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Econ 104, section 04

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Homework 2

1. "Making it in America"
 - a. In terms
 - b. The human capital
2. "The looming challenge to U.S. Competitiveness"
 - a. A nations standard of living
 - b. Creating jobs is
3. U.S. Growth Rate
 - a. Considering the current growth rate which is 2%, and the rule of 70, which states that to approximate the number of years it takes for something to double in size, it would take the U.S economy 35 years to double. If we calculate his rate using a 1% growth rate, the time will be 70 years.
 - i. $70/2\% = 35$ years
 - ii. $70/1\% = 70$ years
 - b. If the growth rate was to remain the same (2% growth) over the next 50 years, the real GDP in 2064 would be \$134,579.40 or roughly \$134,600.
 - i. $((1+g)^n) \cdot X_i = X_n$
 - ii. $((1+.02)^{50}) \cdot \$50,000 = \$134,579.40$
 - c. If the growth rate was to remain the same (1% growth) over the next 50 years, the real GDP in 2064 would be \$82,231.59 or roughly \$82,200.
 - i. $((1+g)^n) \cdot X_i = X_n$
 - ii. $((1+.01)^{50}) \cdot \$50,000 = \$82,231.59$
 - d. Yes, by changing the annual growth rate by just 1% the whole growth of the economy is ruined. With 2% growth the economy more than doubled in the 50 years which we calculated. With 1% growth, the economy grew very slowly, not even doubling in 50 years.
4. Per worker production
 - a. In his example we are looking to find the labor productivity or production per worker (Y/L). Using what we know, the total factor productivity(A) and he capital per worker(K/L), we can use the equation $A \cdot (K/L)^{.3}$ to find Y/L . Labor productivity in this country would then be \$94868.33
 - i. $A \cdot (K/L)^{.3} = Y/L$
 - ii. $3000 \cdot (100,000)^{.3} = \94868.33
 - b. If the capital to labor increased by 10%, or from \$100,000 to \$110,000, the labor productivity would then increase from \$94868.33 to \$97620.06 or by 2.9%
 - i. K/L increases by 10% - $\$100,000 \cdot 10\% + \$100,000 = \$110,000$
 - ii. Using this new K/L - $3000 \cdot (110,000)^{.3} = \97620.06

- iii. Using the proportion $\$94868.33/100 = \$97620.06/x$, $x=102.901$ or 2.9% increase