

# Principles of Microeconomics – Midterm [2022/10/21]

Note: You have 170 minutes (10:20am-1:10pm) to earn 138 points. Allocate your time wisely.

## Part A (46%): Excerpts of “In Russia, They Noticed a Rise in the Price of Bulletproof Vests By Thousands of Percent” By Lee Michaelis (gamingdeputy.com, 2022/10/1)<sup>1</sup>

After the announcement of partial mobilization in Russia, prices for body armor in some stores increased by almost two thousand percent. The Baza edition drew attention to a record rise in the price of military goods. The publication noted that in January 2022, a bulletproof vest could be purchased for seven thousand rubles. Eight days after the announcement of the mobilization, the price of this product jumped to 135,000. Thus, a rise in price by 1829 percent was recorded...(omitted)...Demand has risen 10 times, according to a representative of the Military Market clothing store. Basically, buyers are interested in camouflage, berets, tactics, backpacks, sleeping bags. Also, the Russians are sweeping balaclavas, snood scarves, thermal underwear and berets from the shelves. The Federal Antimonopoly Service (FAS) of Russia sent inquiries to the three largest marketplaces regarding prices for military equipment...(omitted)

### Answer the following questions regarding price elasticity of **supply** for bulletproof vests:

1. (6%) What is the percentage change in prices according to Baza quoted in the article? What is the percentage change in quantity **supplied** according to the representative of the Military Market clothing store quoted in the article? Calculate the price elasticity of **supply** for bulletproof vests in Russian. Is **supply** elastic or inelastic? Explain.
2. (6%) What is the price for bulletproof vests in January 2022? What is the price eight days after the partial mobilization? Use the midpoint method to calculate the percentage change in prices. Is your answer the same as stated in the article? Why or why not?
3. (5%) Assume the quantity **supplied** for bulletproof vests prior to the partial mobilization is 30 vests sold per day. How many vests would be sold per day after the partial mobilization? Use the midpoint method to calculate the percentage change in quantity **supplied**. Does your answer depend on the assumption of 30 vests sold a day? Explain.
4. (4%) Hence or otherwise, calculate the price elasticity of **supply** based on your midpoint method estimates. Is **supply** elastic or inelastic? Explain.
5. (3%) Does your answer depend on employing the midpoint method? Why or why not?

## “In Russia After the Mobilization Soared Prices for Bulletproof Vests” (Grupo JBL Times, 2022/10/1)<sup>2</sup>

...The Federal Anti-monopoly Service (FAS) decided to check retail chains due to rising prices. The agency requested from the Voentorg, Sportmaster and Hakki retail chains data on the dynamics of selling and purchasing prices for goods in August-September with explanations. “If signs of dishonest behavior and the establishment of economically unjustified prices by individual sellers are found, the department will immediately take antimonopoly response measures and will stop unfair practices,” the FAS promised...

6. How does the partial mobilization and subsequent FAS information inquiry affect the Russian bulletproof vest market? Draw a supply and demand diagram to analyze the effect on equilibrium price, quantity supplied, and quantity demanded, assuming:
  - a. (8%) the FAS takes no action regardless of how high the prices are, or
  - b. (8%) the FAS declares all high prices as unjustified.

<sup>1</sup> <https://www.gamingdeputy.com/in-russia-they-noticed-a-rise-in-the-price-of-bulletproof-vests-by-thousands-of-percent-russian-news-en/>

<sup>2</sup> By James Morin: <https://grupo-jbl.com/latest-news/in-russia-after-the-mobilization-soared-prices-for-bulletproof-vests/42426/>

Translated from Moscow Times: <https://www.moscowtimes.ru/2022/09/30/v-rossii-posle-mobilizatsii-vzleteli-tseni-na-bronezhileti-a24892>

- c. (6%) How are consumer surplus, producer surplus and total surplus affected when all high prices are declared as unjustified?

**Part B (25%): “Mandatory Service Key to Bolstering the Military” (Taipei Times, 2022/10/10)<sup>3</sup>**

The Ministry of National Defense has reached an initial consensus on the extension of mandatory military service, Minister of National Defense Chiu Kuo-cheng (邱國正) told legislators on Sept. 27, calling the extension a major issue. The final decision would be made by the end of the year after the ministry has consulted experts, academics and young people, he said.

The possible defense policy U-turn deserves public attention and support, because extending military service meets not only the nation’s needs amid the current cross-strait situation, but also the expectations of the international community. At present, conscripts receive only four months of basic military training. That period is shorter than in Israel and South Korea — countries that are facing formidable enemies and thus have more than a year of compulsory military service. Even though the issue has long been of concern to all sectors of Taiwanese society, the ruling and opposition camps have yet to reach a consensus on the highly sensitive matter.

Having a volunteer military system is common among democracies around the world. However, the unstable number of recruits, as well as a large number of openings for junior officers remaining unfilled, has seriously affected the military. To address the issue, the ministry has set up a program for “noncommissioned officers” to become “commissioned officers” and resumed the recruitment of one-year volunteer officers. It has also introduced additional measures, such as a new recall mechanism that requires 14 days of annual service. However, those measures have failed to solve the shortage of recruits. For example, the ministry in 2017 hoped to recruit more than 1,000 noncommissioned officers to become “second lieutenants” to solve a serious shortage of junior officers, but it received little response from the troops and only about 280 people were willing to switch tracks...(omitted)

**Answer the following questions:**

1. (4%) Is national defense excludable or not? Is it rival or not? Which of the following four goods does it belong: private goods, club goods, common resources, or public goods. Explain.
2. (2%) Why does Taiwan face a shortage of manpower providing national defense? How does this relate to the nature of national defense?
3. (4%) How does the Taiwanese government plan to solve this shortage of manpower in providing national defense? Compare the similarities and differences of this solution with the textbook suggestion of governments providing public goods funded by taxes.
4. (3%) Does volunteering for military service create positive or negative externalities? Is volunteer military service oversupplied or undersupplied? Explain.
5. (4%) Name at least one other way the Taiwanese government could employ that is more efficient than mandatory conscription to reduce this shortage and explain why it is more efficient.
6. (4%) Some claim that mandatory conscription is adopted for fairness. Do you agree or disagree? If you agree, explain why mandatory conscription is better than the alternatives (for fairness). If you disagree, explain why mandatory conscription may not be better than the alternatives.
7. (4%) During war time mobilization, mandatory conscription is almost always employed. What are possible reasons why alternatives may not be suitable to solve the shortage of manpower in war.

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<sup>3</sup> By Yao Chung-yuan (姚中原); translated by Eddy Chang.: <https://www.taipeitimes.com/News/editorials/archives/2022/10/10/2003786738>

**Part C (67%): “India Restricts Wheat Flour Exports to Ease Record Local Prices” (Guardian, 2022/8/26)<sup>4</sup>**

India’s cabinet has approved restrictions on wheat flour exports to calm prices in the local market. The government banned the export of wheat itself in mid-May as a heatwave curtailed output and domestic prices hit a record high. That ban boosted demand for Indian wheat flour, exports of which jumped 200% between April and July from a year ago, and lifted prices in the local market, the government said on Thursday. “There was a policy not to prohibit or put any restrictions on the export of wheat flour,” it said in a statement. “Therefore, a partial modification of the policy was required ...to ensure food security and put a check on mounting prices.”

Wheat prices jumped to a record 24,500 rupees (\$307) a tonne this week in India, the world’s second-largest producer of wheat. That was up nearly 20% from recent lows that followed the government’s surprise ban on exports on 14 May, ending hopes India could fill the market gap left by a plunge in exports from the Black Sea region following Russia’s February invasion of Ukraine.

Before the ban, India had aimed to ship a record 10m tonnes this year. Much of that would have gone to other developing countries such as Indonesia, the Philippines and Thailand. Apart from problems with the heatwave damaging harvests, India’s vast stocks of wheat – a buffer against famine – have been strained by the distribution of free grain during the Covid-19 pandemic to about 800 million people.

**First consider the ban on the export of wheat itself in mid-May:**

1. (2%) How did banning the export of wheat itself (instead of wheat flour) in mid-May affect the international price of wheat flour? (Hint: India is the world’s second-largest producer of wheat!)
2. (4%) What is the domestic wheat price in India on 14 May 2022? (Hint: The reporter did NOT use the midpoint method.) What is the most triggering factor to this change in wheat price? Explain.
3. (8%) Assume India is a small country in the world wheat market. Draw a supply and demand diagram to analyze the effect of banning the export of wheat itself on equilibrium price and quantity, as well as the amount of imports or exports for Indian wheat.
4. (8%) What is the effect on consumer surplus, producer surplus and total surplus? Do the gains from banning the export of wheat itself outweigh the losses? Explain.
5. (3%) How would your answers change if India is NOT a small country in the world wheat market?
6. (8%) Assume India is a small country in the world wheat flour market. Draw a supply and demand diagram to analyze the effect of banning the export of wheat itself on equilibrium price and quantity, as well as the amount of imports or exports for Indian wheat flour.
7. (6%) (Continued) What is the effect on consumer surplus, producer surplus and total surplus?
8. (2%) Who is gaining from banning the export of wheat itself in mid-May? Explain.

**Now consider the new restrictions on wheat flour exports in August:**

9. (8%) Draw a supply and demand diagram to analyze the recent export restrictions on wheat flour. How did it affect equilibrium price and quantity, as well as the amount of imports or exports?
10. (8%) What is the effect on consumer surplus, producer surplus and total surplus? Do the gains from restricting wheat flour exports outweigh the losses? Explain.
11. (2%) Who is gaining from the recent restriction on wheat flour exports? Explain.
12. (3%) Do you think the Indian government achieved its main goal of easing local prices? Explain.
13. (3%) What will happen if the Indian government does not relax the restrictions? Explain.
14. (2%) Is it reasonable to assume India is a small country in the world wheat flour market? Explain.

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<sup>4</sup> Reuters in Mumbai w/ AP: <https://www.theguardian.com/world/2022/aug/26/india-restricts-wheat-flour-exports-to-ease-record-local-prices>