

**Midterm Exam II**

**1. (15 Points)** Suppose that the firm's markup over costs is 10%, and the wage-setting equation is  $W = P \cdot (1 - u + z)$ , where  $u$  is the unemployment rate and  $z$  is the catch-all variable that stands for all other variables that may affect the wage setting equation.

- (a) What is the real wage as determined by the price-setting equation? **(5 Points)**
- (b) What is the natural rate of unemployment if  $z = 0.01$ ? **(5 Points)**
- (c) Suppose that  $\mu$  increases to  $\mu = 0.125$ . How does the real wage and natural rate of unemployment change? **Support your answer by a figure. (5 Points)**

Izmir University of Economics  
Department of Economics

I. Hakan Yetkiner  
<http://www.hakanyetkiner.com>

2. (20 Points) Suppose the Phillips curve equation is  $\pi_t - \pi_t^e = 0.05 - 0.5u_t$ , where  $\pi_t^e = \pi_{t-1}$  ( $\pi_0 = 0.04$ )

- (i) What is the natural rate of unemployment? (5 Points)
- (ii) Suppose that you are given the information in the table below. Find the inflation rate for years 1, 2, 3, and 4 (fill in the missing information in the table; do not forget to show calculations) (7.5 Points):

Time (t)	Unemployment rate (u)	Inflation Rate
1	0.05	
2	0.075	
3	0.085	
4	0.1	

**DO NOT FORGET TO SHOW CALCULATIONS!**

- (iii) Graph the short-run and the long-run relationship between inflation and unemployment from the table you generate in (ii), given  $\pi_0 = 0.04$ . (7.5 Points)



3. (15 Points) Answer the following questions:

3.1 (NER) Suppose that the nominal exchange rate was €0.892/\$ in 2009 and became \$0.890/€ in 2010. Which currency did appreciate and which one did depreciate?

3.2 (RER) Suppose that 1 kg of apple was \$2.5 in the United States, €1.245 in Spain, and the nominal exchange rate was €0.79/\$ in 2009. In 2010, the price of 1 kg of apple in Spain became €1.40. Did the real exchange rate appreciate or depreciate from the viewpoint of US? (your home country is US)

3.3 (Interest Parity condition-Simplified) Suppose that you are an American financial investor considering financial investment between US bonds and Japanese bonds. Suppose that one year interest rate on US bonds is 5% and the one-year interest on Japanese bonds is 14%. US Dollar is expected to appreciate against Japanese Yen by 10%. Which country would you invest and why?

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**4. (25 Points)** Given an AD-AS framework, discuss in FULL DETAIL the impact of a decrease in Money Supply. **Do not forget to support your answer by relevant figures and detailed discussion.**

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**5. (25 Points)** Given an AD-AS framework, discuss in FULL DETAIL the impact of an increase in government spending. **Do not forget to support your answer by relevant figures and detailed discussion.**

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**BONUS QUESTION (10 Points)**

Suppose that the following information is given:

Consumption:  $C = 18 + mpc(Y - T)$ ;

Tax:  $T = 20$ ;

Investment:  $I = 25$ ;

Saving:  $S = -18 + (0.15)(Y - T)$

Government Expenditure:  $G = 14$ .

Find the **marginal propensity to consume (mpc)**.