The Separation of Banking from Insurance: Evidence from Europe

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The European market of banks and insurance companies has traditionally no exact boundaries between insurance and banking activities. Such business arena poses distinctive challenges to both banking and insurance industries. The paper statistically evaluates the feasibility of a hybrid portfolio integrating banking and insurance services. It examines the risk-return effects of European banks' diversification into life and non-life insurance underwriting, as well as into insurance broking businesses. More specifically, it focuses on financial data and analyzes changes in profitability, return volatility and creditworthiness of those financial institutions. The empirical results indicate that diversification by European banks into life and non-life insurance underwriting activities increases banks' risk. Unlike the non-life insurance sector, the return on life assurance underwriting increases significantly. On the other hand, insurance broking returns increase as well, while volatility and possible bankruptcy remain insignificant. This suggests that the interface of banks and insurance broking activities could be further explored (JEL: G21, G22, G28, G34).

Keywords: Bancassurance, Financial institutions, Bank diversification, Insurance activities, Risk-return analysis.

I. Introduction

The globalization of financial markets has brought an unprecedented wave of competition among US, Japanese and European financial institutions. This has forced market participants to recognize the need

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for new products and services, as well as continuous evaluation of those institutions' financial viability. The traditional services of insurers and banks are by now well established, but new financial needs and fields constantly emerge. Evaluating and predicting the future of the insurance sector is one of the challenges posed over the next decades [Van den Berghe (1998), Saunders (2004)].[1] This is hardly surprising given the continuous transformations of risks, financial innovation, changing regulations and the strong emphasis on profit making activities. The financial problems against which insurers provide risk protection span a broad spectrum, from traumatic to the merely inconvenient. The purchase of insurance, however, has social welfare implications, because coverage provided by insurers may encourage individuals or businesses to engage in risky but productive activities. On the other hand, the banking sector, in general, facilitates the flow of funds from the surplus to the deficit units. Both classes of financial institutions have a vital role in modern financial markets and clearly share a variety of functions.[2] The two industries are also sometimes referred to as 'the two sides of the same coin' [Manwaring (1977)].

Nevertheless, insurers and banks have distinctively different asset-liability structures and expose themselves in a variety of risks.[3] Risks have always been of major interest for those institutions, but what is new in this area is the tendency to adopt a set of innovative and more diverse activities in the banking industry. Over the last two decades, financial markets have witnessed a dramatic change in the relationship between the European banking and insurance sector. This is due to the twin pressures of European integration and re-regulation [Diacon (1990)]. Banks are diversifying into insurance business and, to a lesser degree, insurance companies are making inroads into the banking arena. Banks are more aggressive than insurers and due to their cross-business strategic activities could be referred to as 'financial supermarkets'. For banks and insurance companies such convergence has created a new field in the financial services world, namely the Bancassurance

1. Van den Berghe provides a thorough discussion into the challenges and threats of the insurance industry; while Saunders reviews the recent trends in the bank-insurance market and notes the need for further research.

2. Savings products, fiduciary services, insurance and risk management products, lending, underwriting issuance of equity/debt, and payment services.

3. An excellent discussion and analysis related to the activities and risks of financial intermediaries can be found in Saunders and Cornett (2006).

phenomenon.[4] Bancassurance in its simplest form is the distribution of insurance products through a bank's established distribution channels. The result is a banking corporation that can offer banking, insurance, lending and investment products to its customers. Van den Berghe and Verweire (2001) explore various aspects of such phenomenon and discriminate between the financial and institutional aspects of convergence. They further analyze financial convergence in various levels and explore its regulatory implications. Due to the diversity of strategies available, however, there is no standard model for bancassurance. Accordingly, there is a range of possible descriptions and definitions of this phenomenon. The Life Insurance Marketing and Research Association's (LIMRA) dictionary defines bancassurance as 'the provision of life insurance services by banks and building societies'. The Association of British Insurers (ABI) defines it as 'insurance companies that are subsidiaries of banks and building societies and whose primary market is the customer base of the bank or building society'. Another common definition of such interface is 'the involvement of banks, savings institutions and building societies in the manufacturing, marketing or distribution of insurance products'.

In general, banks and insurers remain financial organizations with different risk profiles and dissimilar capital needs. Bancassurance may be potentially beneficial, since it allows commercial banks to diversify into insurance activities and thus reduce the risk of failure. On the other hand, insurance activities may be riskier than banking activities when viewed on a stand-alone basis. Insurers are greater assumers of risk than banks and need to be more heavily capitalized. In recent years, catastrophes and man-made disasters have caused serious problems in the industry around the world. If so, then the bancassurance phenomenon may increase the probability of ruin in the banking sector. Van den Berghe (1995) explores the matter in the context of financial conglomerates and the issues surrounding them; while Merton (1994) discusses the problem in view of functional approach to finance and insurance and provides clues to understanding the trend as natural. Recently, and in a more general framework, Deng and Elyasiani (2008) adeptly show, among others, that geographic diversification is associated with a significant value premium and a reduction in total risk; while Elyasiani and Jia (2008) illustrate that bank holding

4. The term first appeared in France after 1980 and variants of it are also known as Assurancebank or Allfinanz.

companies performance is positively associated with institutional ownership stability.

In this paper, from a viewpoint of the traditional schemes in banking and insurance, the effectiveness of the convergence of European banking and insurance businesses is analyzed. Within the EU, financial conglomerate activities are permitted by the Second Banking Directive (1989), which has been implemented by all member states, making such institutional setting ideal for the purpose of the current research. More specifically, regarding banking and insurance as the entities, which respectively make profits by pooling and managing the risks in their loan and policy portfolio; the paper considers the effectiveness of combining the two in a synthetic portfolio of financial services as opposed to each business separately. The effectiveness is evaluated in terms of the risk-return effects of banks' diversification into different insurance businesses. The new hybrid structure includes activities across life and non-life insurance underwriting businesses as well as insurance broking activities. Saunders (1994, 2004) notes the arguments in the debate as well as the lack of empirical research in this particular area. Thus the current statistical analysis makes use of financial data across Europe and extends the very few previous empirical findings. The former differentiates this study as it is given the opportunity to compare and contrast the findings across two different continents (US/EU); while the latter enables it to examine the robustness of the previous research across the last two decades.

Section II presents a brief overview of the recent trends in the bancassurance market followed, in section III, by a review of the relevant literature. Section IV introduces the data and the methodology employed. Section V presents the empirical results and discusses the relevant issues. Finally, section VI overviews the findings along with some concluding remarks and points out avenues for future research.

II. The Bancassurance Market

The structure of bancassurance depends upon the demographic, economic and legislative climate of the particular country. The demographic profile of a country decides the kind of products bancassurance will be dealing with, the economic situation will determine the trend in terms of turnover, market share etc., whereas the legislative, as well as the tax and regulatory, climate will demarcate the

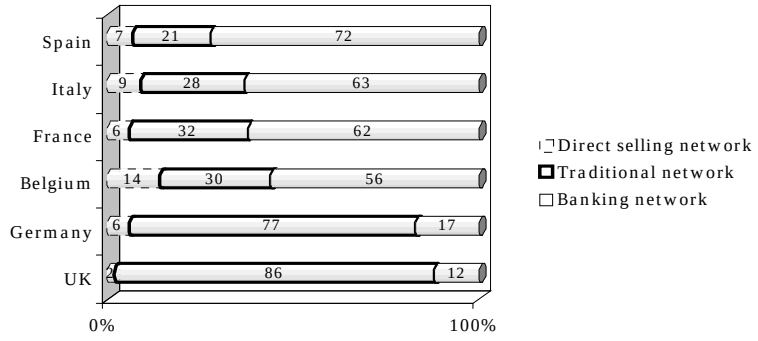

FIGURE 1.— Percentage Market Share per Distribution Network.
Source: The Insurance Argus - April 2002

periphery within which the bancassurance operates. In fact, all these characteristics combined can explain the marked differences across the globe. Although it is clearly a predominant feature in some markets, representing over two thirds of the premium income in life insurance, other markets do not appear to have chosen it as their model. The degree to which banks devote themselves to the sale and servicing of insurance varies among countries and individual banks. Despite the fact that bancassurance has been predominantly a European concept, it has also been growing in other countries especially in emerging economies where the insurance and banking sectors are still evolving. Since the mid-1990s, cross-border links between banks and insurance companies have also become more common with foreign insurers taking shares in local banks or vice versa.[5] In Brazil, five out of the eight largest insurance groups belong to banks, and in Mexico 16 out of a total of 64 insurers belong to a financial group. In Singapore bancassurance claims a market share of 24% of new business in the life insurance sector, while Malaysia and Thailand claim 6% and 2% respectively. Furthermore, Japanese (April 2001) and Korean (August 2003) banks are the newcomers in this market. The phenomenon is also well developed in Australia. The Australian Prudential Regulatory Authority

5. Aegon's joint venture with Mexican bank Banamex in 1995, ING with Piraeus banks in 2002 and Predica with Emporiki in 2002. For the Greek bancassurance model and its evolution the interested reader is referred to Artikis, Mutenga and Staikouras (2008a), and Kalotychou and Staikouras (2007).

(APRA) was formed in 1998 following the Wallis Committee's 1997 report. It is worth noting that banks, which also have 56% of all premiums, own 43% of assets in the Australian life insurance sector.

Over the last two decades, the phenomenon made its presence felt in Europe with alliances being made between banks and insurance groups. This has concentrated the bancassurance market, which was originally highly fragmented. This new synthetic form of financial services has become widely recognized as a successful model in markets such as France, Spain and Portugal, followed by Italy and Belgium. It represents over 70% of the premium income in life insurance in Spain, over 60% in France and Italy and over 50% in Belgium. In some European countries the bank penetration enjoys a rate in excess of 50%, while the UK and Germany have opted for more traditional networks; e.g., figure 1.

The French life insurance market enjoys a big share in both European and global financial markets. Even as early as 1998, insurance subsidiaries of banks controlled some 70% of the new life insurance production in France. Here, the phenomenon is primarily tax-driven: some tax-advantaged insurance products are only available through banks. Over the last two decades, many banks have created their own life insurance subsidiaries and now there is not a single bank of a given size that does not have its insurance subsidiary for life products. In 2000, bancassurance accounted for 35% and 60% of life insurance and savings premiums respectively, 7% for property insurance and 69% of new premium income in individual savings. The French market has overtaken the UK and German markets, largely due to the development of distribution channels through banks. More recently, some banks have diversified into property and casualty (P&C) insurance. Today, new production of P&C is largely driven by bank subsidiaries, which are set to take a much larger part in writing personal insurance and usually excluding motor insurance. The overlap in the two businesses is even more apparent in modern capital markets, where products extensively used by banks, such as credit-default swaps, closely resemble a casualty insurance policy; albeit without either an insurable-interest requirement or any role for an insurance adjuster.

Furthermore, bancassurance in Italy, Spain and Belgium has been characterized by its rapid growth. In Spain, the phenomenon has developed swiftly because of the well-established network of regional building societies, which today accounts for 50% of life insurance premiums in the bancassurance sector. It represented over 65% of life insurance premium income in 2001 (approximately €17 billion),

compared with 43% in 1992.[6] Portugal has recorded the highest penetration rate in bancassurance, with 82% of the market share, but it only represents approximately €4 billion in premiums on a limited life insurance market. The 1990 Amato Law coupled with the favorable tax environment (1995-98) launched bancassurance and further promoted life insurance products in Italy.[7] The substantial, well-established banking network, combined with the Italian public's trust in banks contributed to the development of this phenomenon. As a result, bancassurers' share of the market increased from 8% in 1992 to 50% in 2002, representing over 60% of new life insurance business and including more than 70% of savings products. Bankers and insurers have been brought closely together partly by the increasing trend of mergers, acquisitions and corporate restructuring. In Belgium, bancassuarnce has dominated 56% of the market share in life insurance products, becoming the leading distribution network. The five market leaders are members of bank or insurance groups.

Unlike many other countries in Europe, the UK life insurance market is to a large degree in the hands of the brokers. The provisions in the Financial Services Act of 1986, which radically changed the insurance distribution through independent agents, prompted some changes. At the same time, many life insurance mutuals are demutualizing and are getting closer to banks. In Western Europe, cross-section activities were permitted for a long time. For instance, Barclays Bank set up its own life insurance subsidiary in 1965 (Barclays Life Assurance Co. Ltd) and TSB set up TSB Life in 1967, a life insurance underwriting subsidiary. Today, new developments are taking place, especially with the building societies, which are in the process of setting up their own insurance subsidiaries. Although partnerships are formed between banks and insurers, and reforms in the distribution of life products are expected, it is still difficult to forecast growth in bancassurance. Conversely, the Banking Act of 1933, also known as Glass-Steagall Act, slowed down the phenomenon in the US. Before the Congressional passage of the Financial Services Modernization Act (FSMA) of 1999, which repealed the Glass-Steagall Act and the Bank Holding Company Act (1956), significant restrictions existed upon the affiliation of banks with

6. This high growth rate is not specifically due to bancassurance, rather the whole of the life insurance market, which has sustained a 30% increase per annum on average in the past fifteen years.

7. The Amato Law allows banks to own shares in insurance companies.

securities firms, as well as on the direct conduct by banks of securities dealing, underwriting and related securities activities.[8] In addition, with certain narrow exceptions, banks were prohibited from engaging in insurance activities or affiliating with insurers.[9] The Act removes these remaining barriers by allowing banks to affiliate with securities firms and insurers, through a holding company structure, as well as permitting nationally chartered banks to engage in most financial activities through direct subsidiaries. Under the FSMA, the cross-ownership of banks, securities firms and insurance companies is now possible, as is the conduct of commercial banking, investment banking, merchant banking, investment management, securities underwriting and insurance within a single financial institution. There are very few partnerships, however, between bankers and insurers, apart from creditor insurance. Moreover, the fact that they do not share the same information system does not facilitate any rapid development. The US Congress is promoting and encouraging the hybrid portfolio under the same holding company - a step that the major trade associations embrace, while recognizing that many details must still be worked out. Even though hundreds of financial holding companies have been approved by the Federal Reserve, no US financial services groups other than Citigroup, have obtained such status.

Despite the fact that the Citicorp-Travelers merger is the symptom of hunting superior profits through financial innovation, it is still one of the triggering factors behind the realignment between state laws and economic realities. In fact, the process can be viewed as a 'game' where the sequence becomes one of financial innovation, re-regulation and avoidance; which in turn results to an endless cycle where regulation and avoidance embrace each other in a series of lagged reactions. Kane (1982) describes the phenomenon as "loophole mining" and others have

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8. The interested reader is referred to Saunders and Cornett (2006) for a discussion of the major US laws. The FSMA is also known as the Gramm-Leach-Bliley Act.

9. The National Banking Act of 1918 authorizes national banks to sell insurance from banks located in a town with a population of less than 5000 or sell insurance products that are "necessary to carry on the business of banking". For presentation of how these laws have been interpreted by the Office of the Comptroller of the Currency and the Supreme Court, see Carow (2001). Moreover, in a number of US states, mutual savings banks were allowed to underwrite and market life insurance. Note that the current dual banking system allows both states and the federal government to issue bank charters. Thus, instead of seeking a national charter, banks can be chartered by any of 50 individual state bank regulatory agencies. For more information regarding the management of financial intermediaries, see Saunders and Cornett (2006).

studied such behavior by financial intermediaries [Kane (1988, 1996a,b), Carow and Heron (2002), Carow and Kane (2002)]. To sum up, under the new synthetic form of financial services, three main structures could possibly emerge. The first one could be a life-based partnership where the life insurance company takes the lead, while several banks provide access to middle-market leads.[10] The second structure is a bank-based distribution, where a large bank uses multiple life insurance companies to supply products for its bancassurance efforts. The third one calls for a joint venture of a large bank, with a well-developed customer database, together with a large life insurer with strong product/channel experience to develop a powerful network. Alternatively, banks and insurers could rely on a third party, such as a broker, to integrate their divergent skills.

III. Overview of the Literature

A number of studies have attempted to characterize the risk and related attributes of insurance and to identify the kinds of synergies that might exist between traditional banking activities and insurance brokerage and underwriting [Brewer (1989), Saunders (1994), Saunders and Walter (1994), Eisenbeis (1995), Gande, Puri and Saunders (1999), Nurullah (2000), Van den Berghe and Verweire (2001), Saunders (2004)]. Agency and brokerage is mainly a commission and/or fee-oriented business. It is not a capital intensive activity and since the bank is merely acting as a distribution channel there are little safety and soundness concerns. It is assumed, however, that corporations, which provide brokerage functions, have taken into account elements of operational risk in their overall capital requirements.[11] At this stage, one may also wish to recognize the importance of intangible reputational capital.[12] The potential risks to the safety and soundness of a broking firm mainly relates to losses from a) its inability to earn sufficient commissions to cover fixed and variable operational costs, b) the

10. These are usually small to medium-sized banks with less than $20 billion in assets.

11. The importance of operational risk has been addressed by the BIS in its 2001 proposed amendments to capital adequacy rules. For a detailed discussion, the interested reader is referred to Saunders and Cornett (2006).

12. In the US, stockholders of insurance firms, that were revealed to have rigged bids, experienced losses in the November 2004 scandal.

TABLE 1. Return Volatility and Correlation Analysis among Banking and Non-banking Activities in Previous Studies

	Heggestad (1975)	Johnson & Meinster (1974)	Wall & Eisenbeis (1984)	Litan 1 (1987)	Litan 2 (1987)	Litan 3 (1987)
Banks	0.25	0.33	0.21	0.23	0.22	0.20
	[–]	[–]	[–]	[–]	[–]	[–]
BHC			0.20		0.20	0.20
			[0.79]		[0.63]	[0.63]
Insurance underwriting			0.18	0.18	0.25	0.29
			[0.41]	[–0.79]	[–0.19]	[0.23]
Life assurance			0.10	0.13	–	0.32
			[–0.40]	[–0.87]	[–0.27]	[–0.04]
Mutual insurance			0.49	0.59	–	0.41
			[0.31]	[–0.55]	[–0.21]	[0.44]
Other insurance			0.43	0.18	–	0.49
			[0.45]	[–0.46]	[0.08]	[0.36]
Insurance agency	0.12	0.15	0.19	0.10	–	0.23
	[–0.38]	[–0.42]	[0.70]	[–0.62]	[–0.06]	[0.21]

Note: The first number is the coefficient of variation. Brackets include the correlation coefficient or its sign. BCH: Bank holding company. Litan 1, 2, 3: The numbers refer to three different sample intervals. That is, they correspond to 1962-72, 1962-82 and 1973-82 respectively. Source: Litan 1987.

potential opportunity cost of diverting scarce management resources toward an unprofitable area of business, and c) potential legal liability for errors and omissions made in marketing such policies. In general, brokerage activities have been typically profitable with high yields on invested equity – mainly in the form of incremental physical capital.

On the other hand, non-life insurance underwriting is capital intensive and entails knowledge of specialized risks. For instance, the key feature of claims loss is the actuarial predictability of losses relative to premiums earned, which banks are not familiar with. In that case, the insolvency risk may arise as a result of unexpected increases in loss rates, unexpected increases in expenses (legal costs, commissions, taxes etc.) and/or unexpected declines in investment yields [Saunders and Walter (1994)]. Life assurance underwriting is less risky than its counter non-life part, because the risks are "more predictable". Nevertheless, life insurance profit levels have remained lower than in non-life insurance underwriting. The industry has been characterized by a rapidly changing product mix, as whole life policies decline in attractiveness relative to other products. The largest growth has been in annuity type products, which closely resemble long-term certificates of deposit [Eisenbeis (1995)].

One of the early studies on bank holding companies regulation [Black, Miller and Posner (1978)] raises the issue of risk proliferation, as well as the social cost of dealing with it. In general, the empirical work has concentrated on discriminating between banking and non-banking activities and then measuring their return volatility. A low coefficient of variation would suggest that non-bank activities might potentially be risk reducing, if permitted to banking firms, and vice versa in the case of high return volatility. The creation of the pair-wise hybrid portfolio would be potentially risk reducing, if volatility for the non-banking corporation is low relative to banking and their correlation coefficient is negative [Litan (1987)]. Using synthetic organizations of banking and insurance agency/underwriting activities, Litan (1987) measures the volatility of their return on assets. He finds that the returns on various insurance activities are negatively correlated with those of banking; arguing that in the right proportions, had banks been permitted to engage in insurance activities, their risk, on average, would have been reduced. The empirical results of the early studies are shown in table 1.

Using IRS data in a mean-variance framework, Litan (1987) finds that banking clearly appears to be among the least risky activities with low variance and mean returns. Insurance agency operations appear to be the most risky, but the highest yielding, activity. Similar conclusions

are also reached by Johnson and Meinster (1974). Boyd and Graham (1988) and Boyd, Graham and Hewitt (1993) employ accounting and market data, and extend their previous work [Boyd and Graham (1986)], to investigate the risk-return implications of expanding bank holding company (BHC) activities. Profitability of agency (broking) and underwriting of non-life insurance business exceeds that of BHC, but all insurance activities are more risky according to their measures. Using a simulation methodology, it is found that bankruptcy risk falls slightly when banks merge with life assurance, but rises when banks merge with P&C or insurance broking or securities or real estate firms. It is also found that the return on equity would have been slightly higher had agency activities been allowed, and slightly lower had P&C and life underwriting been permitted. However, risks would have been lower for bank combinations with life assurance, and slightly higher had agency and non-life insurance activities been integrated.

Following the passage of the Gramm-Leach-Bliley Act of 1999, Johnston and Madura (2000), Carow (2001a,b) and Carow and Heron (2002) report positive size-related returns in their studies. On the other hand, Carow and Kane (2002) conclude that the abolition of barriers may have redistributed rather than created value. Other studies provided evidence that the probability of failure is greater for non-banking subsidiaries than for banking subsidiaries or that diversification gains were relatively small [Wall (1987), Kwast (1989), Rosen, Lloyd-Davies, Kwast and Humphrey (1989)]. Findings also show that risk is greater in non-banking than banking, while mergers of bank holding companies with life assurance or P&C firms reduce risk; whereas the latter increases with insurance broking [Liang and Savage (1990), Boyd, Graham and Hewitt (1993)]. Elsewhere, Saunders and Walter (1994) find that highest return per unit of risk would be obtained in the combination of banking with PandC insurance. Saunders (1994) further elaborates the arguments for universal banks and argues that the phenomenon would improve the competence of financial institutions. Looking at the securities market, Gande, Puri and Saunders (1999) find that while Section 20 deregulation appears to have resulted in a significant decline in underwriting spreads in the corporate bond market, similar declines are not apparent in equity markets, where banks have not yet made significant inroads. Using accounting data, Brown, Genetay and Molyneux (1996) conduct a simulation study of banks and building societies diversification into life assurance.[13] It is found that building societies and mutual life insurers

13. For broader issues on geographic diversification see Deng and Elyasiani (2008).

would be significantly risk reducing.

Kazantzis (2000) provides a critical review of the Greek financial sector, discusses the possible interface among financial services and points out the need for product differentiation and target diversification. Furthermore, an examination of the Greek market provides further insight into the evolution of the phenomenon, as well as its various corporate structures that the trend could emerge [Staikouras and Dickinson (2005); Artikis, Mutenga and Staikouras (2008a,b), Staikouras (2007); Kalotychou and Staikouras (2007)]. Empirical evidence by Lown, Osler, Strahan and Sufi (2000) points most strongly to combinations of banks and life insurance firms. They also report stock price increases, for both sectors, surrounding the launch of the 1999 Act. The issue of cost and profit efficiency is adeptly analyzed by Vander Vennet (2002). He finds that trends towards further de-specialization could lead to a more efficient banking system. He also shows that universal banks are more dominant in terms of operational and profit efficiency when compared to their specialized competitors. Finally, in an excellent paper, Fields, Fraser and Kolari (2007) provide evidence of positive bidder wealth effects that are related to economies of scale, potential economies of scope, and the locations of the bidders and targets. In a similar vein, Staikouras (2007) unveils significant abnormal returns surrounding the announcement of bank-insurance ventures. When the sample is separated on the basis of the bidder's nature, then bank-bidders earn significant positive returns, while the insurance-bidders experience significant losses. The analysis unveils either significantly negative or insignificant returns for insurance divestments by banks.

IV. Data and Methodology

In examining the risk-return implications of expanding banking activities, a wide range of financial intermediaries from the insurance and the banking industry are considered. The majority of the data are manually collected from press clippings, industry reports, company accounts and different directories in order to identify banks with bancassurance strategies. The individual European countries' regulators and the banks' insurance subsidiaries are also contacted. The sample covers major European institutions that had available accounting data, between 1990 and 1999, and they were also willing to disclose their

financial information. The sample considers 45 banks, 40 life assurance companies, 12 non-life insurance firms and 11 insurance brokers. The sample for the bancassurance test is shown in appendix 1. The selection criteria applied are that candidates a) could be partially owned insurance subsidiaries with over 50% of their equity hold by banks, b) could be banks that have at least one insurance subsidiary, c) could not be strategic groups of insurance distributors and d) could not be banks which have tied agreements/strategic alliances for joint sales of insurance.[14] As far as the latter is concerned, banks bear very little risk since underwriting companies will have to bear the burden when claims arise.[15] If banks can sell insurance they will get commission/fee from the underwriting companies otherwise not. The data have been converted to the European Currency Unit, while the diversity of the sample does not present an obstacle; since the EC Directive has harmonized the accounting system among the member countries.

With respect to the methodology, there are three ways of evaluating the risk implications of the insurance activities. The first one is the descriptive, operational and strategic examination of the risks inherent in insurance activities as compared to those found in banking [Staikouras and Dickinson (2005), Staikouras (2006)]. The second approach involves an event study methodology, where stock market data are analyzed to determine whether an announcement of intent to engage in insurance activities is perceived to be a positive or negative event. We are unable to obtain market data for banks' insurance subsidiaries, as most of them are not reported separately.[16] The final approach is the one employed in this empirical investigation and is based on Boyd, Graham and Hewitt (1993) work, among others. The current paper employs a measure of profitability, a measure of risk exposure and a measure of creditworthiness or possible failure. The variables are the return on asset (r), the standard deviation (σ) of returns and the Z score respectively.

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14. In the majority of cases the criteria were determined by the availability of data. Some banks have more than one subsidiary such as life and insurance underwriting.

15. For more discussion on this issue, the interested reader is referred to Saunders and Walters (1994).

16. Whether market or accounting data should be employed is a debatable topic. The issue of income smoothing in accounting figures is still open to debate. It is worth noting that market practice allows acquisitions to be marked at historical costs; which these costs are partly the reason behind the smoothing of reported profits. Furthermore, the banking and insurance market is heavily regulated, where the legislators, chartered accountants and regulators make sure that there is no intentional "book cooking" that distorts accounting figures.

Individual firm statistics are computed first and then aggregate ones for each industry.[17] The objective is to examine whether these aggregate variables exhibit a statistically significant change among each other, as well as between the pre- and post-merger structure. More specifically, the profitability of a company is measured as

$$r_t = \frac{I_t}{A_t} \tag{1}$$

where I is the net income (after tax) and A is the book value of total assets at time t. Then, the industry's mean return (R) is calculated over the entire sample period using all individual firms' profitability (r). The computation of the Z value is as follows

$$Z = \frac{g_t - R}{\sigma} \tag{2}$$

where $g_t = -E_t/A_t$ and E_t is the equity at time t and σ is the volatility of returns.[18]

If bankruptcy is defined as the situation in which equity is insufficient to offset losses, or $I_t < -E_t$, i.e., the probability of bankruptcy is

$$P\left(I_t < -E_t\right) = P\left(r_t < g_t\right) = P\left(\frac{r_t - R}{\sigma} < \frac{g_t - R}{\sigma}\right) \tag{3}$$

Theoretically, the mean return (R) and volatility (σ) are the true values, but here sample estimates are employed. One can also draw on Chebyshev's inequality

$$P\left(r_t \le g_t\right) \le \left(\frac{\sigma}{R - g_t}\right) = \frac{1}{Z^2} \tag{4}$$

simply to show that Z is the worst case scenario. In other words, it

17. Note that risk measures are not computed using industry average (or total) returns, since that would lower estimates of the industry risk measures by some unknown amount. We are interested in the riskiness of the average firm in the industry, not the riskiness of the industry average.

18. For more information, the interested reader is referred to Boyd and Graham (1988), Boyd, Graham and Hewitt (1993) and Lown, Osler, Strahan and Sufi (2000).

illustrates an approximation of the upper-bound probability of bankruptcy. Instead of using a simple adding combination method [Boyd and Graham (1988), Brown, Genetay and Molyneux (1996)], for the hybrid/synthetic entity analysis, this study employs a portfolio approach. The return of the synthetic portfolio (post-merger combined entity) is calculated as a weighted average

$$R_C = w_B R_B + (1 - wB) R_I \tag{5}$$

The subscripts indicate the combined entity, bank and insurance return respectively, while wB is the proportion of banking assets in the combined entity. The variance of the combined entity's return is given by

$$\sigma_C^2 = w_B^2 \sigma_B^2 + \left(1 - w_B\right)^2 \sigma_I^2 + 2 w_B \left(1 - w_B\right) \sigma_{BI} \tag{6}$$

Boyd and Graham (1988) point out the firm's effect and time-stationary problems in the merger analysis. The current work overcomes the firm's effect by employing each company's variance, and the time-stationary issue by employing year-by-year combinations. The Z ratio of the synthetic financial structure is formulated as

$$Z_C = \frac{g_C - R_C}{\sigma_C} \tag{7}$$

where $g_C = w_B g_B + (1 - w_B) g_I$. The aforementioned data and methodology facilitates the empirical analysis, which is what the paper turns to next.

V. Empirical Results

The effects of expanding the banking portfolio activities are examined in two steps. First the risk-return variables are calculated for each company across the four different groups. Then the group averages are obtained, as mentioned in the previous section, and the differences among them are analyzed. In the second stage, the paper proceeds to test the performance of the synthetic entity relative to the original business. The study makes use of paired t-test analysis for the "merger" of pair-wise combination of risk-return characteristics between banks and their own insurance firms. The industry return analysis, between banks

TABLE 2. Pre-merger Return and Risk Analysis: Banks vs. Bancassurance

	Mean Return	Volatility (σ)	Z score
Banking activity *Vs*	0.5808	0.969	258.54
Bank's life assurance underwriting	–27.75	1.012	37.06
	(0.754)	[1.091]	(1.829)*
Bank's non-life insurance underwriting	3.196	2.130	14.87
	(2.158)**	[4.832]***	(2.160)**
Bank's insurance intermediation	49.51	4.536	5.31
	(6.091)***	[21.913]***	(1.115)

Note: Parentheses include the t-values and square brackets the F-values. The statistics measure the significance between banking and bancassurance figures. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level. Bancassurance: Insurance companies owned by banks.

and the different insurance groups, shows that the insurance broking activities (intermediation) have the highest return; while life assurance has the lowest among all the activities. The estimation results are presented in table 2.

The non-life insurance underwriting and broking have significantly higher returns than the banking activities, while life assurance appears statistically insignificant. Risk analysis between banks and the three insurance groups shows that all insurance activities experience more volatile returns than banking. Non-life insurance underwriting and insurance broking are riskier than banking in terms of return volatility. On the other hand, the banking group's creditworthiness is significantly better than that of life assurance and non-life underwriting. That is, the insurance activities are more likely to experience some sort of financial distress or even bankruptcy than banks.[19] The findings are also interesting since insurance broking owned by banks, although having higher return volatility, the risk of experiencing financial distress is almost the same as with banking activities alone. Thus, volatility is not necessarily a bad thing, which is also consistent with the finance theory.

The above analysis facilitates the identification of less risky and more profitable industries and vice versa. The industry analysis,however, provides little help on the risk-return effects of the

19. In cases where marginal statistics are found, a nonparametric (Wilcoxon) test is also employed to confirm the robustness of the results.

TABLE 3. Correlation Analysis Between Banking and Insurance Returns

	Life Insurance	Non-life insurance	Insurance Intermediation
Banking	0.0094	0.3147	–0.0184
	(0.058)	(1.048)	(–0.055)

Note: Parentheses include the t-values, which measure the significance of the correlation coefficient with *n*–2 degrees of freedom.

synthetic universal organization. The riskiness of the synthetic portfolio will depend not only on the distributions of banking and non-banking profits, but also on their correlation. The correlation matrix along with their statistical significance is reported in table 3.

At first glance, the correlation vector suggests that the banking and insurance broking hybrid portfolio would outperform the individual businesses, as opposed to the banking and non-life insurance combination. An analysis of their significance, however, clearly indicates that all three are good candidates for increasing diversification. It is worth noting, at this stage, that although Litan (1987) suggests a negative coefficient; the choice of such portfolio would not be "consistent" with the nature of the banking sector. Banks by their very own nature are risk-bearing entities, which at the same time expect an adequate level of return. A zero correlation could actually provide such opportunity as opposed to a negative one.[20] The convergence effects are analyzed by testing whether the risk/return of the combined entity is statistically different from those of the banks alone that have acquired the insurance enterprises. Again a paired t-test for the banks and the hybrid structure is employed. The results of this analysis are shown in table 4.

The hybrid portfolio exhibits statistically significant return increases when the life and broking insurance are incorporated into banking activities. As far as the risk measures are concerned, the findings are consistent with the previous results. There is an increase in volatility and possible failure when life and non-life insurance are "absorbed" by the

20. The discussion mainly refers to extreme cases with high values of correlation coefficient to further highlight this issue. It is true that construction of portfolios with highly positively correlated assets does not provide any advantage over a single asset investment. Similarly, highly negatively correlated assets do not provide any advantage over cash, while a zero correlation would provide the desirable diversification effects.

TABLE 4. Post-merger Return and Risk Analysis: Bank vs. Bank and Insurance Combined

	Mean Return	Volatility (σ)	Z score
Bank alone vs.	0.5146	0.3390	249.64
Bank and life assurance combined	0.8365	0.7410	56.91
	(2.335)***	[4.778]***	(2.029)**
Bank alone vs.	0.4291	0.3160	163.99
Bank and Non-life insurance combined	1.892	0.8940	24.69
	(1.480)	[8.004]***	(1.751)*
Bank alone vs.	1.186	0.9570	354.24
Bank and Insurance intermediation combined	1.595	0.8720	64.20
	(2.015)**	[1.204]	(1.011)

Note: Parentheses include the t-values and square brackets the F-values. BIC: Bank and insurance combined (i.e. the hybrid/synthetic portfolio). The statistics measure the significance between banking and BIC figures. *Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level. All banking figures change across the three insurance activities simply because the banking sample that owns firms across the three insurance groups is not the same.

TABLE 5. Summary of the Analysis Within Bancassurance Groups

Bancassurance Groups	Profitability	Risk
Bank merger with insurance intermediation	↑	×
Bank merger with life assurance underwriting	↑	↑
Bank merger with non-life insurance underwriting	×	↑

Note: ↑ means significant increase. × means no significant change. Note that the summary is based only on statistically significant results.

banking corporation. The results further indicate that the insignificant return volatility of the broking-banking portfolio is accompanied by an insignificant change in creditworthiness. Note, however, that financial distress is a more complex situation reflecting key dimensions of corporate solvency and not necessarily associated with return volatility alone. Ones should also bear in mind that the Z value is not a forecasting device, it can only raise questions and it is only a necessary but not sufficient condition for distress. Overall the analysis suggests that that insurance broking is the most suitable candidate for the synthetic financial entity because the return increases significantly, but volatility and the possibility of ruin remain insignificant. A summary of the aforesaid findings is presented in table 5.

The above results have both economic and practical intuition. The post-merger increased profitability in life underwriting may be the cause of the relatedness of business activities between banking and insurance (i.e. mortgage and life assurance). Rumelt (1974) argues that related diversification affects value more positively than unrelatedness. Furthermore, there may be the existence of scope economies in bancassurance companies [Dickinson (1993), OECD (1992), Jung (2000)]. Banks have a countrywide branch network with sufficient staff for their large client base. Since distribution expenses represent a large proportion of total costs of life products [Llewellyn (1995)], banks can increase their profitability, and simultaneously reduce life-insurance's costs, by undertaking the insurance distribution through their branch network channel. But the underwriting activities are conducted separately and by independent life underwriting specialists (i.e. actuaries that give little chance for scope economies). Moreover, the long-term nature of life assurance contracts as well as the complex management structure may be the cause of increasing risk.

The banks' merger with non-life insurance, however, does not provide any significant profit; instead it significantly decreases the

creditworthiness of the hybrid portfolio. Underwriting non-life insurance requires knowledge of specialized risks and most of them are not closely related to traditional banking activities [Rumelt (1974), Kane (1996a), Saunders and Walter (1994)]. Banks' non-life insurance firms underwrite very few general products (motor, household etc.) in a limited way [Nurullah (2000)]. This may also slow down returns and upraise risks of banks in the non-life insurance underwriting activities due to their inherent risks [Saunders and Walter (1994)].

On the other hand, the bank merger with insurance broking significantly increases bank's profitability with no significant risk effects. Brokerage is mainly a commission/fee-oriented business and the sales and services dimensions are closely aligned with some of the other services conducted in banking. Furthermore, broking is not a heavy capital utilizing activity and hence there is little risk to which an institution's capital is exposed through brokerage [Kane (1996a), Saunders and Walter (1994)]. Llewellyn (1994) mentions that if the likelihood of failure is reduced diversification should be allowed, while if it increases diversification should be limited. Other studies, in a different framework though, have also expressed doubt about isolating banking activities [Saunders and Yourougou (1990)]. Saunders (1994) further argues that universal banking would impose monitoring and create incentives for efficiency and value-maximizing behavior.

Finally, one should be aware that any statistical tests alone might not be the perfect indication of the industry's viability. From a strategic point of view, the issue of financial convergence/conglomerates is also approached by Van den Berghe (1994), Van den Berghe and Verweire (2001) and Staikouras (2006) who raise questions about the possible gains and threats. They also competently distinguish between the financial and institutional nature of such interface between banks and insurance. Tighten or losing regulatory barriers for banks, without prior broad-minded examination, could be quite disadvantageous in today's global financial competition. The phenomenon, as earlier mentioned, is much more complex with other crucial key factors, maybe non-financial, determining the future of bancassurance.

VI. Concluding Remarks

The paper aims to give some insight into the naturally complex phenomenon of bancassurance. The main question raised, but not easily answered, is whether the separation of banking from insurance is

something that banks should pursue or not. The present study endeavors to add another shred of evidence and possibly trigger further research. Using a sample across European banks along with their insurance subsidiaries some interesting results have emerged.

In the pre-merger analysis it is found that life and non-life insurance underwriting appear to be more risky than banking. The insurance broking exhibits significantly higher returns leaving the institution's creditworthiness unaffected. When the synthetic structure is considered, the most desirable candidate merging with the bank is the insurance broking. General and life insurance significantly increase volatility and the possibility of bankruptcy. As the main objective of the regulators is to minimize risks, for the protection of the depositors and policyholders [OECD (1992), Carter and Dickinson (1992), Bank of England (1993), Fever (1993), Van den Berghe (1995), Van den Berghe and Verweire (2001)], the analysis suggests that European banks experience financial synergies by incorporating broking activities into their portfolios. Our results are in line with market-based practices as banks are moving into personal non-life insurance, intermediation and underwriting life products. It is worth noting, however, that banks avoid commercial non-life underwriting due to the high risks involved.

The feasibility and viability of bancassurance should be further explored and empirically established. Saunders and Walter (1994) argue that a move to universal banking would enhance the static and dynamic efficiency of the financial sector without risking financial stability. The most crucial success factor is undoubtedly the legal and fiscal environment of the country concerned. In countries where bancassurance has met with little success, such as the UK and the US, institutions have done little to change consumer's attitude. The security and trust offered by banks has been a major step in creating consumer confidence in bancassurance, but it is only half of the challenge. Bancassurance requires new products and sales processes to alter consumers' perception. Expanding the market to reach middle and lower income segments could be one step towards that direction. Moreover, the high cost of developing, maintaining and compensating a skilled sales force has to be addressed and new marketing alternatives developed. The effectiveness of current sales opportunities and exploitation of all marketing channels, most notably E-commerce, could be something worth considering.

As a final point, one may argue that allowing banks in engaging in different insurance operations may be cost effective. There are,

however, contradicting evidence of scope economies in combinations of banking and non-banking firms [Rhoades and Boczar (1977), Humphrey (1990), Lang and Welzel (1998), Jung (2000), Vander Vennet (2002)]. Nonetheless, one should be very broad minded when analyzing the regulatory/economic environment where financial institutions operate. An interesting area for further research would be to critically approach the future of bancassurance and to forecast how bancassurance premium income is likely to change over the next few years. Moreover, does the existence of regulatory hedges impose extra costs on current and future customers? Have the ostensible financial stability and improved credit cash flow been achieved, or monopolistic structures might provide solutions to the problem? The phenomenon is not as simple as empirical studies, including the current one, might possibly portrait. It certainly involves examination of elements, beyond statistical analysis, covering a wide spectrum ranging from financial to management and reputation areas. Careful consideration of all these issues will give both banks and insurance corporations a valuable insight into whether or not they should be forging strategic alliances and/or developing their own banking and insurance operations.

Appendix 1. Financial Institutions for the Bancassurance Analysis

A. European Banks

1 Abbey National PLC
2 ABN-AMRO Holdings
3 Allied Irish Banks PLC
4 Bancaire, CIE
5 Bancop Bilbao Vizaya
6 Banco Central Hisp/cano
7 Banco Commercial Portugues
8 Bank of Scotland
9 Banque Paribas
10 Banque Populaires
11 Barclays Bank
12 Banca Nazionale del Lavaro
13 Britannia Building Society
14 Caripolo
15 Credit Communial de France
16 Clydesdale Bank
17 Co-operative Bank (UK)
18 Credit Agricole
24 Halifax PLC
25 Hambros
26 Istituto Mobiliare Italiano
27 Kreditbank
28 La Caixa
29 Lloyds Bank
30 Lloyds TSB Group
31 Midland Bank
32 Montei di Paschie Siena
33 National Westminister Bank
34 National & Provincial Building Society
35 Paribas, CIE Financiere
36 Rabobank
37 Royal Bank of Scotland
38 San Paolo
39 Skandinaviska Enskilda Banken
40 Societe Generale
41 Svenska Handelsbanken

19 Credit Lyonnais
20 Credit Suisse
21 Deutsche Bank
22 First National Finance Corp
23 Fleming, Robert
42 SG Warburg
43 TSB Group
44 Woolwich PLC
45 Yorkshire Bank

B. Bank's Own Life Underwriting Companies

1 Abbey Life
2 Abbey Life Pension
3 Abbey National Life
4 Ambassador Life
5 Assurances Federals Vie
6 Barclays Life
7 Black Horse Life
8 BNL Vita (Lavaro Vita)
9 Britannia Life
10 Caixa Vida
11 Cari Vita
12 CS Life
13 DB Leben
14 Erisa
15 Euroseguros
16 Fideuram Vita
17 First National
18 Fleming Life
19 Fructi Vie
20 Generali
21 Gisborne Life
22 Hambro Assured
23 Handelsbanken Liv
24 Hill Samuel Life
25 Interpolis
26 La Estrella
27 Lloyds Bowmaker
28 Mercury Life
29 Midland Life
30 Monte di Paschi Vita
31 N & P Life
32 Ocidental
33 Omniver Vie
34 Predica Life
35 Royal Scott Assurance
36 San Paolo Vita
37 S-E Banken Life
38 Sogecap
39 TSB Life
40 Woolwich Life

C. Bank's Non-life Insurance Underwriting

1 Aurora Polar
2 Direct Line Insurance Co Ltd
3 Fideuram Assicurazioni
4 GAN
5 NCM Insurance
6 Pacifica
7 Pinnacle Insurance
8 Segurocaixa
9 Ticino
10 TSB General Insurance Ltd
11 Omniver Iard
12 UAF

D. Bank's Own Insurance Broking Co.

1 Agencaixa
2 Bank of Scotland Insurance Services
3 Barclays Insurance Services Ltd
4 BBV Brokers
5 Clydesle Bank Insurance Brokers Ltd
6 Co-operative Bank Financial Advisers
7 Halifax Mortgage Services Ltd
8 Lloyds Bank Insurance Services Ltd
9 Luiz Megre Beca
10 National Westminster Insurance Services
11 Yorkshire Bank Financial Services Ltd

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