Suppose, by way of contradiction that, as $\varepsilon \to 0$, $\sigma_B' \to 0$ and $\sigma_B'' \to 0$;

$(\sigma_B', \sigma_B'') \to (0,0) \Rightarrow v(c \mid \theta_s = \theta_s', L) = \delta(\varepsilon)\cdot[\alpha(\varepsilon)(-4) + (1-\alpha(\varepsilon))15] + (1-\delta(\varepsilon))[(1-p)(-4) + 15p]$

where $\delta(\varepsilon) = \Pr[\theta_B = \theta_B' \mid \theta_s = \theta_s', L]$

$$= \frac{\sigma_B'(p(1-\varepsilon)^2 + (1-p)\varepsilon^2)}{(p(1-\varepsilon)^2 + (1-p)\varepsilon^2)\sigma_B' + \varepsilon(1-\varepsilon)(1-\sigma_B'')}$$

and $\alpha(\varepsilon) = \Pr[v = 10 \mid \theta_B', \theta_s'] = 1 - \dfrac{p(1-\varepsilon)^2}{p(1-\varepsilon)^2 + (1-p)\varepsilon^2}$

assume $\delta(\varepsilon) \to 0$ as $\varepsilon \to 0$

and $\alpha(\varepsilon) \to 0$ as $\varepsilon \to 0$

$\Rightarrow v(c \mid \theta_s = \theta_s', L) \to (1-p)(-4) + 15p$

Recall: $v_s(D \mid \theta_s = \theta_s', L) = 10$

$\Rightarrow$ D is optimal for s for proper parametrization

Then, $(\sigma_s', \sigma_s'') \to (1,0)$ as $\varepsilon \to 0$

$r_B(H \mid \theta_B = \theta_B') \approx \eta(\varepsilon)[\beta(\varepsilon)14 + (1-\beta(\varepsilon))10] + (1-\eta(\varepsilon))[p(14) + (1-p)10] - 14$

$v_B(L \mid \theta_B = \theta_B') \approx \eta(\varepsilon)[\beta(\varepsilon)14 + (1-\beta(\varepsilon))10] + (1-\eta(\varepsilon))[p14 + (1-p)10] - 10$

$$\eta(\varepsilon) = \frac{p(1-\varepsilon)^2 + (1-p)\varepsilon^2}{p(1-\varepsilon)^2 + (1-p)\varepsilon^2 + \varepsilon(1-\varepsilon)} \qquad \beta(\varepsilon) = \frac{p(1-\varepsilon)^2}{p(1-\varepsilon)^2 + (1-p)\varepsilon^2}$$

Thus, $v_B(H \mid \theta_B = \theta_B') < v_B(L \mid \theta_B = \theta_B') \Rightarrow \cancel{\rightarrow}$

$\Pr[v = 14] = \beta i$

FB: $\max_i \{\beta i 14 + (1-\beta i)10 - c(i)\}$

(i): $c'(i) = 4\beta$

Seller: $\max_i \{ [\beta i(1-\Pr[L \mid v=\bar{v}]) + (1-\beta i)\Pr[H \mid v=\underline{v}]]14$
$+ [(1-\beta i)(1-\Pr[H \mid v=\underline{v}]) + \beta i \Pr[L \mid v=\bar{v}]] \cdot 10$
$- c(i)\}$

(i): $4\beta(1-\Pr[L \mid v=\bar{v}] - \Pr[H \mid v=\underline{v}]) = c'(i)$

Need $\Pr[L \mid v=\bar{v}] + \Pr[H \mid v=\underline{v}] = 0$, but this is impossible.

Aghion-Dewatripont-Rey (EMA '94) "ADR"
Segal (1995, 1999) - Job market paper
Hart-Moore (1999)
Che-Hausch (AER '99)
Nöldeke-Schmidt (RAND '96)

- Segal - complexity might justify incomplete contracts.
- Nöldeke-Schmidt: can get FB with options contract
- ADR - With proper "default," can make both

players the residual claimant

Read chapter 12's introduction and literature section.

- Contract theory is sort of like game theory with endogenous rules.
  - Nice toolkit to take on a lot of applied topics.

Next Wednesday - Future research

Exam: 3 sections

1] 5 or 6 True/False/Uncertain-type questions
2] Two problems out of three.