

Accepted Manuscript

On the role of the rank condition in CCE estimation of factor-augmented panel regressions

Hande Karabiyik, Simon Reese, Joakim Westerlund

PII: S0304-4076(16)30200-7

DOI: <http://dx.doi.org/10.1016/j.jeconom.2016.10.006>

Reference: ECONOM 4320

To appear in: *Journal of Econometrics*

Received date: 29 November 2015

Revised date: 17 September 2016

Accepted date: 27 October 2016



Please cite this article as: Karabiyik, H., Reese, S., Westerlund, J., On the role of the rank condition in CCE estimation of factor-augmented panel regressions. *Journal of Econometrics* (2016), <http://dx.doi.org/10.1016/j.jeconom.2016.10.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ON THE ROLE OF THE RANK CONDITION IN CCE ESTIMATION OF FACTOR-AUGMENTED PANEL REGRESSIONS *

Hande Karabiyik
VU University Amsterdam

Simon Reese
Lund University

Joakim Westerlund[†]
Lund University
and
Centre for Financial Econometrics
Deakin University

October 28, 2016

Abstract

A popular approach to factor-augmented panel regressions is the common correlated effects (CCE) estimator of Pesaran (Estimation and inference in large heterogeneous panels with a multifactor error structure. *Econometrica* **74**, 967–1012, 2006). This paper points to a problem with the CCE approach that appears in the empirically relevant case when the number of factors is strictly less than the number of observables used in their estimation. Specifically, the use of too many observables causes the second moment matrix of the estimated factors to become asymptotically singular, an issue that has not yet been appropriately accounted for. The purpose of the present paper is to fill this gap in the literature.

JEL Classification: C12; C13; C33; C36.

Keywords: Factor-augmented panel regression; CCE estimation; Moore–Penrose inverse.

1 Introduction

Consider the scalar $y_{i,t}$ and the $k \times 1$ vector $\mathbf{x}_{i,t}$, where $i = 1, \dots, N$ and $t = 1, \dots, T$ index the cross-sectional and time series dimensions, respectively. Except for some simplifications that

*Previous versions of the paper were presented at a seminar at Maastricht University, at the 2016 UvA-Econometrics Panel Data Workshop, at the 9th International Conference on Computational and Financial Econometrics, and at the IAAE 2016 Annual Conference. The authors would like to thank seminar and workshop participants, and in particular Jianqing Fan (Co-Editor), Arturas Juodis, Maurice Bun, Joerg Breitung, Mehdi Hosseinkouchack, one Associate Editor, and two anonymous referees for many valuable comments and suggestions. Thank you also to the Knut and Alice Wallenberg Foundation for financial support through a Wallenberg Academy Fellowship, and the Jan Wallander and Tom Hedelius Foundation for financial support under research grant number P2014-0112:1.

[†]Corresponding author: Department of Economics, Lund University, Box 7082, 220 07 Lund, Sweden. Telephone: +46 46 222 8997. Fax: +46 46 222 4613. E-mail address: joakim.westerlund@fek.lu.se.

Download English Version:

<https://daneshyari.com/en/article/5095486>

Download Persian Version:

<https://daneshyari.com/article/5095486>

[Daneshyari.com](https://daneshyari.com)