

*On Structural v.s. Reduced Form Estimation*

As Michael Keane demonstrates in his paper "Structural vs. atheoretic approaches to econometrics," the criticism that structural estimation postulates "too many assumptions" seems to be neither a proper evaluation nor a valid justification that establishes superiority of reduced form estimation (Keane, 3). In this paper, I substantiate Keane's case for structural estimation as well as reconsider particular claims.

First of all, it is quintessentially because structural estimation draws from economic models and assumptions that it is a valuable method of research. Theoretical models, especially those in economics, are not pure abstractions completely detached from the 'real world'. In fact, such models have been designed and modified upon careful observation and analysis of empirical regularities. Thus, it is only natural that structural models serve as sources of testable implications as well as reference points for which researchers constantly corroborate, improve, and organize their understandings of the world through inferences from data.

Following Keane's argument that the true distinction between structural and reduced form estimation lies in the degree to which assumptions are made explicit, it is important to also question the validity and power of statistical assumptions in whether they are justifiable and generalizable in broader contexts of interpretation. In the same way that theoretical models are always mis-specified, results from reduced form estimation are always mis-representative of the general population because heterogeneity is embedded and any sample is only a limited representation. Further, that economics and most social or natural sciences, in part, study things which are "intrinsically unobservable" necessitates utilization of theoretical assumptions and framework into any investigation of reality (Keane, 11).

Not only are pivotal assumptions such as exogeneity easily disputable, but certain patterns of interest may also have *a priori* relationships with social institutions and economic realities. For example, if a "policy intervention" may be considered a 'natural experiment,' it is noteworthy that such policy would have been designed and implemented under influence of economic assumptions and previous findings related to economic theory (Keane, 12). All research questions are contingent on value judgments and are generated from particular prioritization of empirical phenomena. Data does not naturally emerge and exist for its own sake, but is rather collected and analyzed with certain objectives. What gives voice enabling data to 'speak' rests upon such subjectivity, and is in constant communication with theory.

Michael Keane points out that results from reduced form analyses are often hard to interpret, and more specifically, that the "quantitative magnitude of the estimate" are insignificant without further structure (Keane, 5). However, in turn, his claim neither uncovers a point of differentiation that suggests superiority of structural estimation. Even the interpretability of quantitative parameter estimates in structural analyses, as well as the drivers of such estimates, are ultimately restricted to the context and conditions of the model.

After all, in most cases, I would indeed argue that neither approach is unquestionably better than the other in its own terms. It may be that isolating a certain effect or degree of causality is not only hindered by statistical constraints, intrinsic heterogeneity and endogeneity, but also not always of utmost interest or importance in the general objective of any research. The most insightful and effective analysis may generate from work that takes advantage of the strengths and complementarities of each method.