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Financial development, ICT diffusion and economic growth: Lessons from MENA region

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ABSTRACT

This paper aims to test jointly two economic puzzles: the effect of financial development and Information and Communication Technology (ICT) on economic growth. Theories predict a positive effect of financial development and ICT on growth but empirical studies on these relationships produced mixed results. Further, we investigate the interaction between financial development and ICT Diffusion to test whether the impact of financial development on growth is strengthened by better ICT infrastructure. In this paper we assess empirically these relationships in some MENA countries. The empirical study is based on estimation of a dynamic panel model with system GMM estimators. There are three main findings. First, our empirical results join empirical literature that find a negative direct effect of financial development on economic growth. This ambiguous relationship may be linked to many phenomenons but there are not yet clear explanations of this puzzle. Second, the estimates reveal a positive and significant direct effect of ICT proxies on economic growth. This implies that MENA countries need to reinforce their ICT policies and improve using of new Information and Communication Technology. Finally, the interaction between ICT penetration and financial development is found positive and significant in the growth regression. This implies that economies in Mena region can benefit from financial development only once a threshold of ICT development is reached.

1. Introduction

Within the broader debate over the increasing importance of financial development as a key driver of economic growth, yet, very few empirical works has been conducted on the interaction between financial development and ICT diffusion on developing countries.

Many theoretical studies have highlighted the positive effect of financial development and ICT diffusion on economic growth. However, the recent empirical literature on the issue produced ambiguous results, especially in Mena countries, where little agreement has so far been attained about the evidence in favor of a strong FD-Growth and ICT-Growth relationships.[1] The debate about these two puzzles is continuously updated. While there are some empirical findings on, these issues, there are not much attempt to focus on the interaction between financial development and ICT diffusion and to find a threshold effect which may adversely affect economic growth. The presence of a threshold is an important finding

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[1] In Mena countries studies on Financial Development-Growth Nexus are specially associated with Banking sector development, since financial market are not well developed.

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in studying the FD-Growth nexus, since it prevents the economy to raise sufficient initial capital and ICT penetration. The aim of this paper is to fall this gap and to investigate whether the impact of financial development on growth is strengthened by better ICT infrastructure.

The development of ICT infrastructure consolidates the impact of financial development on economic growth by reducing market imperfections and promoting financial functions: the ICT diffusion reduces the main market frictions which are information and transaction costs. The development of ICT infrastructure eases monitoring managers and exerting corporate control which are an important function of financial intermediaries among the five functions provided by Levine (1997). Besides, a good ICT infrastructure reduces information asymmetries and price volatility; and increase responsiveness of fishing businesses. According to Levine (1997), the financial development boosts economic growth mainly through two channels: capital accumulation and technological innovation; so obviously the rapid diffusion of ICT plays as one key driver of economic development through the technological innovation channel since it contribute to innovation and to the development of new products and processes.

This paper is intended to examine jointly finance-growth nexus and ICT-growth nexus and to investigate whether the interaction between ICT diffusion and financial development facilitates economic growth. We use system GMM estimators of dynamic panel on cross-sectional data of 17 Mena countries during the period 1960–2009.

The paper is organized as follows. Section 2 provides a brief literature review on ICT, financial development and growth. Section 3 presents the data, the econometric methodology and Empirical Results. Section 3 concludes.

2. Literature review

2.1. The finance-growth puzzle

The literature on the relationship between the financial development and growth goes back to the works of Schumpeter (1911), Gurley and Shaw (1960), McKinnon (1973) and Shaw (1973). According to the theory, the banking development is favorable to the economic growth because banks' activity increases the mobilization of the saving, improve the efficiency of the resources allowance, and stimulate the technological innovation. However, some experiences of policies aiming the financial liberalization failed to enhance the financial development and the economic growth. This finding is considered as shortcoming for studies which highlight the strong relationship between financial development and economic growth. This doubt persisted with many empirical studies. In one side, many studies including the most recent, emphasize a positive relation between the financial development and economic growth in accordance with the theoretical predictions. In a time-series setting, Arestis *et al.* (2001) confirmed the positive effect of financial development on five developed countries.[2] Hondroyiannis, Lolos, and Papapetrou (2005) and Van Nieuwerburgh, Buelens, and Cuyvers (2006) used VAR models to assess long term relationship between financial development and growth. They confirm positive long term causality from finance to growth respectively for Greece during the period 1986–1999 and for Belgium between 1873 and 1914.

Huang and Lin (2009) reexamine the finance-growth nexus to the dataset used in Levine, Loayza, and Beck (2000)using a novel threshold regression with the instrumental variables approach. Their finding supports the hypothesis that financial development has a positive effect on economic growth and reveals that this effect tends to be more important in the low-income countries. Using a static and dynamic panel data approach, Leitão (2010) found evidence of that financial development contribute to economic growth in the European union countries and Brazil, Russia, India and China between 1980 and 2006.

On the contrary, other studies like Gregorio and Guidotti (1992), Fernandez and Galetovic (1994), Ram (1999), Andersen and Tarp (2003), Favara (2003) and Ben Naceur and Ghazouani (2007) suggest that the relationship between the financial development and growth can be less general than the traditional literature thought. Basically, they highlight that the results of the econometric studies varies according to the sample and the period considered. On the basis of data set of 95 countries, Ram (1999) was able to confirm the positive effect on economic growth lonely for nine countries. This relationship is meaningful and negative for a subsample of 16 countries. This negative linkage was detected also by Luintel and Khan (1999) on seven countries among the ten countries used in the sample; and even by Gregorio and Guidotti (1992) when the sample is restricted to the Latin American countries.

Favara (2003) revisits the finance-growth nexus using a variety of econometric methods on panel of 87 countries. His findings do noy support a robust and positive link between finance and growth. In the same vein, Ben Naceur and Ghazouani (2007) found evidence of a positive effect of stock markets development but a meaningful negative effect of bank development on growth on a sample of 10 MENA countries. Barajas, Chami and Yousefi (2011) confirm the negative effect of private credit on growth in Mena region. They explain that by the comparative lack of competition in MENA banking systems and the lack of capital account openness and privatization.

[2] Germany, USA, Japan, England and France.