Preliminary: Specification (I) - Log(Compensation)

- CEO's Valuation

$$\beta^u_{y_1} y_1 + \beta^u_{xy_2} x y_2 + \beta^u_{y_2} y_2 + \beta^u_{x\eta} x\eta + \xi^d$$

- Firm's Valuation

$$\beta^d_x x + \beta^d_{xy_1} x y_1 + \beta^d_{xy_2} x y_2 + \beta^d_{\varepsilon\eta} \varepsilon\eta$$

-

$$\varepsilon \sim \mathit{Uniform}(0,1);\ \eta \sim \mathit{Normal}(\mu = 0, \sigma_\eta);$$
$$\xi^d \sim \mathit{Normal}(\mu = 0, \sigma_\xi)$$

- ξ^d is an unobserved firm specific shock to CEO's valuation. Needed to better fit the variations in prices.

Preliminary: Specification (I) - Log(Compensation)

$\beta^u_{xy_2}$	$\beta^d_{xy_1}$	$\beta^d_{xy_2}$	$\beta^u_{x\eta}$	$\beta^d_{\varepsilon\eta}$	β^d_x	$\beta^u_{y_1}$	$\beta^u_{y_2}$	σ_η	σ_ξ	κ
-0.7	1.1	1.0	1.5	-0.7	3.7	4.8	1.5	2.2	1.6	1.7

- CEO's Valuation: $4.8y_1 + 1.5y_2 - 0.7xy_2 + 1.5x\eta + \xi^d$
- Firm's Valuation: $3.7x + 1.1xy_1 + 1xy_2 - 0.7\varepsilon\eta$
- Let $x = 1.5$, $y_1 = 0.25$, $y_2 = 2$, which are approximately the median observation for each characteristic
- CEO's valuation: 2.1, Firm's valuation: 9
- An increase of 1 standard deviation(≈ 0.2) in y_1: $\uparrow$ CEO's valuation by 1, $\uparrow$ Firm's valuation by 0.33
- An increase of 1 standard deviation(≈ 1.3) in y_2: $\uparrow$ CEO's valuation by 0.58, $\uparrow$ Firm's valuation by 1.95
- An increase of 1 standard deviation(≈ 0.9) in x: $\downarrow$ CEO's valuation by 1.2, $\uparrow$ Firm's valuation by 5.30

Preliminary: Specification (II) - Unit: Million Dollars

- CEO's Valuation

$$\beta^u_{y_1} y_1 + \beta^u_{y_2} y_2 + \beta^u_{xy_2} x y_2 + \beta^u_{x\eta} x\eta + \xi^d$$

- Firm's Valuation

$$\beta^d_x x + \beta^d_{xy_1} x y_1 + \beta^d_{xy_2} x y_2 + \beta^d_{\varepsilon\eta} \varepsilon\eta$$

-

$$\varepsilon \sim \mathit{Uniform}(0,1);\ \eta \sim \mathit{LogNormal}(\mu = 0, \sigma_\eta);$$
$$\xi^d \sim \mathit{Normal}(\mu = 0, \sigma_\xi)$$

- ξ^d is an unobserved firm specific shock to CEO's valuation.

Preliminary: Specification (II) - Unit: Million Dollars

$\beta^u_{xy_2}$	$\beta^d_{xy_1}$	$\beta^d_{xy_2}$	$\beta^u_{x\eta}$	$\beta^d_{\varepsilon\eta}$	β^d_x	$\beta^u_{y_1}$	$\beta^u_{y_2}$	σ_η	σ_ξ	κ
-0.4	0.9	1.0	-12.4	5.0	8.3	7.1	1.9	0.5	4.9	12.8

- CEO's Valuation: $7.1y_1 + 1.9y_2 - 0.4xy_2 - 12.4x\eta + \xi^d$
- Firm's Valuation: $8.3x + .9xy_1 + 1xy_2 + 5\varepsilon\eta$
- Let $x = 1.5$, $y_1 = 0.25$, $y_2 = 2$, $\eta = 1$, $\varepsilon = .5$ which are approximately the median observation for each characteristic
- CEO's valuation: -14.2, Firm's valuation: 18.3
- An increase of 1 standard deviation(≈ 0.2) in y_1: $\uparrow$ CEO's valuation by 1.4, $\uparrow$ Firm's valuation by 0.25
- An increase of 1 standard deviation(≈ 1.3) in y_2: $\uparrow$ CEO's valuation by 1.3, $\uparrow$ Firm's valuation by 1.95
- An increase of 1 standard deviation(≈ 0.9) in x: $\downarrow$ CEO's valuation by 11.88, $\uparrow$ Firm's valuation by 9.02

Preliminary: Specification (II) - Unit: Million Dollars

- CEO's Valuation

$$\beta^u_{y_1} y_1 + \beta^u_{y_2} y_2 + \beta^u_{xy_2} x y_2 + \beta^u_{x\eta} x\eta + \beta^u_{\xi} \xi^d$$

- Firm's Valuation

$$\beta^d_x x + \beta^d_{xy_1} x y_1 + \beta^d_{xy_2} x y_2 + \beta^d_{\varepsilon\eta} \varepsilon\eta$$

-

$$\varepsilon \sim \mathit{Uniform}(0,1);\ \eta \sim \mathit{Normal}(\mu = 0, \sigma_\eta);$$
$$\xi^d \sim \mathit{LogNormal}(\mu = 0, \sigma = 1)$$

- ξ^d is an unobserved firm specific shock to CEO's valuation.

Preliminary: Specification (II) - Unit: Million Dollars

$\beta^u_{xy_2}$	$\beta^d_{xy_1}$	$\beta^d_{xy_2}$	$\beta^u_{x\eta}$	$\beta^d_{\varepsilon\eta}$	β^d_x	$\beta^u_{y_1}$	$\beta^u_{y_2}$	σ_η	β^u_ξ	κ
-0.5	0.9	1.1	1.3	-0.5	3.6	-1	1.3	2.2	-4.7	4.4

- CEO's Valuation: $-1y_1 + 1.3y_2 - 0.5xy_2 + 1.3x\eta - 4.7\xi^d$
- Firm's Valuation: $3.6x + 0.9xy_1 + 1.1xy_2 + 0.5\varepsilon\eta$
- Let $x = 1.5$, $y_1 = 0.25$, $y_2 = 2$, $\eta = 0$, $\varepsilon = .5$, $\xi^d = 1$ which are approximately the median value for each characteristic
- CEO's valuation: -3.7, Firm's valuation: 9, Median Firm Profit $= 4.4$
- An increase of 1 standard deviation(≈ 0.2) in y_1: $\downarrow$ CEO's valuation by -0.20, $\uparrow$ Firm's valuation by 0.26
- An increase of 1 standard deviation(≈ 1.3) in y_2: $\uparrow$ CEO's valuation by 0.78, $\uparrow$ Firm's valuation by 2.17
- An increase of 1 standard deviation(≈ 0.9) in x: $\downarrow$ CEO's valuation by -0.85, $\uparrow$ Firm's valuation by 5.45