International Review of Financial Analysis 29 (2013) 70–78

Contents lists available at SciVerse ScienceDirect

International Review of Financial Analysis

The short-run relationship between the financial system and economic growth: New evidence from regional panels

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ARTICLE INFO

Article history:
Received 1 March 2012
Received in revised form 2 March 2013
Accepted 25 March 2013
Available online 2 April 2013

Keywords:
Financial system
Economic growth
Panel data
Bank credit

ABSTRACT

In this paper, we examine the impact of the financial system on economic growth for a panel of 65 developing countries. The novelty of our paper is that we examine these relationships for various regional panels. Our main findings are that while for the full panel of 65 countries there is evidence of financial sector-led growth, bank credit has a negative effect on economic growth. At the regional level, for the Middle Eastern countries evidence suggests that neither the financial sector nor the banking sector contributes to growth. Except for Asia, the role of financial sector development on economic growth is relatively weak. Finally, except for the Middle Eastern countries, clear evidence is found in favour of bank credit having a statistically significant and negative effect on economic growth.

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1. Introduction

The role of financial sector development on economic growth was first identified over 100 years ago by Bagehot (1873), who argued that the financial system played a crucial role in stimulating industrialisation in England by facilitating the mobilisation of capital. A related observation was later made by Schumpeter (1911). His idea was based on the relationship between the financial intermediary sector and the resulting allocation of savings to firms, which he perceived as having implications for productivity growth and technological change (see also Schumpeter, 1934).

There are several empirical studies that examine the relationship between financial sector development and economic growth. This literature can be divided into two branches.[1,2] One strand of this literature examines the impact of stock market developments, namely, market capitalisation, turnover ratio, and stocks traded on economic growth. The second strand of this literature focuses on the relationship between banking sector developments, namely, private credit and liquid liabilities, and economic growth. In the next section, we review these two strands of the literature. The main message from this literature survey is that there is strong support for the hypothesis that financial sector and banking sector (commonly referred to as the financial system in the literature) development promote economic growth. Within this branch of the literature, a sub-set of studies show that trade openness and export growth contribute to economic growth (see Lucas, 2009; Wacziarg & Welch, 2008). Motivated by these findings, some studies have begun to examine the relationship between finance and trade (see, for example, Baltagi, Demetriades, & Law, 2009; Bordo & Rousseau, 2012; Demetriades & Rousseau, 2011).

Our study contributes to this literature by examining the relationship between financial and banking sector developments and economic growth for a panel of 65 developing countries. Our study is different from the extant literature in three ways. First, we focus only on developing countries. While Anwar and Sun (2011), contrary to the literature, do not find evidence in favour of financial sector-led economic growth, their study is based on one developing country, Malaysia. Therefore, we extend the Anwar and Sun (2011) study by considering no fewer than 65 developing countries. Moreover, unlike previous studies (see Section 2), we do not form a panel representing a combination of developed and developing countries. Our motivation for departing from the literature on this approach is as follows. Including both developed and developing countries in cross-section or panel data analysis of the impact of financial sector development on economic growth can lead to biased results in the sense that the developed countries on the panel may be responsible for the positive relationship between financial/banking sector development and economic growth. Thus, to generalise that financial/banking sector development stimulates economic growth in a panel including both developed and developing countries can be misleading because the

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[1] Bekaert, Harvey, and Lundblad (2001) examine the relationship between financial liberalisation and economic growth for a panel of emerging markets and find that financial liberalisation stimulates economic growth.

[2] In a recent study, Amable and Chatelain (2001) showed how financial infrastructure fosters economic growth. They argued that financial infrastructure decreases depositor transaction costs and changes consumer welfare through increasing the proximity of financial services, which, they argue, increase savings and endogenous growth.

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http://dx.doi.org/10.1016/j.irfa.2013.03.012

positive relationship may simply be driven by the developed markets of the panel.

A second way our study is different is as follows. We, for the first time in this literature, divide the sample of 65 developing countries into regions. Thus, we form regional panels. For example, we have an Asian panel, a European panel, an African panel, a South American panel, and a Middle Eastern panel. The formation of regional panels is motivated by Narayan, Mishra, and Narayan (2011), who show that regional panels of countries have relatively more homogeneous financial indicators. The advantages of forming regional panels are twofold: (1) we are able to test the finance–growth relationship for a more homogenous group of countries; and (2) we are able to compare the finance–growth experiences of different regions.

Third, our study examines the short-run relationship between financial systems and economic growth. There are very few studies which have considered the short-run relationship; exceptions are Loayza and Ranciere (2006) and Kaminsky and Reinhart (1999). There are three factors that motivate us to undertake a short-run investigation: (a) data limitations, (b) the concern that averaging data leads to loss of information and prevents the estimation of a more flexible model capable of allowing parameter heterogeneity across countries (see Loayza & Ranciere, 2006), and (c) in the short-run the banking sector development, if over-liberalised, can have negative effects on economic growth, hence a short-run analysis allows us to examine this possibility.

The balance of our paper proceeds as follows. In Section 2, we provide a brief overview of the literature on the finance-economic growth nexus. In Section 3, we discuss the theoretical motivation, and in Section 4, we discuss the data, the empirical model, and the results. In the final section, we provide some concluding remarks.

2. Literature review

There is a large volume of studies on this topic. In this section, we only review selected recent studies that share some common features with the present study.

Levine, Loayza, and Beck (2000) examined the relationship between financial intermediary development and economic growth for a panel of 74 developed and developing countries, and for a cross-section of 71 developed and developing countries. For the panel data, they used the Arellano and Bond (1991) panel-GMM estimator. They found that financial intermediary variables, namely, liquid liabilities and private credit, have a statistically significant and positive effect on economic growth in both cross-sectional and panel data models.

King and Levine (1993a) examined the relationship between economic growth and financial sector indicators (ratio of liquid liabilities of the financial system to GDP, ratio of deposit money bank deposit assets to deposit money bank domestic assets plus central bank domestic assets, private sector credit, and ratio of claims on the non-financial private sector to GDP) using cross-sectional data for 80 developed and developing countries. They found that their four measures of the financial system, namely financial depth, the relative importance of banks vis-a-vis the central bank, the percentage of credit allocated to nonfinancial private firms, and credit to private sector, all have a statistically significant and positive effect on growth indicators.

Levine (1998) examined the impact of the banking sector development, proxied by credit allocated by deposit taking banks to the private sector divided by GDP, on economic growth, capital stock accumulation, and productivity growth. His empirical analysis was based on 42 developed and developing countries over the period 1976–1993. He used a panel GMM estimator and found that banking sector development has a statistically significant positive effect on economic growth.

Levine and Zervos (1998) examined the impact of stock market and banking sector development on economic growth for a cross-section of 45 developed and developing countries using data for the period 1976–1993. They found that banking sector development and stock market liquidity were both good predictors of economic growth, capital accumulation, and productivity growth.

Cole, Moshirian, and Wu (2008) examined the impact of banking sector stock returns on economic growth for 38 countries (both developed and developing). They used data for the period 1973 to 2001 and their empirical analysis is based on the Arellano and Bond GMM estimator. They found that bank stock returns have a statistically significant and positive effect on economic growth, and bank stock returns have a larger impact on economic growth in a panel of emerging markets compared with a panel of developed markets.

Shen and Lee (2006) examined the relationship between financial development and economic growth for a panel of 48 developed and developing countries. They used data for the period 1976–2001 and their estimation was based on the ordinary least squares and two-stage least squares procedures. They found that only stock market development has a positive impact on economic growth.

Beck and Levine (2004) examined a panel of 40 developed and developing countries over the period 1976–1998, and estimated the impact of stock market and banking sector developments on economic growth using the Arellano and Blundell system-GMM estimator. They found that stock market and banking sector developments both have statistically significant and positive effects on economic growth.

The relatively more recent studies have also documented evidence that the financial system leads to economic growth. In a panel data study based on 31 Chinese provinces, Hasan, Wachtel, and Zhou (2009) used the GMM estimator and found that the development of financial markets promoted economic growth at the provincial level. Similar findings were reported by Zhang, Wang, and Wang (2012) for a data set consisting of 286 Chinese cities over the 2001–2006 period. Bittencourt (2012) used time series and panel data models to estimate the relationship between financial development and economic growth for four Latin American countries. He found strong evidence that financial development contributes to economic growth. Using historical data (1896 to 2000), Campos, Karanasos, and Tan (2012) found that financial development contributes to economic growth in Argentina. While the bulk of this literature confirms that the financial sector contributes to economic growth, some recent studies on developing countries cast doubt on this positive relationship; see Anwar and Sun (2011).

The main message emerging from this brief literature review is that the financial system contributes to economic growth. Therefore, before we propose our empirical framework, in the next section, we consider some key theoretical issues that motivate our empirical framework.

3. Theoretical considerations

In this section, we discuss the short-run theoretical association between financial and banking sector developments and the other determinants of economic growth, such as inflation, openness, and capital stock, considered in this study. The relationships discussed here are obviously also possible in the long-run.

3.1. Finance and economic growth

Generally, the literature recognises four functions of the financial sector which are perceived to be growth-enhancing. First, financial intermediaries facilitate pooling and trading of risk. The idea is simple: in the absence of financial markets, investors constrained by liquidity shocks are forced to withdraw funds invested in long-term investment projects. Withdrawal of investment funds hurts economic growth. Financial markets are a remedy to liquidity constraints since they provide lenders immediate access to funds. At the same time, financial markets offer borrowers a long-term supply of capital. Stock markets also offer investors an opportunity to diversify their

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