Econ 1A: Chapter 7 (Study Plan: Section 7Q: multiple choice quiz – Quiz 6, 7 and 8.)

Quiz 6: If NGDP increases by 5% a year and the GDP price index (GDP deflator) rises by 2% a year, then RGDP increased by _____.

Quiz 7: When CPI increases from 200 in 2010 to 210 in 2011 and the nominal wage rate (W) is constant at $10 an hour, the real wage rate (w) (increases or decreases) by _____.

Quiz 8: When the price level is rising (π) at _____ and the real interest rate (r) is 1% a year, the nominal interest rate (i) is 3% a year.

Answer:

1. Since (NGDP/GDP price index) x 100 = RGDP, we can find that
   % change in NGDP - % change in GDP price index = % change in RGDP.

For example,

	NGDP	GDP price index	RGDP.
2010	100	100	100
2011	105	102	103 .

% change in NGDP = {[NGDP(2011)-NGDP(2010)]/NGDP(2010)}x100%
= [(105-100)/100]x100% = 5%.
% change in GDP Price index =
{[GDP price index (2011) –GDP Price index (2010)]/GDP price index (2010)}x100%
= [(102 -100)/100]x100% = 2% .
% change in RGDP = {[RGDP(2011)-RGDP(2010)]/RGDP(2010)}x100%
= [(103-100)/100]x100% = 3%.
It is easy to see that the answer will be 5% - 2% = 3%.

2. Since [nominal wage (W)/CPI]x100 = real wage (w), we can find that
   % change in W - % change in CPI (π) = % change in w
   According to Quiz 7, π = [(210-200)/200]x100% = 5% and % change in W = [(10-10)/10]x100% = 0%, therefore, we can find that
   % change in w = % change in W - % change in CPI (π) = 0% - 5% = - 5% and conclude that the real wage decreases by 5%.

For example,

	W	CPI	w = (W/CPI)x100 .
2010	$10	200	($10/200)x100 = $5
2011	$10	210	($10/210)x100= $4.76 .

% chane in W = {[W(2011)-W(2010)]/W(2010)}x100% = [[(10-10)]/10}x100% = 0%.
% change in CPI (π) = {[CPI(2011)-CPI(2010)]/CPI(2010)}x100%
= [(210-200)/200]x100% = 5%
%change in w = {[w(2011)-w(2010)]/w(2010)}x100% = [(4.76-5)/5]x100%
= (-0.24/5)x100% ≈ - 5%.

3. Applying i – π = r, we at once obtain that π = i – r = 3% - 1% = 2%.