current dollars

Per capita growth

As we can see, growth in real (or constant dollar) terms

is much less dramatic than growth in current dollars that make no allowance for rising prices. Nonetheless, the value of 1975 output, compared to that of 1900, with price changes eliminated as best we can, still shows a growth factor of eight.

But there still remains one last adjust-

ment to be made. The growth of output is a massive assemblage of goods and services to be distributed among the nation's households, and the number of those households has increased. In 1900, United States population was 76 million; in 1975 it was 214 million. To bring our constant GNP down to life size, we have to divide it by population, to get GNP per person, or per capita.

The normal range in growth rates for capitalist economies does not seem to be very great. How much difference does it make, after all, if output grows at 1.7 or 2.7 percent?

The answer is: an amazing difference. This is because growth is an exponential phenomenon involving a percentage rate of growth on a steadily rising base. At 1.7 percent, per-capita real income will double in

THE DIFFERENCE THAT GROWTH RATES MAKE

about 40 years. At 2.7 percent, it will double in 26 years.

Recently, Professor Kenneth Boulding pointed out that before World War II no country sustained more than 2.3 percent per-capita growth of GNP. Since World War II, Japan has achieved a per-capita growth rate of 8 percent. Boulding writes: "The difference between 2.3 and 8 percent may be dramatically illustrated by pointing out that [at 2.3 percent] children are twice as rich as their parents—i.e., per capita income approximately doubles every generation—while at 8 percent per annum, children are six times as rich as their parents."

Basic importance of growth As Fig. 1.3 shows, between 1913 and 1972 real per capita growth ranged be-

tween 1.7 and 2.0 percent per year. That may not seem very much, but growth rates compound, like interest in a bank. A rate of 1.8 percent was enough to give the average citizen in 1975 six times as large a volume of goods and services as the average citizen got in 1900. Whether or not average happiness multiplied six times is another question. We will look into the relation between GNP and personal wellbeing in Chapters 4 and 18.

Sources of growth

How will we explain this long upward trend? Here we can

give only a brief summary of the causes that we will study more systematically as we go along. Essentially, we grew for two reasons:

1. The quantity of "inputs" going into the economic process increased.

In 1900 our labor force was 27 million. In 1975 it was 95 million. Obviously, larger inputs of labor produce larger outputs of goods and services.

Our inputs of capital increased as well. In 1900 the total horsepower energy delivered by "prime movers"—engines of all kinds, work animals, ships, trains, etc.—was 65 million horsepower. In 1975 it was 25 billion.

Land in use also increased. In 1900, there were 839 million acres of land used for farming purposes, and over 1,000 million acres for nonfarm purposes such as grazing. By 1975, land in farms had increased to over 1,000 million acres, and land in nonfarm use had also increased: we had reclaimed "virgin land" and made it economically productive.

2. The quality of inputs improved.

The population working in 1975 was not only more numerous than in 1900, it was better trained and better schooled. The best overall gauge of this is the amount of education stored up in the work force. In 1900, when only 6.4 percent of the working population had gone beyond grade school, there were 223 million manyears of schooling embodied in the popu-

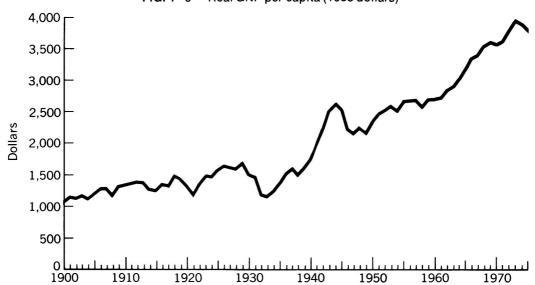
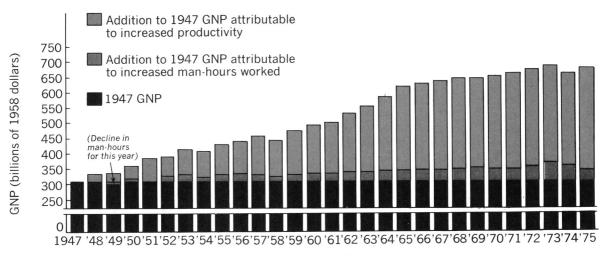


FIG. 1 · 3 Real GNP per capita (1958 dollars)



Source of GNP increases, 1947-1975 FIG. 1 · 4

lation. In 1975, when over two-thirds of the population had finished high school, the stock of education embodied in the population had grown to 991 million manyears.

The quality of capital has also increased, along with its quantity. As an indication of the importance of the changing quality of capital, consider the contribution made to our output by the availability of surfaced roads. In 1900 there were about 150,000 miles of such roads. In 1975, there were almost 4 million miles. That is an increase in the "quantity" of roads of over 25 times. But that increase does not begin to measure the difference in the transport capability of the two road systems, one of them gravelled, narrow, built for traffic that averaged 10 to 20 miles per hour; the other, concrete or asphalt, multilane, fast-paced.

There are still other **Productivity** sources of growth, such as shifts in occupations and efficiencies of large-scale operation, but the main ones are the increase in the quantity and the quality of inputs. Of the two, improvements in the quality of inputs—in human skills, in improved designs of capital equipment—have been far more important than mere increases in quantity. Better skills and technology enable the labor force to increase its productivity, the amount of goods and services it can turn out in a given time. Figure 1.4 shows how this increase in productivity has overweighed the increase in sheer man-hours during the last 25 years.

Some Major Economic Problems

We have begun to acquaint ourselves with the trend of growth that plays such a central role in macroeconomics. But we have yet to complete our first examination of our economic photo album. For everyone studies economics not just to learn about the forces that move us ahead, but to study the forces that set us off course. Let us therefore look at the economic trend from a different perspective, paying less heed to its forward momentum, and more attention to the problems that have disturbed it, yesterday and today.

There is no question Inflation where to start. For the last decade, the pollsters tell us, inflation has headed the list of the public's worries. What should we know, to begin with, about this major issue?