

The Greek three-pillar functional system in the presence of the European Union Banking Directives

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ABSTRACT

KEYWORDS: EU Banking Directives, functional banking system, regulation, systematic risk, universal banking system, wealth effects

This paper examines wealth effects and changes in the systematic risk associated with the return structure of the 'three-pillar' functional system in Greece, resulting from the introduction of the eight major European Union Banking Directives over the period 1990–94. The findings indicate that the systematic risk for the insurance and investment firms dramatically increased, while the systematic risk for commercial banks slightly increased through the passage

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of the Free Capital Movement Directive. Evidence was also found to show that the Free Capital Movement Directive created significant wealth effects for the investment firms, but insignificant wealth effects for banks. In addition, a marginal wealth effect was created for the insurance firms. Conversely, the results suggest that the Solvency Ratios and Own Funds Banking Directives produced no wealth effects for the banks, significant wealth effects for the insurance firms, and insignificant wealth effects for the investment firms. The wealth effects of the rest of the EU Banking Directives on the functional 'three-pillar' Greek financial system were neutral.

INTRODUCTION

The European Union's (EU's) 1992 Banking Initiative was a direct form of economic regulation aimed at the transfer or substitution of commands and controls, of rights and duties, from the member states' governments to the EU's main financial authority. In general terms, this banking initiative consisted of a set of technical binding banking directives or a set of rules imposed on the sovereign member states, intended to modify their economic behaviour significantly with respect to price, entry (eg franchises, permits, licences), methods of production (eg standards), and conditions of service in the financial services industry.

The 1992 Banking Initiative included three areas of regulatory reform: (1) the free movement of capital, (2) the right to sell securities across EU frontiers without a local banking establishment, and (3) the right of financial institutions to establish themselves in other sovereign member states of the EU without authorisation by the host country economic regulators.

Hence, the main economic rationale for the new EU regulatory framework under the banner '1992 Banking Initiative' was to harmonise the regulatory financial regimes across all member sovereign states. This

harmonisation aimed to opening of previously closed EU banking and investment services markets to the fierce international competition.

In their seminal papers on regulation Stigler¹ and Peltzman² have shown respectively that any deregulatory changes would affect bank shareholders' returns and the systematic risk of the other market financial institutions. The main objective of this paper is to address this important issue by posing two related questions: (1) how were the returns to shareholders of Greek financial institutions affected by the introduction of the EU Banking Directives, and (2) how did these regulatory reforms affect the systematic risk for these institutions. Thus, the main contribution of this analysis is that it examines the economic implications of moving from a segmented financial system to a universal one, with special reference as to how the 1992 Banking Initiative impacted the Greek banking system.

The Greek experience is especially interesting and instructive because the introduction of the EU Banking Directives completely transformed and restructured its financial system from a functional to a universal system in a single policy government shift. Furthermore, little empirical work exists on how the systematic risk of a financial system for a small open emerging economy like Greece is impacted by regulatory changes within a larger trading bloc due to data deficiency.

The paper is arranged as follows. The second section describes the eight fundamental EU Banking Directives in a chronological order, as they relate to the 1992 Banking Initiative. The third section examines the workings of the Greek financial system. The fourth section reviews the existing literature. The fifth section highlights and introduces the econometric methodology. The sixth section presents the results. Finally, in the seventh section, conclusions are drawn.

THE EUROPEAN UNION BANKING DIRECTIVES

The term 'EU 1992 Banking Initiative' contained a set of banking directives that encompassed a full range of financial services offered by financial institutions in Europe including securities, mutual funds and investment banking. Based on these enabling banking directives, principles of regulation were formed, and strategies were implemented in order to remove the serious impediments to constructive financial innovation. The purpose of these enabling laws was to exploit potential economic advantages stemming from the concept of economic integration and globalisation associated with the European trading bloc. The proposed EU technical banking directives and the effective dates

for these reforms are outlined and described in Table 1. A technical 'Banking Directive' is a binding policy that each member state is free to implement in its own way.

These regulatory enabling laws were easily identifiable in terms of costs, and their economic effects were broadly predictable, and were subject to annual EU examination as part of the trading bloc budgetary process. Associated with the introduction of these regulatory reforms is a word of caution. Although the trading bloc costs of administering these regulatory reforms were identifiable (although often with great difficulty), the direct and indirect costs, borne by the private sector (eg shareholders, employees and consumers) were not.

Table 1 The eight major EU Banking Directives

EU Directive	Effective date	Description
(1) Free Capital Movement	07/01/1990	EU announced the complete liberalisation of capital movements and financial institutions establishment from one member state territory to another.
(2) The Solvency Ratios	01/01/1991	Classified on and off-balance sheet items (eg options, swaps and interest rate caps) and commitments into different risk categories.
(3) The Own Funds	01/01/1991	Defined what kind of financial resources should be treated as capital.
(4) The Second Banking	01/01/1993	Authorised the financial institutions to conduct numerous banking activities in any member state and granted the right to the 'host' countries to impose additional liquidity rules to protect the investors from financial manipulation.
(5) The Consolidated	01/01/1993	Supervision: Supervised the financial institutions on a consolidated group as well as on a company basis.
(6) The Money Laundering	01/01/1993	Established the 'home' and 'host' sovereign countries control and guidelines for illegal 'funds' activities.
(7) The Investment Services	01/01/1994	Allowed EU banks to own investment companies of limited size.
(8) The Capital Adequacy	01/01/1994	Established the minimum 'core' and 'non-core' capital requirements for EU financial institutions.

THE GREEK FINANCIAL SYSTEM

During the 1980s and early 1990s, the Greek banking system operated in a highly regulated environment, imposed by the government through the Bank of Greece. This control was exercised directly through banking regulations, which were often changed to reflect the government's short-term goals of economic and monetary policy, and indirectly through government control over the major Greek commercial banks. Government regulations covered reserve requirements, permission for incentives to the banks for the granting of loans to certain types of enterprises, and foreign exchange control measures.

In the 1980s, the Central Bank of Greece did not enjoy a substantial degree of independence or near autonomy from the Greek government. The socialist government applied a great deal of pressure to the Central Bank with respect to the conduct of monetary policy in order to achieve their 'myopic' short-run goals. Furthermore, the political pressures imposed on the socialist government after the exposition of the 'Bank of Crete' economic scandal and the political unrest of the Greek labour movement have circumvented even more the autonomy of the Central Bank, since the socialist government ordered the largest expansion of the money supply in order to satisfy the unreasonable labour demands.

During the early 1990s the Greek financial sector transformed and compartmentalised itself into a 'three-pillar' functional system. The three fundamental pillars were: (1) banks fulfilled the functions of deposit and lending, fiduciary services, and mortgages; (2) investment firms underwrote and traded securities; and (3) provincially regulated insurance companies. Cross-ownership of banks, investment firms and insurance companies was strictly prohibited. Foreign control of banks and security dealers was also restricted.

The economic rationale for the function-

ality and the compartmentalisation of the Greek financial sector was to limit the ability of deposit-taking institutions to engage in activities deemed to be 'too risky', such as underwriting. A second reason was to guard against conflicts of interest, such as a bank underwriting the equity issue of one of its corporate borrowers.

The introduction of the EU Banking Directives, however, brought increased competition to the Greek financial sector as European financial institutions received the right to expand within the EU market. Increased international competition, especially in investment banking and corporate lending, compelled financial institutions to seek greater efficiencies by expanding into one another's business in order to obtain scale and scope economies.

The 'three-pillar' functional Greek system started to crumble. Financial institutions started entering into each other's line of business. Cross-ownership of commercial banks and investment banks was finally allowed by the Greek government. The Greek system changed rapidly, conforming to EU market forces. The entire Greek financial sector was altered from a 'three-pillar' functional system to a universal one, a financial system that incorporated and contained all financial services and banking transactions under 'one roof'.

The Greek financial sector was transformed overnight from a functional or segmented system to a universal banking system, because of the passage of the EU Banking Directives. The newly created universal financial system not only ensured that banks were no longer sheltered from various government regulations and obsolete regulatory decrees, but also that they were run prudently, cost effectively, and efficiently. Additionally, the efficient financial structure of the universal system completely avoided any major upheavals in investor confidence, in movement of funds, and concentration of power.

LITERATURE REVIEW

Academic literature on regulatory regime changes is unclear as to the creation of wealth effects on banks' shareholders return and the changes on the market systematic risk. During the last two decades, various researchers have examined changes produced by the introduction of the Glass-Steagall Act, which separated banking from underwriting/investment business in the USA.

Peltzman³ suggests that the introduction of various regulatory reforms may affect the systematic risk of the banks. He argues that reduction of economic regulation and movement from segmented markets to universal ones will increase the risk of equity ownership. This is due to the increase in competition and the resultant increased variability of banking earnings.

For instance, if the deregulatory reforms are 'pro-market', competition may increase profit volatility but also increase mean expected returns as a result of cost savings. In addition, a decrease in economic regulation may allow financial institutions to diversify more effectively, and henceforth reduce their systematic risk or alternatively enter into riskier areas and therefore increase their systematic risk.

Litan⁴ discusses how the market systematic risk may increase when banks diversify into riskier non-banking ventures because of the existence of the so-called 'moral hazard' problem associated with government deposit insurance. Joskow and MacAvoy⁵ on the other hand, suggest that the introduction of various regulatory reforms and barriers results in lower risk. In addition, Brewer⁶ claims that regulatory reforms leading to geographical diversification also decrease systematic risk.

Fraser and Kannan⁷ find that the introduction of various US regulatory reforms increases the risk of equity for banks. Pettway, Tapley and Yamada⁸ examine a set of Japanese and US financial institutions that

underwrote and managed Eurobond offerings and find that the systematic risk for these intermediaries monotonically increases.

Aharony, Saunders and Swary⁹ examine the 1980 US Depository Institutions Deregulation Monetary Control Act (DIDMCA) and find that its introduction decreased the systematic risk for financial institutions, while Allen and Wilhelm¹⁰ find no relationship associated with the DIDMCA and the risk for banks. Wall¹¹ and Brewer¹² both find that deregulation does not lead to greater risk as banks enter into investment firms' business.

Stigler¹³ employed a welfare-economics framework in order to analyse the impact on financial institutions' shareholders' return (ie wealth effects) when various regulatory reforms are introduced. Stigler¹⁴ clearly explains that economic interests among the various market participants are affected by the passage of regulatory reforms and strictly distributed based on the political power that each market group possesses.

The chief economic regulator sets the rules in such a way to benefit the party with the greatest political power at the expense of everybody else in the financial system. Stigler¹⁵ claims that economic regulation essentially imposes a tax on the wealth of economic agents in the financial system and the per capita gains (ie wealth effects) accrue to the party that enjoys the greatest political association with the economic regulators.

Several US studies have examined the wealth effect creation associated with the passage of various bank acts. For instance, James¹⁶ produces evidence that the removal of deposit rate ceilings in the USA created positive abnormal returns for the wholesale banks while the retail commercial banks experienced losses.

Allen and Wilhelm,¹⁷ and Cornett and Tehranian¹⁸ have shown respectively that shareholders of large commercial chartered

banks have experienced positive wealth effects (ie gains) with the passage of the DIDMCA. Conversely, the shareholders of small commercial chartered banks and small savings and loans (S&L) financial institutions have experienced significant wealth losses.

Conversely, using a different event study econometric methodology, Aharony, Saunders and Swary¹⁹ conclude that the chartered banks did not experience positive wealth effects with the passage of the DIDMCA. Only the S&L industry experienced significant wealth effects (ie positive gains) in the 24-week period surrounding the announcement of the introduction of the DIDMCA.

Cornett and Tehranian²⁰ examine wealth effects associated with the introduction of the Garn-St. German Depository Institution Act of 1982 on commercial charter banks and S&L financial institutions. Their results indicate that the shareholders of the large financial institutions experience positive wealth effects (ie large gains) while the shareholders of the smaller ones experience negative wealth effects (ie losses).

Thus, from the above-mentioned literature review one clearly understands that there exists no consensus among academics on how changes in economic regulation will affect a financial institution's risk and the shareholders rate of return. Since it is unclear what the net effect of the various regulatory reforms on Greek banks, and investment and insurance firms would be, the whole issue becomes an empirical question.

HYPOTHESIS TESTING AND ECONOMETRIC METHODOLOGY

The separate effects of each of the major three banking directives on the banks, and investment and insurance firms in the sample are tested. These tests will indicate whether there was an increase in the systematic risk of these firms at the time of

the introduction of the EU Banking Directives. In addition, whether there was a change in shareholder wealth attributable to each individual banking directive is tested. The two hypotheses to be tested in this paper are: (i) whether there was a significant shift in the systematic risk of the banks, and investment and insurance firms resulting from the initial proposals, which commenced with the introduction of the various regulatory EU Banking Directives and (ii) whether the announcement of each EU Banking Directive had a significant impact on shareholder wealth of each portfolio of banks, investment and insurance firms.

The data are comprised of monthly price indices obtained from the DataStream Database for the period January 1988 to October 2003 and encompass three portfolios: (i) an equally weighted banking index (ii) an equally weighted investment company index, and (iii) an equally weighted insurance company index. In addition, the total market price index is used as a proxy for the Greek market portfolio. The indices were converted to returns using the log difference method.

Following the seminal study of Binder,²¹ Allen and Wilhelm,²² Cornett and Tehranian,²³ the seemingly unrelated regressions (SUR) of Zellner²⁴ are used. This methodology has the advantage of providing a framework for testing a wide range of regulatory change announcements. Moreover, with common calendar day announcements for all stocks, the error term is not independent across equations. The lack of independence of the regression residuals reduces the efficiency of the estimated coefficients and renders the t statistics unreliable if each equation is estimated separately as it is often done with the standard residual analysis. The SUR methodology is more suitable in testing for abnormal returns when the event involves a common calendar date. Failure to use SUR results in ineffi-

Table 2 Estimation of regression coefficients using the SUR model $R_{it} = \delta_i + \delta'_i D_s + \beta_i R_{Mt} + \beta'_i D_s R_{Mt} + \sum \gamma_{ij} D_{jt} + \varepsilon_{it}$

Coefficients	Banks		Insurance firms		Investment firms	
δ	-0.9847	(-1.42)	1.6491	(0.74)	-0.3932	(-0.23)
δ'	1.06506	(1.44)	-1.6764	(-0.71)	0.4465	(0.25)
β	1.0244***	(17.27)	0.7960***	(4.19)	0.7109***	(4.92)
β'	0.1546**	(2.34)	0.6694***	(3.16)	0.3394**	(2.10)
γ_2	5.0685	(1.50)	-19.6892*	(-1.82)	-18.0663**	(-2.19)
γ_3	-4.3782	(-1.26)	-22.5754**	(-2.04)	-0.6897	(-0.08)
γ_4	0.5408	(0.16)	-6.0623	(-0.56)	-2.7607	(-0.34)
γ_4	-4.2031	(-1.25)	-11.0020	(-1.02)	-1.3788	(-0.17)
Wald Test:	$\chi^2 = 5.4756$	(5%)	$\chi^2 = 9.9856$	(1%)	$\chi^2 = 4.4100$	(5%)
Significance Level						
R^2	0.9193		0.5925		0.5826	

The term R_i denotes returns on group i and R_M denotes market returns

A Chow test was used to assess the change in systematic risk post July 1990. Subscripts on the wealth coefficients correspond to 1 = July 1990, 2 = January 1991, 3 = January 1993 and 4 = January 1994. D_s is the dummy variable reflecting the shift in the systematic risk due to the full liberalisation implemented in July 1990. ***, **, and * correspond to significance at the 1%, 5%, 10% levels, respectively.

cient estimates of beta coefficients (eg the coefficients will not exhibit minimum variance) and the corresponding t ratios are drawn into question. The practical consequence of this, of course, is the possibility of erroneously not rejecting the null hypotheses relating to these coefficients.

The SUR model to be tested is specified below:

Chartered banks:

$$R_{1t} = \delta_1 + \beta_1 R_{Mt} + \beta'_1 D_s R_{Mt} + \sum_{j=1}^4 \gamma_{1j} D_{jt} + \varepsilon_{1t} \quad (1)$$

Investment firms:

$$R_{2t} = \delta_2 + \beta_2 R_{Mt} + \beta'_2 D_s R_{Mt} + \sum_{j=1}^4 \gamma_{2j} D_{jt} + \varepsilon_{2t} \quad (2)$$

Insurance firms:

$$R_{3t} = \delta_3 + \beta_3 R_{Mt} + \beta'_3 D_s R_{Mt} + \sum_{j=1}^4 \gamma_{3j} D_{jt} + \varepsilon_{3t} \quad (3)$$

where R_{it} denotes the time series of portfolio i returns and ($i = 1, 2, 3$); R_{Mt} denotes the time series of market portfolio returns; δ_i denotes the intercept coefficient of portfolio i before July 1990 regulatory changes; β_i denotes the systematic risk coefficient of portfolio i before July 1990 regulatory changes; β'_i denotes the shift in the systematic risk coefficient due to the post-July 1990 regulatory changes; D_s denotes the shift dummy variable that takes values of zero before July 1990 and one after the July 1990 regulatory changes; D_{jt} denotes the regulatory event dummy variable j that takes the value of 1 if t is the month of the

announcement, and 0 otherwise. Finally γ_{ij} denotes the marginal effect of each regulatory event j on the portfolio i with ($j = 1,2,3,4$) for the four distinct months of regulatory changes in Table 1 and portfolio i with ($i = 1,2,3$).

Equations (1), (2), and (3) constitute a system of simultaneous equations to be jointly estimated using the SUR econometric model. The primary interest is to evaluate whether there is a significant shift in the systematic risk of each financial institution as a result of the introduction of the proposals for regulatory reforms (eg $\beta'_i \geq 0$ or $\beta'_i \leq 0$). This is tested in equations (1), (2), and (3) with the beta shift dummy which appears in the term $\beta'_i D_s R_{Mt}$.

For instance, if the regulatory proposals allow the banks to diversify into the underwriting industry by acquiring some securities dealers and such news significantly affect the systematic risk of the banks we should expect β' to be statistically different from zero. The choice of July 1990 as the test date for the beta shift is made on the basis that it was the month of the first proposal of reform and thus is expected to be the event that would initially shift the systematic risk.

The regulatory impact is measured by the statistical significance of the coefficient γ_{ij} for each specific event. If the effect on portfolio i of each financial institution results in an increase in shareholder wealth, the coefficient will be >0 . Conversely, a coefficient, which is <0 , implies a decrease in shareholder wealth.

ANALYSIS OF EMPIRICAL RESULTS

Banks systematic risk rose from 1.0244 to 1.179 with the introduction of the Free Movement of Capital Directive in July 1990. However, the increase in the systematic risk for the insurance and the investment firms were dramatic. The systematic risk for insurance firms jumped from 0.796 to 1.4654, an increase of 0.6694

points, compared with the increase in the banks systematic risk. The investment firms' systematic risk was 0.7109 before the introduction of the Free Capital Movement Directive, which rose to 1.0503 after its implementation, an increase of 0.3394 points.

The announcement of the Free Capital Movement Directive in July 1990 did not produce a significant effect on the banks' returns. However, it produced a marginally significant effect on the returns of the insurance firms (γ_1 significant at a 10% level) and a greater significant effect on the investment firms' returns (γ_1 significant at a 5% level).

The Solvency Ratios and the Own Funds Banking Directives which were implemented in January 1991 produced a significant wealth effect on the insurance firms' returns (eg γ_2 for insurance firms was significant at the 5% level) but an insignificant wealth effect on the banks and investment firms respectively. The wealth effects produced with the tabling of the rest of the EU Banking Directives on the Greek financial system were neutral.

CONCLUSIONS

The EU Banking Directives demolished the powers of the functional 'three-pillar' Greek financial system by allowing cross-ownership to prevail among the Greek financial institutions. This study found dramatic increases in the systematic risk with the introduction of the Free Capital Movement Directive for both insurance and investment firms respectively. The results support Peltzman's²⁵ argument that deregulation of an industry increases the market risk of those firms previously buffered from outside competition.

The study also found that the wealth effects on the investment and insurance shareholders returns firms were significant and marginally significant respectively. Consequently, the findings are in line with

US studies on financial deregulation, such as studies performed by Cornett and Tehranian,²⁶ Aharony Saunders and Swary²⁷ and Pantos and Paraskevopoulos.²⁸ In addition the study found that the rest of the banking directives produced no significant wealth effects.

The study concludes that the EU Banking Directives were the route to enhance the competitiveness of the Greek financial sector. They assisted the Greek economy to converge towards the more developed EU financial systems, provided for greater competition through greater freedom of entry for the EU financial institutions, fuller disclosure of pertinent information and afforded similar function similar treatment (eg reciprocity) among EU market participants, at the expense, of course, of higher risk.

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