Political Economy Questions

September 10, 2021

These are questions designed for intermediate/advanced undergraduates who have had exposure to the following topics: commitment problems, supply and demand, topics in market structure, agency problems, collective action problems, and two-level games.

My "International Political Economy" Syllabus has readings that should prepare undergraduates for these questions. Answer key available upon request.

Q1. The Plot Thickens

In the Supply and Demand Module, we discussed food aid and its potentially destabilizing effects. Use what you learned there to tackle this set of questions.

A. We are going to consider supply and demand shifts in the market for agricultural goods in the United States. Draw and label a generic (i.e. not completely elastic or inelastic) supply and demand curves. Intuitively, why does supply look the way it does (i.e. why is it sloping upwards or downwards)? Why does demand look the way it does? What is the equilibrium price and quantity? What is the intuition for equilibrium price/quantity? (4 points)

B. Describe some external shock that would expand the market demand for agricultural goods in the United States? Graph it.[1] What is the final effect on quantities produced and prices? (3 points)

C. Describe some external shock that would contract the market demand for agricultural goods in the United States? Graph it. What is the final effect on quantities produced and prices? (3 points)

D. Suppose President Joe Biden implemented a "Freedom and Prosperity" 15% tariff on a set of fertilizers that are commonly imported (but also domestically produced) and used by farmers in the United States. What is the market equilibrium effect on U.S. agricultural goods? (2 points)

E. Now supposed instead of the tariff in Part D, President Biden implemented a "Strengthening America" tariff that also imposed a 15% tariff on the same set of fertilizers that are commonly imported and used by farmers in the United States, but excluded the J. R. Simplot Company, a major producer of corn and potatoes, from the 15% tariff.[2] We would expect this to change market structure and lead to a market consolidation. Describe how this would come about, and describe the effect on the various producers in the market (i.e. the producers with the tariff and the producers without the tariff). (4 points)

F. Discuss the market equilibrium without and with the "Strengthening America" tariff.[3] Do you think the final prices that ordinary U.S. citizens face will be higher or lower with the "Strengthening America" tariff? (2 points)

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[1]You can be quick with this – no need to add every quantity and dollar value.
[2]This is an analogous case to the lead-up to the Boston Tea Party.
[3]In other words, do not discuss the "Freedom and Prosperity" tariff here.

G. Describe the coalition of winners and losers here. As an adviser to Joe Biden, describe why the "Strengthening America" tariff could be a politically damaging move, even beyond what the "Freedom and Prosperity" tariff would generate. Hint: think about this in terms of winners and losers: who are the additional losers in the "Strengthening America" Tariff? (7 points)

Q2. Troubles with Commitment

The following questions ask you to consider aspects of insurgency within the context of expected utility framing presented in the class. Namely, consider an insurgent/rebel group that is deciding whether or not to agree to a favorable (for the rebels) peace deal put forward by the government (i.e. the discussion on EU(War today) + EU(war in future) versus EU(peace today) + EU(peace in future)). If this question is giving you a hard time, you might consider also reviewing the Walter 2009 recommended reading.

A. Describe why commitment problems can arise in negotiating a peace between governments and rebels. (4 points)

B. Using the expected utility formulation, describe how the possibility of a neutral third party punishing actors for breaking the terms of a peace treaty affects specific aspects of the expected utility formula facing the rebel (i.e. does it affect EU(war today)? EU(war in the future)? Etc. Explain why). Would this encourage or discourage the rebel group to fight today? (2 points)

C. Using the expected utility formulation, describe how strong domestic political and legal institutions affect specific aspects of the rebel's expected utility formula. Would this encourage or discourage the rebel group to fight today? (2 points)

D. Using the expected utility formulation, describe how demographic trends that result in the government becoming more powerful over time affect specific aspects of the expected utility formula. Would this encourage or discourage the rebel group to fight today? (2 points)

E. Suppose the insurgent group and government are nearing a peace deal. However, then a series of correspondences between the rebel group and a powerful third party (like Russia) are published by Wikileaks, suggesting that the powerful third party is in talks to provide assistance to the rebel group. Describe how this could undermine the peace deal and result in more fighting between government and rebels. (5 points)

F. Returning to Part E, would you expect the peace deal to also be undermined if the powerful third party was in talks to support government forces? (2 points)

G. In Part E. you identified one way that outside support for rebel groups (or even the shadow of outside support) could lead to more violence. Describe how this topic— third-party support to terrorist or rebel groups—presents a collective action problem for countries in the international system. (8 points)

Q3. Diffusing commitment problems

Since the development of the nuclear bomb, countries have been concerned with nuclear proliferation. This question asks that you consider this topic in the context of commitment problems.

A. Describe why commitment problems can arise when a state that does not possess a nuclear bomb builds a nuclear weapon? (8 points)

B. Describe why commitment problems can arise when two states both possess a nuclear arsenal? (8 points)

C. Imagine a setting with two countries: Country A (that has a nuclear weapon in production – i.e. it is not yet online) and Country B (that is Country A's adversary). Would Country A or Country B be

incentivised to go to war today? Why? (5 points)

D. In 2010, researchers discovered that Iranian computer networks were being targeted with a particularly computer worm, that came to be known as the Stuxnet worm. The Stuxnet worm targeted Iran's nuclear centrifuges and broke them, thus dragging out Iran's progress towards building a nuclear bomb. By some accounts, Stuxnet succeeded in keeping Israel from declaring war with Iran at a particularly tense point in Israeli-Iranian relations. Describe how Stuxnet may have "solved" commitment problems in this context. (4 points)

Q4. Agency problems for dummies.

In class, we discussed a series of possible sources for agency problems. Consider an alternate way agency problems may arise. On page 27 of The Terrorist's Dilemma, an outstanding book that discusses agency problems within terror and insurgent groups, Shapiro states "Delegation is less likely to be advantageous when making strategic decisions that require integrating many sources of information, such as what types of targets should be hit. Terrorist operatives rarely have the same understanding of political impact as leaders." Put another way, terrorists may not know what leadership would want them to do.[4] This is a different take on the agency problems discussed in class. The series of questions relate to this observation.

A. Describe the three conditions that produce agency problems and why they apply to the insurgency setting. (8 points)

B. Consider what happens if one (of any) of the three conditions do not hold (your choice). Why wouldn't agency problems arise? (2 points)

C. The possibility that agents may not know what the principal wants falls under which of the three conditions defined earlier? Why? (3 points)

D. Describe a way that the operatives' uncertainty (as described by Shapiro) can affect organizational operations. Provide an example from the insurgency setting insurgency for what types of behavior could come about. (4 points)

E. Describe one way of resolving this type of uncertainty, and describe how this solution concept may make the terror group less secure. Note, before answering this, please read Part F; your way of resolving uncertainty cannot be educating the agents. (4 points)

F. Consider the following proposal: one way to resolve the agent's uncertainty without exposing the group's leadership would be to educate the agents. Give one argument in favor of this proposal (i.e. one "pro") and one argument against this proposal (i.e. one "con"). (4 points)

Q5. Aiding autocrats

In a February 2020 working paper, three economists uncovered a troubling trend.[5] They found that foreign aid disbursements to highly aid-dependent countries coincided with sharp increases in bank deposits in off-shore financial centers known for their secrecy and private wealth management. This data suggests that, while aid was flowing to highly aid-dependent countries, a portion of that aid was leaving the country and ending up in the bank accounts of the wealthy. The estimated "leakage" rate of aid is around 5%.

A. Offer an explanation for these findings in terms of principal-agent problems. In doing so, clearly define who are the principal(s), agent(s), and how the conditions for agency problems are met in this case (8 points)

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[4] Put yet another way, the terrorist operatives may be dummies.
[5] See "Elite Capture of Foreign Aid," Policy Research Working Paper 9150.

B. In Acemoglu-Robinson terms, emphasize what is it about the countries' receiving aid that makes them susceptible to this kind of behavior? (3 points)

C. In an interesting twist, there is evidence that the World Bank suppressed publication of this paper.[6] Describe why work like this puts organizations like the World Bank in a difficult position. (4 points)

D. Imagine that you are a part of a foreign aid NGO who was involved in aid disbursement in these highly aid dependent countries. In three days, you have a meeting with your donors, who are pretty mad that some of their money is going into the hands of those who are, in all likelihood, already very wealthy (it's expensive to create these offshore accounts). Given what you know about the ubiquity of agency problems, what would you tell the donors to get them to keep investing with you? In addition to justifying some "leakage," offer a proposal to mitigate aid capture? (10 points)

Q6. Louie Vuitton?

In " Stamping it out: Counterfeiting and piracy" (within the Two-level games readings: read it all the way through, note the last few paragraphs), you read about Chinese production of counterfeit goods.

A. What are the differences in the interests of domestic actors within China? In other words, what are the preferences of those in Beijing negotiating international anti-counterfeiting policies versus the preferences of local administrators? (3 points)

B. Assume for now a simpler framework: that China's local interests care about economic growth. Describe how these domestic preferences can create problems in the context/language of a Putnam-style Two-Level Game, where international actors negotiate over cracking down on counterfeiting. (10 points)

C. As hopefully the reading got you thinking about, the global economy for counterfeit goods can be thought of as a collective action problem. Describe counterfeiting within this context. What are ways the international community can get China to stop counterfeiting? Offer theoretical background on how these ideas would work? (12 points)

Q7. Collection of Collective Action Problems

A. Reducing greenhouse gas emissions presents a collective action problem. Scientists almost uniformly agree and economists generally agree that a successful approach to managing global climate change would be all countries collectively reducing their greenhouse gas emissions. However, this collective change has not happened. On this topic, discuss what externalities are, describe what actions generate externalities, and discuss who experiences the externalities in this case. (6 points)

B. Achieving global free trade presents a collective action problem. What are some of the economic arguments for free (or freer) trade? Why do individual states have incentives to unilaterally deviate from a world where states collectively implement free trade? (5 points)

C. Describe how the hunting of whales presents a tragedy-of-the-commons/common-pool-resource problem. Describe how internal (i.e. states that could be whaling) and external (Non-Government Organizations or Transnational Advocacy Networks) actors have shaped the significant reduction in whaling. (5 points)

D. OPEC is able to raise global oil prices by restricting its member-states' oil production levels through quotas. This essentially allows member states to function together as a single market actor (i.e. more like a monopoly). However, it is difficult to monitor precise oil production across member states. Describe how this setup presents member states with a collective action problem. (4 points)

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[6]See Vox's "Some development aid gets misdirected. Did the World Bank try to suppress a paper saying so?" February 21, 2020.

E. (Continuing Part D) One of the challenges that OPEC has faced in recent years is the emergence of shale gas producers in the United States. These "Independents" are a large group of firms that also produce oil and that are not part of OPEC. Think about what the entrance of these actors means for OPEC's business. Describe what these entrants mean for the OPEC business model, and discuss if you think the emergence of new oil producers will undermine or enhance cooperation among existing OPEC members? (5 points)

Q8. Why can't we all just get along?

Consider the following model of a political elite (modeled as unitary actor G) and a class of subjects (modeled as unitary actor S). The subjects got together and decided to build a railroad to help them trade better among themselves. The political elite observed this and grew wary, because they estimated that this would make the subjects more powerful in the long run. Consider the following model of the political elite's and subject's behavior.

This is a two period model. Peace in either period can be thought of as a split of the "pie," which is normalized to one unit of value per-period. I let $x_1 \geq 0$ and $x_1 \leq 1$ represent the offer made in the first period, and $x_2 \geq 0$ and $x_2 \leq 1$ represent offers made in the second period. p_1 is G's likelihood of winning in war in period 1, and p_2 is G's likelihood of winning in war in period 2. Costs of war remain the same across periods, with $c_S > 0$ being S's costs of war, and $c_G > 0$ being G's costs of war. The game is as follows.

- (Start of Round 1) First, S offers the government G x_1, where $x_1 \geq 0$ and $x_1 \leq 1$.

- Next, the Government G either accepts the offer, resulting in the "peace" payoff for that round, or rejects the offer, resulting in the "war payoff." If G accepts, then G receives x_1, S receives payoff $1 - x_1$, and the game moves forward to the third bullet point. If G declares war, then both players receive their expected war payoffs and the game does not proceed. In other words, when war happens in the first round, the winning party controls the asset minus the costs of war *for two rounds.* I let p_1 denote the likelihood that G wins in war in round 1, and c_G and c_S denote G's and S's costs of war. Together, G's total expected utility from war in round 1 is $EU_G(war\,in\,round\,1) = 2 * (p_1 - c_G)$ and the subject's expected utility from war at this point $EU_S(war\,in\,round\,1) = 2 * (1 - p_1 - c_S)$.

- (Start of Round 2) Next, S offers G x_2, where $x_2 \geq 0$ and $x_2 \leq 1$.

- Finally, the government G either accepts the offer, resulting in the "peace" payoff for that round, or rejects the offer, resulting in the "war payoff." If G accepts, then G receives x_2, and S receives payoff $1 - x_2$. If G declares war, then both players receive their expected war payoff. Here the winning party controls the asset minus the costs of war for one round. I let p_2 denote G's likelihood of winning in war in round 2, and c_G and c_S denote G's and S's costs of war in round 2. Together, G's expected utility from war in round 2 is $EU_G(war\,in\,round\,2) = p_2 - c_G$, and S's expected utility from war in round 2 is $EU_S(war\,in\,round\,2) = 1 - p_2 - c_S$. (note- this is not S's or G's total utility from the game. See the table below).

To summarize the payoffs:

Actions	G's total expected utility	S's total expected utility
G accepts offers in both rounds	$x_1 + x_2$	$2 - x_1 - x_2$
G accepts 1st offer, G goes to war in second round	$x_1 + p_2 - c_G$	$1 - x_1 + (1 - p_2 - c_S)$
G goes to war in first round	$2 * (p_1 - c_G)$	$2 * (1 - p_1 - c_S)$

Note that G cannot go to war in the first round then accept in the second round because war resolves the crisis.

Let $p_1 = 0.9$, $p_2 = 0.2$, $c_G = 0.1$, $c_S = 0.2$. In other words, here G is getting much weaker following

the building of the railroad. Let's consider what happens.

In the second round, G's expected utility from going to war is $EU_G(war\,in\,round\,2) = p_2 - c_G = 0.2 - 0.1 = 0.1$. Assume if G is indifferent between going to war and accepting the offer, G will accept the offer. The Subjects S know this and will offer G as little as possible to prevent war, which is $x_2 = 0.1$.

Now consider the following questions.

A. What is G's total expected utility from going to war in the first round? Use the formula in the table above. (3 points)

B. How many utils would it take in the first round to make G indifferent between going to war and accepting? Is it possible to prevent war? (3 points)

C. What is S's expected utility from going to war in the first round? (3 points)

D. If S could commit to some larger second period offer, would S want to do so? If so, name one such feasible offer pair (some x_1 and x_2) that would result in S doing better. (5 points)

E. Discuss how a powerful third-party whose purpose was to enforce agreements between the subjects and leaders might be able to get the scheme in Part D implemented. Note: I'm not asking you to use math here, just to verbally discuss how it could work. (3 points)

F. Before the political elite declared war, imagine an adviser claimed the following: "Maybe instead of declaring war on your subjects, use your power today to tax and oppress the non-elites? Just throw the political dissenters (i.e. would be rebel leaders) in jail. Doesn't this seem better than going to war?" Argue in favor of this proposal using what you know about non-war solutions to commitment problems. (5 points)

G. Consider the proposal in Part F. Argue against the long-term stability of this proposal using what you know about collective action problems. (3 points)

Q9. Damn it feels good to be a gangster.

A. In the early 1990s in Russia, emerging oligarchs turned to organized crime to protect their business interests. Generally speaking, what about Russia in the early 1990s made Russian leaders distrustful of using the state to protect their assets? (2 points)

One feature of employing private "security" forces is that they come with large price tags. Imagine you are opening a petroleum processing facility. You will need to pay a lot for protection.[7] I will model paying for protection as firms facing high fixed start-up costs. We are going to discuss how this feature affects market structure and incentives. Let the assumptions discussed in class hold, specifically:

Assumption 1: There are ten consumers, each valuing one barrel of oil at 1, 2, 3,..., 10 rubles.

Assumption 2: There are uniform marginal costs to production across all firms.

Assumption 3: Buyers buy when indifferent, producers produce when indifferent.

Assumption 4: Firm sets quantity not price, and price discrimination is not possible.

B. Assume for now that there is just one firm. Fill out the bottom table (you will find negative profits

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[7] As some justification logic, if you don't pay your security forces enough, your competitors may outbid your security forces, your security forces will not adequately protect you, and your oil could be stolen.

in some cases). If Firm 1 were a monopoly, what is the optimal quantity of oil produced? (5 points)

Firm #1 Oil Production #	Marginal Cost to production	Fixed Security Cost	Total Cost	Market Price per barrel	Firm Revenues	Firm Profits
1	1	12	13	10		
2	1	12	14	9		
3	2	12	16	8		
4	3	12	19	7		
5	5	12	24	6		
6	8	12	32	5		
7	12	12	44	4		

C. Above you showed that the monopoly price is 7 rubles per barrel. Now consider the possibility of a market entrant. If the market entrant produced a single barrel of oil, the market price would adjust to 6 rubles per barrel. Assume the market entrant faces the same marginal cost structure and same fixed security costs. Does the potential market entrant have any incentive to enter the market? (2 points)

D. If the market entrant produced two barrels of oil, the market price would adjust to 5 rubles per barrel. Assume the market entrant faces the same marginal cost structure and same fixed security costs. Show the calculations for why the potential market entrant has no incentive to enter the market at this production level. (2 points)

E. If the market entrant produced three barrels of oil, the market price would adjust to 4 rubles per barrel. Assume the market entrant faces the same marginal cost structure and same fixed security costs. Show the calculations for why the potential market entrant has no incentive to enter the market at this production level. (2 points)

F. I can tell you that the market entrant has no incentive to enter the market by producing four or more barrels of oil. Consider a different set-up where, to start up, entrants and incumbents do not need to pay security costs (i.e. the fixed security costs are now zero). Assume there is an incumbent in the market already producing 4 barrels of oil and the price is 7 rubles per barrel. Here (i.e. in the market with a single producer producing 4 barrels of oil without the fixed security costs), would it be profitable for an entrant to enter the market and produce 1 barrel of oil? What about a second entrant entering and also producing a single barrel of oil? Why? (4 points)

G. Consider two cases: when there are no outside security costs, and when there are outside security costs. In either case described above, how would the possibility of entrants affect Firm #1's profitability? (3 points)

H. Acemoglu and Robinson extensively discuss the importance of secure property rights and rule of law. In this model, does Firm #1 have incentives to establish rule of law and drive the fixed security costs down? Note: I don't expect you to argue this with lots of math, but I do expect you to discuss intuition to (both sides) of why this can benefit or hurt Firm #1. (5 points)

Q10. Honor among thieves? (25 points)

A). We are going to consider supply and demand shifts in the market for cocaine in the United States. Draw a supply and demand figure below and label the supply and demand curves. Intuitively, why does supply look the way it does (i.e. why is it sloping upwards or downwards)? Why does demand look the way it does? What is the equilibrium price and quantity? What is the intuition for equilibrium price/quantity? (5 points)

B. Describe some external shock that would expand market demand for cocaine? Graph it.[8] What is the final effect on quantities produced and prices? (3 points)

C. Describe some external shock that would contract market demand for cocaine? Graph it. What is the final effect on quantities produced and prices? (3 points)

D. Suppose a hurricane comes through the Gulf of Mexico and hits the southeastern tip of Texas at the Mexico border crossing. To deal with damage, the proximate Mexico border crossings are shut down, which inhibits the Gulf Cartel's ability to import cocaine into the United States. Would this expand/contract supply or demand for cocaine in the U.S.? [9] What is the final effect on quantities produced and prices? (3 points)

E. Assume that a few months have passed since the hurricane and things are back to normal (in other words, any equilibrium effects in Part D have reverted back to the baseline state). However, the Sinaloa Cartel, the DTO that controls Western border crossings, thought back to the hurricane and came up with an idea. The Sinaloa Cartel has information that the Gulf Cartel was making a very large shipment of cocaine into the U.S. at a given time. In terms of supply, demand, quantity, and price, what would happen if the Sinaloa Cartel gave the United States Drug Enforcement Agency (DEA) a random tip that the Gulf Cartel was making a big shipment, and the DEA intercepted and stoped the Gulf Cartel's shipment from happening? (3 points)

F. Could the Sinaloa Cartel gain from giving the DEA information on the movements of the Gulf Cartel? Using your answer in E, describe how. (4 points)

G. Suppose DTOs could commit to future behavior. Describe how it could be in their best interest to collectively agree to not report on one another to external authorities (like the U.S. DEA). (3 points)

H. In Part G, you argued in favor of DTOs colluding to not invite in government intervention. As you may (or may not) know, these kinds of norms do exist across many DTOs or criminal groups, despite the financial incentives for breaking these norms. Can you think of an example or situation when a gang or DTO would really want to break these norms and collaborate with government/police elements to undercut rivals? (1 point)

Q11. If you can't join em, beat em. (25 Points)

A. Suppose both Russia and the U.S. have developed robust satellite jamming technology that could disrupt GPS and mobile communication satellites. These satellites are critical for military operations and the functioning of missiles. What type of commitment problem could this technology create? Why? In this case, who would you expect to have the incentives to (potentially) resort to conflict?[10] (6 points)

B. Suppose as the Arctic thaws fisheries and oil and gas resources become more accessible and the area becomes a major shipping thoroughfare for Russia, the United States and Canada (don't worry about the other major Arctic powers here). What type of commitment problems could this defrosting create? Why?

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[8] You can be quick with this – no need to add every quantity and dollar value.

[9] Note: please don't overthink this. This will produce a shift, not something weird like kinking or destroying the supply/demand curve

[10] Note: for all of these, I'm asking who would do best fighting the conflict today. Please do not engage any kind of "Side A wants to declare conflict, so Side B knows this and would want to declare violence first" logic.

In this case, who would you expect to have the incentives to (potentially) resort to conflict? (6 points)

C. Suppose the Texas state government implements a new and controversial pilot program for detecting drug shipments coming across it's border crossings. The effect of the pilot program is expected to lower revenues for the cartels in control of Texas border crossings (the Gulf and Juarez Cartels) but would not have an effect on the Sinaloa Cartel (that controls California, New Mexico, and Arizona crossings). What type of commitment problems could this program create? Why? In this case, who would you expect to have the incentives to (potentially) resort to conflict? (6 points)

D. Within Part C, we considered a situation where a strong government actor (i.e. a strong legal institution limiting the trafficking of illicit drugs into Texas) behaving in a certain way could actually generate commitment problems. However, at many other points in the class, I have highlighted, Fearon 1995 has highlighted, A&R has highlighted, many of the recommended readings like Walter 2009 have highlighted, etc. that weak institutions aggravate commitment problems. How would you explain the role of institutions in this case? Is it possible that enforcement of the law (i.e. active legal institutions) can generate commitment problems as well? (7 points)