A Growth-Accounting Perspective on the Post-Pandemic Economy

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Much of our economic future depends on the growth rate of the nation’s real (inflation-adjusted) gross domestic product (GDP). For example, the profitability of firms and, therefore, trends in stock prices will depend in good part on this growth rate, as will the average tax rate we pay. Lower tax rates also tend to create more incentives for work and investment, both of which promote higher economic growth.

The long-run growth rate of real GDP itself depends importantly on the growth rate of labor productivity, or output per hours worked. Labor productivity growth over time depends on several factors, such as technological improvements and additions to the capital stock. The Bureau of Labor Statistics reports nonfarm labor productivity, a commonly used measure of output per hours worked.

Some economists use a growth-accounting framework to analyze the contributions to real GDP growth from productivity and labor inputs. Implicit in this accounting are factors such as new ideas, the level of technology, and enhancements to worker skill levels that are important to economic growth. The importance of labor input follows a standard economic formulation of the production process that transforms inputs (including technology) into outputs. Declining labor input can easily cancel out improvements in productivity growth, leaving real GDP growth unchanged or even lower than before.

A common growth-accounting framework is presented in the table. The framework links the growth of employment (line 3) and the growth of labor productivity (line 4) with the growth of real GDP. At a more granular level, labor input is determined primarily by the growth of the total population (line 1) and the percentage of the population that is employed (line 2). The latter is determined importantly by the labor force participation rate (not shown in the table). The framework is a useful metric for assessing the economy’s potential long-run economic performance because it decomposes the growth of real GDP (line 5) into its two primary contributions: labor inputs (lines 1-3) and labor productivity (line 4). Because population growth tends to change slowly (absent major wars or pandemics), productivity growth is thus the key source of increases in real GDP growth over time. (As noted in the table, I am using the growth rate of the average of real gross domestic product and gross domestic income to be “real GDP.”)

Table columns 1 to 4 detail the contributions to real GDP growth during periods of economic expansion from late 1982 to late 2019: The time period is from the trough quarter to the peak quarter as defined by the National Bureau of Economic Research Business Cycle Dating
Notes

1 Similar to John Fernald (https://www.kansascityfed.org/Jackson%20Hole/documents/9032/JH_Paper_Fernald.pdf), this essay uses the average of real GDP (sum of final expenditures) and real gross domestic income, or GDI, which is the sum of income from current production. For simplicity, the average of the two measures will be referred to as real GDP. A more detailed version of this table appears annually in the Economic Report of the President (https://www.govinfo.gov/app/collection/erp).

2 From the February 2022 survey by the Philadelphia Fed: Labor productivity growth is expected to average 1.6% over the next 10 years, which is close to the average estimate seen over the previous five surveys (1.5%).