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Linkages Between Financial Deepening, Trade Openness, and Economic Development: Causality Evidence from Sub-Saharan Africa

THOMAS GRIES, MANFRED KRAFT and DANIEL MEIERRIEKS *
University of Paderborn, Germany

Summary. — This contribution tests for causality between financial deepening, trade openness, and economic development for 16 sub-Saharan African countries. The Hsiao-Granger method is used to add to the existing empirical evidence. Only limited support is found for the popular hypothesis of finance-led growth. In general, the evidence indicates that financial deepening and trade openness have swayed economic development rather marginally. In particular, the investigated countries have failed to benefit from financial deepening. Development strategies prioritizing financial or trade sector development hence cannot be supported.
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Key words — financial markets, economic growth, openness, Hsiao's Granger causality, Sub-Saharan Africa, South Africa

1. INTRODUCTION

In the last decades, many developing economies have adopted development strategies that prioritize the modernization of their financial systems. The countries of sub-Saharan Africa (henceforth *SSA*) are no exception. Since the end of the 1980s, these countries have been interested in fostering financial development, for example, by reducing governmental intervention in national financial sectors or by privatizing banks. Such policies have been expected to promote growth through, *inter alia*, a higher mobilization of savings or a rise in domestic and foreign investments (e.g., Reinhart & Tokatlidis, 2003). However, the effectiveness of such policies requires a convenient causal relationship between financial and real sectors.

This contribution assesses whether financial deepening has actually swayed economic development in a sample of *SSA* countries and whether a policy focus on financial sector development is appropriate for fostering development. We hence test for causality between finance and economic growth, capturing indirect linkages also by scrutinizing the relationship between finance and trade openness. We add to the existing literature by (1) using econometric methods that are less prone to the misspecifications that occur when testing for causality, (2) employing a composite finance indicator in order to proxy financial depth in a broad sense, (3) distinguishing between short-run and long-run effects between finance, openness, and growth, and (4) taking into account the linkages between finance and openness that allow for further effects on economic development.

This contribution is structured as follows. Section 2 reviews the corresponding academic literature. Section 3 introduces the data and first empirical results. Section 4 presents the findings of the causality analyses. Section 5 concludes with a summary.

2. FINANCE, OPENNESS, GROWTH, AND DEVELOPMENT

(a) *Theory and evidence*

(i) *Finance and growth*

Financial markets provide an economy with certain services such as risk and information management and the pooling and mobilization of savings. More developed, that is, *deeper*, financial systems are associated with a more effective supply of these services to the real sector. Links between financial and economic development may take different forms. On the one hand, the financial sector may influence growth through the accumulative and the allocative channel. The former emphasizes the finance-induced effects of physical and human capital accumulation on economic growth (e.g., Pagano, 1993); the latter focuses on the finance-induced gains in resource allocation efficiency which translate into augmented growth (e.g., King & Levine, 1993). On the other hand, the development of the financial system may also be initiated by economic growth. For instance, in an expanding economy the private sector may demand new financial instruments and a better access to external finance, so finance activities simply amplify in step with general economic development (e.g., Robinson, 1952). Furthermore, finance and growth may be mutually dependent. The real sector may provide the financial system with the funds necessary to enable financial deepening, eventually allowing for a capitalization on financial economies of scale which in turn facilitates economic development (e.g., Berthelemy & Varoudakis, 1996). That is, the theory provides ground for several causation patterns, where finance leads growth (*supply-leading hypothesis*), finance follows growth (*demand-following hypothesis*), or where the real and financial sector influence each other mutually (*bidirectional causality*). Following more skeptical views as discussed in Chandavarkar (1992), finance and growth may also evolve independently of each other, so no causality exists between them (*insignificant causation*).

Some empirical evidence suggests that certain economies have indeed benefited from well-developed financial systems (e.g., Rousseau & Wachtel, 1998). Still, the causality evidence is not conclusive. For some successful emerging economies finance appears to have been a leading factor of economic success, for example, in Korea (Choe & Moosa, 1999) and Taiwan (Chang & Caudill, 2005). However, no such strong

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connection is identifiable in mature OECD countries (e.g., Shan, Morris, & Sun, 2001). For developing economies, some studies find a leading impact of finance on growth (e.g., Christopoulos & Tsionas, 2004), while others find the finance-growth relationship to be more complex (e.g., Demetriades & Hussein, 1996; Luintel & Khan, 1999). In general, the empirical findings strongly indicate that there is a country-specific dimension to finance-growth dynamics that accounts for frequently ambiguous results across countries. [1]

(ii) *Finance and trade openness*

Possible linkages between finance and trade openness open up further channels through which financial and real sectors may interact. On the one hand, mature financial markets may constitute a comparative advantage for industrial sectors that rely heavily on external financing (e.g., Beck, 2003). Thus, economies with developed financial systems are expected to feature industrial and trade structures that are linked to finance-dependent sectors of the economy. On the other hand, increased trade openness may trigger demand for new financial products. Trade carries risks linked to external shocks and foreign competition. Therefore, an increase in trade openness may lead to a supply of more sophisticated financial instruments; in such an environment, financial institutions are expected to evolve so as to provide more adequate insurance and risk diversification (Svaleryd & Vlachos, 2002). Furthermore, domestic interest groups may have a natural interest in obstructing financial development to prevent competitors from entering the market; as international competition increases, such groups may shift their interests toward positive financial sector development, creating another link between the trade and financial sector (Rajan & Zingales, 2003).

The empirical findings confirm the existence of a finance-openness nexus, although the subject has not been studied exhaustively. For instance, Beck (2003) shows that countries with more developed financial systems exhibit higher trade shares in industries that depend on external finance, concluding that finance is an important determinant of trade structures. Similarly, Svaleryd and Vlachos (2005) find that financial sectors significantly determine industrial specialization across OECD countries. Considering the effects of trade on finance, Baltagi, Demetriades, and Law (2009) also find that trade openness is an important determinant of banking sector development.

(iii) *Finance-openness links and development*

Links between finance and openness allow for more complex paths to economic development. On the one hand, if increasing trade openness leads to an increase in financial development, this may promote economic growth where finance is found to enhance growth *via* the allocative and accumulative channels. On the other hand, if finance induces openness, it may subsequently foster growth where openness is found to be a growth factor. Openness may induce economic growth in several ways, for example, by increasing a country's level of specialization or by positively affecting innovation and technological diffusion. Empirical evidence suggests that trade openness may indeed positively affect economic performance (e.g., Edwards, 1998; Harrison, 1996). [2]

(b) *Finance and development in sub-Saharan Africa*

(i) *Economic development*

During the last decades, the economic performance of *SSA* has been distinctly worse than that of other developing parts of the world. During 1960–80, average annual *per capita* income growth in the region was 1.3%, compared to 2.5% worldwide. During 1980–2000, *SSA* countries even experienced a decline in annual growth rates of about −0.6% on average, where the world grew at an annual rate of 2.7%.

Sachs and Warner (1997) attribute the region's poor economic performance to geographical factors and inappropriate economic policies. In particular, they argue that the lack of international integration is an obstacle to better performance. Collier and Gunning (1999) similarly suggest that geographical disadvantages negatively affect economic growth in *SSA*. They argue that poor economic policies also impair growth, for example, manifesting in a lack of trade openness, poor infrastructure, or the underdevelopment of financial and product markets.

(ii) *Financial development*

Financial systems in *SSA* can be described as underdeveloped. Financial sectors in *SSA* suffer from various unfavorable characteristics such as limited financial products and financial innovation, wide interest rate spreads, weak legal systems, and pronounced market fragmentation (Ncube, 2007). The level of financial depth and efficiency in *SSA* is rather low, also in comparison to other developing world regions. Financial systems in *SSA* are strongly bank based, whereas stock markets are generally not well developed. Nevertheless, over the past four decades *SSA* has seen some financial deepening. For instance, the ratio of private credit to GDP in Burundi increased from 2.5% in 1960 to 23% in 2003. Similarly, the private credit to GDP ratio in South Africa rose from 46.5% in 1966 to 79.2% in 2004. General overviews on financial development in *SSA* can be found in Reinhart and Tokatlidis (2003) and Ncube (2007).

From the above discussion, one would expect a distortionary rather than promoting effect of finance on economic development. Empirical studies on this issue for *SSA* yield mixed results. Some studies suggest that financial factors have enhanced economic growth in the past, for exapmle, by positively influencing investment (e.g., Ndikumana, 2000). Others indicate that the impact of financial development on growth has been rather negligible (e.g., Anoruo & Ahmad, 2001; Adjasi & Biekpe, 2006). The issue of finance-growth causality is far from settled. While Ghirmay (2004) finds strong evidence of a virtuous circle of finance and growth, the results of Atindehou, Gueyie, and Amenounve (2005) indicate the opposite, with finance and growth exhibiting only a weak causal relationship. The ambiguity of the empirical literature, especially with respect to finance-growth causality, is an additional motivation for our analysis.

3. DATA AND FIRST EMPIRICAL RESULTS

(a) *General methodology*

In the following, we test for causality between finance, openness and growth. As previously discussed, causal links may take different forms. (1) In order to reveal the exact nature of the causality interrelations, we create a composite indicator of financial deepening *via* a principal component analysis in order to capture financial system developments in a broader sense, while avoiding the problems associated with multicollinearity and over-parameterization. By using this approach, we also avoid the imbalanced representation of certain aspects of financial deepening by using only certain narrow finance indicators. To validate our findings, we also use a more common

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