



Financial development convergence: New evidence for the EU

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ABSTRACT

This paper aims to investigate whether the banking and stock market measures among European Union countries have been subject to a convergence process in order to verify whether the transition from the European Monetary System to the Single Currency in the last five decades have led to the integration of financial markets. We show that banking and stock market measures tend to converge across the EU over time, and the process is even improved by controlling for the quality of country level institutions and a range of macroeconomic variables. We conclude that there is a degree of success in the financial integration process of EU countries and therefore recommend that the EU accelerates financial integration to completion rather than to slowing the process.

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1. Introduction

The European Union (EU) Single Market project seeks to create a territory with no internal borders or regulatory obstacles to the free movement of goods and services, and the factors of production. The integration project is expected to stimulate competition and trade, cut prices, improve efficiency, and promote economic growth among members. The financial sector as one of the principal sectors of an economy plays a key role in the integration process of economies, given the positive impact of financial development on economic development.¹ Therefore, the creation of a single market for

financial services has been a key aspect of European integration.² To this end, since the second half of the last century, a series of steps was taken to enhance the single market project, including the European Monetary System (EMS), the European Currency Unit (ECU), The Exchange Rate Mechanism, the Economic and Monetary Union (EMU), and the Single Currency Area.

A key issue is to understand the outcome of the steps taken towards financial integration in the last five decades. The primary aim of this study is to elucidate convergence in banking and stock market measures in the EU-15 countries.³ We consider evidence on convergence in financial measures as a verification of the success of these steps taken from EMS to Single Currency in the last five decades for integration in financial markets. To this end, this work studies convergence in banking measures (the ratio of private credit by deposit money banks to GDP and the ratio of liquid liabilities to GDP) over the period 1963–2012, and in the stock market

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¹ A widespread movement toward financial development and the economic growth nexus emerged notably with the early work by Goldsmith (1969) and Shaw (1973) in the 1970s. Since then, there have been various studies investigating the relationship between financial development and economic growth. A large body of research concentrating on this relationship has shown that a well-functioning and market oriented financial sector contributes to improved economic outcomes (King and Levine, 1993a; 1993b; Levine and Zervos, 1996; Beck and Levine, 2004; Seven and Yetkiner, 2016).

² A detailed discussion on the history of European financial integration can be found in De Haan et al. (2009) and a one on legal dimension in Gortsos (2011). For empirical evidence, Tables 2 and 3 in Abiad et al. (2007) can be referred.

³ The EU-15 countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.

measures (the ratio of stock market capitalization to GDP and the stock market turnover ratio) over the period 1988–2012. We also investigate the role of several control variables, which we believe may contribute to the explanation of the convergence in financial measures across the EU-15 countries. Our rationale for focusing solely on the EU-15 countries, rather than the EU-28, is twofold. Firstly, the EU-15 countries have relatively similar levels of economic development and less structural differences in fundamental economic and political institutions.⁴ Secondly, since we differentiate between banks and stock markets, it is of great importance to choose only those countries that have both (well-developed) banking sectors and stock markets. Furthermore, not all the EU-28 countries had sufficient stock market data, especially the relatively new member states. Were data for EU-28 available, results would not perhaps change qualitatively but the degree of statistical significance would be lower due to greater variation and dissimilarities in fundamentals. This view, although speculative, is consistent with, for example, [Borsi and Metiu \(2015\)](#), who describe a clear separation between the new and old EU member states in the long run in (income) convergence performance.

There are three key points for specifically choosing convergence in financial sector development. Firstly, we motivate our research from the mutual interaction between income, the front-end of an array of activities in back-end sectors, and the financial sector, a back-end sector.⁵ The literature presents a bidirectional relationship between financial development and economic growth, pointing to the supply-leading and demand-following hypotheses.⁶ Furthermore, the issue of whether the financial sector development in one country is catching up with the levels achieved by the others is vital since bridging the financial development gap is likely to help reduce the income gap. Evidently, the EU project constitutes a natural climate for measuring convergence in back-end sectors, since “the project stimulates integration in back-end sectors as much as in the front-end” ([Beyzatlar and Yetkiner, 2017](#)). Therefore, we investigate whether such convergence has occurred in a sample of EU countries.

The second reason for focusing on the financial sector is the strong evidence of income convergence among EU-15 countries.⁷ Studies such as [Beugelsdijk and Eijffinger \(2005\)](#), [Crespo Cuaresma et al. \(2013\)](#), [Cavenaile and Dubois \(2011\)](#) all show evidence of income convergence in EU-15. [Crespo Cuaresma et al.](#)

(2013) also show that the length of EU membership has a significant positive effect, indicating the positive role of economic integration on income convergence.⁸ A strong income convergence among EU-15 countries due to similarities in fundamentals suggest that a similar convergence may also be expected in financial measures, given the mutual interaction between the front-end income and the financial sector, a back-end sector. Hence, income convergence is likely to provide a solid background for testing the financial development convergence hypothesis. Moreover, there are several other studies in which economic integration is presumed to be a determinant of income convergence. For example, [Kutan and Yigit \(2007\)](#) investigate the impact of economic integration on convergence and productivity growth by using the stochastic endogenous growth approach. [Abiad et al. \(2007\)](#) show that economic integration accelerates capital movement from capital-rich to capital-scarce economies, which enhances income convergence. [Borsi and Metiu \(2015\)](#) also presume that economic integration is a cause of income convergence. In conclusion, the literature clearly supports the presumption of financial convergence among EU-15 countries, based on evidence on income convergence and economic integration.

The final reason for the choice of the financial sector is that, despite the clear indications of the financial development for the real economy in the literature, there has been little systematic empirical study indicating whether the financial measures across countries converge over time. In this respect, we also contribute to the small but growing literature on financial sector convergence. Among the very few studies, [Murinde et al. \(2004\)](#), using data for seven EU countries for the period of 1972–1996, investigate convergence in terms of the patterns of corporate financing by banks, bond markets, and stock markets to determine whether the economies are converging towards capital-market-oriented or a bank-oriented financial system. Their evidence suggests convergence on a variant of the capital market-oriented financial system, indicating the reliance on internal financing as well as direct financing through equity and bond markets, while bank debt is becoming relatively less important. [Veysov and Stolbov \(2011\)](#) investigate the existence of convergence for financial institutional characteristics for the dataset of 102 countries from 1980 to 2009. The authors conclude that there is a worldwide trend towards steady financial development, as well as the convergence of financial depth indicators; nevertheless, their study suggests that this speed of convergence is not sufficient to allow the developing world to catch up. [Bianco et al. \(1997\)](#) find that convergence in financial systems of the six EU countries is still limited. Different results are found by [Antzoulatos et al. \(2011\)](#), who test for the financial development convergence of 38 industrial and developing countries during the 1990–2005 period. Their results not only show no evidence of convergence, but also suggest that the differences in financial system of the sample countries are actually increasing over time. These differences are greater for stock market and private credit by banks compared to bond market and bank deposits. [Bruno et al. \(2012\)](#) study the issue of convergence of financial systems through the lens of asset allocation using data for the OECD countries. The authors find a strong evidence of convergence of shares and insurance products, but mixed results for debt securities and deposits, due to differences across countries in the weight of national public debts and in the role of banks. More recently, using data of a broad sample of countries for 1965–2009, [Bahadır and Valev \(2015\)](#) show that credit levels relative to GDP and other measures of banking tend to converge over time. The authors, however, do not test the same convergence hypothesis for the stock market development indicators, which is an equally important component of financial development.

Our main contribution is that in our investigation into whether

⁴ [Cavenaile and Dubois \(2011\)](#) show that the 10 new entrants from Central and Eastern Europe and the 15 former members of the European Union have heterogeneous convergence process, supporting our country selection process. [Borsi and Metiu \(2015\)](#) can also be considered supporting our focus on EU-15.

⁵ As first argued by [Beyzatlar and Yetkiner \(2017\)](#), any back-end sector having a high level of interaction with the front-end sector will also portray a convergence behavior.

⁶ The supply-leading hypothesis suggests a causal relationship from financial development to economic growth, by which the mainstream literature is dominated (see, for example, [McKinnon, 1973](#), [King and Levine, 1993a, 1993b](#); [Neusser and Kugler, 1998](#); [Levine et al., 2000](#); among many others). On the other hand, the demand-following hypothesis asserts a causal relationship from economic growth to financial sector development. The hypothesis suggests the positive response of financial sector development to economic growth in such a way that an increasing demand for financial services might promote financial sector as the real economy grows (see, for example, [Gurley and Shaw, 1967](#); [Goldsmith, 1969](#); [Jung, 1986](#); among others).

⁷ Some seminal works in income convergence are [Mankiw et al. \(1992\)](#), [Islam \(1995\)](#), [Caselli et al. \(1996\)](#), [Evans \(1997\)](#), [Hoeffler \(2002\)](#) and [Mathunjwa and Temple \(2007\)](#).

⁸ There are also a group of studies, including [Kutan and Yigit \(2004, 2005, 2007\)](#) and [Brada et al. \(2005\)](#), using different estimation methodologies, such as rolling cointegration or stochastic convergence, divulge the impact of integration on convergence in core EU members and new members for several real and nominal variables, including industrial output, prices, monetary aggregates and nominal and real interest rate spreads.

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