Problem Set 1

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ECON 833: Computational Methods for Economists

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1   Research Interests

My main research interests are in international trade, industrial organization, public economics. I am also especially interested in topics in political economy.

When I started my master's program, I focused on health and public economics, so most of the class research projects I did were in these areas. For example, for a class project, the Effects of Health Insurance Coverage on Fertility: Evidence from the Affordable Care Act, utilizing simulated Medicaid eligibility rate and difference-in-difference method, I found that the ACA Medicaid expansion did not impact fertility in the United State. Since I am more interested in topics in trade, IO, and political economy, and I want to work on these areas during my Ph.D. studies. In the future, I would like to study the effect of trade policy uncertainty and political uncertainty on a country's economic growth and innovation. I hope the second-year classes will help me to be more prepared for research in these areas.

I am currently very interested in the paper of Padró i Miquel and Yared (2012) and Handley and Limão (2017). Padró i Miquel and Yared (2012) studies how a government can use rewards and interventions to align the incentives of the local authority with its own using a dynamic principal-agent model. Handley and Limão (2017) examine the effect of trade policy uncertainty on trade, prices, and real income in general equilibrium with heterogeneous firms.
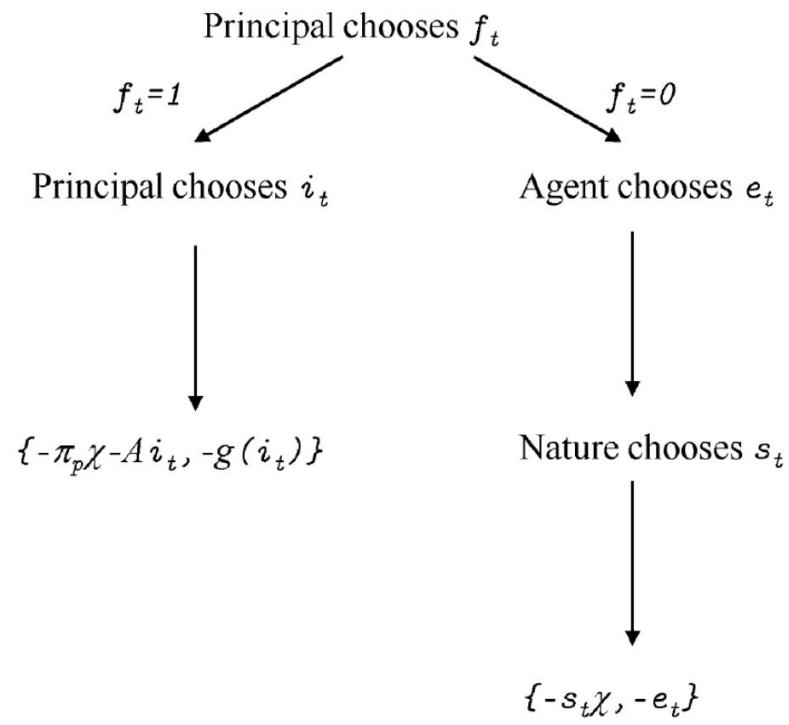
2   Equation

Equation (1) is the equation (1) of Padró i Miquel and Yared (2012)

$$
\begin{aligned}
J(U) = \max_{\rho} E_z \big\{ &f_z \left(-\pi_p \chi - A i_z + \beta J \left(U_z^F \right) \right) + (1 - f_z) \\
&\left(-\pi_a \left(e_z \right) \chi + \beta E_s \left\{ J \left(U_{z,s}^N \right) \mid e_z \right\} \right) \big\}
\end{aligned}
\tag{1}
$$

3   Figure

Figure 1 is the figure I of Padró i Miquel and Yared (2012):

Principal chooses f_t

$f_t = 1$

$f_t = 0$

Principal chooses i_t

Agent chooses e_t

$\{-\pi_p \chi - A i_t,\ -g(i_t)\}$

Nature chooses s_t

$\{-s_t \chi,\ -e_t\}$

Adapted from "The political economy of indirect control," by Padró i Miquel, Gerard, and Pierre Yared., 2012, The Quarterly Journal of Economics 127.2 (2012): 947-1015.

References

Handley, Kyle, and Nuno Limão. 2017. "Policy uncertainty, trade, and welfare: Theory and evidence for China and the United States." *American Economic Review*, 107(9): 2731–83.

Padró i Miquel, Gerard, and Pierre Yared. 2012. "The political economy of indirect control." *The Quarterly Journal of Economics*, 127(2): 947–1015.