A Theory of Policy Expertise

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(Online Appendix)

Steven Callander

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Corollary 1: *Non-invertible policy processes and $c_A < c_L$. An equilibrium in which the legislature delegates, the agency acquires expertise, recommends its ideal policy, and is not overridden by the legislature, exists if and only if:*
(i) $c_A < c_L < \frac{i^2}{3}$ and $a \in (a_1', a_1'')$, where $(a_1')^2 = c_A$ and $(a_1'')^2 = c_L$.
(ii) $c_A < \frac{i^2}{3} < c_L$ and $a < \frac{i}{\sqrt{3}}$.
(iii) $\frac{i^2}{3} < c_A < \frac{2i^2}{3}$ and $a \in \left(a_2', \frac{i}{\sqrt{3}}\right)$, where $(a_2')^2 + \frac{1}{3}i^2 = c_A$.

Proof of Corollary 1: I proceed by backward induction. (a) If A recommends policy p, L's beliefs over all $q \neq p$ are unchanged and these policies remain dominated by sq. L accepts the agency recommendation iff $a^2 < \min\left[c_L, \frac{i^2}{3}\right]$. If A doesn't acquire expertise, L acquires expertise iff $c_L < \frac{1}{3}i^2$. (b) Conditional on L accepting its recommendation, A can do no better than its ideal policy. (c) I break this step down by cases. (i) $c_A < c_L < \frac{i^2}{3}$. Expertise is profitable for A only if $c_A < a^2$ and A's recommendation is not overridden only if $c_L > a^2$. (ii) $c_A < \frac{i^2}{3} < c_L$. Expertise is profitable for A as the informational benefit alone exceeds the cost. L accepts the agency recommendation only if $a^2 < \frac{i^2}{3}$. (iii) $c_A > \frac{i^2}{3}$. Expertise is profitable for A only if $c_A < a^2 + \frac{1}{3}i^2$ and L accepts A's recommendation only if $a^2 < \frac{i^2}{3}$. (d) The legislature's incentive to delegate is induced by steps (a)-(c) and the result follows. ■