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Final Exam Defence Economics

Question 1 (128 words)

The defence market is imperfect due to its quasi-monopsony structure, where governments dominate procurement but operate within a semi-international market. While most defence companies rely heavily on domestic military contracts, the global nature of the industry prevents a pure monopsony. This disrupts the "invisible hand", as government purchasing power influences prices, production, and innovation priorities.

Governments' focus on national security and controlling sensitive technologies often leads to inefficiencies such as information asymmetry and smaller markets. Profit margins are squeezed, discouraging private firms from making long-term investments. To counter this governments can provide R&D incentives, such as grants or tax breaks. Encourage collaboration between firms across borders and research institutions to accelerate technological progress. Supporting exports expands the market, leading to competition, spreading development costs, and economies of scale.

Question 2 (122 words)

Competition policy can drive defence industrial policy by encouraging open competition for government contracts. This can lead to more efficient and innovative outcomes, as many different companies compete to provide the best products and services at the lowest cost. For example, governments can use open calls for proposals/tenders to solve technical challenges, promoting innovation from a wide pool of potential suppliers.

Competition policy can constrain defence industrial policy by limiting the ability of governments to support domestic defence companies. Rules on state aid can restrict the types and amounts of financial assistance governments can provide to defence companies, potentially hindering the development and competitiveness of the national defence industrial base. As the defence market is imperfect, there needs to be a balance.

Question 3 (203 words)

Innovation in drone technology is driven by factors such as in demand dynamics, innovation models, and cost structures, contrasting with the slower pace of innovation in advanced defence systems. The Russia-Ukraine war has sharply increased demand for UAVs, forcing rapid innovation, such as integrating general-purpose technologies (GPTs) like artificial intelligence (AI). These GPTs enhance drones' autonomous capabilities, enabling swarm management and navigation without GPS, critical for modern battlefields. Demand boost pushes manufacturers to rapidly adopt cutting-edge advancements to stay competitive and counter evolving threats.

Major defence systems often rely on Closed Innovation Models dominated by incumbents, the UAV industry thrives on Open Innovation. This model embraces collaboration with startups and civilian companies, opening up broader talent pools and fostering competition, accelerating technological progress. The availability of Commercial Off-The-Shelf (COTS) technologies like mature AI systems reduces drone development time and costs.

Lower production costs and adaptable manufacturing processes of drones allow for quicker responses and rapid iteration to meet battlefield demands. The scale of deployment also allows for experimentation on drone capabilities. Advanced systems like combat aircraft require specialised, capital-intensive production lines, slowing innovation with long-lived generations. The Russia-Ukraine conflict has provided a live testing ground for UAVs, advancing capabilities in ISR and EW.