

Frank Wu, 2015

*Firm Alliances in R&D: Coopetition in the Pharmaceutical Industry* with Professor Khwaja

The goal of this research project was to investigate the benefits of alliances between firms that are also competitors in a different front. In particular, we focused on the pharmaceutical industry, where firms with competing drugs on the market may collaborate with one another in the research and development (R&D) of a separate product. This approach further allowed an objective way to measure the impacts of such alliances: success in the phases of FDA clinical trials. In the spirit of prior literature on firm alliances such as *Danzon et al. (2005)*, we started by running preliminary regressions using data from the FDA Clinical Trials database. Our initial regressions (excluding controls) yielded a generally positive effect of alliances on approval success in each of the clinical trial phases; however, upon the introduction of controls for year and firm identity, the effect became much less robust. We finished up the summer portion of the project by transitioning our attention to other determinants of success in the clinical trials, not just prior success and alliance experience.

My responsibilities were initially focused on conducting a literary review of publications on firm alliances. In particular, I focused on addressing the question of what determines the success of an alliance: including past experience in alliances, the scope and scale of the project, and the sizes of the firms, just to name a few. After we developed a more concrete sense of what we wanted to investigate, my duties expanded to preparing and manipulating data using Stata.

I think that the SRO experience was very beneficial at helping me refine my understanding of econometrics; I definitely feel more comfortable at reading and interpreting results from economics literature. Technically, I continued to develop my skills at using the Stata software and working with data in general. I think the biggest takeaway for me was the whole mindset of how to do research. Before the summer, I would have had little idea of how to create or develop an original thought. Now, I feel that I am ready to tackle something like my senior paper. I really enjoyed working on the SRO, and I believe that what I learned will serve me well into the future.