

Bank Sector Performances, Economic Growth and European Integration

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Abstract

This paper is a contribution to the study of the link between financial intermediation and economic growth in the context of the European Union and particularly in the context of the integration of new member-states and their specific financial systems.

We use panel fixed and random effects estimates considering two sub-sets of EU countries: the first comprises 11 “old” EU countries, excluding Luxembourg, Denmark, Ireland and Sweden, for the period between Q2 1980 and Q4 1998; the second panel includes 26 EU countries, excluding Luxembourg but including the future EU member-countries, Bulgaria and Romania, for the period between Q2 1999 and Q4 2002.

The results obtained allow us to draw conclusions not only on the importance of the banking sector performance to economic growth, but also on the different level of integration in the two considered sub-sets. There is evidence of financial integration in the form of the similarities in the behaviour of the financial institutions, in spite of their different initial conditions.

Keywords: financial systems; financial integration; panel estimates; European Union

Category number of topic (JEL): C23; E44; F36;

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1. Introduction

Well-developed financial systems are usually considered an important and necessary foundation on which to ensure that credit sectors can play their particular role in processes of economic development. More efficient credit sectors may represent a necessary and important condition for the transmission mechanism of monetary policy in the Euro zone, but they should also contribute to the economic benefits of the other sectors and agents which use financial services.

The introduction of the single currency accelerated the process of consolidation and financial integration not only in the European Monetary Union, but in the European Union as a whole, in which the newest 10 member-states also have a voice, in spite of the heterogeneous situation of their specific financial systems.

The process of financial integration is, on one hand, a necessary pre-requisite for the adoption of the single currency and the implementation of the single monetary policy, with the predominance of the banking intermediation in the context of the EU. On the other hand, this process raises the potential to incite liquidity crises, which could become contagious and affect the increasingly integrated European financial system.

This paper is a contribution to the study of the link between financial intermediation and economic growth in the context of the European Union and particularly in the context of the integration of new member-states and their specific financial systems.

This paper is developed following two main vectors:

1) the first considers the role that financial systems play in economic growth, taking into account not only some historically important theoretical contributions to this subject but, more significantly, recent empirical studies which, using different financial variables, different estimations techniques and different sets of countries, confirm the linkage between financial systems and economic growth;

2) the second vector analyses how financial integration may affect financial structure. In the context of the European Union, the focus is on the role that financial and particularly credit sectors, play today under the conditions of the European Monetary Union, and particularly after the recent and future enlargements embracing countries with specific financial systems, some of which present many limitations in financial-sector intermediation.

Our principal contribution is an empirical data analysis of the influence of the financial systems in the economic growth of the European Union countries. More specifically, we use IMF and Eurostat quarterly data to analyse the possible influence of the financial systems (here represented by two bank-performance ratios: the ratio, domestic credit/assets of the deposit money banks and the ratio, domestic credit/liabilities of the deposit money banks) in economic growth.

For the estimations, we consider two sub-sets of EU countries:

- 11 “old” EU member-countries (excluding Luxembourg, Denmark, Ireland and Sweden) for the period between Q2 1980 and Q4 1998.
- 26 EU countries (excluding only Luxembourg and including the future EU members, Bulgaria and Romania) for the period between Q2 1999 and Q4 2002.

The results obtained allow us to draw conclusions not only on the importance of bank-sector performance to economic growth, but also on the different level of integration in the two considered sub-sets.

The remainder of the paper is organized as follows: Section 2 presents relevant literature on the link between financial systems and growth; Section 3 underlines some specific questions arising from financial integration within the European Union; in Section 4, we present our estimations; we make our concluding remarks in Section 5.

2. Financial Systems and Economic Growth

The link between economic growth and the quality of financial systems dates back at least as far as Schumpeter (1911), who maintained that the services provided by financial intermediaries are essential for economic innovation, productive investment and economic growth.

During the Great Depression, there was a collapse of the financial systems along with other economic sectors. Fisher (1933) analyzed the possible connection between the performance of the financial markets and the 1929 crisis and subsequent depression that ravaged the real economic activity, linked both directly and indirectly through the slowdown of the redistribution of wealth from debtors to creditors, while authors like Hicks (1937) and Modigliani (1944) underlined the role of the credit markets and the real interest rate in the context of the Keynesian liquidity theory.

Later, Mishkin (1978) used data from the Great Depression to study the interaction between output, consumer balance sheets and consumer spending, concluding that during the crisis, the increase in consumer real indebtedness, resulting mainly from the decline in incomes, induced consumers to lower spending, particularly on durable goods and housing investment, which further contributed to a lowering of output.

The connection between real economic output and the characteristics and quality of the financial structure, in particular in the process of financial intermediation, was also emphasised by Gurley and Shaw (1955) who focused in addition on the differentiation of the financial systems of the more developed and less developed countries.

More recently, and particularly during the last decade, the link between economic growth and the quality of financial systems has been studied by more or less sophisticated analysis and empirical studies. According to most of these studies, financial development may be an important condition to economic growth, since well-functioning markets and financial institutions may decrease the transaction costs and asymmetric information problems. At the same time, financial institutions play an increasingly important role in identifying investment opportunities, selecting the most profitable projects, mobilizing savings, facilitating trading and diversification of risk, as well as improving corporate governance mechanisms.

However, other authors, for example, Stiglitz (1985), Bhidé (1993), Bencivenga et al. (1995), stress that there may exist some costs associated with the role of financial intermediaries and

that sometimes these intermediaries may be subject to adverse selection and moral hazard problems which may constrain real economic growth enhancing resource allocation, exaggerating the increase in interest rates, or contributing to the decrease in the saving rates.

During the last decade, and particularly since the renowned King and Levine (1993) paper, there has been an increase of empirical studies at the aggregate level which explain output variables with financial ratios and variables such as liquid liabilities, bank loans to the private-sector, or stock market capitalization, which may be representative of the performance of the financial systems and institutions..

In one such study, Levine and Zervos (1998), using data for 49 countries for the period 1976-1990, conclude that there is a strong correlation between the rates of real per-capita output growth and stock market liquidity.

The influence of financial variables (particularly the liquid liabilities and the private credit from deposit banks in relation to GDP) in the real per-capita output growth is also demonstrated by Leahy et al. (2001), using data for 19 OECD countries for the years between 1970 and 1997. Similar variables (more precisely, liquid liabilities, private credit from deposit banks and stock market capitalization, all in relation to GDP) are used by Bassanini et al. (2001), who use data for 24 OECD countries (19971-1998) obtaining better results for stock markets than for bank variables.

Examining 9 OECD countries and available series with different starts between 1960 and 1986 and ending in 1998, Shan et al. (2001) explain real per-capita GDP by bank credit to GDP and conclude that the causality varies among countries.

Demirgüç-Kunt and Levine (1999), with data for 150 countries during the 1990s, conclude that the rich countries have more developed financial systems, characterizing this development by the size and efficiency of the financial sector, measured by the assets, liabilities, overhead costs and interest margins.

Comparing financial systems of different countries and regions, Allen and Gale (2000) conclude that there is inherent inefficiency within the monopolistic power of banks, which may also adopt an excessively conservative approach while the competitive nature of markets tends to encourage innovation and growth-enhancing activities.

Recently, Beck et al. (2004) have used the ratio of the value of the credit by financial intermediaries to the private sector divided by GDP as a proxy to capture the depth and breath of the financial intermediation in a panel of 52 countries over the period 1960 to 1999 and

conclude that financial development is not only clearly pro-growth but also pro-poor, that is, in countries with better-developed financial intermediation, income inequality declines more rapidly.

Summarizing these studies, we must agree with Khan and Senhadji (2000), who, in providing a review of the literature and empirical evidence of the relationship between financial development and economic growth, concluded that the results indicate that while the general effects of financial development on the outputs are positive, the size of these effects varies with the different variables considered, with indicators of financial development and with the estimation method, data frequency or the defined functional form of the relationship.

3. Financial Integration in the EU

The link between financial integration and economic growth is currently emphasized by authors like Obstfeld and Taylor (2003), this link having particular relevance in the new European Union, which is still adapting to the conditions of the European Monetary Union (EMU) and to the new universe of 25 members, following the historically remarkable enlargement which brought the simultaneous entry of 10 new member-states in 2004, with very particular characteristics in terms of their financial systems.

Financial institutions play a unique role particularly in the context of the Single Market Program and the European Monetary Union, although the EU banking sector has been considered as one of the sectors least affected by the SMP (Monti, 1996, Gardener et al., 2002). The introduction of the EMU may reduce some of the competitive advantages of local and national banks (advantages which were based on factors like currency risk, lack of price transparency and greater knowledge of national monetary policy), but it also increases competition in all financial-product market segments.

The structural changes due to the adoption of the single currency and a common monetary policy are exerting a profound impact on the Euro area finance sector and intensifying competition for banking services.

Some common trends may be identified in the context of the pressures of globalization, which affect the Euro area with particular intensity, specifically, a process of disintermediation, new technologies and increased competition (Belaisch et al., 2001).

Despite all the changes and disintermediation, the EU's bank asset structure reflects the rapid increase of lending since the advent of the EMU. It is a process which started before the implementation of the single currency and reflects the growing demand for credit provoked by the downward path of interest-rate levels.

At the present time, it remains true that the Euro area's financial and credit systems continue to be bank- dominated; the ECB (more precisely, the European System of Central Banks and its Banking Supervision Committee) is obliged to monitor and supervise closely the banking activity and structural developments in the EU banking sector.

The inadequacy of the present situation/extent of financial regulation in the context of the EMU is emphasized by authors like Vives (2001), who defends a reform to establish clear procedures for (confronting) hypothetical crises in lending and moreover, to prepare the implementation of more centralized supervisory arrangements in the whole financial system, with specific regard to the banking sector. Measures are required in order to increase the competition and to prevent and limit the national power of the "too big to fail" institutions.

The "Structural Analysis of the EU Banking Sector", published by the ECB in November, 2002, identifies three sets of trends which contribute to the present resilience of the European banking systems, namely:

- 1) the need of banks to increase income and control costs – in order to increase income, banks must diversify their credit lines (looking for new business and geographical areas);
- 2) the financial innovation to face the changes in risk and risk management – to develop more sophisticated approaches to risk management, like the use of credit derivatives and securitization;
- 3) the growing importance of consumer issues – with financial innovation, commercial banks have moved into specific areas, such as investment banking and asset management, and are now more exposed to the performance of the other markets and global economical conditions.

So, in the last few years, and in spite of all the remaining limitations in the supervision process, in addition to the profound structural changes due to the implementation of the single currency and the common monetary policy, and despite all the recent political shocks, EU banks have demonstrated a remarkable robustness, generally speaking. They have diversified their activities and financial innovations, against a background of increasing competition, under continuing pressure not only to increase their income and

profits, but also to guarantee most of the transmission mechanisms of the monetary policy and to maintain the financial stability of the whole system.

Particular attention must be paid to the sector after the last enlargement to ten new member-states, particularly those under the former-Soviet Union sphere of influence. Until the collapse of the Warsaw Pact, central banks and the state-owned commercial banks were mere instruments in the hands of the respective governments, passively executing the payment orders to the public employees and monitoring the payment flows between the enterprises, which were also state-owned. Under these conditions, there was no need for financial systems to allocate savings to investment as this was carried out in accordance with the Plan, without compensation or any assigning of value.

According to the characteristics of the recent transition processes in these countries, and in spite of their specificities (Holscher, 2000; Dimitrova, 2004), it is possible to define some groups according to their similarities in the financial-sector transition, namely: the “advanced reformers” (Poland and Hungary), the “reluctant modernizers” (Czech Republic and Slovenia), those “struggling with a double legacy” (Slovakia and Croatia), or the “desperate reformers” (Romania and Bulgaria) (Winkler, 2002, p.16).

However, three essential pillars are in place to assist the financial-sector development of the new member-states and to assure the conditions propitious to an increasing integration in the EU (and possibly also in the EMU) financial systems. These pillars are (Winkler, idem, pp.35):

1. internal and external government structures
2. domestic and international competition
3. prudential regulation supervision

All three could also be accepted as strong and necessary pillars for the development of the financial systems, particularly the banking sectors, of the older EU member-states and above all, of the EMU members.

4. Empirical Estimations

The methods used in the different aggregate estimations which look for empirical evidence of the relationship between financial development and economic growth are mainly co-integration analysis, correlations, cross-country regressions and panel regressions.

One of the most common problems of these estimations is the difficulty in harmonizing and making compatible the available data as, in spite of all the efforts of the ECB, Eurostat, IMF and other international and institutions, the study of financial structures and financial developments in the context of the EU remains a difficult task. This is due not only to the lack of data, but also to the inherent complexity of the financial structures as well as the constant changes, besides the specificities of the financial structures in the different EU countries.

Using quarterly data of the Eurostat and IMF statistics, we contribute to the existing empirical evidence of the influence of financial systems and EU integration on economic growth in two ways:

1. We use panel (fixed effects and random effects) estimates to explain the real per-capita GDP growth rate, admitting two variables to represent the role of financial systems. More specifically, we introduce the following two ratios:

- the ratio domestic credit/assets of the deposit money banks and
- the ratio domestic credit/liabilities of the deposit money banks

The first ratio provides a rough measure of the profitability of the deposit money banks (the main financial institutions in all EU countries) since as a rule, the credit granted is the most profitable asset of banks. The second ratio underlines the risk exposure of these banks as some of them may concede more credits than the resources provided to them, which would be a sign of the indebtedness of the banking institutions themselves.

2. In order to analyse the degree of integration of the EU countries, we compare the results obtained for two different sub-sets:

- one balanced panel with 825 observations, with data for the period between Q2 1980 and Q4 1998 for 11 “old” countries (excluding Luxembourg, Denmark, Ireland and Sweden);
- a second panel for 26 EU countries (excluding only Luxembourg, but including Bulgaria and Romania) for the period between Q2 1999 and Q4 2002, with 390 observations.

4. 1. Panel estimations

To examine the relation between the two ratios presented above (dom. credit/assets and dom. credit/liabilities) and the real per-capita GDP growth and to compare the results for the two considered panels, we use a panel data approach (following Wooldridge 2002 and 2003) which provides more observations for estimations and reduces the possibility of multicollinearity among the different variables.

In order to control for individual country-specific effects, we specify a linear model and estimate panel regressions with fixed and random effects:

$$\text{GDP Growth}_{it} = a_i + b_1 (\text{credit/assets}) + b_2 (\text{credit/ liabilities}) + u_{it}$$

With the fixed-effects (within) estimates, we assume that slopes (b_1 and b_2) are common to all the countries, whilst intercepts (a_i) vary across the i countries. The random-effects (variance components) estimates are similar to the fixed-effects estimates, but require that the individual intercepts are drawn from a common distribution and that they are not correlated with the independent variables.

We present the “**Vwith**”, which is the variance of the basic error terms (U_{it}) and the “**Vbet**”, which is the variance of the individual specific-error terms (A_i). To compare the results obtained with random effects and with the fixed-effects estimates, we also compute a Hausman test.

**Table 1 – Panel estimates for 11 EU countries;
time period between Q2 1980 and Q4 1998 (N = 825)**

$$\text{GDP Growth}_{it} = a_i + b_1 (\text{credit/assets}) + b_2 (\text{credit/ liabilities}) + u_{it}$$

	Estim. Coefficient	Standard Error	t-statistic	P-value
<u>Fixed effects (within estimates) :</u>				
credit/assets	7,10142	1,14541	6,19988	0,000
credit/liabilities	-6,50306	1,79166	-3,62963	0,000
Adjusted R ² =0,16				
F test: A,B=Ai,B F (74;748) =2,5981; P-value=0,000 Critical F-value =8,3534				
<u>Random effects (variance components estimates) :</u>				
Vwith (Variance of U _{it}) = 0,28319E-01				
Vbet (Variance of A _i) = 0,40742E-02				
credit/assets	6,99076	1,14096	6,12710	0,000
credit/liabilities	-6,57840	1,78292	-3,68968	0,000
intercept	0,996564	0,012029	82,8434	0,000
Adjusted R ² =0,04				
Hausman test H ₀ :RE vs FE : CHISQ (2) =1,3547; P-value=0,5080				

The results obtained confirm the influence of the performance of the financial institutions on the real per-capita GDP growth. As was expected, we observe evidence of the positive influence of the credit/assets ratio and of the negative effects of the credit/liabilities ratio.

According to the values obtained for the Hausmann test, we could conclude that apparently both fixed and random effects are acceptable. At the same time, the “Vwithin” and “Vbetween” variances are quite small, but the variance of the basic error terms (U_i) is still greater than the variance of the individual specific-error terms (A_i).

Nevertheless, and since we are not using a large panel (N = 825), we may conclude that the system responds well to the within (fixed-effects) estimations, which are more adequate and in all situations, they demonstrate consistency.

Simultaneously, by the values obtained with the F-tests, we can confirm that there are common slopes, meaning that within the European Union, there are clear signs of integration, since the growth rates of the real GDP per-capita have similar reactions to the behaviour of the financial institutions. Nevertheless, each country has a different intercept, that is, it had a specific initial condition before embarking on the process of integration (and particularly of financial integration).

**Table2 – Panel estimates for 26 EU countries;
time period between Q2 1999 and Q4 2002 (N = 390)**

$$\text{GDP Growth}_{it} = a_i + b_1 (\text{credit/assets}) + b_2 (\text{credit/ liabilities}) + u_{it}$$

	Estim. Coefficient	Standard Error	t-statistic	P-value
<u>Fixed effects (within estimates) :</u>				
credit/assets	0,012904	0,526653E-02	2,45021	0,015
credit/liabilities	-0,42135E-02	0,232608E-02	-1,81141	0,071
Adjusted R ² =0,45				
F test: A,B=Ai,B F (14;373) =21,698; P-value=0,000 Critical F-value =6,3632				
<u>Random effects (variance components estimates) :</u>				
Vwith (Variance of U _{it}) =0,57742E-02				
Vbet (Variance of A _i) = 0,43235E-02				
credit/assets	0,012933	0,526545E-02	2,45616	0,014
credit/liabilities	-0,422799E-02	0,232564E-02	-1,81799	0,069
intercept	1,01572	0,017482	58,1002	0,000
Adjusted R ² =0,03				
Hausman test H ₀ :RE vs FE : CHISQ (2) =0,25107; P-value= 0,8820				

Not surprisingly, the results obtained for the second panel (Table 2) are less consistent than those for the first panel. The second panel comprises fewer observations ($N = 390$) and a shorter time-span (Q2 1999 – Q4 2002). Moreover, we analyze the influence of the two financial ratios on the real GDP per-capita growth in 26 EU countries, that is, not only the “old” 14 (without Luxembourg), but also the 10 “new” and the 2 future-members (Bulgaria and Romania).

There is still evidence of the positive influence of the credit/asset ratio and of the negative influence of the credit/liabilities ratio, but in all situations the t-statistics are smaller and the p-values are greater than those in the first panel.

The “Vwithin” and “Vbetween” variances are now very similar and both quite small. At the same time, according to the values of the Hausman test, we may conclude that the random effects (variance components) estimates are preferable to the fixed-effect estimates and this is valid only if we consider that the used panel is a sample from a larger set. However, in this case, it would be appropriate to consider randomly-distributed, country-specific intercepts, which is not easily acceptable.

In reality, our (second) panel is still smaller ($N=390$) than the first panel, so it seems quite appropriate to accept the fixed-effects (within) estimates. The presented F-test confirms the existence of common slopes as a result of the process of financial integration. Under the conditions of increasing competition, the bank institutions, which are active in the same market, have to develop homogenous performances and contribute in a similar way to real GDP per-capita growth.

Nonetheless, again according to the obtained results for the F-test, it is clear that the countries have different intercepts, meaning that there are country-specific initial conditions. This is consistent both with the historically-known conditions and the fact that the financial institutions of these 26 countries have sometimes had to follow a specific course, facing different individual consequences, while adapting to the new conditions of the EU integration process.

5. Concluding remarks

This paper confirms the influence of financial systems, particularly of the banking institutions' performance on the output growth as well as the still considerable differences among EU member-states.

We contribute to the existing empirical evidence by introducing two variables to represent the role of financial systems: the ratio, domestic credit/assets of the deposit money banks and the ratio, domestic credit/liabilities of the deposit money banks. We find that both ratios influence the real GDP per-capita growth rate, not surprisingly the first ratio having a positive influence on the growth rate, while the second has a negative effect on the output results.

We use panel fixed- and random-effects estimates considering two panels of EU countries: one with data from 11 "old" countries, from the beginning of the 1980s until the implementation of the EMU and the other with data from then until the end of 2002 for 26 EU countries, excluding Luxembourg and including Bulgaria and Romania.

Our estimates show relatively more homogenous results for the first panel, with common slopes, that is, for this group of 11 EU countries. Even before the EMU, the integration process had already brought about a similar response of their output growth to the behaviour of the banking institutions. Nevertheless, in this panel there are still different intercepts, which is evidence of the specific initial conditions of these "old" and relatively more homogenous countries.

The results obtained for the second panel are less consistent. They confirm that in spite of the increasing competition among the banking institutions which had to adapt to the new market conditions, there is clear evidence of the country-specific initial conditions.

This is consistent with the historically-known integration processes, since the EU financial structures are still undergoing remarkable transformations, although considerable differences among EU member-states still persist.

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