NORTH-HOLLAND

International Review of Economics and Finance
9 (2000) 223–241

International Review of Economics & Finance

A dynamic two-sector model for analyzing the interrelation between financial development and industrial growth

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Received 17 February 1998; accepted 1 April 1999

Abstract

Motivated by Feder's two-sector model concerning exports and growth, this article intends to propose a dynamic framework, which bases on the production function theory and consists of two versions of the two-sector (the financial sector and the real sector) model, for analyzing the interrelation between financial development and economic growth in terms of intersectoral externalities. The approach is applied as a prototype to the case of financial liberalization and industrial growth in Taiwan using deflated annual data for 1961–1996. Growth equations are derived and the externality series are estimated. Regressions incorporating the economic/financial variables as well as a linear spline in time variable are set up for testing the externality series. The results show that the financial-supply-leading version is more prevailing in the studied case. The externality series of the supply-leading version are highly related to the financial variables, while those of the demand-following version are related to real variables that affect the industrial production.

JEL classification: O16; O53

Keywords: Financial development; Industrial growth; Dynamic two-sector model

1. Introduction

Ever since the pioneering contributions of Patrick (1966) and Goldsmith (1969), the relationship between financial development and economic growth has remained an important subject in development literature. A great number of studies have dealt

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PII: S1059-0560(99)00052-0

with different aspects of this issue at both the theoretical and empirical levels. The dominant theme, formulated by McKinnon (1973) and Shaw (1973) and extended by subsequent researchers (e.g., Galbis, 1977; Mathieson, 1980; Fry, 1982, 1997; and Pagano, 1993), asserts that the development of financial sector should have positive repercussions on real growth performance. The main policy implication of this school is that government restrictions on the banking system (such as interest rate ceilings, credit rationing, and entry barriers) impede the process of financial development and, consequently, reduce economic growth in most less developed countries (LDCs). Similar conclusions are also reached by the endogenous literature (e.g., Greenwood & Jovanovic, 1990; Bencivenga & Smith, 1991; and Roubini & Sala-i-Martin, 1992), in which the services provided by financial intermediaries are modeled and emphasized.

Although it is generally agreed that financial development is crucial for successful economic growth, the question of which sector, financial or real, leads in the dynamic process of economic development remains ambiguous. Patrick (1966) identified two possible patterns in the causality relationship. The first is the 'supply-leading' pattern in which the creation of financial institutions and the supply of their financial assets, liabilities, and related services are in advance of demand for them, especially the demand brought about in the modern, growth-inducing sectors. Financial development induces real growth through several channels. For example, the establishment of domestic financial markets may enhance the efficiency of capital accumulation; and, financial intermediation can contribute to raising the saving rate and, thus, the investment rate. Modern financial system, therefore, plays the role of activating economic growth by transferring resources from backward sectors to advanced sectors and by stimulating entrepreneurial responses. The deliberate establishment and promotion of financial institutions in many LDCs, upon the recommendation of the World Bank and the International Monetary Fund, for example , might reflect this belief in the supply-leading argument.[1] The second pattern identified by Patrick (1966) is the 'demand-following' phenomenon in which the creation of modern financial institutions as well as the supply of financial intermediaries and related services are in response to the demand by investors and savers in the real economy. As a consequence of real economic growth, financial markets develop, widen, and become more and more perfect. The demand-following argument implies that finance is essentially passive and permissive in the growth process. The supply-leading-cum-demand-following hypothesis seems to suggest a virtuous cycle of the real-financial relationship. The development of financial system, on the one hand, induces real economic growth through the increase in supply of its services. The growth in real economy, on the other hand, stimulates the financial sector to develop through the increase in demand for financial services.

As far as the question of what are the likely determinants of the patterns of causality is concerned, Arestis and Demetriades (1997) explored the quantitative aspects of the controversy in an attempt to reveal what the evidence can tell us about the validity of the thesis and its implications. In addition to the issue of financial repression and liberalization, they reviewed many individual country circumstances, such as the institutional structure of the financial system, the policy regime, and the degree of