# Problem Set #1

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In Keane's 2010 paper, "Structural vs. atheoretic approaches to econometrics", he expresses that although structural econometrics seems to have a declining popularity, he thinks structural econometric work will never fall out of favor. Keane strongly believes that "it is not possible to learn anything of interest from data without theoretical assumptions, regardless of what sort of idealized experiments, 'natural experiments', or 'quasi-experiments' are present in the data". Keane concludes his belief that Experimetalist approaches, or the use of Instrumental Variables (IV), does not have commonly believed comparative advantage of relying on fewer or weaker assumptions, but rather, the difference between structuralist approach and experimentalist approach is that the former must lay out *a priori* assumptions explicitly while the later simply left key assumptions implicit.

Rust shows his support to Keane in his comment to Keane's paper. He slightly disagrees with Keane's statement that structural econometrics are falling out because there are many structural approach is still flourishing in IO field. Rust agrees with Keane that one of the most important reasons that structuralist approach is loosing its place is due to its difficulty: "It requires several skills including a knowledge of economic theory, econometrics, an understanding of data and institutions, and especially, considerable knowledge of numerical methods and computer programming". Another reason Rust proposed is what he called "professional incentive structure". Using Levitt's *freakonomics* as an example, Rust thinks the field of econometrics seems to start worshipping "clever instruments" and "entertaining topic", while no longer caring whether the basic methodology is correctly implemented.

Although I understand where Keane and Rust are coming from and do respect the structuralist approach, I am personally more inclined to the experimentalist approach because I find nonparametric inferences and techniques such as instrumental variables to be more statistically powerful. I agree with Keane and Rust that *a priori* assumptions are important; however, I think sometimes assumptions can somehow limit our perspectives. I always think to analyze, model, and predict human behaviors is already a subtle and insurmountable task because human behaviors, or in general the market, are always subject to unknown variations. From my point of view, if we adapt economic theory and lay out clear but strict assumptions before modeling with the purpose of simplifing problems and reducing variations, it could potentially distort the reality making already "wrong" model even worse (all models are wrong). Nevertheless, I agree with Rust and I do not see either experimentalist approach or structuralist approach would dominate the field of econometrics because each approach has its unique comparative advantage and it would be the best practice to find a middle ground between structural and reduced form models.