



Financial development convergence



Berrak Bahadir^{a,*}, Neven Valev^b

^a Özyeğin University, Turkey

^b Georgia State University, United States

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ABSTRACT

We show that credit levels relative to GDP and other measures for financial development tend to converge across countries over time. The results are obtained using a broad sample of countries over many years and controlling for the quality of country-level institutions, the efficiency of financial institutions, and a range of macroeconomic variables. While we find evidence for convergence in the broad sample, we show that it levels off when countries reach a medium level of financial development. At high levels of financial development, convergence slows down even more and becomes negligible.

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1. Introduction

The last several decades have witnessed massive financial liberalization in developing countries. For the financial markets, the objective has been to foster financial development by inviting international know-how and to reduce the “knowledge gap” (Goldberg, 2007) in finance between developed and developing countries. In terms of the real economy, the objective of financial liberalization has been to provide funding for capital investment and to stimulate economic growth, thus helping developing countries reach the standard of living achieved in developed economies (Aghion et al., 2005).

While the benefits of financial development are well established, to date there is little systematic evidence indicating whether the financial development in developing countries is catching up with the levels achieved by developed countries. Bridging the financial development gap is likely to help reduce the income gap between countries. If there is divergence, then the gap between developed and developing countries will keep growing, with important ramifications not only for the financial sector but also for the real economy. In this paper, we investigate whether such convergence has occurred using a broad sample of countries with a primary focus on credit markets. Our findings suggest that:

- there is an underlying process of financial development convergence but it ceases as countries reach higher levels of financial development;
- the convergence cannot be attributed to improvements in the country-level institutions or in the efficiency of financial institutions;
- it is most likely driven by expanding the financial sector to reach new customers in developing countries; as the gains from such investment wear off with diminishing returns, convergence slows down.

Our analysis extends the literature on the determinants of financial development, e.g. La Porta et al. (1997, 1998), Djankov et al. (2007), and Beck et al. (2003) by providing further evidence on the factors that explain the differences in financial development across countries. Our contribution is that we investigate whether widely used measures of financial development exhibit convergence or divergence across countries over time. In other words, our particular focus is not on the magnitude of differences in financial development across countries but on the *changes* in these differences over time. We want to know if financially less developed countries catch up with the financially more developed countries in terms of credit availability.

There is an important difference between studying the determinants of financial development and studying financial development convergence. Financial markets have evolved significantly in advanced economies during the last several decades reflecting significant improvements in financial sector know-how. The

* Corresponding author.

E-mail addresses: berrak.bahadir@ozyegin.edu.tr (B. Bahadir), nvalev@gsu.edu (N. Valev).

question for developing countries then is not only whether its citizens can access more financial services over time but whether they take full advantage of the available international finance know-how. To answer that question, we must look at the differences between countries over time, and not only at the growth of financial services within one country over time. Similar to the economic growth literature, where the goal is to know if income levels increase and, separately, if they increase relative to developed countries, in the financial development literature the objective is to know, (1) if the access to financial services increases over time and (2) if the increase in a particular country outpaces or lags behind the development in the leader countries. The literature has addressed the former question on the determinants of financial development but has paid less attention to the latter question on financial development convergence.

We also contribute to several recent papers on financial system convergence. Antzoulatos et al. (2011) find evidence for non-convergence in a sample of thirty-eight industrial and developing countries during 1990–2005 whereas Veysov and Stolbov (2011) report convergence. Bruno et al. (2011) find mixed evidence for convergence looking at household financial assets in the OECD countries. Our contribution to these papers is threefold. First, we approach the question with the entire financial structure database (Beck and Demirgüç-Kunt, 2009) using all countries and years for which data are available. Second, we investigate financial development convergence at different levels of economic and financial development. Third, we explore whether the process of convergence can be attributed to institutional changes on the country level or to changes in the efficiency of operation of financial institutions. These estimations are important as institutions are the primary factor for financial development (La Porta et al., 1997) while the efficiency of financial institutions reflects know-how and innovation.

The rest of the paper is structured as follows. In Section 2 we discuss whether or not we should expect convergence. Then, we present the data in Section 3 and the empirical results in Section 4. The paper concludes with final remarks in Section 5.

2. Should we expect financial development convergence?

Looking at the global economy, bank credit to the private sector as percent of GDP had doubled in the three decades before the financial crisis of 2008. Based on 45 countries for which we have data since the 1970's, bank credit increased from 31.1 percent of GDP in 1974, to 38.1 percent in 1984, 45.6 percent in 1994, and reached 61.2 percent in 2004. However, the growth has not been uniform across countries. In Table 1 we show the average level of bank credit to the private sector as percent of GDP for three groups of countries with a low, medium, and high level of bank credit in 1974. All countries were ranked in terms of credit levels in 1974 and then separated into the three groups along the 33rd and the 66th percentile of bank credit in 1974.

In the group of countries with a relatively low initial level of credit in 1974, bank credit increased from 11 percent of GDP in 1974 to 26.5 percent of GDP in 2004, which is a cumulative increase of 140.9 percent. In the medium group the increase was 109 percent and, among the countries with an initially high level of credit, the increase was 82.9 percent. These observations suggest that there is a process of convergence in the sense that bank credit grew faster in countries with an initially low level of credit.¹

Available time series do not tell us how much of that growth can be attributed to larger loans to existing borrowers or to a larger number of borrowers. A recent project by the World Bank

Table 1
Bank credit to the private sectors as percent of GDP.

	Country groups according to their 1974 levels of bank credit			
	All countries	High	Medium	Low
1974	31.1	58.8	23.6	11.0
1984	38.1	66.7	29.2	18.4
1994	45.6	84.7	32.6	19.4
2004	61.2	107.6	49.4	26.5
Percent increase 1974–2004	96.8%	82.9%	109.3%	140.9%

Notes: Three groups with 15 countries each. High credit levels: countries with bank credit to the private sector greater than 30.7 percent of GDP in 1974; medium levels: from 18.0 percent to 30.6 percent; low level: below 17.9 percent.

(Demirgüç-Kunt and Klapper, 2012) has started collecting such data but it would be some time before time series are accumulated. Nonetheless, the initial survey from 2011 shows that over 30 percent of households in the U.S., UK, Sweden, Netherlands, Belgium, Denmark, and other developed countries have mortgages while the percent of households with mortgages is less than 10 percent in most of the rest of the world. In fact, less than 5 percent of households in many countries in Africa, Latin America, and the former communist bloc have outstanding mortgages. Given these numbers and that much of the growth in credit has come from growth in household credit (Beck et al., 2012; Büyükkarabacak and Valev, 2010; Greenwood and Scharfstein, 2012), we can conjecture that an increase in the number of borrowers can explain much of the credit growth.

The increase in the number of borrowers can be attributed to several potential factors. First, institutions that are important to the financial system could have improved over time allowing banks to go down-market. Many developing countries have made efforts to adopt institutions that promote financial development. More efficient bankruptcy procedures, better financial transparency rules, and stronger regulation and supervision of the financial system could help expand the supply of external financing to households and firms. As we pointed out earlier, the literature, e.g. La Porta et al. (1997, 1998), identifies institutions as the primary determinant of financial development.

Second, financial liberalization has spread financial sector know-how to developing countries. The branches of international banks bring expertise in risk management, credit evaluation, and other areas that facilitate the development of the financial sector. In some developing countries, such as the Ukraine, more than half of the entire financial system is foreign owned. In some developing countries, mobile technology has played a vital role in expanding financial services to rural areas. All of those could increase the efficiency of operation of the financial system, bringing down the costs and allowing financial institutions to reach new customers.

Third, financial liberalization and the general move toward market-based economies around the world have opened the playing field for capital investment in financial services. Domestic and international banks have invested in new branches in urban and rural areas reducing the geographic distance to their customers and helping bring more households and firms into the formal financial system even if institutions and technological know-how remain the same. A few numbers from the IMF's Financial Access Survey could illustrate that point. The number of bank branches per 100,000 adults in middle income countries increased from 8.1 in 2004 to 12.2 in 2010. At the same time, the number of bank branches in the high income countries decreased from 31.6 per 100,000 adults to 23.1.² The number of ATM's per 1000 adults

¹ Note that the growth of credit in the countries with an already high level of credit does not seem to slow down over the decades. In that sense, they do not seem to have reached an upper threshold in their credit to GDP level.

² The data set begins in 2004 and cannot be used in our analysis as the time series is too short. Moreover, there are limited data for low income countries.

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