

1. Suppose that there are two identical countries, Home and Foreign, each having a single firm that produces an identical product, x . Each firm sells its product only to a third country. Suppose that the inverse demand in the third country is given by $p = 1 - x_h - x_f$, where x_h and x_f represent the production in Home and Foreign, respectively. For simplicity, assume that the marginal cost of production equals zero.

(a) (5 points) Suppose that the firms compete in the Cournot fashion. How much does each firm produce in equilibrium? What is each firm's profit in equilibrium?

(b) (10 points) Now suppose that Home's government is elective to adopt a strategic trade policy in the form of a specific (per unit) tax or subsidy. The government's goal is to maximize its national welfare (equals firm's profits plus tax revenue or minus the value of subsidy). Also suppose that Foreign's government will not react by adopting any trade policies. What should Home's government do?

(c) (10 points) Now suppose Foreign's government can react to Home's strategic trade policy by adopting a similar policy. What are the governments' optimal trade policies? (Consider cases in which both governments take the same action in equilibrium.) How much does each firm produce under the optimal policies? What are the firm's profits in equilibrium?

2. (a) (10 points) There are two goods and two consumers. Preferences and endowments are given by

$$u^1(x_1, x_2) = \min\{x_1, x_2\} \quad \text{and} \quad \omega^1 = (1, 3)$$

$$u^2(x_1, x_2) = \min\{x_1, x_2\} \quad \text{and} \quad \omega^2 = (3, 1).$$

Illustrate Pareto optima, Core and Walrasian equilibrium allocations in an Edgeworth box and explain briefly.

(b) (15 points) Now suppose that preferences and endowments are given by

$$u^1(x_1, x_2) = \min\left\{\frac{x_1}{2}, x_2\right\} \quad \text{and} \quad \omega^1 = (1, 3)$$

$$u^2(x_1, x_2) = \min\left\{x_1, \frac{x_2}{2}\right\} \quad \text{and} \quad \omega^2 = (3, 1).$$

Again illustrate Pareto optima, Core and Walrasian equilibrium allocations in an Edgeworth box and explain briefly.

3. (25%) There are three economists each has a different view about the economy.

- Peter: price adjusts immediately and the production is affected by technology shocks (ie, RBC model);
- Larry: firms misperceive the general price level in setting their prices (ie, Lucas supply curve);
- Frank: wages are set for several periods by staggered contracts (ie, Fischer contract model).

Peter believes that recessions typically arise from adverse technology shocks. Larry and Frank believe that recessions typically arise from adverse demand shocks.

- How each of the economists would explain the fact that in recessions output decreases and employment falls? Describe the mechanisms; using equations and graphs only if necessary.
- Suppose the economy is initially in its long-run steady state, and is suddenly hit by an unanticipated adverse demand shock. The government is considering using monetary policy to maintain output at its long-run level. How each of the economists would advise the government on this issue? Why? Your explanation determines the grade. (Your answer should *at least* address the issue of using anticipated vs. unanticipated monetary policy.)

4. (25%) Consider a consumer who derives utility from her consumption of a non-durable good, C , and from her use of a stock of durable goods, K . Her intertemporal utility function is:

$$E_t \sum_{s=0}^{\infty} \left(\frac{1}{1+\rho} \right)^s [U(C_{t+s}) + V(K_{t+s})].$$

She faces the intertemporal budget constraint:

$$\sum_{s=0}^{\infty} \left(\frac{1}{1+r} \right)^s [C_{t+s} + I_{t+s} - Y_{t+s}] = A_t,$$

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where

- I is expenditure on the durable,
- Y is labor income,
- A is non-human wealth,
- r is the real interest rate,
- and ρ is the preference discount rate.

The relative price of the durable and the non-durable is fixed at one.

Unlike non-durable goods, durable goods can be accumulated over time subject to a depreciation rate δ . The relation between the stock K and the flow I is

$$K_{t+1} = (1 - \delta)K_t + I_{t+1},$$

In answering the following questions, you may assume that $U(\cdot)$ and $V(\cdot)$ are quadratic (so that as an approximation $U'(W) = a + b \cdot W$). You may also assume that $r = \rho$.

- (a) A variable W is said to follow a random walk if $W_t = E_t(W_{t+1})$. In this question, do both C_t and K_t follow a random walk?
- (b) By reducing the consumption of C_t , the consumer can increase the use of K_t . Suppose the consumer reduces the consumption of C_t by ϕ_t , $\phi_t > 0$. What is the *present discounted amount* of extra capital goods that can be consumed as a result?
- (c) Show that the first order condition implies

$$\frac{r + \delta}{1 + r} U'(C_t) = V'(K_t). \quad (1)$$

You can use algebra or use the result from (2b) to answer this question. In either case, give an economic interpretation of this first order condition.

- (d) Define the notation $\Delta W_t \equiv W_t - W_{t-1}$. What is the correlation between ΔC_t and ΔK_t ? Hint: Use the assumption that $U(\cdot)$ and $V(\cdot)$ are quadratic.
- (e) What is the first autocorrelation of C_t ? Why?

國立政治大學圖書館

1. 請對以下的敘述, 整理出摘要, 並提出你的看法. (25%)

“ Stock Market Movements and Investor Demand. ”

Two authors, William Goetzmann and Massimo Massa use high-frequency (daily) data on index fund trading, coupled with separate analyses of inflows and outflows, to investigate the relationship between investor demand and the movement of the S&P500. They find that the investor behavior is primarily governed by risk aversion, rather than by investors chasing positive returns. Conversely, investors tend to overreact to negative returns, immediately liquidating their positions in the funds.

The authors also show that investors react to expert recommendations that appear in market timing newsletters. When the experts are generally bullish, investors react with greater inflows into these index funds and smaller outflows. However, investors react even more strongly to uncertainty among these experts. As dispersion of opinion about the market widens, investors react with reduced inflows and increased outflows. Finally, Goetzmann and Massa find that investor demand shocks are permanent, and do not revert over time.

2. 請針對以下的說法, 提出你的感想. (25%)

The U.S. unemployment rate fell to a thirty-year low of 3.9 % in April 2,000-more than 2 percentage points below the 6% that was widely regarded as unsustainable during the 1980s. Moreover, the unemployment rate has remained at supposedly unsustainable levels for each of the past five years, which suggests the remarkable unemployment performance of the American economy cannot be explained solely by short-term overheating. Explanations given in previous work include unusually strong productivity gains, increased global competition, and more skillful business cycle management by government.

In fact, there are two other factors that have contributed to the low rate of unemployment in America today: welfare reform and technological advancement. The reason that welfare reform reduces unemployment rate are twofold. First, empirical evidence suggests that welfare reform have caused hundreds of thousands of Americans to leave the welfare rolls and enter the labor force. Second, welfare reform can increase the official unemployment rate by drawing new people into the pool of jobs seekers, but it can not increase the number of people who are out of work. As for technological change , it can help low-skilled or disabled individuals become productive members of the labor force, and hence reduce the unemployment rate.

However, these factors are not without controversy. Welfare reform opponents argue that welfare recipients face such formidable problems in their everyday lives that they simply cannot work, with or without a social safety net. On the technology side, interest groups wary of technological change envision a "digital divide" that dooms low-skilled Americans to unemployment while high-skilled Americans prosper.

3. 對以下的文字敘述, 提出你的看法. (30%)

There is no real evidence yet that Japan's central bank is flooding the market with reserves, but analysts are keeping a close watch on the monetary base for confirmation of a major shift in policy that just might put an end to the country's crippling deflation.

"Our analysis shows that the more rapid Japan's monetary-base growth eventually becomes, the weaker the yen will be," says Michael Rosenberg, head of global foreign exchange research at Deutsche Bank.

"We believe that history will view this policy shift as being truly monumental." Rosenberg says. "It is roughly on the same level as the Fed policy shift engineered by [former chairman] Paul Volcker in the late 1970's and early 1980's, when the Fed shifted from interest rate targeting to reserve targeting."

4. 請對以下的說法, 提出你個人的見解. (20%)

Many consumers complain that gasoline and crude oil prices have an asymmetric relationship in which gasoline prices rise more quickly when crude oil prices are rising than they fall when crude oil prices are falling. Many also regard the asymmetry they observe as evidence of market power in petroleum industry. Most previous research provides econometric evidence of the asymmetry, confirming at least part of what consumers suspect. However, some observed that asymmetry is unlikely to be the result of monopoly power.

With the evidence pointing away from market power as an explanation, asymmetry is likely to be the consequence of other market factors. As such, policies to suppress asymmetric price movements are likely to lead to undesirable outcomes. If one is concerned about market power in the production, distribution, and marketing of gasoline, the best policy seems to be watching for mergers that increase market concentration without increasing economies of scale, rather than taking direct steps to suppress asymmetry.