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Does too much finance harm economic growth?

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ABSTRACT

This study provides new evidence on the relationship between finance and economic growth using an innovative dynamic panel threshold technique. The sample consists of 87 developed and developing countries. The empirical results indicate that there is a threshold effect in the finance–growth relationship. In particular, we find that the level of financial development is beneficial to growth only up to a certain threshold; beyond the threshold level further development of finance tends to adversely affect growth. These findings reveal that more finance is not necessarily good for economic growth and highlight that an "optimal" level of financial development is more crucial in facilitating growth.

1. Introduction

A large amount of literature has examined the effect of financial development on economic growth using an array of econometric techniques, such as cross-country, time series, panel data, and firm-level studies[1]: for example, King and Levine (1993a,b), Levine (1997, 2003), Rajan and Zingales (1998), Levine et al. (2000), Beck and Levine (2004), and Beck et al. (2000, 2005). By and large, the empirical evidence has demonstrated that there is a positive long-run association between indicators of financial development and economic growth. In general, all these papers suggest that a well-developed financial market is growth-enhancing, and therefore consistent with the proposition of "more finance, more growth". The preponderance of evidence suggesting the critical importance of the financial system for growth in recent years has shifted the focus of the literature towards examining the determinants or sources of financial development, rather than the finance–growth link itself.[2]

However, the recent 2007–2008 global economic crisis has led both academics and policymakers to reconsider their prior conclusions. The crisis has illustrated the possibilities that malfunctioning financial systems can directly and indirectly waste resources, discourage saving and encourage speculation, resulting in under-investment and a misallocation of scarce resources. As a consequence, it may be that the economy stagnates, unemployment rises and poverty is exacerbated. The drastic falls in real sector activity during the crisis, due to adverse implications of financial turbulence, highlight the need for economists and policy makers to question the optimal size of financial systems for sustainable economic growth. Finance is found to promote growth, but is this true regardless of the size and growth of the financial sector? In other words, does a bloated financial system become a drag on the rest of the economy?

Recently, researchers at the Bank for International Settlement (BIS) and International Monetary Fund (IMF) have suggested that the level of financial development is good only up to a point, after which it becomes a drag on growth. This implies that the relationship between finance and growth is a non-linear one or, more specifically an inverted U-shape, where there is a turning point in the effect of financial development. For example, Cecchetti and Kharroubi (2012) find that for private sector credit extended by banks, the turning point is close to 90% of GDP. They also find that the faster the financial sector grows, the slower the economy as a whole grows. This finding indicates that big and fast-growing financial sectors may be very costly for the rest of the economy. They argue that this phenomenon occurs because the financial

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[1] Levine (2003) provides an excellent overview of a large body of empirical literature that suggests that financial development can robustly explain differences in economic growth across countries.

[2] Among the determinants are financial sector policies (Abiad and Mody, 2005; Ang, 2008), legal systems (La Porta et al., 1997, 1998), government ownership of bank (La Porta et al., 2002; Andrianova et al., 2008), political institutions (Girma and Shortland, 2008; Roe and Siegel, 2011; Huang, 2010), culture (Stulz and Williamson, 2003), trade and financial openness (Rajan and Zingales, 2003; Baltagi et al., 2009; Law, 2009), remittances (Aggarwal et al. 2011; Demirgüç-Kunt et al. 2011), institutions (Law and Azman-Saini, 2012; Law et al., 2013).

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Table 1
Summary of the non-linear studies between finance and growth.

Authors	Sample countries	Type of data and sample period	Methods	Findings
Deidda and Fattouh (2002)	119 Developed and developing countries	Cross-sections (1960–1989)	Hansen (2000) threshold regression (two groups: high and low income countries)	Non-linear relationship between finance and economic growth. Finance is significant determinant of growth in high-income countries but insignificant in low-income countries
Rioja and Valev (2004a)	74 Developed and developing countries	Panel data (1961–1995) averaged over 5-year interval	Dynamic panel generalized method of moments (three regions: low, intermediate and high level of financial development)	Finance has large positive effect on growth in intermediate financial development region. It is positive but the effect is smaller in high region, but insignificant in low region
Rioja and Valev (2004b)	74 Developed and developing countries	Panel data (1961–1995) averaged over 5-year interval	Dynamic panel generalized method of moments (three groups: low, intermediate and high income countries)	Finance has a strong positive influence on productivity growth in more developed economies. In low-income economies, the effect of finance on output growth occurs through capital accumulation
Shen and Lee (2006)	48 Developed and developing countries	Panel data (1976–2001)	Pooled OLS	Non-linear inverse U-shaped relationship between finance (stock market variables) and economic growth; Bank development is better described as a weak inverse U-shaped
Ergungor (2008)	46 Developed and developing countries	Cross-sections (average from 1980 to 1995)	2SLS with heteroscedasticity-consistent standard errors	A non-linear (contingent) relationship between finance (banking sector) and economic growth. Countries that have an inflexible judicial system grow faster when they have a more bank-oriented financial system
Huang and Lin (2009)	71 Countries	Cross-sections (average from 1960 to 1995)	Caner and Hansen (2004) IV threshold regression (two regimes: high and low income countries)	Non-linear positive relation between finance and economic growth. The positive effect is more pronounced in the low-income countries than in the high-income countries
Cecchetti and Kharroubi (2012)	50 Developed and emerging countries	Panel data (5-year non-overlapping from 1980 to 2009)	Pooled OLS with robust standard errors	Financial sector has an inverted U-shaped effect on productivity growth. Financial sector growth is found to be a drag on productivity growth
Arcand et al. (2012)	>100 Developed and developing countries	Cross-sections and panel data (1960–2010)	Semi-parametric estimations	Finance starts having a negative effect on output growth when credit to the private sector reaches 100% of GDP. The results are consistent with the "vanishing effect" of financial development

sector competes with the rest of the economy for scarce resources: financial booms are not, in general, growth-enhancing.[3] Arcand et al. (2012) also highlight that the finance–growth relationship turns negative for high-income countries, where finance starts having a negative effect when credit to the private sector reaches 100% of GDP. They show that their results are consistent with the "vanishing effect" of financial development and that they are not driven by output volatility, banking crises, low institutional quality, or by differences in bank regulation and supervision.

The above two recent studies of the non-linear or non-monotonic relationship between finance and growth also accord with previous empirical studies, which show a non-linear relationship.[4] Table 1 provides a summary of this literature, which is also discussed in the following. For example, Rioja and Valev (2004b) find that financial development exerts a strong positive effect on economic growth only when it has achieved a certain level or threshold of financial development; below this threshold, the effect is at best uncertain. They claim that the levels of financial development – high, intermediate and low – play an important role in shaping the effect of finance on growth. In countries with intermediate levels of financial development, the financial system has a large and positive effect on growth. In countries with a high level of financial development, the effect is positive but smaller. In countries with a low level of financial development, however, the financial system is insignificant in fostering economic growth. Shen and Lee (2006) also demonstrate a similar non-linear, inverse U-shaped relationship between financial development and economic growth, where a higher level of financial development tends to slow down economic growth. They argue that this explains why a negative impact is found between banking sector development and growth when a linear form is used for estimating the relationship empirically.

Moreover, the existing evidence also demonstrates that this relationship between finance and growth varies by level of income. For example, Rioja and Valev (2004b) find that there is no significant relationship between financial development and growth in low-income countries, whereas the relationship is positive and significant in middle-income countries, but weakly significant in high-income countries. Nevertheless, De Gregorio and Guidotti (1995) and Huang and Lin (2009) find that the positive effect of financial development on economic growth is much more significant in low-income and middle-income countries than in high-income countries.[5] The contradiction between these findings on the finance and growth relationship at different income levels, as well as those of a non-linear relationship between finance and growth

[3] De Gregorio and Guidotti (1995) point out that higher financial intermediation may have negative effects on growth performance if the financial system is liberalized and allowed to operate under a poor regulatory environment, providing one possible explanation for the Cecchetti and Kharroubi results.

[4] For an example of the mechanism where financial sector growth reduces economic growth, see Cecchetti and Kharroubi (2013).

[5] De Gregorio and Guidotti (1995) argue that the weak relationship observed in high income countries is due to the fact that financial development occurs to a large extent outside the banking system, while their proxy for financial development focuses on banking sector development.