Robustness Checks in Structural Analysis

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Robustness checks, such as adding controls or sample splits, are a standard feature of reduced-form empirical research. Because of computational costs of reestimating alternative models, they are much less common in structural research using simulation-based methods. We propose a simple methodology to bypass this computational cost. Our approach is based on estimating a flexible approximation of the relation between moments and parameters. It provides a computationally cheap way to run the potentially large number of structural estimations required for such robustness checks. We demonstrate the validity and usefulness of this methodology in the context of two standard applications in economics and finance: (1) dynamic corporate finance (2) portfolio choice over the life cycle.