Seminar 5 - Exercises

As usual, please submit finished solutions by Monday around 12:00 (lunch) either by email (to both danielbergsvik@gmail.com and ole.rogeberg@frisch.uio.no) or directly to the Frisch Centre (leave in Daniel's mail shelf at the Frisch Centre if he is not present).

Part 1 - Bargaining (Group: Julian Eckert, Rainer Kolsdey, Silje T. Knudtzen, Ine Blaas)

A. Download the excel model for seminar 5 on the course website. The model calculates the steps in the backwards induction argument of the bargaining model with known end-point when instantaneous utility equals share of cake:

- In period T (top line) player 2 would be able to ask for all the cake and get it (columns "Player 1's share" and "Player 2's share".
- The sheet calculates the present value of this infinite stream of cake for player 2 ("Value 2")
- In the period before, the sheet calculates the value of this stream ("one whole cake starting from next period") in the period before, i.e. when discounted by one period using player 2's discount factor ("Eq value to above")
- The sheet then calculates the smallest share of pie that player 2 would be happy getting instead of waiting one period and getting everything from then on
- Since this determines the most that player 1 can get in period T-1, the sheet then calculates the present value of the stream of cake that player 1 would get in this case, calculates the discounted value of this the period before, finds the equivalent share that player 2 can propose in period t-2 to make player 1 equally well off
- And so on

The sheet allows you to change the two player's discount factors by typing new numbers in the two orange cells, and automatically updates the graphs, the table etc. that would follow if the players had these two discount factors. By typing in different sets of values and logging the solutions that appear in a separate excel sheet you can create tables that explore the importance of the discount rates. Play around with a few values in each case and see what the changes are before you decide on the most relevant/important information to capture.

1) How does the discount factor change the backward induction outcome at different steps when both discount factors are the same?
2) How important are differences in the discount factor between the players? What does it alter?
3) Does the importance of a x percentage point difference in discount rates the same for different levels of the discount rate (i.e., is the effect of 0.9 vs. 0.95 the same as 0.3 vs. 0.35?)
4) "Finally, it must be emphasized that, thanks to the precise description of the bargaining process, we now have a better grasp of the notion of bargaining power. In the models we have studied, this notion is linked to a preference for the present." How would you answer the following two questions from a friend in a labour union:
   a. "How would you summarize the impact and importance of the time preference rate in negotiations according to economic theory?"
   b. "What kind of negotiator should I choose and how long a potential negotiation period should we aim for to get the best outcome for my union?"

B. Consider the right to manage model. Let union preferences be as in Chapter 7, 3.1.1, but for simplicity let $v(w) = w$.

1) Consider a situation where the firm gets an income per period of $\pi 0$ during a conflict. What is the effect of $\pi 0$ on the markup?

2) Consider a two-tier bargaining system where central negotiators first set a wage; wc. Next local bargaining occurs. Local bargaining is conducted under a "peace clause" where the firm gets $\pi 0$ while workers are paid wc. Derive the expression for the markup in this case. What is the relationship between the centrally negotiated wage and the employment level in this case?

3) Go back to the model with local bargaining only, and set $\pi 0 = 0$. Consider now a case where the union only cares about the wage level only, not the employment level. Derive the expression for the mark-up in this case.

Part 2 - Insider Outsider (Group: Chama Yoram, Alessandro Freitas, Tesfay Zeru)

1) Consider the expression for the firm's profit in the insider-outsider model of part 4.1 in chapter 7. How does the firm decide on the number of insiders it wants to fire or how many outsiders it wants to hire?

2) Explain the expected utility of an insider (p. 407) and how this differs from the expected utility of a union member in the standard case (p. 394)

3) Using the book, state the expression for the markup in the standard case (without insider/outsider distinction) and explain the different elements. Try to provide some verbal intuition for what the expression states.

4) IN the insider-outsider model the expression from question 3 will be different depending on whether the firm will hire outsiders or fire insiders. State the two expressions and explain why they differ.

5) Explain the three segments (horizontal, downward sloping, horizontal) of the wage-employment curve in figure 7.8 based on the above discussion.