

Report on “Bounded rationality in Keynesian beauty contests: A lesson for central bankers”

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Summary: An interesting topic, but an extremely sloppily written paper.

The paper first summarizes experimental results on Nagel’s version of the beauty contest and then argues for their relevance as microfoundations of macroeconomics.

Detailed comments:

- p.1: “wins a prize”. In principle, there are two distinct possibilities. Either the prize is a fixed amount, regardless of the values chosen, or it is proportional to the actual choice. In both cases, with a factor < 1 , 0 is the unique equilibrium, but in the latter case, that equilibrium is disadvantageous for the players, as an equilibrium player gets a reward of 0. I assume that you consider the former version, but it should be useful to also discuss the latter.
- All mathematical symbols should be written in italics.
- Top of p.3: a repetition
- You switch between the symbols b and p without explanation. This was very confusing, but in the end I suspect that they mean the same.
- p.5: “We highlight ...”: it seems that you are now back to b (or p) = $\frac{2}{3}$, but that should be said.
- End of that paragraph is completely unclear. What, for instance, does $p = c + b$ mean?
- What is the point of surveying all the different variations anyway? You need to decide whether you want to give a survey of experimental beauty contests or of the implications for macro. In the latter case, you should only present those variations that are relevant for that purpose. In the former case, leave out the macro discussion.
- p.6: “from 30 years of experimental games”: as I understand, the experiments started with Nagel (1995). This is < 30 .

- Variation 5: You suddenly jump to macro, but you should explain the connection first.
- End of variation 6: completely unintelligible.
- p.11: Signal for what? Also, a signal is some information about an outside event, and therefore, choosing your own signal does not make any sense.
- Beginning of 4.1: repetition
- p.12: “in the next section 4”: there is no such section.
- Now comes the important equation (1), but with an incomplete explanation (and a typo). I suppose, although this is not said, that \hat{E}_t^i is some expectation, but what expectation precisely? Also, now future values y_{t+1} enter. How are they to be understood? Expected values? This is really crucial, and so it must be very carefully explained.
- All equations involving β are corrupted. It seems that you have defined a very strange latex symbol.
- What is the “output gap”?
- In (4), it is unclear whether ϕ_π is a function or a constant (later, it becomes clear that it is a constant). Why does it carry the subscript π ?
- (2)-(4) can easily be reduced to a single equation, for instance by first inserting (3) into (4) and then (4) into (2). In particular, ρ then drops out, and therefore, it is completely superfluous (and not explained anyway).
- End of 4.2.2: “thus an choices”?
- Beginning of 4.2.3: repetition

Conclusion: I am not an expert on the beauty contest, but I suppose the paper is addressed to readers like me. But then, the argument must be much more carefully presented. First of all, the basic form of the beauty contest is a one shot game, but in the end you are interested in macro problems where future expectations play a role. The connection is not completely obvious, but conceptually, this is a major step. And then, the crucial argument why level k thinking is also relevant for understanding macro phenomena must be worked out. After all, it could simply be that for human market participants, the macro dynamics is so complicated that they revert to simple rules of thumb, instead of doing level 2 or 3 reasoning. What value of k would be chosen anyway in real market situations according to your theory?