Lobbying and Income Inequality

Experimental Evidence

David O’Callaghan (B.Ec(Advanced))

Supervisor: Dr Ralph Bayer

School of Economics
University of Adelaide
November 4, 2016

Thesis submitted in partial completion of the requirements for the degree of Bachelor of Economics (Honours)
Abstract

In this paper we develop a simple two-stage model of lobbying with income inequality and examine our predictions in the laboratory. We found a treatment effect contradicting the theoretical predictions: Low wage subjects paired with high wage subjects over exert in a real effort task, beyond individual rationality, producing for the group at the expense of individual welfare. Neither inequality aversion nor competitive preferences explains the off-equilibrium behaviour. In the second stage, in contrast to much of the literature, subjects tended to exert effort in the contest quite close to SPNE. Delving deeper, we found those that contributed more tax revenue in the first stage exerted more effort in the contest in the second stage, despite it being a strictly dominated strategy. Inversely, those that contributed less exerted less. The effect was observed across treatments. Over-exertion of effort displayed by the higher contributors can potentially be explained by an entitlement effect within the preferences of players, which expresses as a dislike for equal splits of pots, which were not created equally.
Declaration

I declare that except where appropriately acknowledged this thesis is my own work, has been expressed in my own words and has not previously been submitted for assessment.

________________________________________  ________________
Signature                                      Date

word count: 11,063
Acknowledgements

Firstly, I would like to thank my supervisor Professor Ralph-Christopher Bayer, without whose guidance, generosity of time and knowledge this thesis would not have been possible. I would also like to thank my partner Tamzin, for her continued support during my honours year. Lastly, I would like to thank my friends in the honours room for making the journey all the more enriching.
Contents

1 Introduction .................................................. 7

2 The Model ..................................................... 14
   2.1 Timeline .................................................. 16
   2.2 Equilibrium ............................................. 18
   2.3 Some discussions on $e^*$ ................................ 19
   2.4 The production decision ................................. 21
   2.5 Some welfare analysis .................................. 22
      2.5.1 The social Planner’s Problem ..................... 22
      2.5.2 The Social Dilemma ................................. 23
      2.5.3 Some observations on the SPNE production decision 25
      2.5.4 Wasted efforts ..................................... 25
   2.6 What effect does inequality in wages have? .......... 26

3 Experimental design and hypotheses ...................... 28
   3.1 Hypothesis specification ............................... 33
      3.1.1 Hypothesis 1 ........................................ 34
      3.1.2 Hypothesis 2 ........................................ 41
   3.2 Econometric model specification and tests ............ 42

4 Results ......................................................... 44
   4.1 Non-parametric tests ................................... 44
   4.2 Regression analysis ................................... 48
   4.3 Results: Hypothesis 1 ................................. 50
   4.4 Results: Hypothesis 2 ................................. 56
   4.5 A closer look at lobbying efforts ....................... 56
4.6 Discussion .................................................. 60

5 Conclusion .................................................. 62

6 Appendix ................................................... 65
  6.1 Non parametric tests ........................................ 65
  6.2 Some observations on the tax and institutional quality . . 70
  6.3 Econometric models ....................................... 74

List of Figures

1 Best response functions for players $i$ and $-i$ ................. 20
2 Average $time\_cost$ by treatment condition and period ....... 45
3 Average $q$ by treatment condition ............................ 46
4 Average $q$ box and whisker (by treatment condition) ....... 47
5 Average $time\_cost$ box and whisker by treatment condition . 47
6 Histogram of $time\_cost$ with hypotheses(low wage) ........ 55
7 Histogram of $time\_cost$ with hypotheses(high wage) ........ 55
8 Observed efforts vs. SPNE efforts by treatment condition . . 57
9 Average observed efforts vs. SPNE efforts by treatment condi-
   tion .......................................................... 57
10 Optimal production decision for given $t$ and $r$ ............... 72
11 Optimal Lobbying effort for given $t$ and $r$ ................... 73
**List of Tables**

1. Predicted *time_costs* by treatment condition ............... 40
2. Regressions for *q* (questions answered) ...................... 49
3. Regressions for *time_cost* (last question) .................... 51
4. Results from two sided t-test by hypothesis and treatment condition .................................................. 52
5. Estimation results : mixed ........................................ 59
6. Ranksum *time_cost* \_low = \_low \_high Overall ............ 66
7. Ranksum *time_cost* \_low = \_low \_high period 1 ............ 66
8. Ranksum *time_cost* \_low = \_low \_high period 2 ............ 66
9. Ranksum *time_cost* \_low = \_low \_high period 3 ............ 67
10. Ranksum *q* \_low = \_low \_high Overall ....................... 67
11. Ranksum *q* \_low = \_low \_high period 1 ..................... 68
12. Ranksum *q* \_low = \_low \_high period 2 ..................... 68
13. Ranksum *q* \_low = \_low \_high period 3 ..................... 69
14. Wald test *q* (mixed regression coeff) ...................... 69
15. Wald test *time_cost* (mixed regression coeff) .............. 70
16. Parameters for Figure 10 & 11 ................................. 71