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Title	Bootstrap Inference for Impulse Response Functions in Factor-Augmented Vector Autoregressions
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Abstract	<p>In this paper, we consider residual-based bootstrap methods à la Gonçalves and Perron (2014) to construct the confidence interval for structural impulse response functions in factor-augmented vector autoregressions. In particular, we compare the bootstrap with factor estimation (Procedure A) with the bootstrap without factor estimation (Procedure B). In theory, both procedures are asymptotically valid under a condition $\sqrt{T}/N \rightarrow 0$, where N and T are the cross-sectional dimension and the time dimension, respectively. Even when $\sqrt{T}/N \rightarrow 0$ is irrelevant, Procedure A still accounts for the effect of the factor estimation errors on the impulse response function estimate and it achieves good coverage rates in most cases. On the contrary, Procedure B is invalid in such cases and tends to undercover if N is much smaller than T. However, Procedure B is implemented more straightforwardly from the standard structural VARs and the length of the confidence interval is shorter than that of Procedure A in finite samples. Given that Procedure B still gives a satisfactory coverage rate unless N is very small, it remains in consideration of empirical use, although using Procedure A is safer as it correctly accounts for the effect of the factor estimation errors.</p>
Keywords	factor-augmented vector autoregression, structural identification, coverage rate, impulse response function
JEL	C14, C22
