Does financial development cause economic growth?
Implication for policy in Korea

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Abstract

The causal relationship between financial development and economic growth is examined, utilizing the superexogeneity methodology. We use annual data for Korea during 1971–2002, during which Korea has experienced both phenomenal economic growth and a variety of financial liberalization and reforms. In our tests for superexogeneity, we find that financial development *control causes* economic growth, but the reverse is not true. Our empirical results provide evidence in favor of the 'finance causes growth' view for the case of Korea while rejecting the 'growth causes finance' view. The policy implication is that Korea should give policy priority to financial reform rather than economic growth, because only a decisive and accelerated pace of financial restructuring can ensure a sustainable growth in the medium or long term.
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1. Introduction

The role of financial development in determining long-run economic growth has been studied since the 19th century (Schumpeter, 1939). However, modern empirical research on the relationship between finance and growth began with Goldsmith (1969). Research on the issue has

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flourished in recent years and now there is a large, growing body of empirical studies.[1] While based on different statistical procedures and data sets, these studies produce remarkably consistent results in confirming the critical role of financial development in determining long-run economic growth. The observed relationship between the growth and financial development in these studies is robust and thus appears to be convincingly causal in providing empirical support to the 'finance leads and growth follows' view.

However, establishing a causal relationship between the financial development and the growth is difficult because of the frequently encountered problem of observational equivalence. While the growth–finance nexus is well established, several competing views about the causal direction are possible.[2] This difficulty arises partly from the limitations of methods of testing causality in all prior empirical studies of the finance–growth nexus. For example, King and Levine (1993a,b) use correlations; Demetriades and Hussein (1996) rely on Granger causality tests; Luintel and Khan (1999) and Abu-Bader and Abu-Qarn (2007) rely on a multivariate vector autoregressive (VAR) model in an error–correction framework.[3] But correlation does not necessarily mean causality, and as Granger (1980, p. 351) himself notes, Granger causality implies temporal predictability but does not deal with the issue of control and thus is not suitable for policy analysis. More recently, Beck, Levine, and Loayza (2000), Levine, Loayza, and Beck (2000), and Beck and Levine (2002) use advanced econometric techniques developed to deal with simultaneity bias and for dealing with problems of using panel data with cross-country. But there is a growing concern about the cross-country empirical approach in general, and its use for causal inference in particular.[4]

Another source for the difficulty of establishing a causal relationship in the growth–finance nexus is our limited understanding of why and how financial deepening brings about changes in the behavior of economic agents that ultimately leads to economic growth. As Wachtel (2003, p. 34) puts it, the specific mechanisms that relate financial sector development to changes in the behavior of economic agents "are still a mystery".

The question of causality is a long-standing problem, deeply philosophical and raises all kinds of controversies. However, it is necessary for economists and policy analysts to be able to use estimated models for policy purposes. Given the practical importance of causality for control or policy purposes, it is desirable to make use of two available structural approaches to causality. One is the concept of control causality, originally developed by Simon (1953) and revived and used by Hoover (1988, 2001) and his co-authors (Hoover & Perez, 1994a,b; Hoover & Sheffrin, 1992; Hoover & Siegler, 2000).[5] Another is the superexogeneity concept of Engle, Hendry, and

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[1] For recent surveys of the literature on the growth-finance nexus and related major research issues, see Levine (1997) and Wachtel (2003).

[2] Three competing views are: 'financial development causes growth' view; an opposing view of 'growth causes financial development', and, finally the mutual causation view. A fourth possibility is that both financial development and economic growth are driven by an unknown third variable.

[3] They rely on weak exogeneity tests by Hall and Wicken's (1993) long-run causality tests. We say that X_t is *weakly exogenous* if X_t explains Y_t but Y_t does not explain X_t. In this case estimation and testing of the regression model can be done, conditional on the values of X_t. However, policy analysis requires superexogeneity. For more details on this point, see Cuthbertson, Hall, and Taylor (1992, p. 100).

[4] Levine recognizes that cross-country regression suffers from 'measurement, statistical, and conceptual problems' and cross-country regressions do not resolve the issue of causality (Levine & Zervos, 1996, p. 325).

[5] Hoover (1988, p. 173) defines control causality as follows: "A causes B if control of A renders B controllable. A causal relation, then, is one that is invariant to interventions in A in the sense that if someone or something can alter the value of A the change in B follows in a predictable fashion."