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**Bank affiliation influence on life insurers' performance
before and after the financial crisis**

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Abstract

The article analyses the link between Italian life insurers' profitability and bank affiliation. It also examines the influence that the differences in product mix and distribution costs displayed by bank affiliated versus traditional insurers has on results, and the changes that the big financial crisis caused in the previously established correlations. Our results highlights that, until 2007 neither distribution efficiency nor being bank affiliated significantly affected performance. Product mix composition did not influence results as well. After the start of the big financial crisis though, both distribution efficiency and bank affiliation prove to be crucial in fostering performance. Moreover, adverse economic conditions make product mix revision crucial in order to adapt to changes in demand and sustain profitability.

Keywords: bancassurance, life insurance, economic performance, Italy, financial crisis, insurance market.

JEL Classification: G21, G22, L25, M21.

Introduction

Both in the US and in most European countries actuarial risk coverage is an exclusive domain of insurance companies. However, while the law forbids banks to perform this activity, it allows them to sell insurance products. Therefore, starting from the 1970s, European banks carved a role in the insurance business by distributing policies through their branch networks and creating the “bancassurance” phenomenon [Hoschka 1994].

As documented in the following section, at least before the big financial crisis, European banks operating in the life insurance business through controlled insurance companies favoured the offer of “financial” policies – i.e. insurance products with a limited actuarial risk protection content and whose main objective is producing returns by investing premiums either in index linked bonds or in mutual funds. On the other hand, players that were not bank affiliated competed in the traditional area of demographic and financial risk insurance, mostly selling “with profit policies”.

The positive trend in financial markets’ prices, lasting from the beginning of the 2000s until 2007, benefited bank affiliated insurers because it magnified the returns to holders of the products they marketed. New customers were enticed by the results coming from financial policies, enabling insurers to pocket part of considerable management fees [Fiordelisi & Ricci 2012]. On top of that, bank affiliated insurers could take advantage of lower distribution costs, due to the availability of their banking partners’ distribution networks.

The financial crisis changed all this, making products sold by non-bank affiliated insurers attractive again. Savers’ increased risk aversion shifted demand towards safer investing, giving traditional insurers the chance to fight back banks controlled ones by offering products earning nice profits for them while being easy to sell by their agents.

Has traditional insurers’ performance benefited from this change, in spite of higher distribution costs? More in general, how relevant is being “bank affiliated” for succeeding in the life insurance business?

In this article, we try to answer the above questions by analysing the performances of Italian life insurers from 2003 to 2013. We examine the impact that bank affiliation, product mix composition and distribution costs had on their economic results and the change that the big financial crisis determined on the influence that the above variables have on profitability.

To our knowledge, this is the first systematic attempt at examining all the above factors’ contribution to life insurers’ performance. Moreover, we consid-

ered their interaction with macroeconomic conditions, adding value and generalization extent to our analysis.

In order to shed light on the above topic, Italy is an interesting case from various points of view. First, banks accession to the life insurance sector through the acquisition of ownership stakes in established players has been particularly swift due to the virtual absence of cooperative insurers. The “bancassurance” phenomenon had been developing for a number of years before 2000, allowing us to analyse it when the presence of banks in the life insurance market was full-fledged.

Second, during the timeframe of our analysis, Italy never exited the great crisis that hit Europe in 2008. Except for 2010, from 2008 to 2013 Italian GDP growth was zero or negative. While this is unfortunate for obvious reasons, it means that both bank affiliated and independent insurers had to adapt to economic recession because it became soon clear that it was not a temporary occurrence. We could therefore observe how insurance companies reacted to it.

Third, the Italian life insurance market is the fourth in Europe for volume of premiums written, making it meritorious of an analysis of its own.

Limiting our analysis to one country allowed us to be sure that the same legal and accounting framework applies to the entire sample, avoiding data manipulation that could bias our results. We combined public data coming from different sources and were able to build a unique dataset comprising both accounting and ownership information.

To our knowledge, ours is one of the few papers that take into consideration life insurers' performance when analysing the “bancassurance” phenomenon. Notable exceptions to the dearth of academic literature on this topic are Fiordelisi & Ricci [2011], Fiordelisi & Ricci [2012] and Anderloni & Moro [2014b]. Fiordelisi and Ricci [2011; 2012] perform an efficiency analysis on both banks owning insurers and independent insurers in order to ascertain if bank ownership is beneficial in terms of cost savings and revenue synergies.

Anderloni & Moro [2014b] is more similar to our work. Even though they also consider Italian insurers, their article focuses on the influence that different premiums payment plans exert on insurers' financial performance by considering historical data on Italian firms operating in 2010. Our paper examines a more complete sample, which is exempt from survivorship bias problems, and takes into consideration the influence on profitability of the composition of the portfolio of products that insurers offer to their clients and its changes after the big financial crisis started. Due to that choice, our data allowed us to detect a shift in the marketing strategy of bank owned insurers that highlights the importance of resilience when facing adverse economic conditions in order to achieve superior performances.

The structure of the article is the following: The first paragraph documents the development of the bancassurance phenomenon in Europe and exposes the relevant academic literature that examined it. The second paragraph illustrates our research questions and the methodology that we followed in our analysis. It also delineates our data sources, the sample selection and the variables' construction processes. The third paragraph contains descriptive analysis while the fourth depicts the multivariate analysis results. Conclusions end our work.

1. The bancassurance phenomenon in Europe: Its development and the relevant literature

Broadly speaking, the word "bancassurance" is the term that defines the "cooperation" between banks and insurers [Swiss Re 1992]. In our analysis we restrict this definition and we classify as "bank-affiliated" the companies that banks can exert a strong influence on by means of a minimum 20% ownership stake. However, the phenomenon's boundaries are more blurred. Especially at its start, the relationship between banks and insurers was agreed upon via simple selling agreements.

At the beginning, before 1980s, West European banks began entering the life insurance business by selling insurance products ancillary to their lending activity, such as term life policies linked to mortgages. From the 1980s, they also complemented these policies by offering annuities and with profit policies. The above products were attractive because allowed banks' customers to deal with both demographic and inflation risks while enjoying a privileged fiscal treatment.

Their foothold in the distribution of life insurance policies and the contemporaneous liberalization process in the financial industry enacted by the Second Banking Directory presented European Union banks with the opportunity to secure their position also in the production phase of the insurance business. On one hand, from 1989 European Union banks were allowed to hold unlimited participation in insurance firms. On the other, the Second Banking Directive allowed banks to expand their activity far beyond their traditional turf on top of bestowing them with the right of establishment and freedom to provide services within the EU [European Council 1989].

Pressured by the increasing competition enacted by the European financial market integration that reduced profits from deposit taking and lending, banks expanded first in the asset management business. After that, they entered the life insurance sector through various means: cross selling agreements, strategic alliances often reinforced by cross-ownership in the form of minority stakes, joint

ventures. Later on, they also established their own captive insurance companies and acquired the control of existing ones [Fiordelisi & Ricci 2012].

Through their affiliated insurance companies banks tailored products that allowed them to capitalize on their skills in asset management. During the 1990s, unit and index policies, featuring a loose actuarial risk coverage component and a strong exposure to financial markets' returns, started to be marketed. Still benefited with a favourable tax treatment because of the presence of a limited coverage against death risk, these products were in fact very similar to indexed bonds and mutual funds investing. Revenues for the financial intermediaries issuing and selling these policies comes from management and selling fees [ISVAP 1999]. Being so similar to financial products already promoted through bank branches, no specific skills were needed in order to cater them to clients.

In this work, we will call the above products "Financial policies" as opposed to "Traditional policies".

Traditional policies are products whose exposure to financial risk is limited for the holder because a minimum yearly return is contractually granted. These policies might or might not include a demographic risk coverage component. Sources of earnings for the financial intermediaries are a percentage of the profits on top of the minimum return coming from investing premiums – excess return is therefore shared with the policy holder – management and selling fees. Due to the fact that the asset manager has to compensate for results below the minimum return, premiums are usually invested in safe government bonds and returns for policy holders are basically in line with the risk free rate [Floreani & Rigamonti 1999]. However, offering benefits not easily replaceable with existing financial products, these policies allowed life insurers to profit from their monopolistic position.

Capital requirements for the two kind of products are different, capital absorption for traditional policies being higher due to the interest rate risk borne by the insurer who market them [ISVAP 2008]. Focusing on financial policies allowed banks' controlled companies to reduce equity funding. Moreover, in a decreasing yield environment such as the one that started with Italy's accession to the euro, insurance companies selling traditional policies had to cope with interest rate risks in order to keep their commitments with policyholders who were attracted by the minimum return and the guaranteed end-of-contract value. On the other hand, during the bull market at the beginning of 2000s, financial products were easy to sell without the bothering of bearing any risk.

Encumbered by skilled but expensive dedicated distribution networks, dominated by agents and brokers, insurers at first viewed selling agreements with banks as a way to shed costs. They were on average slow at realizing the threat under way – i.e. that over time banks were not going to allow money coming

from their clients to outflow towards insurers that they did not control. Even though from the rear door at the beginning, the entrance in the new business prompted banks to reach out to growing segments of demand interested more in a combination of investment profit and specific advantages coming from insurance policies – i.e. inheritance taxes reduction, exemption from foreclosure and distress – than in pure life protection. Thanks to their greater information and financial know how in the marketing of investment products, banks could easily sidestep insurers [Swiss Re 2007].

With the increase in banks' skills and experience, banks and insurance companies' cooperating behavior changed into competing attitude.

When they recognized the danger coming from banks, insurers either (rarely) acquired majority stakes in existing banks or established captive new ones. However, opting for the latter implied creating an extensive branch network from scratch in a crowded marketplace, which was a daunting challenge. More often then, non-bank owned insurers ended selling their policies through a mix of distribution channels that included bank branches. When insurers started to react though, banks that had not already established their own captive insurance companies and that were thus interested in establishing an alliance were, in most cases, small players. In order to create a sizable distribution network through bank branches, insurers had therefore to build a patchy web of agreements that proved complex to manage.

Despite its importance, empirical research on bancassurance is limited. Most academic papers describe the phenomenon, present various entrance strategies' advantages and drawbacks for the involved institutions but do not perform extensive data analysis.

Qualitative studies focus on: the determinants and evolution of the bancassurance [Falautano & Marsiglia 2003]; the convergence between the banking and life insurance industries [Staikouras 2006]; the best way to enter the new businesses [Hoschka 1994]. Most of this literature lists benefits and costs of either starting the insurance business by banks or entering the banking business by insurers [Benoist 2003; Staikouras 2006; Clipici & Bolovan 2012] and the advantages and drawbacks of different ways of creating a "bancassurance" financial intermediary.

On the benefits side increased sales commissions and the reaping of economies of scale and of scope are mostly cited while on the costs side authors warn against potentially high expenses for training sales personnel, the lack of control over the handling of claims, image risks. Other papers [i.e. Van den Berghe, Verweire & Carchon 1999; Van den Berghe & Verweire 2000] examine the strategies chosen by various financial institutions, highlighting that, depending on the level of integration between banking and insurance activities, different problems can arise.

As for the empirical studies, lack of data severely limit their feasibility when Europe is concerned – Europe being the most interesting area of investigation as European institutions have been deeply influenced by the integration of different financial activities.

The hardship of obtaining homogeneous information for the insurance industry has made it virtually impossible to examine the bancassurance phenomenon on a cross-country basis. Databases including insurance companies' reports, such as SNL or Orbis, either have a limited coverage of the industry or do not provide detailed enough information. The databases devoted to insurance companies (Bureau Van Dijk's Orbis Insurance and A.M. Best's statement file global) are hard to access due to their costs.

As a result, European cross-country analysis has forcefully to focus on listed insurance companies only, while most players are not. The picture obtained is at best partial and the analysis' conclusions not entirely reliable. To correct for that, the scarcity of data makes researchers hand collect information from various sources: websites, regulatory agencies and trade association. This hinders replication of previous investigations and somehow their scientific validity. Keeping the above in mind, we describe the main investigation strategies and findings of the relevant literature in the following lines.

The studies that explore the bancassurance phenomenon intend either to ascertain the net results of diversification into a different business or to find the existence of specific sources of benefits – and in particular of economies of scope.

Most works that broadly test diversification's results either compare the performance of diversified versus specialized financial institutions, both from an economic and a risk exposure point of view [DeYoung & Rice 2004; and specifically on bancassurance: Chiorazzo, Milani & Salvini 2008]. While initially focusing on US financial firms [DeYoung & Rice 2004; Stiroh 2004; Stiroh 2006], over time researchers started dealing with single European countries and more recently European cross-country samples [van Lelyveld & Knot 2009; Chen & Tan 2011].

Some papers that intend to investigate diversification's results do that by estimating the stock market reaction when deals that enact a diversification strategy are announced and draw conclusions from that. This investigation strategy obviously limits samples to listed companies. Mergers and acquisitions are the main events taken into consideration. Thanks to event study techniques, these studies estimate the acquirer's shareholders' reaction at announcement date inferring by it if the deal created positive synergies or not [Fields, Fraser & Kolari 2007].

Finally, other works create hypothetical bancassurance combinations to evaluate their profitability from an accounting point of view [Nurullah & Staikouras 2008].

Findings of empirical investigations are not consistent. Some researchers conclude that diversification worsens economic performance and increases risk exposure [Rumble & Stiroh 2006; Stiroh 2006; Schmid & Walter 2009] while other works' results show that diversification is beneficial [Baele, de Jonghe & Vander Vennet 2007; Elyasiani, Staikouras & Dontis-Charitos 2016]. This contrasting evidence might be due to geographical factors, different timeframes and sample composition.

A very limited number of studies test for specific sources of benefits from bancassurance in terms of increased efficiency [Barros, Barroso & Borges 2006; Fiordelisi & Ricci 2011; Schneider 2014]. These works intend to directly measure cost savings and revenue synergies linked to economies of scope reaped by institutions that operate both into the banking and the insurance businesses. Even though output definition is hard as data from banks' financial reports include commissions from various financial activities and do not provide specific evidence of insurance sale fees, evidence points at cost efficiency gains both in Barros, Barroso & Borges [2006] and Fiordelisi & Ricci [2011] while revenue synergies effects seem not to be significant. Performance disparities across models of bancassurance (controlled insurance companies, joint ventures or selling agreements) do not come neither from the way products are distributed nor from product mix.

2. Data and methodology

As mentioned, we performed a multivariate panel regression analysis in order to ascertain if being bank affiliated is beneficial for life insurers' performance and to find out if this condition changes depending on the timeframe we consider. In particular, we want to ascertain if the financial crisis, which hit Italy in 2008 and still influenced its economy in 2013, made bank affiliation more or less convenient than before. In order to check if bank affiliation per se creates value, we also explore the impact that the variance in product mix and distribution channels have on life insurers' performance differentials.

As the number of insurers in our sample changes over time due to new entrances or exits in the industry, our sample is an unbalanced panel. We model our analysis in order to consider that by using a fixed effect panel estimation technique.

The sample for the analysis of Italian life insurers' features and performance includes 105 company-level observations for both bank affiliated and "traditional" insurers from 2003 to 2013.

We consider a life insurer to be bank affiliated if one or more banks own at least 20% of its common shares as the above threshold usually identifies the minimum amount needed to determine corporate policy [Leech 2002]. “Traditional” are either independent companies or firms owned by other insurers. Bank affiliated insurers in our sample are 42, while 63 firms are “traditional” insurers.

From a descriptive point of view our sample allows us to provide a good picture of the Italian life insurance industry. According to the information provided by IVASS, the Italian insurance regulator, gross premiums collected by the players we include in our analysis are on average 90% of gross premiums collected considering the entire industry. IVASS information includes premium collection from insurers that are not headquartered in Italy. We do not consider them in our analysis because of their different regulatory framework.

In our sample we both have pure play life insurers and companies that are also in the P&L business: as for the latter, in our analysis only their operations in the life business is considered.

Annual report data came from the Italian Insurers' Association (ANIA) database named “Infobila”, which supply information about all insurers headquartered in Italy. Ownership information came from the Orbis database maintained by Bureau Van Dijk which, whenever needed, was double checked and complemented with hand collected data from the insurers' web sites and original annual reports.

We excluded observations with either missing or obviously mistaken data, and companies with zero or negative gross premiums written. We also excluded the insurance firm controlled by the Italian Postal Service (named Poste Vita SpA) because of the heterogeneous nature of its owner. On top of that we omitted six observations as pertaining to firms whose operations in the insurance business were ancillary to their role as holding companies. We measured that by comparing the amount of money invested in other companies belonging to their group to the amount of money invested in the insurance business. Whenever the former was higher than the latter we discarded the observation.

Table 1 below depicts our sample composition features.

Table 1. Sample composition

Nobs			Entire	Non bank	Bank affiliated
	1	2	Sample	affiliated insurers	insurers
			3	4	5
		2003	87	54	33
		2004	89	55	34
		2005	86	52	34
		2006	85	52	33
		2007	83	49	34
		2008	80	47	33
		2009	75	41	34
		2010	73	41	32

Table 1 cont.

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
	2011	68	39	29
	2012	63	35	28
	2013	59	31	28
Nobs	Total	848	496	352
Firms		105	63	42

As our main concern is the impact of bank affiliation on life insurers' performance, several controls are necessary to disentangle it from other effects. Our multivariate model is therefore depicted by the following equation:

$$\text{Performance measure}_{i,t} = f(\alpha_i \text{ Bank affiliation dummy}_{i,t}, \text{Control variables}_{i,t}) + \varepsilon_{i,t}$$

As for the dependent variable, we take into consideration both operating results and earnings. As we want to avoid the influence of one-time items, we added back non-recurring costs and subtracted non-recurring revenues from net earnings [Nissim 2010]. After that, for each company we both calculated the return on assets ($r_{\text{ex_nonrec_A_1}}$) and the return on equity ($r_{\text{ex_nonrec_E_1}}$) using the rectified earnings measure.

As mentioned, insurers are considered to be bank affiliated if one or more banks own at least 20% of their ordinary shares. The dummy variable d_{bank} therefore equals 1 if that is the case and 0 whenever it is not.

In order to isolate the bank affiliation effect, we check for differences in distribution costs and in the product mix offered.

The relative relevance of different distribution channels and their cost differentials have been analyzed in the literature primarily for Property and Casualty insurers – see for example Etgar [1977] for a comparison of costs coming from different distribution choices; Baranoff & Sager [2003] for an analysis of distribution choices' impact on insurers' risk taking. Distribution costs in the life insurance business are less often explored, Ward [2002] and Klumpes & Schuermann [2011] being notable exceptions.

As said, non-bank affiliated insurance companies tend to use a broad range of distribution channels – among which bank branches – while bank affiliated insurers market their policies mostly (when not exclusively) through banks' distribution networks. As a result of exploiting banks' networks, bank affiliated insurers in our sample are on average able to save on distribution costs. We expect that, *ceteris paribus*, lower distribution expenses will increase the insurer's performance, as insurance companies that are able to sell at a lower cost are more efficient. On the other hand, higher distribution costs might be justified from insurers' point of view if conducive to the sale of more profitable products. (We check for the insurers' product mix using a separate variable).

The variable that measures insurers' selling efficiency is named *pct_distr_costs* and it is the ratio between distribution costs and net premiums. Distribution costs are obtained by summing up the fees paid to agents and bank branches for selling the company's products, net of the amounts paid back by reinsurers for the policies whose risk has been transferred after their sale. Marketing costs are also added. Distribution costs are then divided by net premiums written because reinsurance activity is excluded. We do not include other administrative costs in our analysis because their weight in the insurers' cost function is extremely limited and their variability across our sample is very low.

As for product mix, while we are not aware of a detailed analysis of its impact on life insurers' performance, the influence of diversification on P&L insurers' performance is extensively analyzed in the academic literature, even if consensus on diversification benefits has not been reached – see Anderloni & Moro [2014a] for a review of the literature on this topic. As for our analysis, traditional insurance products are reckoned to be more profitable for insurers than financial policies when financial markets' performance is negative. Investment profits coming from the former are shared while companies drive the investment process so that loss risks – when carried by the insurers – are kept at reasonable levels. When demographic risk is also covered, insurers can also gain from the high loadings they charge to policy holders. On the other hand, as investments tend to be riskier when financial policies are concerned because the loss burden is transferred to the policy holders, when financial markets perform well, management fees from financial products might compensate for the lack of participation into investment profits. We therefore expect insurers whose product portfolio contains a higher percentage of traditional policies to be more profitable during the crisis years. This might not be the case before the crisis.

The firm's business mix variable (*log_pct_fin_res*) is calculated by taking the natural logarithm of the ratio of financial products technical provisions over technical reserves for traditional policies. This way we capture the whole exposure of each company towards financial products, which is not limited to the yearly premiums written, but depends on past activity, too.

We also considered the following additional controls.

Size: Past empirical analysis concludes that economies of scale are relevant in the P&L insurance business – see Praetz [1985] for a survey of the literature on the topic; Cummins & Nini [2002]; Liebenberg & Sommer [2008]. The relationship between size and performance is less clear in the life business. However, some literature – Praetz [1983], Kaye [1991] – finds that life insurers enjoy increased productivity gains with size increases and therefore we include a control for that. If economies of scale are there, we should find a positive coefficient.

We estimated size by using the natural logarithm of each firms' total assets. Alternative specifications (natural logarithm of gross premiums written and natural logarithm of total technical provisions) did not change our analysis' results.

Results of Investment activity: Investment activity is a crucial determinant of life insurance companies' profitability both due to its impact on earnings and to its influence on products' attractiveness. As a share of investment profits flows to policy holders, past superior returns coming from investment activity make it easier to sell new policies by leveraging on their historical positive performance to substantiate their value when approaching prospective clients [Swiss Re 2012].

As for investment activity results' direct impact on earnings, Anderloni & Moro [2014a] show that for P&L insurers the higher the returns coming from investing that flow to the insurance firm, the higher the insurers' profits. This effect is even more important for life insurers because life insurers' investment activity is core business. Therefore, we do not consider returns coming from investing financial policies' premiums and technical reserves as in this case the results of the investing activity go directly to policy holders.

On the other hand, provided that a minimum threshold is reached, investment returns coming from assets linked to traditional policies are shared with the insurer while losses are expensed on the firm's books. In this way, the results of investing are linked to the insurer profitability. Life companies also invest assets that are funded by equity. We obviously consider results coming from those assets as returns are entirely attributable to the firms' shareholders. Investment returns (inv_ret_trad) is therefore measured by dividing net investment results less investment results attributable to financial products that entirely flow to policy holders over the average value of investments during the year – of course excluding the assets that are linked to financial policies. We do not divide by technical reserves because we want to measure the overall ability at investing of the company, including in that measurement the return on assets that are funded with both equity and technical reserves pertaining to traditional policies.

As for the positive effect of investment results on policies marketability, given that financial policies are less profitable than traditional ones when financial markets' performance is bad, the higher the attractiveness of traditional products relatively to financial ones, the easier for the company to drive customers towards the former, increasing the overall economic results for the company. To capture this effect, we calculated the lagged net investment return over average technical reserves for both financial and traditional policies. This allowed us to measure the marketability of each of these products' categories. The higher the results for traditional policies ($lag1_net_inv_ret_trad$) the higher the insurance company placing power and its profitability. At the same time, if invest-

ment returns of traditional policies are better than those from financial products, we expect that insurers are more effective at driving their clients towards the most profitable products for them, at least when that is the case i.e. when financial markets performance is bad. This is why we introduce the `lag1_inv_ret_rel` variable, which is the difference between the net investment returns for traditional policies and the net investment returns for financial products.

Leverage: The higher the company's leverage the lower its capitalization. The consequence of that for a life insurer is twofold: the lower the equity level, the lower the flexibility the company can enjoy in its investment activity due to solvency regulation [ISVAP 2008]. Moreover, the higher the company's leverage, the lower the size of the assets the company is investing on behalf of its shareholders, whose profits flow directly to them increasing net profitability. We therefore expect a negative relationship between leverage and ROA. On the other hand, a higher leverage benefits the company's shareholders because, given a certain level of operating performance, their investment in the company decreases. Thus, we expect a negative impact of leverage on operating performance which could be offset when considering shareholders' returns only, as shown in Cummins and Nini [2002] for non-life insurers.

We measured leverage (`tecrs_A_tot`) dividing total technical provisions by total assets. Financial debt is extremely low for both bank affiliated and traditional insurers as these firms fund their investment activity with premiums collected from policyholders. Technical provisions are therefore the relevant measure of insurers' indebtedness. As a robustness check we also included financial debt in our leverage variable (`all_debt_A_tot`), without obtaining relevant changes in our results.

Premiums' growth: Companies that want to grow rapidly might forgo profits in the short term in order to establish themselves in the market [Swiss Re 2011]. We then expect a negative impact of premium growth on insurers' profitability. We calculated premiums' growth (`growth_gr_prm`) by considering gross premiums increase over the previous year.

Reinsurance activity: While more limited for life insurers than for P&L ones, the presence of reinsurance activity might either signal superior risk management skills that help insurers achieve higher profits or a weaker ability at internally managing risks especially shown by poor capitalized companies. – See for example Mankai & Belgacem [2016] on the interaction between reinsurance, risk taking and capitalization in P&L insurance companies. Anyway, active reinsurance is very limited in our sample. On the other hand, while non-bank affiliated insurers tend to exploit passive insurance, bank affiliated ones do not. This might not be surprising because reinsurance helps insurance groups to reduce

capital absorption and to manage taxes through tax loss carry forward utilization [Adams et al. 2008]. Therefore, even though we do not have precise expectations for the coefficient sign of this variable, we want to check for that too in order to avoid model misspecification problems.

The variable `Reins_pass` proxies for the passive insurance activity of the companies by dividing the amount of premiums that were reinsured over the gross premiums written.

Table 2 in the next page sums up the way we calculated the variables employed in our analysis and the expected signs for their coefficients.

Table 2. Variables names and description

Variable name	Calculation method	Economic meaning	Proxy for	Expected sign – ROA	Expected sign – ROE
<code>r_ex_nonrec_E_1</code>	Net earnings minus net non recurring items over equity - life lines only	Return on equity for the life business - non recurring items excluded	Overall performance - Return on Equity	Dependent variable	
<code>r_ex_nonrec_A_1</code>	Net earnings minus net non recurring items over total assets	Return on assets for the life business - non recurring items excluded	Overall performance - Return on Assets	Dependent variable	
<code>d_bank</code>	Dummy: equals 1 if bank ownership more than 20%	Bank owner strongly influences product mix composition and distribution	Bank affiliation	?	?
<code>Size_A</code>	Natural log of total assets	Size of the life business measured by total assets	Size	+	+
<code>pct_distr_costs</code>	Distribution costs over net premiums written	Efficiency of the selling process	Efficiency	-	-
<code>log_pct_fin_res</code>	Natural logarithm of technical reserves of financial products over technical reserves of traditional policies	Product portfolio composition	Business mix	-	-
<code>inv_ret_trad</code>	Net returns from investing activity over average investments - traditional insurance lines and equity funded assets	Proficiency at investing activity for traditional business lines	Proficiency at investing activity	+	+
<code>lag1_inv_ret_rel</code>	Net returns over average technical reserves for traditional policies less net returns over average technical reserves financial products - year t-1	Proficiency at investing during the past financial year - traditional policies relative to financial products	Traditional policies marketability	+	+
<code>lag1_net_inv_ret_trad</code>	Net returns over average technical reserves for traditional policies year t-1	Proficiency at investing during the past financial year - traditional policies	Traditional policies marketability	+	+
<code>growth_gr_pgm</code>	Gross premiums t less gross premium t-1 over gross premium t-1	Gross premiums written's growth	Business Growth	-	-
<code>Tecres_A_tot</code>	Total technical provisions (both traditional and financial products) over total assets	Indebtedness towards policy holders	Leverage	-	?
<code>All_debt_A_tot</code>	Total technical provisions and financial debt over total assets	Total indebtedness	Leverage	-	?
<code>Reins_pass</code>	Reinsured premiums over gross premiums written	Passive reinsurance activity	Actuarial risk management skills	?	?

3. Descriptive analysis

Tables 3 to 6 below depict the descriptive statistics for our sample.

Instead of showing aggregate statistics (which are available upon request), we present here a comparison between the bank affiliated insurers' subsample and the other insurers' one, contrasting the mean values of the variables that we considered in our analysis before and during the crisis. Through this exercise, we intend to individuate both relevant changes taking place with the modification in economic conditions and differences linked to our sample firms' affiliation. The

following remarks are based on statistical tests (omitted for brevity), in order to draw conclusions only when significant differences in mean values arise.

Starting the scrutiny with the bank affiliated insurers' subsample before and during the crisis (Table 3 and 4), we remark a dramatic shift in their business mix that takes place with the crisis. Before 2008 bank affiliated insurers technical reserves were on average attributable to financial policies for more than half of total technical provisions value (the mean of the *log_pct_fin_res* variable in Table 3 is positive). On the other hand, during the crisis years, bank affiliated insurers' products portfolio composition becomes more similar to non-bank affiliated insurance companies', with a prevalence of traditional policies (*log_pct_res* variable negative and below -1 in Table 4).

Table 3. Pre-crisis year: Bank affiliated insurers

Pre crisis Bank affiliated insurers					
Variable	Obs	Mean	Std. Dev.	Min	Max
<i>r_ex_nonrec_A_1</i>	168	0.00	0.00	-0.03	0.01
<i>r_ex_nonrec_E_1</i>	168	0.08	0.09	-0.29	0.37
<i>size_A</i>	168	14.63	1.49	9.31	17.39
<i>pct_distr_costs</i>	168	0.05	0.05	0.01	0.69
<i>log_pct_fin_res</i>	168	0.16	1.21	-7.53	3.28
<i>inv_ret_trad</i>	130	0.03	0.01	0.00	0.05
<i>growth_gr_prm</i>	130	0.10	0.41	-0.90	2.29
<i>tecres_A_tot</i>	168	0.93	0.08	0.12	0.98
<i>all_debt_A_tot</i>	168	0.93	0.08	0.12	0.98
<i>reins_pass</i>	168	0.01	0.03	0.00	0.19
<i>lag1_net_inv_ret_trad</i>	96	0.03	0.01	0.01	0.05
<i>lag1_inv_ret_rel</i>	96	-0.01	0.03	-0.11	0.05

Table 4. Crisis years: Bank affiliated insurers

Crisis Bank affiliated insurers					
Variable	Obs	Mean	Std. Dev.	Min	Max
r_ex_nonrec_A_1	184	0.00	0.01	-0.07	0.07
r_ex_nonrec_E_1	184	-0.02	0.33	-1.80	0.91
size_A	184	14.91	1.36	11.16	18.00
pct_distr_costs	184	0.07	0.13	0.00	0.74
log_pct_fin_res	179	-1.07	1.84	-11.13	2.20
inv_ret_trad	181	0.03	0.03	-0.07	0.15
growth_gr_prm	181	0.43	2.43	-0.93	27.60
tecres_A_tot	184	0.93	0.06	0.42	0.97
all_debt_A_tot	184	0.93	0.06	0.42	0.98
reins_pass	184	0.02	0.04	0.00	0.27
lag1_net_inv_ret_trad	178	0.03	0.02	-0.07	0.14
lag1_inv_ret_rel	175	0.02	0.09	-0.21	0.55

Even though the change in the `log_pct_fin_res` variable value might partly be due to financial policies' technical reserves decrease in value, due to the bear financial markets, the gross premiums written distribution between traditional and financial policies draws a clear picture. Traditional products constitute the bulk of all insurers' new underwritings from 2008 on, financial products losing their attractiveness due to customers' increased risk aversion and to deceiving returns. Moreover, from 2009 more than half of new traditional policies underwriting value comes from bank-affiliated insurers' sales. The jump in the average gross premiums written growth (`growth_gr_prm` variable) during the crisis years confirms the aggressiveness of their accession to the traditional policies segment of the life insurance market.

The shift in their business mix might explain bank affiliated insurers' increased average distribution costs in the crisis years' subsample. Facing the need to sell new products to their clients, bank-affiliated insurers had probably to invest in marketing and personnel training costs. The increase in distribution costs is mainly limited to the 2008-2009 period, corroborating this perception.

As for non-bank affiliated insurers (Table 5 and Table 6), the crisis years bring a reduction in both distribution costs and gross premiums written yearly growth, possibly due to the increased competition in their traditional turf.

Table 5. Pre-crisis years: Non-bank affiliated insurers

Pre crisis Non bank affiliated insurers					
Variable	Obs	Mean	Std. Dev.	Min	Max
r_ex_nonrec_A_1	262	0.00	0.01	-0.05	0.03
r_ex_nonrec_E_1	262	0.04	0.09	-0.32	0.25
size_A	262	13.58	1.96	9.38	17.60
pct_distr_costs	262	0.09	0.10	0.00	0.75
log_pct_fin_res	242	-1.76	2.77	-11.61	5.40
inv_ret_trad	201	0.04	0.01	0.00	0.08
growth_gr_prm	201	0.41	2.66	-0.89	28.92
tecres_A_tot	262	0.82	0.14	0.12	0.98
all_debt_A_tot	262	0.82	0.13	0.12	0.98
reins_pass	262	0.06	0.10	0.00	0.54
lag1_net_inv_ret_trad	144	0.04	0.01	0.00	0.07
lag1_inv_ret_rel	132	-0.01	0.02	-0.10	0.05

Table 6. Crisis years: Non-bank affiliated insurers

Crisis Non bank affiliated insurers					
Variable	Obs	Mean	Std. Dev.	Min	Max
r_ex_nonrec_A_1	234	0.00	0.02	-0.13	0.05
r_ex_nonrec_E_1	234	-0.05	0.32	-2.02	0.42
size_A	234	14.19	1.83	9.42	17.87
pct_distr_costs	234	0.09	0.13	0.00	0.91
log_pct_fin_res	215	-2.00	2.04	-10.32	5.21
inv_ret_trad	230	0.03	0.03	-0.10	0.13
growth_gr_prm	230	0.23	1.20	-0.96	11.62
tecres_A_tot	234	0.85	0.10	0.33	0.97
all_debt_A_tot	234	0.85	0.10	0.33	0.97
reins_pass	234	0.06	0.10	0.00	0.50
lag1_net_inv_ret_trad	227	0.03	0.03	-0.11	0.11
lag1_inv_ret_rel	211	0.01	0.08	-0.16	0.33

On the other hand, their focus on traditional policies remains unchanged while we detect a slight increase in leverage, which might be attributable to a decrease in their equity due to loss absorption.

Notwithstanding the crisis, comparing insurers of different affiliation, a difference in performance, size, distribution costs, business mix, leverage, proficiency at investing, reinsurance usage can be remarked.

Before the crisis, insurers' average operating performance is similar for the two subsamples including firms of different affiliation (see Table 3 and Table 5 first two lines). During the crisis years though, the mean of the return on assets for bank affiliated insurers' becomes higher than the average return on assets of other insurers (Table 4 and Table 6 first line). The difference in performance is striking when considering the return on equity, both before and during the crisis. This disparity might be also driven by the fact that bank-affiliated insurers' leverage is on average always higher than other insurers'.

Not surprisingly, bank-affiliated insurers' distribution costs are lower than other insurers' while their size is on average bigger. As mentioned in the introduction, at the start of 2000s bancassurance was full-fledged in Italy. Banks' broad distribution networks had already favored bank controlled insurers' acquisition of large swaths of customers, allowing them to reach respectable sizes.

The difference in passive insurance usage is also predictable. In Italy, non-bank affiliated life insurers usually belong to financial groups comprising other insurers. Within these groups, reinsurance allows the shifting of both risks (in order to reduce aggregate capital absorption) and profits (in order to minimize the whole tax base). On the other hand, bank affiliated insurers are usually part of banking groups comprising no other insurers. As a consequence, reinsurance strategies are not exploitable within these groups.

More unanticipated is the increase in bank affiliated insurers' proficiency at investing, especially when traditional products are concerned. Before the crisis non-bank affiliated insurers' average return from investing both their shareholders' and traditional policies holders' money is higher than bank affiliated insurers' return. During the crisis average results are the same irrespective to the insurer affiliation.

We tentatively interpret this change as the consequence of the decreasing interest rates environment with which Italian insurers had to cope from 1999 on and the change in insurers' investment strategies triggered by the Italian government bonds credit rating downgrade in 2011.

Besides investments pertaining to financial products, the asset composition of all insurers in our sample is at any time extremely concentrated towards bonds. Anecdotal evidence suggests that Italian Government bonds have been Italian insurers' main investment vehicles at least before the crisis and that their

trading was very limited. According to the practitioners we spoke with, Italian insurers used to invest traditional policies premiums in order to match liabilities maturities. The bonds' coupons allowed the insurers to obtain a yearly return that they shared with their policyholders, while the bond was held until maturity and its reimbursement value was used to pay the face amount of the policy. Even though we do not have direct evidence of the following, as bank affiliated insurers have on average been established more recently than non-bank affiliated ones, it might be the case that their assets' lower returns were simply due to the later timing of their investing. Over time, non-bank affiliated insurers' advantage eroded as bonds matured and more active investment strategies were needed to cover return guarantees included in traditional products.

4. Multivariate regression analysis results

We first tested our model over the entire timeframe of our sample, including the crisis years by using a dummy variable (*d_crisis*) whose value is one for the 2008-2013 period. We tested different specifications both excluding and including product attractiveness variables without obtaining significant changes in our results.

The correlation matrix can be found in Table 7, while the fixed effect panel regression results are detailed in Table 8 and Table 9. The latter shows the results considering as dependent variable the firms' return on equity instead of their operating performance.

Table 7. Correlation matrix

Variable	<i>d_bank</i>	<i>size_A</i>	<i>pct_distr_costs</i>	<i>log_pct_fin_res</i>	<i>inv_ret_trad</i>	<i>lag1_inv_ret_rel</i>	<i>lag1_net_inv_ret_trad</i>	<i>growth_gr_prm</i>	<i>tecrec_A_tot</i>	<i>reins_pass</i>
<i>d_bank</i>	1.0000									
<i>size_A</i>	0.2061	1.0000								
<i>pct_distr_costs</i>	-0.1445	-0.2153	1.0000							
<i>log_pct_fin_res</i>	0.2810	0.2394	-0.1500	1.0000						
<i>inv_ret_trad</i>	-0.0242	0.0582	-0.0354	-0.0332	1.0000					
<i>lag1_inv_ret_rel</i>	0.0321	-0.0172	0.0415	-0.0336	0.2107	1.0000				
<i>lag1_net_inv_ret_trad</i>	-0.0456	0.0741	-0.0623	-0.0873	-0.1935	-0.2708	1.0000			
<i>growth_gr_prm</i>	0.0005	-0.0691	-0.0168	-0.0284	0.0288	0.0491	-0.0811	1.0000		
<i>tecrec_A_tot</i>	0.4595	0.2989	-0.3780	0.5126	0.0284	-0.0276	0.0697	-0.0735	1.0000	
<i>reins_pass</i>	-0.2554	-0.2089	0.4643	-0.4419	-0.1307	0.0078	-0.0926	-0.0509	-0.7201	1.0000

Table 8. Multivariate regression analysis: Operating performance. Fixed effect panel model

Variable	r_ex_nonrec_A_1		
	-1	-2	-3
d_bank	0.006*** (3.35)	0.006*** (3.08)	0.006*** (3.08)
size_A	0.002** (2.00)	0.002** (2.04)	0.002** (2.07)
pct_distr_costs	-0.019*** (2.69)	-0.027*** (3.50)	-0.027*** (3.51)
log_pct_fin_res	-0.003*** (8.44)	-0.002*** (6.19)	-0.002*** (6.20)
inv_ret_trad	0.419*** (31.97)	0.436*** (29.95)	0.435*** (29.86)
growth_gr_prm	-0.001*** (4.28)	-0.001*** (5.22)	-0.001*** (5.23)
tec_res_A_tot	-0.004 (0.44)	-0.009 (0.75)	
reins_pass	0.008 (0.78)	0.016 (1.40)	0.015 (1.34)
d_crisi	-0.004*** (6.50)	-0.004*** (5.64)	-0.004*** (5.66)
lag1_net_inv_ret_trad		0.068*** (4.29)	0.068*** (4.28)
lag1_inv_ret_rel		0.015*** (3.65)	0.015*** (3.66)
all_debt_A_tot			-0.010 (0.84)
Intercept	-0.040** (3.21)	-0.043*** (2.71)	-0.042*** (2.66)
R2	0.68	0.72	0.72
N	706	614	614

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level

Table 9. Multivariate regression analysis: Return on equity. Fixed effect panel model

Variable	r_ex_nonrec_E_1	
	-1	-2
d_bank	0.137***	0.141***
	-2.98	-2.78
size_A	0.052**	0.069***
	-2.34	-2.65
pct_distr_costs	-0.579***	-0.705***
	-3.41	-3.78
log_pct_fin_res	-0.040***	-0.043***
	-5.01	-4.47
inv_ret_trad	8.159***	8.524***
	-26.02	-24.05
growth_gr_prm	-0.016***	-0.022***
	-4.53	-4.71
tec_res_A_tot	-0.364	-0.512
	-1.61	-1.78
reins_pass	0.437	0.498
	-1.82	-1.81
d_crisi	-0.113***	-0.119***
	-7.44	-6.77
lag1_net_inv_ret_trad		1.717***
		-4.44
lag1_inv_ret_rel		0.346***
		-3.4
all_debt_A_tot		
Intercept	-0.739**	-0.917**
	-2.48	-2.39
R2	0.60	0.64
N	706	614

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level

Our results highlights that, independent on the specification we refer to, the bank affiliation variable coefficient has always a positive sign and it is always significant at the highest level, implying an advantage coming to life insurance companies from being bank affiliated.

Other variables' coefficients have the expected signs, even though they are not always significant. Size in particular shows a positive coefficient, which is

always significant. Alternative measures of it, as for example the natural logarithm of technical provisions instead of the natural logarithm of total assets, give the same results. This hints at an effect due to the presence of economies of scale, which we are not able to further detail in this work.

Higher distribution costs impair performance (`pct_distr_costs` coefficient negative and significant) and a business mix composition that leans towards financial products has the same consequence (`log_pct_fin_res` coefficient negative and significant). Moreover, the more aggressive a firm is in pursuing growth, the more its performance suffers, as the negative significant coefficient of the `growth_gr_prm` variable testifies. On the other hand, investment proficiency exalts results (`inv_ret_trad` coefficient positive and significant) as do both the attractiveness of traditional policies and their being easier to market than financial products due to better relative past performance (both `lag1_net_inv_ret_trad` and `lag1_inv_ret_rel` coefficients positive and significant).

Both the leverage variables and the passive reinsurance variable coefficients are not significant. However, leverage shows the expected negative sign. A lower leverage increases both the amount of money available for investing on behalf of the insurers' shareholders – whose returns directly flow to earnings – and the flexibility available to insurers while engaged in this activity. The negative sign is confirmed in Table 9. The fact that the coefficient is still not significant might imply that the mechanical increase in return on equity due to a higher leverage is offset by this “investment effect”.

When analyzing the crisis year only, our model's results confirm the above conclusions as detailed in Table 10.

A very different picture emerges when analyzing the 2003-2007 timeframe, as Table 11 shows. When limiting our timeframe to the pre-crisis years, most variables' coefficients are not significant and the explanatory power of our model drastically decreases, especially when considering our sample firms' return on equity.

Table 10. Operating performance and return on equity: Crisis years only, fixed effect panel estimation

Variable	r_ex_nonrec_A_1	r_ex_nonrec_E_1
	-1	-1
d_bank	0.007**	0.186**
	-2.27	-2.14
size_A	0.006***	0.099**
	-3.3	-2.2
pct_distr_costs	-0.060***	-1.373***
	-4.79	-4.15
log_pct_fin_res	0	-0.056***
	-0.64	-2.81
inv_ret_trad	0.440***	8.839***
	-24.33	-17.9
growth_gr_prm	-0.001***	-0.023***
	-4.06	-3.39
all_debt_A_tot	-0.046**	-1.248**
	-2.3	-2.39
reins_pass	0.031	0.275
	-1.39	-0.47
lag1_net_inv_ret_trad	0.065***	1.705***
	-3.51	-3.51
lag1_inv_ret_rel	0.011**	0.358***
	-2.31	-2.82
Intercept	-0.060**	-0.808
	-2.45	-1.25
R2	0.78	0.67
N	386	386

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level

Table 11. Operating performance and return on equity: Pre-crisis years only, fixed effect panel estimation

Variable	r_ex_non	r_ex_non
	-1	-1
d_bank	0.001	0.023
	-0.39	-0.71
size_A	-0.001	-0.023
	-0.69	-0.61
pct_distr_costs	0.006	0.036
	-0.87	-0.28
log_pct_fin_res	-0.001	-0.003
	-0.93	-0.2
inv_ret_trad	0.251***	5.112***
	-7.18	-7.34
growth_gr_prm	-0.000***	-0.004
	-2.66	-1.57
all_debt_A_tot	-0.046***	-0.252
	-3.98	-1.09
reins_pass	-0.029***	-0.205
	-4.41	-1.58
lag1_net_inv_ret_trad	0.01	0.483
	-0.29	-0.67
lag1_inv_ret_rel	-0.01	-0.272
	-0.98	-1.37
Intercept	0.053	0.403
	-1.87	-0.71
R2	0.44	0.36
N	228	228

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level

Being bank affiliated does not entail any serious advantage and no positive size effect can be detected (the size variable coefficient is even negative on top of being not significant). Distribution costs have no sizable impact on insurers' performance: the variable coefficient sign is not significant and positive (while being negative during the crisis). We tentatively interpret these puzzling results as follows: as in our definition of distribution costs we included marketing expenses, successful, but costly marketing efforts might have increased insurers' profitability before the crisis, when clients' sensitivity to costs was lower due to average satisfying financial results coming from their policies. Possibly most of

this increase in profitability linked to more intense marketing efforts comes from aggressive players of small size that need to affirm their name in the market. However, more empirical work is necessary to shed light on this topic.

Traditional product attractiveness linked to good past results also has no impact. Moreover, traditional products' relative performance with respect to financial products would damage performance should the negative coefficient of the $lag1_inv_ret_rel$ be significant (which is not, however). We explain the last result by acknowledging that during the pre-crisis years, the bull financial markets might have allowed insurers selling financial products to recoup profits from higher investment management fees. This could also justify the fact that the business mix composition variable coefficient sign is not significant. Being fees coming in from financial products as high as profits from traditional policies due to favorable investment results, a product mix that leans towards traditional products shows no clear advantage.

Conclusions

From our analysis, two very different pictures arise depending on the timeframe we considered, suggesting that the shifts in external economic circumstances induced by the financial crisis led to a deep change in the drivers that explain performance.

Our data show that before the crisis two profitable strategic models coexisted. The first model was adopted by traditional insurers and was centered on a dedicated agency based distribution network selling traditional products covering actuarial risk with a limited exposure to financial risks. Targeted policies holders' aim was mainly protection from both demographic and financial uncertainty. A second model adopted by bank-affiliated insurers, had bank branches as its linchpin. Policies sold had features that were very similar to financial products and could complement customers' investment portfolios due to some advantages they held, such as foreclosure exemption and inheritance tax reduction. Being the economic environment favorable, our results demonstrate that both models were profitable and that efficiency was not a determinant of performance.

The crisis had an impact on insurers' assets possibly due to policyholders' behavior, creating an echo effect on insurers' strategic choices. The modification in investors risk perception due to the crisis made financial strategies aimed at protecting wealth more attractive than before. Cost consciousness also probably increased.

While non-bank affiliated insurers were slow at realizing that this could allow them to reach new customers, as traditional policies were now in demand,

bank affiliated insurers, under the threat of losing their clients, were swift at adapting to the new environment. They could also capitalize on their superior efficiency and size and, we suspect, on their owners' move towards shifting their clients' savings from riskier assets towards insurance policies in order to decrease exposure to financial risks.

The general implication of our results is that the capability of adapting the product mix to changes in demand is crucial for both retaining old customers and acquiring new ones. In this respect, bank affiliated insurers have an advantage which is hard to rival by traditional insurers: They possibly have access to their owners' clients, as policies complement banks' asset and wealth management products. Non-bank affiliated insurers might contrast that by increasing cost efficiency and enticing customers through promotion of their higher capitalization levels, as the insurer credit risk is a key component of the evaluation of traditional long term policies.

The above results are obviously limited by the fact that our analysis has been performed on Italian data. We suspect that they could be extended to countries where banks have a role in managing their clients' money. However, empirical work on other European countries' samples is needed to prove that. Besides the above, we speculate that the source of the bank affiliation's advantage is the exploitation of economies of scope, but further investigation is needed in order to corroborate that impression.

More in general, in this article we restricted the definition of bank affiliation in order to focus on the impact that banks' control has on life insurers performance. However, the cooperation between banks and life insurers is possible through other means than ownership. Future research should be devoted to establish the effectiveness of different ways to establish links and their influence on insurers' performance, checking for different macroeconomic conditions and possibly based on an international sample.

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