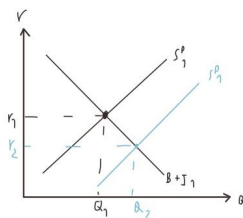
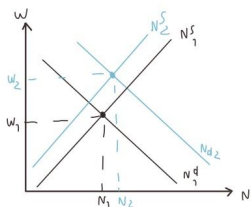
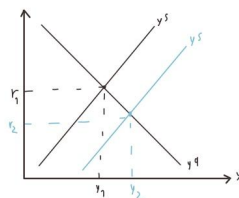
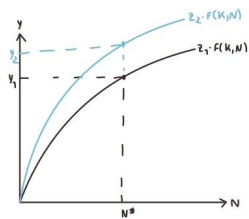


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U.S. productivity increases solidly in third-quarter

The labor department said nonfarm productivity, which measures hourly output per worker, increased at a 4.9% annualized rate last quarter. Data for the second quarter was revised up to show productivity increasing at a 10.6% rate instead of a 10.1% pace as previously reported. Economists forecast productivity increasing at a 5.6% rate in the third quarter. Robust productivity growth was flagged by data last week showing the economy expanded at a historic 33.1% annualized rate in the July-September quarter, thanks to more than \$3 trillion in government pandemic relief for businesses and workers. According to the information, which tells us that hourly output per worker increased 4.9%, leads to a positive change in production function (productivity of labor).



The positive change in productivity (an increase in hourly output per worker = z) increases the production function and the marginal product of labor (MPN), which causes the production function to shift right. Making firms want to hire more labor, labor demand (N^d) will shift to the right, also an output supply (Y^s). Because if firms hire more labor, they will produce more output causing interest rate decreases from r_1 to r_2 . After interest rate decreases, labor supply will shift to the left causing wage to increase from w_1 to w_2 . After consumer's consumption increases making them want to save more (S^s increase from S^s_1 to S^s_2). Therefore, the real interest rate decreases from r_1 to r_2 .