

Principles of Economics I: Microeconomics – Quiz 1 [10/17/14]

Note: You have 2 hours (9:10am-11:10pm), and there are 100 points. Allocate your time wisely.

Part I: (24%) True or False (and Briefly Explain Why)

1. The housing shortages caused by rent control are larger in the long run than in the short run because both the supply and the demand for housing are more elastic in the long run.
2. A tax on a good causes the size of the market to shrink.
3. Jake can solve a Calculus question in 45 minutes and he can write a Principles of Economics homework in 90 minutes. Eric can solve a Calculus question in 30 minutes and she can write a Principles of Economics homework in 90 minutes. Jake's opportunity cost of writing a Principles of Economics homework is lower than Eric's opportunity cost of writing a Principles of Economics homework.
4. If China were to subsidize the production of ASUS Transformer Tablets and sell them in Taiwan at artificially low prices, the Taiwan economy would be worse off.
5. If a firm is facing inelastic demand, then the firm should decrease price to increase revenue.
6. OPEC failed to maintain a high price of oil in the long run, partly because both the supply of oil and the demand for oil are more elastic in the long run than in the short run.
7. All buyers benefit from a binding price ceiling.
8. If the government imposes a binding price ceiling in a market, then the producer surplus in that market will increase.

Part II: (25%) Economics in the News - The Effect of the Business Cycle

Excerpts from “景氣差 頭路少 募兵報名超夯,” by 呂昭隆, 中國時報, 2008/12/14

景氣不好，工作難找；當兵賺錢，成為年輕人在就業市場困乏下的另類選擇。國防部相關官員表示，國軍今年募兵人數是一萬二千餘人，但報名人數達二萬二千人，超過需求數一萬人之譜。一位將領指出，三、四年前，國軍每年募兵數只有五、六千人，整年都募得很辛苦，效果卻不是很好；今年因經濟情況不是很好，很多年輕人找工作不易，當兵成了一個不錯的選擇。... (omitted)

1. (3%) How does the 2008 economic downturn affect the supply for military personnel?
2. (5%) Suppose salary can adjust freely and markets are competitive. Draw the supply and demand diagram and analyze how economic downturn affects equilibrium price and quantity.
3. (5%) Now suppose the government imposes a price floor of 22k for the salary for military personnel so it cannot adjust freely. Draw the supply and demand diagram and analyze the effect of the 2008 economic downturn on equilibrium prices and quantity.
4. (7%) Now suppose the government imposes a binding price ceiling for the salary for military personnel so it cannot adjust freely. Draw the supply and demand diagram and analyze the effect of the 2008 economic downturn on equilibrium prices and quantity. Identify the change in consumer surplus, producer surplus and total surplus.
5. (5%) Which of your answers closely matches what is described in the news excerpts? Explain.

Part III: (51%) Economics in the News - Price Elasticity of Supply for Military Personnel

Excerpts from “救募兵 志願役起薪最高 53K” by 邱燕玲羅添斌, 自由時報, 2013/12/27

馬政府推動募兵制面臨困難，為增加誘因，行政院昨公布國防部「配合募兵制軍職人員待遇調整案」，士官、士兵的志願役勤務加給每月增加 2000 元至 4000 元，軍官待遇則未調整。另外，外島地區第一級（南沙）和第二級（東沙、大膽及二膽等地區）也調整地域加給，分別由現行 12360 元及 9790 元調增為 20000 元及 12000 元。...(omitted)... 針對募兵加薪案，行政院指出，這次志願役勤務加給的調整，以志願役士兵為優先，各等階軍官待遇未作調整，以志願役二等兵為例，每月薪資由現行 29625 元，調高為 33625 元，若又在南沙外島地區服役，加上地域加給兩萬元，每月薪資可達 53625 元。...

Excerpts of “國軍推動募兵成效佳，志願士兵年度報名數超標” via 軍聞社郭家良, 2014/7/29

國防部資源規劃司人力資源處處長劉靖中少將今日出席例行記者會，針對「民國 103 年上半年志願士兵招募及留營成效」提出報告，...(omitted)... 劉靖中表示，103 年志願士兵計畫招募 1 萬 557 員，迄 7 月 29 日，報名人數累計達 2 萬 1,294 員，約為年度計畫目標 2 倍，亦為上半年招募目標(6,157 員)3.5 倍，與去年同時期(1 萬 1,669 員)相較，成長 9,625 員，增加幅度為 82.48%。劉靖中進一步說明，經國防部各階段甄選機制篩選，獲得 7,127 員，與去年同時期(4,579 員)相較，成長 2,548 員，成長率為 55.65%，...

6. (3%) What is the salary of a typical military personnel? Is it truly 53k? Why or why not?
7. (10%) Use the midpoint method to calculate the percentage change in the salary of a typical military personnel, as well as the percentage change in the salary of a military personnel stationed at a remote island (class 1 and/or 2). Which salary has a higher percentage change?
8. (10%) Use the midpoint method to calculate the percentage change in applicants for military personnel and the percentage change in actual recruits. Are your percentages the same as what is described in the news excerpts? Why or why not?
9. (5%) What assumptions are required to calculate the price elasticity of supply for military personnel using your answers of the previous two question? Are they reasonable? Explain.
10. (5%) If the above assumptions hold, what is the price elasticity of supply for military personnel? Is this supply elastic or inelastic? Use information on applicants to obtain your answers.
11. (5%) Would your answers to the previous question change if you use information on actual recruits instead of applicants? Which is more appropriate? Explain.
12. (7%) How much did monthly expenditure on newly recruited military personnel change from 2013 to 2014 (January to July)? Based on this information, can you infer whether the supply for military personnel is elastic or not? Why or why not? Is it consistent with your calculation in the previous questions?
13. (6%) It used to be that salary for military personnel is tax-free, but now it is not. Draw a supply-demand graph and analyze how equilibrium price and quantity of the market for military personnel changed due to the taxation and identify the deadweight loss.

Translation for Excerpts from “Joining Military Service Is Hot”, China Times, 2008/12/14

During the economic downturn, it’s hard to get a job. Hence, joining military service becomes an alternative choice for young people. According to authorities, the demand for military personnel this year was around 12,000, but there were more than 22,000 applicants, which was 10 thousand more than needed. A general said, “We wanted to recruit about 5,000 ~ 6,000 new military personnel a couple of years ago, but there were no enough applicants for the job then. However, due to the economic downturn, it’s hard for young people to find a job, so joining the military becomes a good option. ... (omitted)

Translation for Excerpts of “Get more volunteers, 53K monthly salary”, Liberty Times, 2013/12/27

Since it’s hard to implement a voluntary military service system, authorities have tried to provide more incentives. According to the announcement of the Executive Yuan, the salary of a soldier or sergeant increased by \$2,000 ~ \$4,000 per month, but that of an officer remain unchanged. Also, for those who are stationed at a remote island, their regional bonus increased from \$12,360 to \$20,000 (class 1) and from \$9,790 to \$12,000 (class 2). ...(omitted)... Authorities of the Executive Yuan said that this adjustment targeted voluntary soldiers, not officers. Take a private for example. His monthly salary increased from \$29,625 to \$33,625. What’s more, if he is stationed at a class 1 remote island, he can receive an additional \$20,000 regional bonus, earning up to \$53,625.

Translation for Excerpts of “A success in hiring military personnel, More applicants than needed”

Lieutenant General Liu reported outcomes of the voluntary military service system in the first half year of 2014. “We plan to hire 10,557, and so far, the number of applicants has reached 21,294, almost double the amount needed. Also, compared with the same period last year, the number of applicants increased from 11,669 to 21,294, a growth rate of about 82.48%,” said Mr. Liu. After filtering out some applicants, the Ministry of National Defense employed 7,127 of the applicants. Compared with the same period last year, the number of new recruits increased from 4,579 to 7,127, a growth rate of about 55.65%...