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A note on potential one-way policy instruments in cointegrated VAR systems

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Abstract

This note introduces the concept of potential one-way policy instruments in a cointegrated vector autoregressive (VAR) system in a manner validating super and strong exogeneity. Monte Carlo experiments are conducted to verify arguments for a policy-oriented interpretation of the system's impact-matrix. This study provides useful insight into simulation exercises for macroeconomic policy.
JEL classification codes: C32; C52; C54.
Keywords: Super and strong exogeneity; Cointegrated vector autoregressive models; Control theory; Policy instruments.

1 Introduction

This note augments Johansen and Juselius (2001)'s control theory with the idea of potential one-way policy instruments, which are compatible with the concept of super and strong exogeneity introduced by Engle, Hendry and Richard (1983). A cointegrated vector autoregressive (CVAR) model pioneered by Johansen (1988, 1996) is the vehicle by which various arguments for empirical policy simulations are developed in a macroeconomic context in this note. See also Juselius (2006) as well as Hunter, Burke and Canepa (2017) for CVAR analysis in general. This study also conducts small-scale Monte Carlo experiments to give weight to the aforementioned arguments. Overall, this note presents useful results from the viewpoint of empirical macroeconomic policy analysis.

This study proceeds as follows. Section 2 reviews CVAR-based control theory and examines one-way policy instruments in the CVAR framework. Section 3 carries out a set of Monte Carlo experiments. Finally, Section 4 provides concluding remarks. All

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