Izmir University of Economics

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

ECON 202
INTERMEDIATE MACROECONOMICS **26 April 2007**
Dr. Yetkiner

Midterm Exam

1. (**15 Points**) Calculate the GDP of Farmland, a fictitious economy whose numbers are listed below. Do so using all three methods (value added approach, income approach, and expenditure approach).

Farmland, year 2000

Farmer Jones, (private firm)	
Corn Sold to Govt	**$35**
Corn Sold to Singapore	**$25**
Corn Sold to FoodCo, Inc	**$20**
Paid workers	**$40**
Tax on profit	**$15**

FoodCo, Inc	
Sold Corn Flakes to Consumers	**$100**
Farmland sales tax	**$10**
Revenue of FoodCo, Inc	**$90**
Bought corn from Farmer Jones	**$20**
Corn Inventory	
Beginning of Year	**$0**
End of Year	**$10**
Bought salt from Egypt	**$10**
Paid workers	**$20**
Tax on Profit	**$15**

Farmland Govt	
Taxes	**$50**
Purchase of Corn	**$35**
Unemployment benefits Paid	**$15**

Households	
Taxes on wage income	**$10**
Unemployment benefits	**$15**

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

2. (**10 Points**) Fill in the blanks in the following table:

Year	Nominal GDP	Real GDP	GDP Deflator (1994=100)	Real GDP Growth Rate
1992		**6244**	**95**	
1993	**6240**	**6389**		
1994	**6611**			
1995		**6761**	**107**	
1996	**7290**	**6994**		

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

3. (**15 Points**) Suppose that utility function u of a representative agent is $u = c^{0.75} l^{0.25}$, where c is consumption of physical goods and l is consumption of leisure. Assume that non-labor income is 120, the real wage rate is $w = 5$ and $h = 24$ hours. Find the optimal values of c, l, N, and u.

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

4. (**30 Points**) Suppose that utility function u of a representative agent is $u = c^{0.25} l^{0.75}$, where c is consumption of physical goods and l is consumption of leisure. Suppose that production technology is represented by $y = 2K^{0.35} N^{0.65}$ where $K = 48$ is the physical capital stock and N is labor. We assume that $h = 24$, $h = l + N$ and that there is no government in the economy (use w and π to denote the real wage and profits, respectively)..

a) Find the optimal values of c, l, N, y, w, π, and u under the competitive equilibrium assumption.

b) Find the optimal values of c, l, N, y, and u under the social planner's solution assumption. Are the results different or same? Why or why not?

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

5. (**10 Points**) Suppose that Daniel has income of y_1 when he is young and y_2 when he is old. The real interest rate is $r = 1$. The overall utility function of Daniel is $U = 2c_1^{0.5} + (0.5)2c_2^{0.5}$.

(i) Find the optimal values of c_1, c_2 and s.

(ii) Show that $\frac{\partial s}{\partial y_1} > 0$ and $\frac{\partial s}{\partial y_2} < 0$. Interpret these results.

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

6. (**15 Points**) An unexpected invention makes supersonic transportation substantially cheaper. This invention is expected to raise overall productivity both in the current period and in the future period. What will happen to current values of **N**, **I**, **C**, **Y**, **w**, and **r**? **Discuss and illustrate**.

Izmir Univery of Economics
Department of Economics

I. Hakan Yetkiner
http://homes.ieu.edu.tr/~iyetkiner/

7. (**10 Points**) The government announces that a decrease in government expenditure will occur next year. What effect will this have on the current values of aggregate output, employment, real wage, the real interest rate, consumption, and investment? **Discuss and illustrate**.