

# **Worksheet 4 for lecture 4 (AO, March 12) - Environmental Policy in the Central European Context**

Time: Thursdays 3 p.m. – 6 p.m.

Location: at CERGE-EI, Room # 7

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1. Be able to explain Plott's Figure 2 (and the corrective policies mentioned there).
2. Be prepared to summarize what Figure 17.6 in Schotter and Figure 3 in Plott demonstrate. Does this result support or contradict the experimental literature on prisoners' dilemma, and voluntary contribution game experiments?
3. How do pollution tax, standard and licenses compare as methods for correcting the externality, at least according to the results in Plott (1982)? (I.e., which is the least efficient and which is the most efficient?)
4. Understand Figures 8 and 9 in Plott (1982).
5. Understand Figures 10 and 11 in Plott (1982).
6. The following two quotes seem to contradict each other. Or can you reconcile them?
  - 1) "The standards approach is the one found most frequently in application. The current air pollution are a good case in point." (Plott 1982, p. 107)
  - 2) "Among economists at least, the use of tradable emission allowances under an aggregate emission cap is generally considered a mature policy technology. It has become the default policy option in controlling a variety of large scale air emissions and is being increasingly considered for replacing inefficient source-specific regulation of water pollutants (Tietenberg, 2002). The same policy technology is also being used in fisheries regulation and elsewhere (National Academy of Sciences, 1999). In a competitive emissions market with low transaction costs, the initial allocation of rights will not affect the final use of the allowances. However, how the rights are allocated can have significant economic consequences through their effect on the entry and exit decisions at marginal tax rates (Goulder et al 1999)." (Porter+ 2009, p. 190)

7. Give examples of transaction costs for emissions allowances (and explain why they might matter).

8. Cason & Gangadharan (2003) study the impact of transaction costs on market outcomes under different initial permit endowments: How, in the “real world”, might different initial permit endowments come about?

9. Explain Figure 1 in Cason & Gangadharan (2003).

10. Using Table 2 of Cason & Gangadharan (2003), explain which pieces of data exactly support their hypotheses regarding transaction prices (we did this in class), regarding transaction quantities and final allowance distributions, and regarding cost-effectiveness of abatement.

11. Be also able to explain what Figure 1 in Cason & Gangadharan (2003) shows.

12.a. Explain the difference between the three auction treatments that Porter et al. (2009) analyzed.

12.b. Explain what the term “asymmetric substitutability” refers to in the present context.

12.c. Why did Porter et al. (2009) study the three auction formats (and what do they find; see the sneak review and the results in the lecture notes.)

12.d. What are the problems with the two pricing rules (discriminatory and uniform) that are conceptually possible? Discuss for each of the three auction formats whether both pricing rules are applicable.

12.e. What political concerns were there that had to be taken into account? Do the political concerns preclude one of the auction formats?