

# Principles of Economics I: Microeconomics - Midterm A [11/16/12]

## Part I: True or False (10 questions, 20%)

NOTE: You will have to briefly explain if you think the statement is false. You need not explain if you think it is true, but you lose 3 points each if you incorrectly say it is true without explanation.

1. Surpluses drive price up, while shortages drive price down.
2. A decrease in the price of a product and an increase in the number of buyers in the market affect the demand curve in the same general way.
3. The tax incidence depends on whether the tax is levied on buyers or sellers.
4. A subsidy on sellers usually causes buyers to pay more for the good and sellers to receive less for the good than they did before the tax was levied.
5. Price elasticity of demand along a linear, downward-sloping demand curve increases as price falls.
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. Taxation will always allocate resources inefficiently.
8. The Laffer curve illustrates how taxes in markets with greater elasticities of demand compare to taxes in markets with smaller elasticities of supply.
9. Exports benefit a country but imports harm a country.
10. One solution to the "Tragedy of the Commons" is to turn the common resource into a private good.

## Part II: Economics in the News (Read the articles below and answer the following questions)

**A. (44%) The Nobel Prize in Literature for 2012 is awarded to the Chinese writer Mo Yan "who with hallucinatory realism merges folk tales, history and the contemporary".**

Mo Yan (a pseudonym for Guan Moye) was born in 1955 and grew up in Gaomi in Shandong province in north-eastern China. His parents were farmers. As a twelve-year-old during the Cultural Revolution he left school to work, first in agriculture, later in a factory. In 1976 he joined the People's Liberation Army and during this time began to study literature and write. His first short story was published in a literary journal in 1981. His breakthrough came a few years later with the novella *Touming de hong luobo* (1986, published in French as *Le radis de cristal* 1993).

In his writing Mo Yan draws on his youthful experiences and on settings in the province of his birth. This is apparent in his novel *Hong gaoliang jiazu* (1987, in English *Red Sorghum* 1993). The book consists of five stories that unfold and interweave in Gaomi in several turbulent decades in the 20th century, with depictions of bandit culture, the Japanese occupation and the harsh conditions endured by poor farm workers. *Red Sorghum* was

successfully filmed in 1987, directed by Zhang Yimou. The novel *Tiantang suantai zhi ge* (1988, in English *The Garlic Ballads* 1995) and his satirical *Jiuguo* (1992, in English *The Republic of Wine* 2000) have been judged subversive because of their sharp criticism of contemporary Chinese society... ~[Nobelprize.org](http://Nobelprize.org), 11 October 2012

Answer the following questions:

1. (3%) How would the demand for *Hong gaoliang jiazhu* change after this press release on Oct. 11 2012? Draw a supply-demand diagram and illustrate how the equilibrium price and quantity change.
2. (3%) How is the demand for Zhang Yimou's film *Red Sorghum* affected by this? Draw two supply-demand diagrams and illustrate how the equilibrium price and quantity of the second market change (as a result of changes in the first market).
3. (3%) How is the demand for Shen Congwen (沈從文)'s novel *Border Town* (邊城) affected by this? Draw supply-demand diagrams and illustrate how the equilibrium price and quantity change.
4. (4%) How is the demand for iPads affected? Draw supply-demand diagrams to show changes in equilibrium price and quantity. How is the stock price of Foxconn, the manufacturer of iPads, affected?
5. (4%) *Hong gaoliang jiazhu* is not available on Barnes & Noble's Nook. How is the demand for Nook affected? Draw supply-demand diagrams and illustrate how the equilibrium price and quantity change. How is the stock price of Inventec, which assembles Nook (but not iPad), affected?
6. (6%) How would the supply for second-hand copies of *Hong gaoliang jiazhu* change six months later? How is the demand for new copies of *Hong gaoliang jiazhu* affected by this change? Draw supply-demand diagrams and illustrate how the equilibrium price and quantity change.
7. (3%) The Taiwanese market for *Hong gaoliang jiazhu* use to be a domestic market. Due to Mo Yan's sudden fame, book stores decided to import cheaper international copies of *Hong gaoliang jiazhu*, so consumers can buy the book either published domestically or abroad. First ignore quality differences and assume the Taiwanese publishing industry is small relative to the world market. Draw supply-demand diagrams and illustrate how the equilibrium price and quantity change after international trade.
8. (2%) How would your answer of the previous question change if (a) there is quality difference between international copies and domestic copies of *Hong gaoliang jiazhu*, or (b) the Taiwanese market of *Hong gaoliang jiazhu* is a significant portion of the world market?
9. (6%) Suppose the Taiwanese government decides to levy a special "Nobel tax" on importers of *Hong gaoliang jiazhu* who take advantage of Mo Yan's sudden fame. Draw a supply-demand diagram and illustrate how the equilibrium price and quantity change. What are the welfare consequences of this tax? Discuss in terms of consumer surplus, producer surplus, tax revenue and total surplus.
10. (4%) Do you think the demand for *Hong gaoliang jiazhu* is elastic? Why or why not? What about the supply for *Hong gaoliang jiazhu*?
11. (3%) What is the incidence of this Nobel tax? Is it affected by the price elasticities of supply and demand? Why or why not?
12. (3%) Suppose the Taiwanese impose this Nobel tax on all publishers instead. How would your answers to the previous question change?

#### **B. (22%) Amazon Faces Taxing Times, Wall Street Journal, March 22, 2012 - By Justin Lahart**

For years, Amazon.com battled against efforts to make online retailers collect sales taxes. Now that it has yielded, investors may learn why it fought so hard for so long. Back in 1992, the Supreme Court ruled that retailers were exempt from collecting taxes where they didn't have a physical presence. From the outset, Amazon understood that the decision could provide a competitive advantage: CEO Jeff Bezos has said one

reason he located the company in Seattle was that Washington's small population would minimize the number of customers it would have to tax... (Omitted)

A recent examination of eBay customers' buying behavior conducted by Stanford University economists Liran Einav, Dan Knoepfle and Jonathan Levin, along with eBay Research Labs director Neel Sundaresan, suggests that the effect of taxes on online sales is substantial. They found that the higher the sales tax in a buyer's home state, the more likely he or she was to avoid paying it by using a seller in a different state. For every 1% increase in the sales-tax rate, the researchers calculate the share of consumers' online purchases from same-state sellers falls 4% to 6%.

For economists interested in how taxes affect buying behavior, California's introduction of online sales tax this fall will be a nice case study: The state accounts for 15% of U.S. retail sales and probably more of online sales. The effect of the rule change should be palpable. Investors, who are paying a hefty 126 times last year's earnings for Amazon shares, may not want to be guinea pigs in the experiment.

Answer the Following Questions:

1. (6%) Draw supply-demand diagram and show the effect of a US\$30 (=9.25% x US\$329) per-unit sales tax on the demand curve for iPad minis, the effective price per unit paid by Apple-lovers, the effective revenue per unit received by eBay sellers, and the quantity of iPad minis bought on eBay.
2. (6%) How does the tax affect consumer surplus of iPad mini users, producer surplus of eBay sellers, tax revenue, and total surplus? Show how taxes lead to a deadweight loss.
3. (3%) According to the article, what is the price elasticity of demand for eBay buyers (in general)? Is the demand for eBay listing elastic or inelastic?
4. (3%) Consider the large number of eBay sellers of iPad mini, each being able to acquire iPad minis at different costs. Do you think the supply for iPad minis listed on eBay more elastic than demand? Why or why not?
5. (2%) How is the incidence of sales tax shared across eBay buyers and sellers?
6. (2%) Why would investors of Amazon "not want to be guinea pigs in the experiment"?

### C. (14%) NTU Bicycle Parking Violations

The following message was sent to by NTU's mailing system on March 2, 2012. We focus solely on #5:

「重要訊息發送」自行車使用規範重大變革！

計算機及資訊網路中心校內訊息轉送服務

委託單位： 總務長室

委託人： 鄭富書總務長

各位臺大人您好：

「國立臺灣大學校園交通管理要點」第十五點、第二十一點、第二十三點及第四十二點條文修正案，經第 2704 次行政會議討論修正通過，並自公布日起實施，本次修正均與自行車攸關，經整理詳細說明如下。…(Omitted)

- 五、降低移置費免罰額度：原要點規定每學期違規遭拖吊次數累計達 4 次以上者，車輛所有人應繳交移置費 50 元，經數據證明違規 3 次的人數是違規 4 次人數的 3 倍，可見車主發覺自己已無免罰額度時，會自律停車，以免荷包失血，顯見罰款規定能有效嚇阻車主違停行為，為持續維護校園停車秩序，本次修法將罰款規定改

為自 101 學年度起，每學年違規遭拖吊次數累計達 3 次以上者，車輛所有人應繳交移置費 50 元；但 100 學年度下學期自 3 月 1 日起至 7 月 31 日止，違規遭拖吊次數累計達 3 次者，亦罰款移置費 50 元。

5. Reduce the number of violations without fine: The original rule states if a bike is towed for the 4<sup>th</sup> time (or more) in a semester, the owner has to pay a fine of NT\$50. The data shows that those with exactly 3 violations is three times the number of those with 4 violations, indicating that owners will park carefully to avoid losing money when they find themselves with no more free violations left. This shows that fines effectively deter illegal parking. To maintain campus parking order, starting from the 2012-13 school year, if a bike is towed for the 3<sup>rd</sup> time (or more) in a semester, the owner has to pay a fine of NT\$50. In addition, this semester (between March 1, 2012 and July 31, 2012), owners will also have to pay a fine of NT\$50 starting from their 3<sup>rd</sup> violation.

良好的停車秩序和美好的校園環境都需要你我共同來愛護，自律停車，利人利己利車，安全文明方便，何樂而不為？

祝您 平安健康

總務處 關心您！

總務長 鄭富書 敬啟

1. (4%) Use the midpoint method to calculate the percentage change in prices from the 3<sup>rd</sup> to 4<sup>th</sup> parking violation using the original rules. Similarly, what is the percentage change in the number of violations?
2. (3%) What is the current price elasticity for NTU bicycle parking violations? Is bicycle parking violations elastic or inelastic?
3. (3%) Would the price elasticity be the same for bicycle parking violations of all Taipei City citizens? Why or why not? (Hint: How would the percentage change in the number of violation differ across income?)
4. (2%) What do you expect to happen after the rule change?
5. (2%) Do you think NTU can further reduce parking violations by subsequently reducing the number of free violations from two to one? Why or why not?