Can Financial Development Cause Productive Inefficiency?

Viktor Khanzhyn
University of Nebraska – Lincoln
Department of Economics
vkhanzhyn@huskers.unl.edu


Copyright 2010 by Viktor Khanzhyn. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.
Can Financial Development Cause Productive Inefficiency?
by Viktor Khazhyn, PhD student, Department of Economics, UNL

1) The question is: what is the relationship between financial development and overall productive inefficiency.

2) Hypothesis: higher productivity in banking sector results in easier lending conditions and companies lose incentive to stay efficient.

3) I suggest use TFP change in banking sector as the measure of financial development.

4) Sample of 16 OECD countries over 1990 – 2007 (due to availability of data for TFP estimation in banking sector).

5) TFP change is measured by Malmquist index. Estimated using DEA (software used: DEAP by T. J. Coelli). One output (total credit) and three inputs (employment, fixed capital, and total deposits).

6) Inefficiency effects modeled as Battese and Coelli (1995) specification (software used: Frontier V.4.1. by T. J. Coelli)

Production function equation
Intercept 1.71***
Labor (a) 0.97***
Capital (b-1) -0.96***
Time trend 0.01*

Inefficiency equation
Intercept -1.57***
Malm 0.66***
Malm -1 0.75***

Log-likelihood function = 124.70

Battese and Coelli (1995) specification

\[
\ln y_{it} = \alpha_0 + \alpha_1 \ln K_{it} + \alpha_2 \ln L_{it} + \alpha_3 t + v_{it} - u_{it}
\]

\[
u_{it} = \delta_0 + \delta_1 Malm_{it} + \delta_2 Malm_{it-1} + \varepsilon_{it}
\]

where \(y_{it}\) is per capita GDP and \(K_{it}\) is fixed capital, expressed in 2005 U.S. dollars. \(L_{it}\) is total employment.

\(v_{it} \sim iid \ N(0,\sigma_v^2)\) is noise and \(u_{it} \sim iid \ |N(0,\sigma_u^2)|\) is a measure of (in)efficiency.

Countries: Austria, Belgium, Denmark, Finland, Germany, Ireland, Italy, Korea, Luxembourg, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, United States