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# To be euro or not to be euro: a comparative analysis of banking systems

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For the past half century, European countries have moved to harmonize their economies. While there has been a push for a single banking market in Europe, the 25 European Union (EU) countries have still not achieved full harmonization. The purpose of this study is to explore similarities and differences in country-specific banking system attributes between member nations in the EU that have adopted the Euro and those that have not. We find evidence suggesting that the currency adoption decision is related to the level of market disclosure and openness. In general, countries that have adopted the Euro have the strongest quality of information and greatest protection against the exploitation of banking entities.

## I. Introduction

The seeds for what is today's European Union (EU) were planted over 50 years ago in discussions calling for greater integration of commodity markets among the nations of Europe. As free trade became increasingly integrated across members of the EU, attempts were made to harmonize the European banking system. In 1977, the First banking directive was issued. This directive insured that all banks in the Union would be supervised and regulated by their host country (see Barth *et al.*, 2006). While the First banking directive moved toward a single banking system in Europe, obstacles, such as differences in capital controls, still impeded market harmonization. To address these impediments, the Second banking directive was issued in 1998 and required member countries to comply with the principle of 'mutual recognition' (Barth *et al.*, 2006). This allowed all banks to conduct services in any member country without authorization from the host country.

Ultimately, this eliminated a duplication of supervision, while letting banks compete across borders.

The latest step in the move to a single banking economy came in 1999, when 12 member countries in the EU adopted a single currency: the Euro. By adopting a common currency, the marketplace for financial services and institutions was, in the words of Thomas Friedman (2005), 'flattened.' To facilitate this integration, the European Central bank now monitors the European financial market and formulates monetary policy for the 12 member nations. Moreover, the individual nations are responsible for regulating and supervising banks, per the Second directive.

The purpose of this study is to explore similarities and differences in country-specific banking system attributes between member nations in the EU that have adopted the Euro and those that have not. While there has been a push for a single banking market in Europe, the 25 EU countries have still not achieved full harmonization. Because only 12 member countries have adopted the Euro, this

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current market environment establishes an interesting ‘laboratory’ in which one may examine the process of integration among countries. In particular, examining differences between these member groups allows one to answer the following: If full harmonization is important, which attributes have led member nations into self-selecting a common currency?

## II. Literature

It is widely understood that banks significantly influence the overall economic growth, poverty and stability of a country (Levine, 2005). As the member nations of the EU push for greater harmony, one goal is to obtain a more sound banking system to enhance bank development, stability, efficiency, performance and reduce the degree of corruption in bank lending. In terms of regulatory and supervisory practices, the Basel committee has routinely recommended strategies it believes will lead to sound banking. Barth *et al.* (2004) show that no one policy works best. Rather, the recommendations, in general, do provide better practices, but need to be tailored for particular countries. In this sense, one should expect that the countries in the EU that have adopted the Euro have similar banking practices across the Basel committee’s recommendations for capital standards, official supervision and market discipline.

There have been research efforts in recent years to examine the banking efficiency and profitability of countries in the EU. Berger (2006) examines the developed nations of Europe in comparison to the transition economies. Specifically, Berger considers the degree of foreign ownership and the reasons for any differences between the two groups of countries. Explicit barriers to entry, such as governmental policies/regulations, appear more substantial for developing nations. Kondeas *et al.* (2005) use the EU to examine efficiencies that resulted from the changing banking environment among member nations. They show the banking industry in those countries increased efficiency and narrowed the gap between the least efficient and most efficient from 1989 to 1995.

Other studies of EU countries investigate the degree of banking integration among those member nations that have adopted the Euro. Manna (2004) finds that a strong home bias exists, but that banks in EU countries that have adopted the Euro are more likely to operate in both their home country and other countries that have adopted the Euro. Hartmann *et al.* (2005) empirically examine equity prices for US banks and banks in countries that have

adopted the Euro, with the objective of comparing contagion effects among the US banks with those in the Euro area. They conclude that there are greater contagion effects among US banks, as opposed to Euro banks. Hartmann *et al.* (2003) find that the expansion of cross-border branching has seen only limited progress. Furthermore, they conclude that there has been a major reduction in barriers to entry among countries that have adopted the Euro. In a similar study, Perez *et al.* (2005) also find that financial integration progressed more rapidly among countries that have adopted the Euro than in the remainder of EU countries.

## III. Data and Results

The purpose of this research is to compare the characteristics of the banking systems and political economies of EU countries that have adopted the Euro (hereafter, Euro countries) to those that have not (hereafter, nonEuro countries). In doing so, we hope to shed light on the determinants of that self selection. Specifically, we examine the ownership structure of banks, the market discipline to which they are subjected, the activities banks are allowed to pursue, the political and legal structure of the countries and country income characteristics. It is important to note that, although there exist statistically significant differences in several of the variables we examine, due to small sample sizes of Euro and nonEuro countries, statistical significance only represents extreme differences. There are still substantial differences among other variables, though our statistical tests are not powerful enough to show significance.

The data come from two sources. All of our country-level banking data come from Barth *et al.* (2006), who, in conjunction with the World bank, collected survey data for 262 questions from the banking authorities of 153 countries in 2003 and early 2004. Our political and legal structure variables come from La Porta *et al.* (1999).

Panel A of Table 1 examines the ownership structure of banks. Ownership is measured by the percentage of banking assets that are at least 50% owned by a given entity at the end of 2001. While the median level of government ownership is nearly identical between Euro and nonEuro countries, those that have adopted the common currency have significantly lower foreign ownership and significantly greater private ownership than countries that have not yet adopted the Euro.

**Table 1. Ownership and market discipline**

	All EU countries	Adopted euro	Not adopted euro
Panel A: Percent of ownership			
Government ownership	7.4671 (3.8500) 24	9.7045 (3.9000) 11	5.5738 (3.8000) 13
Foreign ownership	42.1176 (20.6000) 21	18.8711 (8.5000) 9	59.5525*** (66.9500)** 12
Private ownership	49.3486 (54.0000) 21	69.2678 (80.2000) 9	34.4092** (20.8500)* 12
Panel B: Market discipline			
Certified audit required	0.9600 (1.0000) 25	0.9167 (1.0000) 12	1.0000 (1.0000) 13
International credit ratings (Percentage of top 10 banks)	71.6667 (80.0000) 24	81.8182 (90.0000) 11	63.0769* (60.0000) 13
Domestic credit ratings (Percentage of top 10 banks)	10.5263 (0.0000) 19	0.0000 (0.0000) 9	20.0000 (0.0000) 10
Deposit insurance scheme	0.2000 (0.0000) 25	0.0000 (0.0000) 12	0.3846** (0.0000)** 13
Bank accounting practices	3.6800 (4.0000) 25	3.5833 (4.0000) 12	3.7692 (4.0000) 13
Private monitoring index	7.9474 (8.0000) 19	7.5556 (8.0000) 9	8.3000 (8.5000) 10
Deposit insurer power	1.2500 (1.0000) 24	1.3636 (1.0000) 11	1.1538 (1.0000) 13
Deposit insurance to total bank assets	1.6138 (0.3000) 15	0.2740 (0.3000) 5	2.2836 (0.4125) 10
Funding with insured deposits	46.7265 (45.3500) 23	39.6557 (38.0000) 10	52.9135 (53.9500) 13
Moral hazard index	1.9565 (2.0000) 23	2.2000 (2.0000) 10	1.7692 (2.0000) 13

Notes: The banking data are country-level data from Barth *et al.* (2006). Means (medians) and number of observations are reported for all EU countries, those that have adopted the euro, and those that have not.

\*\*\*, \*\* and \* represent significant differences at the 1, 5 and 10% levels, respectively, between those that have adopted the euro and those that have not.

The level of market discipline is measured by a variety of variables in panel B of Table 1. While essentially all EU countries require a certified audit, the percent of the 10 largest banks that have international credit ratings is significantly lower in countries that have not adopted the Euro than in Euro countries, though there is little difference in the percent of the 10 largest banks that have domestic credit ratings. A significantly greater number of nonEuro countries also have no explicit deposit insurance scheme (the variable takes a value of one if there is no explicit deposit insurance scheme and zero otherwise). Bank accounting practices, an index

which takes into account whether banks report accruals, nonperforming loans and consolidated financial statements, are similar between Euro countries and nonEuro countries. Finally, the private monitoring index is comprised of the previous five variables, as well as variables indicating whether banks report off-balance sheet items, risk management procedures and formal enforcement actions to the public. NonEuro countries exhibit greater private oversight characteristics than Euro countries.

Moral hazard is the focus of the final three variables in panel B. The first measures the ratio of accumulated deposit insurance funds to total

**Table 2. Bank activity, political structure, and income**

Panel A: Bank activity	All EU countries	Adopted euro	Not adopted euro
Security activity	1.4400 (1.0000) 25	1.1667 (1.0000) 12	1.6923*** (2.0000)** 13
Insurance activity	2.4800 (3.0000) 25	2.6667 (3.0000) 12	2.3077 (2.0000) 13
Real estate activity	2.2800 (2.0000) 25	1.8333 (1.0000) 12	2.6923* (3.0000)* 13
Overall restrictiveness	6.2000 (6.0000) 25	5.6667 (5.0000) 12	6.6923 (7.0000) 13
Panel B: Political structure			
Corruption index	8.2592 (8.5417) 20	8.5020 (8.6905) 12	7.8950 (7.4306) 8
Democracy index	8.6627 (10.0000) 24	9.2020 (10.0000) 12	8.1233 (9.7600) 12
Panel C: Income characteristics			
Average GDP (\$ Millions)	397 859.5 (144 170.3) 25	615 076.1 (250 044.6) 12	197 352.0* (27 819.8)** 13
Average GDP per capital	21 862.6 (16 149.9) 25	24 071.4 (23 411.1) 12	17 296.5 (5 177.7) 13
Average inflation	3.0367 (2.9260) 25	2.5673 (2.5120) 12	3.4700 (3.1100) 13
Average GDP growth	3.0899 (2.8920) 25	2.5988 (2.0130) 12	3.5432 (3.1340) 13
Average imports (Percentage of GDP)	54.6938 (53.4620) 25	50.3088 (35.8030) 12	58.7414 (58.2320) 13
Average exports (Percentage of GDP)	54.3846 (48.2020) 25	53.5818 (37.3120) 12	55.1257 (50.7360) 13

Notes: Bank activity data are from Barth *et al.* (2006), income characteristics are from the World Bank and political structure data are from La Porta *et al.* (1999). Means (medians) and number of observations are reported for all EU countries, those that have adopted the Euro, and those that have not.

\*\*\*, \*\* and \* represent significant differences at the 1, 5 and 10% levels, respectively, between those that have adopted the Euro and those that have not.

bank assets. The second is the percentage of banking system assets funded with insured deposits. Both variables are substantially greater for nonEuro nations than Euro nations. The final variable is a moral hazard index, based on a scale of one to three, with higher values indicating lower moral hazard. Specifically, this index measures whether banks fund the deposit insurance, whether those fees vary by bank risk, and whether depositors are insured for only a portion of their deposits. We see that the greater deposit insurance levels for nonEuro countries create an environment, on average, with greater moral hazard than Euro countries.

Next, we explore the extent to which banks are allowed to engage in nontraditional activities related to security underwriting, insurance, and real estate in panel A of Table 2. These variables are presented on a scale of one to four, where one indicates the activity is unrestricted and four indicates it is prohibited. For an aggregate measure, the overall restrictiveness variable is the sum of the other three. The data show that Euro countries are more restrictive of insurance activities, but nonEuro countries are significantly more restrictive of security and real estate activities. Euro countries appear less restrictive, overall.

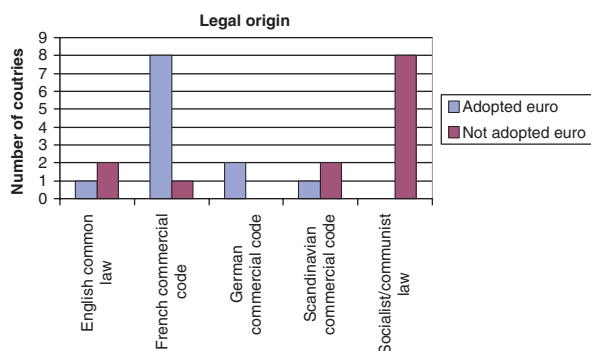


Fig. 1. Legal origin

Differences in the political and legal structures of EU countries are interesting to note. As shown in panel B of Table 2, countries that have adopted the Euro are characterized by lower levels of corruption (higher corruption index scores indicate lower levels of corruption in a country) and greater levels of democracy. Figure 1 illustrates the legal origin of these countries. The vast majority of Euro countries have legal systems stemming from the French commercial code and none are socialist or communist law countries. By contrast, the vast majority of nonEuro countries are socialist/communist law countries. Those countries that have adopted the Euro display greater openness and fairness, as well as less corruption.

Finally, we explore the income characteristics of EU countries in panel C of Table 2. Variables are calculated using the average of 2000–2004 World bank data. Those countries that have adopted the Euro are significantly larger, both in total GDP and GDP per capital, than countries that have not adopted the Euro. In addition, Euro countries have lower levels of average inflation and GDP growth than nonEuro countries. Most striking are the differences in imports and exports. While the median Euro country has imports and exports of 35.8 and 37.3% of GDP, respectively, the median nonEuro country has imports of 58.2% of GDP and exports of 50.7%. In summary, Euro countries are wealthier, have lower inflation, and rely less extensively on imports and exports than nonEuro countries.

#### IV. Conclusion

For the past half century, European countries have moved to harmonize their economies. Twenty-five countries created a free trade union to allow for market integration and economic stability.

Furthermore, 12 of the member nations have adopted the same currency. We explore the differences between those countries that have adopted the Euro and those that have not, focusing on ownership, market discipline, bank activities, political and legal structures and income characteristics. Our goal is to identify the attributes that led nations to self-select and adopt the Euro.

We find evidence suggesting that the currency adoption decision is related to the level of market disclosure and openness. Countries that have the strongest quality of information and countries where banking entities maintain stronger protection against exploitation are those countries that have adopted the Euro. Our finding that these nations are characterized by significantly greater private bank ownership and significantly lower foreign ownership is consistent with this view.

Also supportive of the conclusion that Euro countries are those that have higher quality of information, these nations have a greater proportion of their largest banks rated by international credit agencies and have less need for explicit deposit insurance schemes and private monitoring than nonEuro countries. Euro countries also have lower potential moral hazard, lower corruption, greater democracy and have legal structures that are substantially less likely to be socialist or communist. In addition, greater information disclosure and information quality allows banks in Euro countries to be less restricted in nontraditional banking activities, such as securities underwriting and real estate. Finally, Euro nations have a smaller portion of their GDPs comprised of imports and exports, perhaps mitigating the need for control of one's own monetary policy. As the European Union further evolves, with an increase in member countries and the number of those countries adopting the Euro, we expect many of these differences to dissipate.

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