HHI on the valuation of CEOs and firms, which are given by,

$$\Phi^u\left(G, \varepsilon, S, C, \eta, \xi\right) = 2.3\text{HHI} + 0.5\text{SIZE} - 0.3\text{GAI} \times \text{SIZE} + 1.3\text{GAI}\times\eta - 4.3\xi,$$

$$\Phi^d\left(G, \varepsilon, S, C, \eta, \xi\right) = 4.0\text{GAI} + 0.9\text{GAI} \times \text{HHI} + 1.1\text{GAI} \times \text{SIZE} + 0.5\varepsilon\eta.$$

The CEO's valuation is approximately -3.1 million dollars, while the firm has a valuation of 9.1 million dollars. Recall the valuation is not the same as the agents' payoffs. The CEO and firm payoffs are calculated by adding and subtracting the equilibrium total compensation from their respective valuations. An increase of one standard deviation, approximately 0.9, in CEO's ability decreases the CEO's valuation by 230,000 dollars, while it increases the firm's valuation by 5.5 million dollars. The negative effect of the increase in general ability on CEO's valuation can be thought of as the higher disutility of work for CEO of higher ability from being matched with a firm with the same characteristics. The effect of the increase in general ability on match production function is an increase of 5.3 millions dollars. A similar change of one standard deviation in firm's HHI, approximately 0.2, results in an increase of 450,000 dollars in CEO's valuation, and an increase of 280,000 dollars in firm's valuation. Finally, increasing the firm's size by one standard deviation, approximately 1.3, increases CEO's valuation by 630,000 dollars, and it increases the firm's valuation by 1.8 million dollars. We can see that, all else equal and without considering the compensation, the median CEO prefers managing a firm with a larger size and broader scope. In other words, the CEO would be indifferent between managing a firm with lower size or HHI and a larger or higher HHI firm, but with lower compensation. If we consider the median compensation of 5.2 million dollars, the increase in CEO's valuation from one standard deviation increase in HHI and size amounts to 9% and 12% of the total compensation respectively. Focke, Maug, and Niessen-Ruenzi (2017) find evidence that CEOs are willing to trade off working for a higher "prestige" firm against additional monetary payments.

6.5 Profit Estimation

Let us assume the CEO only cares about the compensation and does not have non-pecuniary match preferences. Provided that, we can treat the total compensation as CEO's profit. Further, let us assume that the match production function is monotonically increasing in the scalar unobserved characteristic ε of CEOs, which can, similar to Terviö (2008), be interpreted as the unobserved ability of CEO. It follows that the Data Scheme 2 and Assumption 5 are satisfied, and we are able to
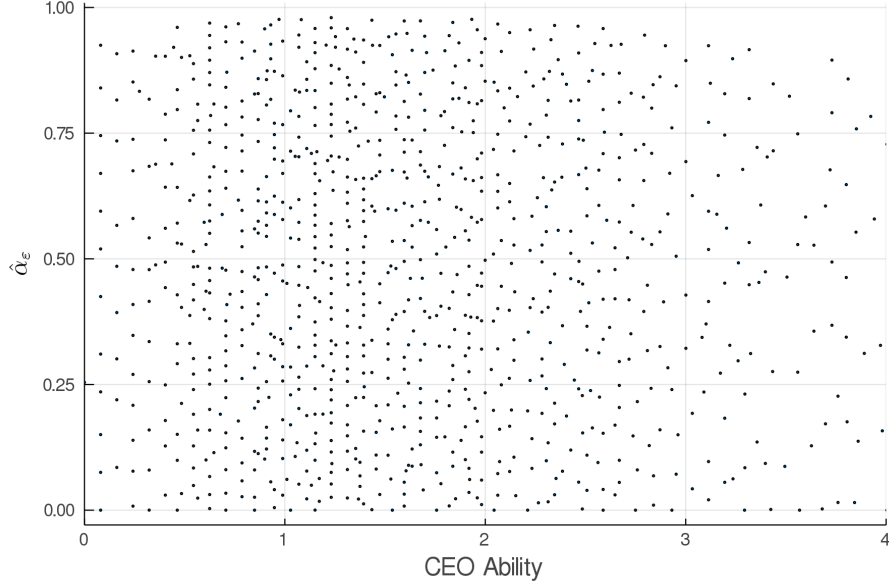
Figure 5:

apply Corollary 4 to identify and estimate the derivative of the match production function with respect to CEO's ability at the equilibrium point in the market, i.e. $\bar{\Phi}_x\left(\boldsymbol{x}, \alpha_\varepsilon, \boldsymbol{y^*}\right)$. We start by following the procedure explained in Section 5.2 to estimate $\hat{\alpha}_{\varepsilon i}$ for each CEO observation. Figure 6.5 plots CEOs' general ability against $\hat{\alpha}_{\varepsilon i}$. By assumption, the normalized unobserved characteristic is uncorrelated with the observed general ability and is distributed uniformly over $[0, 1]$.

Next, we proceed to estimate the the derivative of the production function with respect to CEO's general ability evaluated at the $N = 1000$ matches observed in the data, i.e. $\bar{\Phi}_x\left(G_i, \hat{\alpha}_{\varepsilon i}, H_i^*, S_i^*\right)$. We use (17) to estimate the partial derivatives and (20) to choose the tuning parameters of the estimator. We recalculate the optimal bandwidth by minimizing the cross-validation objective in (20) for different values of $\hat{\alpha}_{\varepsilon i}$. Figure 6.5 plots the partial effects of the CEO's general ability for different values of the general ability and unobserved ability α_ε.

At the first look, the partial effects evaluated at the sample points $(G_i, \hat{\alpha}_{\varepsilon i}, H_i^*, G_i^*)$ may seem uninformative. Except for a few points, the partial effect of the general ability evaluated at the equilibrium of the market is positive. Interestingly, when we fix the unobserved ability at the quartiles of its distribution, we see that the partial effects of the general ability are quite different for CEOs that share the same GAI but differ in their unobserved ability. Let us consider three CEOs with GAI $= 1.5$, i.e. the median general ability in the market, but with unobserved abilities corresponding to the first, second, and third quartiles of the distribution ε. We see
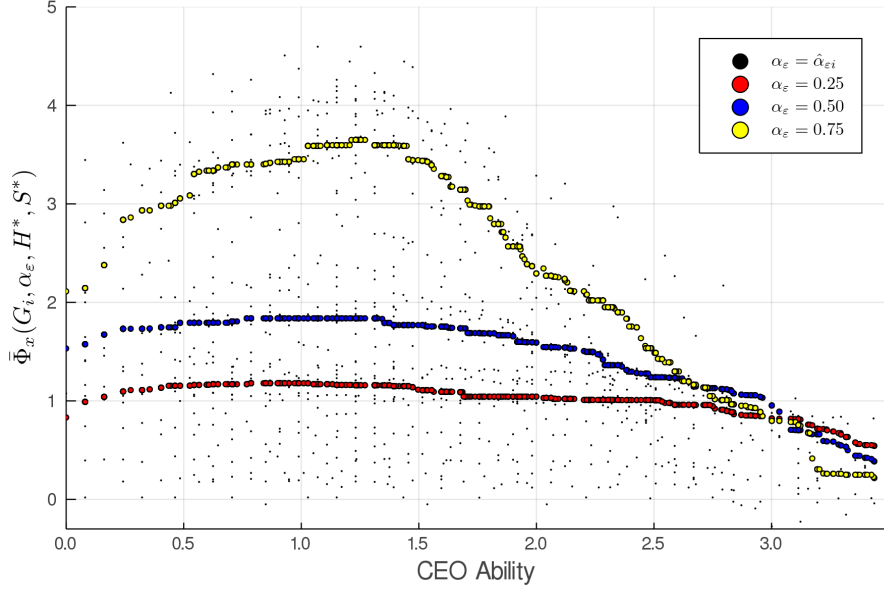
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Figure 6:

that the partial effects of the general ability for the CEO with $\alpha_\varepsilon = 0.75$ are almost twice as much as the CEO with $\alpha = 0.5$ and almost three times as much the CEO with $\alpha_\varepsilon = 0.25$. An increase of one standard deviation (approximately one unit of GAI) in the general ability of CEO, holding all the unobserved ability and the firm's characteristics fixed, would increase the match production by 3.5 million dollars for the CEO with $\alpha_\varepsilon = 0.75$, while this increase is only 1.8 and 1.2 million dollars for the CEOs with $\alpha_\varepsilon = 0.5$ and $\alpha_\varepsilon = 0.25$, respectively. It is important to note that these partial effect are calculated at the equilibriums of the market. For instance, when comparing the partial effects for $(G = 1.5, \alpha_\varepsilon = 0.75)$-CEO with $(G = 1.5, \alpha_\varepsilon = 0.25)$-CEO, we are comparing $\bar{\Phi}_x(1.5, .75, \bar{T}^u(1.5, .75), \bar{S}^u(1.5, .75))$ witha $\bar{\Phi}_x(1.5, .25, \bar{T}^u(1.5, .25), \bar{S}^u(1.5, .25))$. In this sense, the difference in the partial effects can be due to the characteristics of the firms that are matched in equilibrium to these two CEOs. For example, the CEO with a higher unobserved ability is matched to a larger firm with a broader scope of operations, and thus, the partial effect of CEO's observed ability is higher because of the both the CEO's unobserved ability, as well as the fact that this we are evaluating this partial effect for a larger firm with a broader scope of operations.