

## **ECON 8602: Final Exam**

(due under the door of my office by 9:00 AM, Wednesday, 12/19)

Look at the paper that Tor Jakob Klette presented in the last of the applied micro seminars (“How and Why do Firms Differ?”, joint with Arvid Raknerud). Consider the theoretical framework for their empirical methodology. Assume perfect competition and a continuum of firms. I conjecture that some combination of Lucas and Prescott (1971) and Hopenhayn (1992) might help to clarify the model of exit, entry, and capital accumulation. I want you to follow up on this conjecture.

In doing so, I would advise going with a somewhat restricted representation of demand shocks and productivity shocks in order to simplify the notation. There may be difficulties that I do not foresee. (For example, it may be too hard to deal with any industry-wide shocks.) You may make additional simplifying assumptions as needed (in which case you should explain precisely why it is needed).

I will not grade this final based on answering everything in a particular way. Rather, I want to see how well you grapple with the problem, getting past roadblocks and gaining insight.

1. State the definition of an industry equilibrium. Some tricky issues include how to describe the state of a firm and the industry, and how to model the entry and exit decisions.
2. Can you make simplifying assumptions that would justify the investment equation used in the Klette and Raknerud analysis? If not, have they missed anything fundamental?
3. Can you make simplifying assumptions that would justify the restrictions they have placed on firm exit? If not, can you suggest another approach?