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Value added and profitability of the Italian insurance companies: what is that actually matters?

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Value added and profitability of the Italian insurance companies: what is that actually matters?

Leandro D'Aurizio[*]

Abstract

Using firm-level data for the years 2005-2017, the paper reconstructs the Gross Value Added (*GVA*) for all the Italian insurance companies by adopting the same methodology applied by the Italian National Accounts. After classifying the Italian companies by kind of ownership, it emerges that those controlled by banks (*bancassurance* companies) have higher levels of per-employee *GVA* compared to traditional insurance companies, but the opposite result holds when *GVA* is expressed as a ratio of the premiums. On the other hand, profitability measured with *ROE* tends to be superior for the *bancassurance* companies, compared to that of the other insurers. The heterogeneous variables that produce these aggregate results can be used to model insurance companies' profits with respect to the main positive components of the *GVA*, controlling for a wide array of conditional factors. The results show that the type of ownership is not significant and that higher profits are mainly associated with superior returns from financial investment.

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1 Introduction

The classification of insurance companies that distinguishes between traditional insurers and insurers controlled by banks (with the addition of other residual categories) is relevant to understand whether the banks' penetration into the insurance sector by acquiring the control of an insurance company determines different performances of the new company compared to traditional insurers. A growing interest of the major bank groups in expanding into the insurance business has been observed in all the advanced countries and it is part of a broader trend of integration of the financial sector. The phenomenon has been widely explored in the economic literature because of its economic relevance.

The integration of the financial sector started in Europe in the 1990s (Fiordelisi and Ricci, 2011) and continued, albeit intermittently, until 2006 and then slowed down during the global financial crisis. A major milestone for the integration process was the full implementation of the integrated market, which started with the third-generation Directives introduced progressively since 1994.[1] At the same time, competition among insurers became international and forced previously independent entities to consolidate. The consolidation process took place both within the insurance sector and within the more extended financial sector, where insurance companies tried to find new partners (Cummins *et al.*, 1996).

A worldwide financial deregulation made possible first the beginning and then the rapid diffusion of the integration process (Chen *et al.*, 2009). For the US, the literature focuses on the competitive pressure in the sector of life insurance products exerted by banks and other financial institutions on traditional insurance firms (Cummins *et al.*, 1999), which set off a wave of mergers and acquisitions pursuing higher efficiency levels.

In the years between 1985 and 1999, the mergers and acquisitions in the US financial sector took place mainly within the sub-sectors of finance (banking, securities, insurance), whereas in Europe the consolidations across different sectors were more common, with almost half the value of the consolidations in insurance under the form of an insurance company becoming part of a financial group headed by a bank (Berger *et al.*, 1999). These differences between US and Europe can also be explained by the greater weight of the banking sector in the European economy.

Banks were interested to operate mainly into the life sector, since an ageing population increasingly turned to life products as a way to supplement less generous state pensions, with the incentive of tax deductions. Banks could exploit their extended networks of branches to distribute these products to their customers, by proposing them as an alternative to more established financial products. Entering this new field was also a way to offset the decreasing profit margins in traditional commercial banking and hence lower the riskiness of the banking business. In conclusion, the banks that chose to diversify into the insurance sector took a calculated risk (Fields *et al.*, 2007), since they exploited their technical and managerial skills as well as their physical resources in a related sector. These transformations also affected the Italian insurance sector, where bank groups had been already operating in insurance before the year 2000, in the wake of a 1990 government authorization allowing banks to own majority shareholdings in insurance companies (Cummins et al., 2000), whereas the control of a bank by an insurance company was expressly forbidden by law number 20 enacted in 1991 and repealed some years later.

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[1] The modification of European regulatory framework had already begun at the end of the 1980s, when EU banks had been allowed to hold unlimited participation in insurance firms. A few years later, the Second Banking Directive gave banks the right of establishment and freedom to provide services within the whole EU space.

In a broad sense, the term *bancassurance* refers to many possible forms of relationship and cooperation between insurers and banks, ranging from simple agreements to distribute insurance products through the bank branches, to the creation of a new insurance company controlled by a bank group. Intermediate forms of *bancassurance* are also possible either by creating a new insurance entity, jointly owned by a bank and an insurer, or by an insurer creating a bank with the main purpose of distributing insurance products through this new channel. All these forms are different ways to create economies of scale and scope aimed at increasing market shares and profitability. While the creation of stable links between a bank and an insurer provides superior strategic focus compared to short-term distribution agreements, it carries the risk of being less flexible and scarcely reversible. In the present paper the expression "*bancassurance* company" is exclusively used with reference to an insurance company of which a bank group owns more than 50% of the equity and can therefore exert full control over its strategic decisions. This definition is more restrictive than others used in the recent empirical literature. For example, Spotorno *et al.* (2016) use a 20% threshold in their analysis of the Italian life sector and hence consider a broader set of *bancassurance* entities. Fiordelisi and Ricci (2011) examine *bancassurance* efficiency gains at the European level and consider *bancassurance* companies also those jointly owned by a bank and an insurer, in addition to the ones classified as such in this paper.

Assessing the economic gains of *bancassurance* is a difficult exercise. The measurement can be attempted both from a banking and from an insurance perspective, but it requires solving problems of data availability, as well as some econometric difficulties. If results are measured from the viewpoint of the bank sector, the main obstacle is the difficulty of isolating in bank balance sheet the output produced by forms of integration with insurance companies.

Rather than attempting to measure the comparative advantage of *bancassurance* by examining the profitability indicators of the bank sector, the paper focuses on profitability and performance exclusively for the Italian insurance companies, for which complete data are available. The years examined are those from 2005 until 2017, which can be divided into three sub-periods: a pre-crisis period (2005-2008), the years 2009-2014, affected by the economic downturn and the sovereign debt crisis that heavily affected Italy, and a final period 2015-2017 of weak economic recovery.

With this aim, the various components of the gross value added of the Italian insurance companies are computed by using the standard method of the system of National Accounts. The decomposition is separate for the life and non-life sectors. The main trends emerging from this exercise are extensively commented, after classifying insurance companies by ownership type (2 main groups are considered and are the focus of this paper: traditional insurers[2] and *bancassurance* companies, to which are residually added the companies controlled by the public sector and those owned by private firms of the industrial and non-financial services sectors). The same classification is applied to highlight the time trends of the Return on Equity (*ROE*), one of the most commonly used profitability indicator.

A final econometric exercise, limited to traditional insurers and *bancassurance* companies, models profitability, in order to understand:

1) whether different ownership types produce significant differences in profitability,
2) whether the main positive components of the *GVA* have relevant conditional associations with profitability, which can be analyzed and critically discussed.

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[2] The category includes both insurers controlled by an insurance group and independent insurers (there can be independence either because their property is highly fragmented or because they are controlled by an individual or a family).

The main results are reported below.

1. *Bancassurance* companies' per-employee GVA is higher than that of the other companies, but it is lower when expressed as a share of the premiums collected. The first result derives from the smaller size of *bancassurance* companies, that manage to exploit synergies within the same financial group in order to remain smaller than comparable insurers not controlled by banks. The second fact derives from *bancassurance* companies' inferior financial profits, which are less relevant for them because the controlling bank makes additional profits by providing services to the controlled insurers.
2. *Bancassurance* companies' *ROE* tend to be on average higher than that of the other companies, even if not uniformly over all the years considered.
3. According to the model, the ability to obtain high returns from financial investment is the factor most strongly associated with profits and the distinction between *bancassurance* companies and other insurers becomes not significant. This is an evidence of the high variability existing within the two groups of insurance companies.

The paper attempts to provide a novel contribution to the empirical literature on the insurance sector in three ways:

1) by relying on a comprehensive dataset of economic data of the Italian insurance companies spanning an extended time interval including the economic crisis years, as well as a pre-crisis and a post-crisis period,
2) by conducting two distinct analyses for the life and non-life sectors, keeping them as comparable as possible, within the limits imposed by the diversity of the two businesses.
3) by interpreting a microeconometric model in the light of the aggregate results on the creation of value added in insurance.

The paper is organized as follows. The second section presents the main results of three studies on the Italian insurance sector, chosen for the variety of their approaches and for the different periods considered. The third section describes the data used and presents the main descriptive figures. The fourth section briefly discusses the main issues on how to evaluate insurance GVA and also shows the main trends of the *GVA* for the Italian insurance companies. The fifth section contains the econometric exercise modeling company-level profitability. The sixth and last section concludes.

2   The main findings of the economic literature for the Italian insurance sector

Cummins *et al.* (1996) apply the Data Envelopment Analysis (DEA) to look at the technical efficiency of the Italian insurance companies, proxied by their ability to produce a given output by minimizing the inputs. The technique uses linear programming to build an optimal frontier, in order to evaluate by a suitable score the distance of every firm from it. The authors explore a period ranging from 1985 to 1993, when the number of Italian insurers (250-300) was more than twice the actual figure and the relative size of the life sector was much smaller. The interest of the research is that, during the years examined, competition among the market participants greatly increased, also thanks to the process of European market integration. The wide dispersion of company-level characteristics such as size, profitability and loss ratios, similar to that found among French companies (Fécher *et al.*, 1993), is attributed to this heightened competitive pressure. The output chosen are the total claims incurred, together with the life provisions changes and the amount of total invested assets (this latter term representing the output of companies'

financial intermediation). The inputs are commissions (measuring insurance agents' labor) and general expenses, to which fixed capital and total invested assets are added. A great dispersion of efficiency levels emerges, lower than the one measured over the French companies, but within the ranges of those found for the US and Japanese insurers by similar techniques. Conditioning the results in order to take into account of company-level characteristics explains only a part of the dispersion, with companies' expertise in the market playing the biggest role in increasing efficiency. Productivity, measured as the ability to get closer to the optimal frontier over time, slightly declines in the period examined: the greatest productivity drops are recorded for the years 1990 and 1993, heavily affected by deregulation, a result ascribed to the trial-and-error process of finding new input combinations in a more challenging environment.

Fiordelisi and Ricci (2011) take a systemic view of *bancassurance*, since they separately assess its impact on the banking sector and on the life insurance sector for the years 2005 and 2006. They accordingly verify: 1) whether the banks operating also in life insurance display higher performances compared to competitors that keep their business within the limits of banking activities, 2) whether the companies controlled by banks or jointly owned by a bank and another company are more cost-efficient and more profitable than the independent companies. The authors measure cost and profit efficiency by using the stochastic frontier approach. A *translog* specification separately models the log of production costs and profits, conditioning on the log of input prices and output quantities. For banks, the output is defined as sum of interest and non-interest income (this latter member also includes the fees earned from the insurance business), whereas profit is the balance-sheet pre-tax profit. For insurance, output is the sum of net incurred claims and life provision changes, profit is the sum of net earned premiums and investment income, from which total costs are subtracted. The bank perspective does not show superior performances by bank groups operating in life insurance. Results are more nuanced from the insurance viewpoint, since the companies distributing life products through bank branches are very cost-efficient. Cost efficiency is also a feature of life products with a high financial contents, typically preferred by insurers controlled by banks, which however turn out to be less profitable than traditional life products. The degree of insurance companies' control by banks is only indirectly significant, since it partially explains the utilization intensity of bank branches as a selling channel for insurance life products.

Spotorno *et al.* (2016) focus exclusively on the life sector for the years 2003-2013 and use a linear fixed-effects model estimated over an unbalanced panel to look into the role of companies' bank affiliation in determining profitability. Bank affiliation occurs when a bank owns at least 20% of the equity, considered the minimum threshold for the bank to have some clout on the participated company's strategic decisions. The main conditional factors in the model are the product mix and the distribution measured by agents' commissions. One of the authors' main interest is whether there is a structural break determined by the financial crisis. The main results are that neither bank affiliation nor distribution efficiency and product mix influenced profitability before the outbreak of the economic crisis. As soon as the crisis began and the product mix was altered towards traditional life products, bank affiliation started playing a positive role in driving profitability.

3   The data used and the main descriptive results

The analysis of the paper is based on an unbalanced panel of 210 firms with yearly data from 2005 to 2017. In the period examined, the number of Italian insurers dropped from 180 in 2005 to 104 in 2017 (fig. 1.a,

tab. A.1). [3] This is an effect of the increasing consolidations of smaller firms into bigger insurance groups, as shown by the rise of the average yearly premium collected by each company (from 709.2 million euros to 1,262.2 million euros, fig. 1.b and tab. A.3). A decrease in the number of the market players in the insurance sector has also occurred in the major European countries (Moro and Anderloni, 2014). In the same period, the premium variability slightly increased, as a consequence of the polarization of the insurance market between big-sized groups and small-scale companies that managed to remain competitive in specialized niches.

In the period examined (tab. A.1), the *bancassurance* companies were on average 14.8% of the total, but the share increased from 15.4% to 19.2% in the last years 2014-2017 examined. Most consolidations took place among traditional insurers, whose number halved in the 13 years considered (from 149 in 2005 to 73 in 2017). The number of companies belonging to state bodies or non-financial private firms has remained more or less constant in the last decade 2008-2017.

Figure 1 – **Number of companies and premiums collected**
Italian insurance companies, 2005–2017

a. Number of companies	b. Premiums collected: per-company average level and variation coefficient
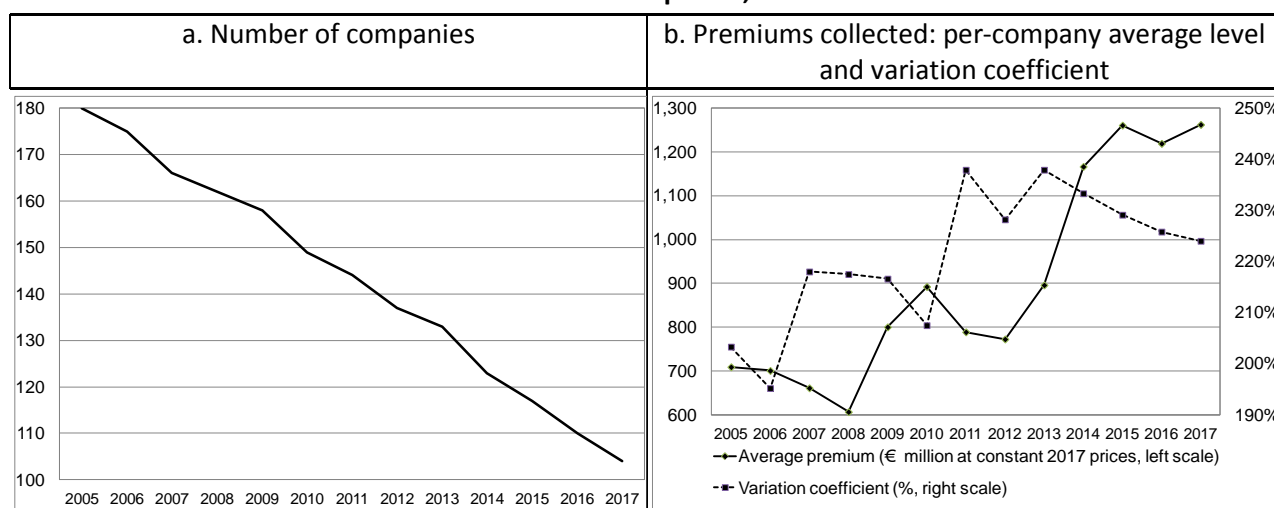
Source: IVASS.

In the life sectors, the *bancassurance* companies collected on average 31.3% of the premiums (tab. A.2), with an increase of 13% of the volume of premiums (in real terms) between 2005 and 2017. During the same years, the share of traditional insurers' premiums dropped from 63.4% to 51%, to the benefit of the insurers controlled by public bodies.

In the non-life sectors, in line with a European trend, *bancassurance* companies' premiums were a modest share of the total (3% on average), even if many of them operate also in this sector (tab. A.1). However, their share doubled in the period considered (from 2.2% to 4.5%), with most of the rise taking place in 2017, the most recent year examined. The traditional insurers are leaders in non-life, collecting on average 94.3% of the premiums.

On average, the Italian insurance sector employs slightly more than 40,000 workers, a figure that remained quite stable throughout the period examined (tab. A.4). The sector did not undergo the workforce cuts that hit the banking sector (with a −12.2% decrease of payroll employment from 2008 to 2015) imposed by the economic crisis and the necessity to reduce the number of branches. The workforce share of *bancassurance* companies increased from 4.3% in 2005 to 7% in 2017.

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[3] All the monetary values used in the paper are expressed at constant 2017 prices, using the official Cost of Living Index for the Italian Households.

In the life sectors, where *bancassurance* companies' business is concentrated, their per-employee average yearly premium is always higher than that of the other insurers (on average, 20,100,000 euro against 6,500,000 for the other insurers, fig. 2.a). This result, combined with lower values of commission expenses as a share of premiums collected (fig. 2.b), is an evidence of the economies of scale and scope attained by the utilization of the bank branches to distribute insurance products. The major factors explaining this comparative advantage can be found in the savings generated from sharing fixed costs with new operations and in the ability to design and sell cost-effective products (Chen *et al.,* 2009). Another possible explanation for the cost advantage could be that a financial conglomerate charges its insurers lower fees for the distribution service, compared to those it could potentially bill to an independent insurer.

As a consequence of the role of the bank branches network, *bancassurance* companies' utilization of independent operators (agents, brokers and financial consultants) for the distribution of their life products is marginal compared to that of the other insurers (fig 2.c).[4]

In the non-life sectors, the average yearly per-employee premiums are closer for the *bancassurance* companies and the other insurers (fig. 3.a), but the former ones pay higher commission costs (fig 3.b). This fact could be explained by *bancassurance* companies' need to rely on external distributors for their non-life products (fig. 3.c), to whom they had to pay higher commissions in order to get a foothold on a sector dominated by the traditional insurers, even if their utilization of bank branches for non-life products has been increasing over the more recent years 2013-2017.

Looking at profitability, the *ROE*s for the life and non-life sectors should be examined separately, also in the light of the different weight of the two businesses for the *bancassurance* companies. Before the economic crisis, the *ROE* of the life sectors was lower for these insurers, especially in 2008, at the onset of the economic crisis (–19.8% as opposed to –3.4% of the other companies, fig. 4.a and tab. A.5). After that year, the *bancassurance* companies began to rebalance their product mix by decreasing the share of unit-linked products, which had peaked up to 70% in 2007 (fig. 4.b).[5] In the following years, the *bancassurance* companies' *ROE* in the life sectors was on average higher than the other companies', except for the years 2010 and 2011 at the negative peak of the crisis.

Bancassurance companies' *ROE* in the non-life sectors is on average lower than that of the other insurers (tab. A.5). However, the gap has been closing in the more recent years after 2013. The increased utilization of bank branches to distribute non-life products may have played a role in improving *bancassurance* companies' profitability (fig. 3.c).

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[4] The share of premiums not collected through bank branches also includes those collected directly by the insurers (mainly on the phone or on the web). The direct channel is scarcely used in Italy, especially for life products.

[5] Starting from 2009 consumers' preferences went towards traditional insurance products that offered less variable returns, quite appreciated in the uncertainties of the economic crisis. The greatest shift of the product mix took place for the *bancassurance* companies. Starting from 2015 unit-linked products became attractive again, even if they did not get back to pre-crisis years' sale levels. The main reason for this partial recovery is that the guaranteed returns of the traditional products have become much lower than in the past, as an effect of the very low interest rates prevailing in the financial market.

Figure 2 – **Premiums per employee, commission expenses and premiums collected through bank branches in the life sector**

Italian insurance companies, 2005–2017

a. Life premiums per employee
(€ thousand at constant 2017 prices)

b. Expenses for commissions
(% of total life premiums)

c. Premiums collected through bank branches
(% of total life premiums)

Source: IVASS.
(a) Insurance companies with equity majority owned by a bank group.

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Figure 3 – **Premiums per employee, commission expenses and premiums collected through bank branches in the non-life sector**

Italian insurance companies, 2005–2017

a. Non-life premiums per employee
(€ thousand at constant 2017 prices)

b. Expenses for commissions
(% of total non-life life premiums)

c. Premiums collected through bank branches
(% of total non-life premiums)
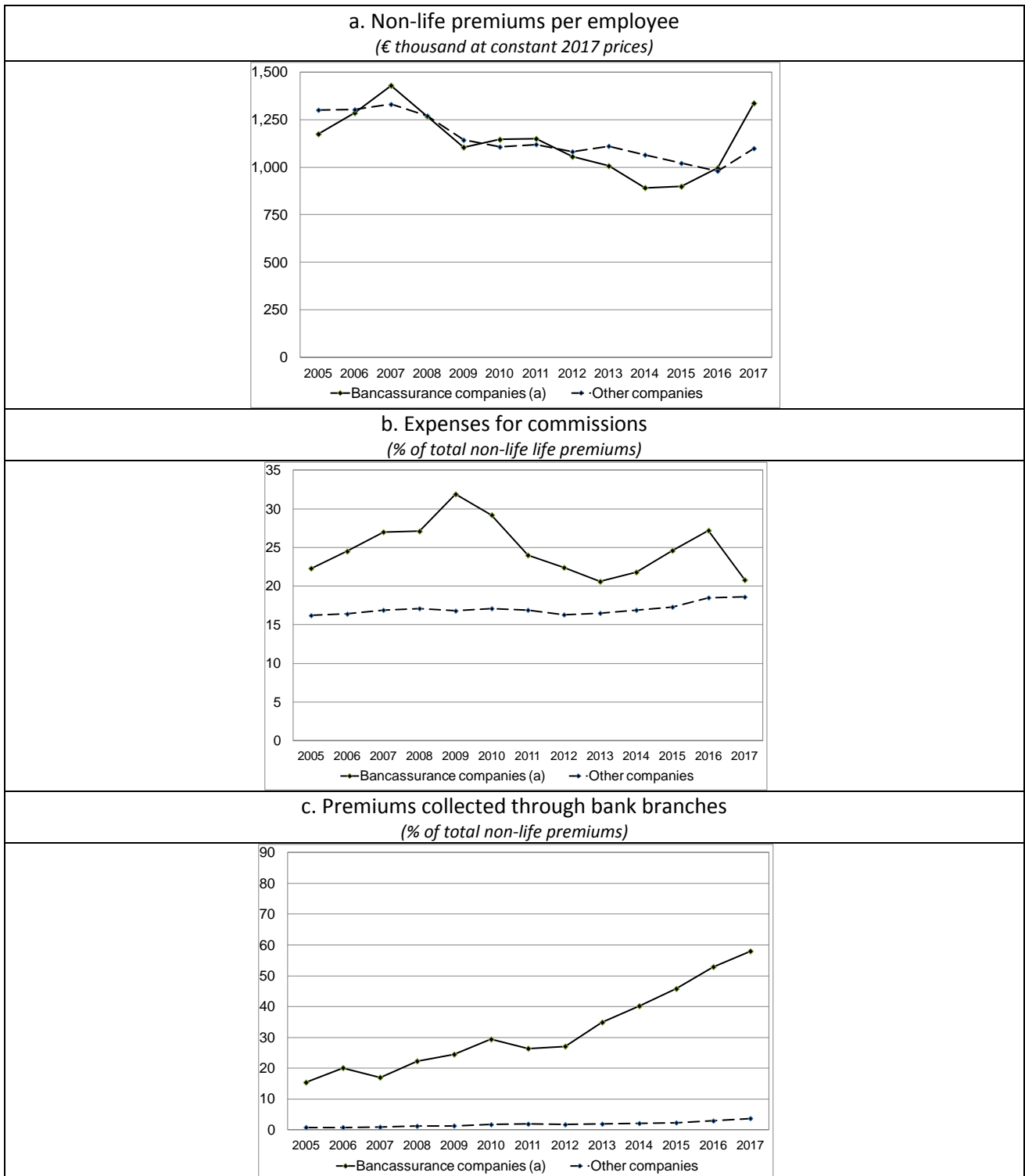
Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Figure 4 – **Life ROE and share of life premiums collected by selling financial products**
Italian insurance companies, 2005–2017

a. Life ROE *(%)*	b. Share of premiums for financial products *(% of life premiums)*
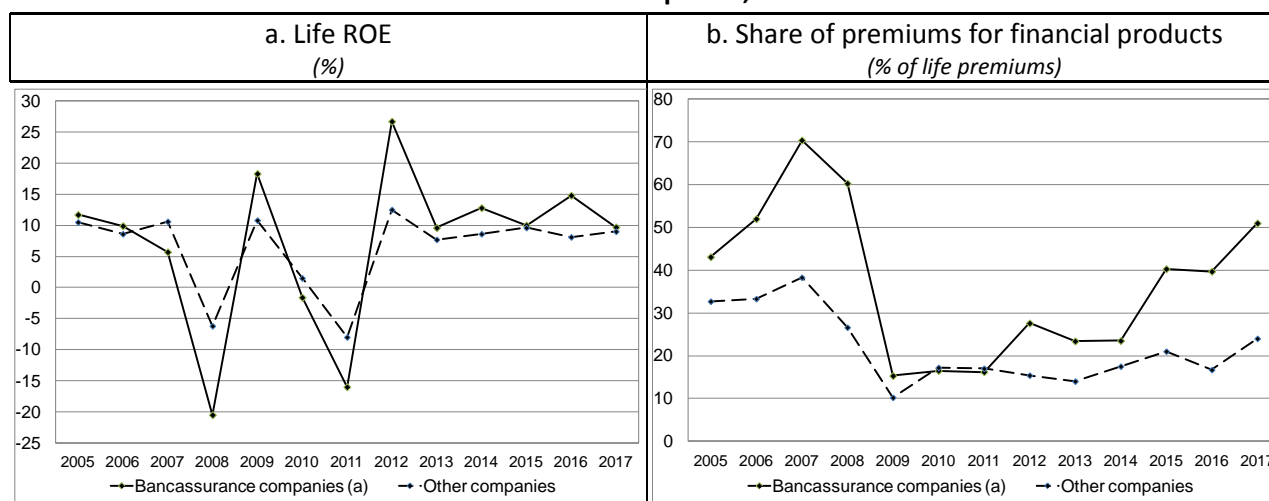
Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

4   The value added of insurance

4.1   The total gross value added in the National Accounts

The gross value added (*GVA*) of a country is the main component of the Gross Domestic Product (*GDP*). It is the difference between the value of the production and the value of the intermediate goods required to produce that output. The total GVA is derived by aggregating the *GVA*s of all the sectors composing the country's economy, including the insurance sector.

The *GDP* is the sum of the *GVA* and an adjustment factor, according to the following identity:

GDP= GVA+ (taxes on products- subsidies on products).

For Italy, the *GVA* for 2016 is evaluated at 1,537.9 billion of euros, the *GDP* at 1,680.5 billion of euros. For this year, the *GVA* represents therefore 91.5% of the *GDP*.

4.2   The value added of insurance in the economic literature

Insurance firms produce an intangible output, and in this respect they are similar to the other financial firms. The difference between the output value and the value of the input required is the added value.

In principle, the output of the financial sector could be measured by following three different approaches (Cummins *et al.*, 1996):

1) the asset or intermediation approach,

2) the user-cost approach,

3) the value added approach.

The first approach measures the passive and active interests derived from borrowing funds from other agents and is therefore more suitable to measure the output of bank or bank-like financial intermediaries rather than of insurers.

The user cost method determines whether a financial product is an input or output on the basis of its net contribution to the revenues of the financial institution and of a threshold-value represented by an opportunity cost of funds. If an asset generates financial returns higher than the opportunity cost or a liability comes with a cost lower than it, the asset or the liability is accordingly considered a financial output, otherwise it is classified as a financial input. This method is theoretically sound, but requires analytical data on financial revenues and costs as well as on opportunity costs, all difficult to estimate.

As a consequence, the approach almost universally adopted in insurance studies is based on value-added measurement.

The economic literature (Cummins *et al.*, 2010) identifies three services produced by insurance to the rest of the economy and looks separately for their inputs and outputs:

1) risk-pooling and risk-bearing activities, managed by insurers on behalf of their policyholders;

2) non-financial services in the form of legal counseling, risk management, financial advice, etc.;

3) return from financial intermediation, derived from investment of provisions into financial assets before using them to pay claims.

When inputs and outputs have to be actually identified to perform efficiency analysis, life and non-life sectors are treated separately. The outputs of the services under 1) and 2) are generally proxied by the claims incurred, with a separate addition for the investment income distributed to the policyholder in life products (Mahlberg and Url, 2010). Technical provisions for a given year (or their variation from the previous year) are also considered as further outputs, since they are an estimate of future claims. Financial investment or average invested assets are generally used to estimate the services of point 3).

Inputs are more homogeneous for life and non-life and they include labor costs, distribution expenses (agents' commissions), purchases of services and amount of financial capital (typically equity).

For each component ,value added could be obtained by subtracting all the inputs from the corresponding outputs, after suitably defining the quantities and the prices for each item. In the literature on efficiency analysis value added is seldom computed, since inputs and outputs are required separately, in order to rank firms according to their efficiency.

The approach of the system of national accounts that will be illustrated below in subsection 3.3 is different, since it has the specific aim of computing the value added of insurance from its single components.

4.3   Computing the Gross Value Added of the insurance sector in the European System of National Accounts

The National Accounts could compute the output for the insurance sector by following two approaches, indicated as the Gross Premium Approach and the Net Premium Approach (Triplett, 2001).

The Gross Premium Approach represents the output as the total revenue from premiums, after adding the ancillary activities of insurance.

In the Net Premium Approach, premiums minus claims are the proper output measurement. This balance is the sum of insurer's profits and the value of the administrative services provided to the policyholder.

In both approaches value added is obtained by subtracting the inputs from the corresponding outputs. Since the claims are an input in the Gross Premium Approach, in the two approached value added should be the same.

Under the Gross Premium Approach:
value added = [premiums] – [claims + purchased inputs]

Under the Net Premium approach:
value added = [premiums – claims] – [purchased inputs].

Different results may however arise because of misaligned estimation techniques used for the single addends required in the two approaches.

The system of National Accounts adopted by all the member states of the European Union (EU Regulation n. 549/2013) uses the framework of the Gross premiums approach, with three main variations:

1. incremental premiums are explicitly added;
2. net capital gains are also explicitly added for the life sectors;
3. change in provisions are subtracted.

Incremental premiums are added, because they are the income earned from investing the assets of the insurance company, which cover the technical provisions for their greatest part. This activity can generate capital gains, which are recorded separately in life insurance because of their relevance. Change in provisions is subtracted, because it represents an evaluation of policyholders' future claims, for which resources are allocated as a balance-sheet liability.

The Gross Value Added is separately computed for life and non-life insurance (tab. 1)

Table 1 – **Main components of the Value Added at base prices in the SEC 2010**

Life insurance	Non-life insurance
Production at base prices= + Premiums for the financial year + Incremental premiums *(generated from financial returns)* + Net capital gains (realized and unrealized) – Expenses for claims – Change in provisions	Production at base prices = + Premiums for the financial year + Incremental premiums *(generated from financial returns)* – Expenses for claims – Change in provisions
– Intermediate costs	– Intermediate costs
= Gross Value Added at base prices	= Gross Value Added at base prices

The reading of the table from top to bottom make it possible to follow the whole process of value added creation for insurance. The starting point is premium collection, incremented by the financial returns of assets management. It is then necessary to subtract the expenses, first those for claims, then the expenses for future claims, represented by the change in provisions, and finally the intermediate costs, generated within the firm (under the form of personnel expenses, administrative costs, etc.) and for the remuneration of the external agents that distribute insurance products (agents, brokers, financial intermediaries).

4.4 The Gross Value Added of the Insurance and the Bank sectors for the major European countries

The share of the insurance sector *GVA* over the total *GVA* is relatively small in all advanced countries, much lower than that of the bank sector. In the European Union the two figures amount respectively to 1% and 3.6% on average in 2005-2015 (fig. 5.a and 5b). A part of the gap is explained by the different sizes of the two sectors.

The *GVA* of insurance measured per employee tends to be higher than that of the bank sector in many European countries, with the exception of France (fig 5.c and 5.d). For Italy, the two figures amount respectively to € 174,000 and € 142,000).

Figure 5 – **Gross Value Added (GVA) of the financial and insurance sectors in the European Union Averages, 2005-2015**

Contribution to the total Gross Value Added
(%)

a. **Insurance sector**[a]	b. **Bank sector**

Gross Value Added per employee
(€ thousand)

c. **Insurance sector**[a]	d. **Bank sector**
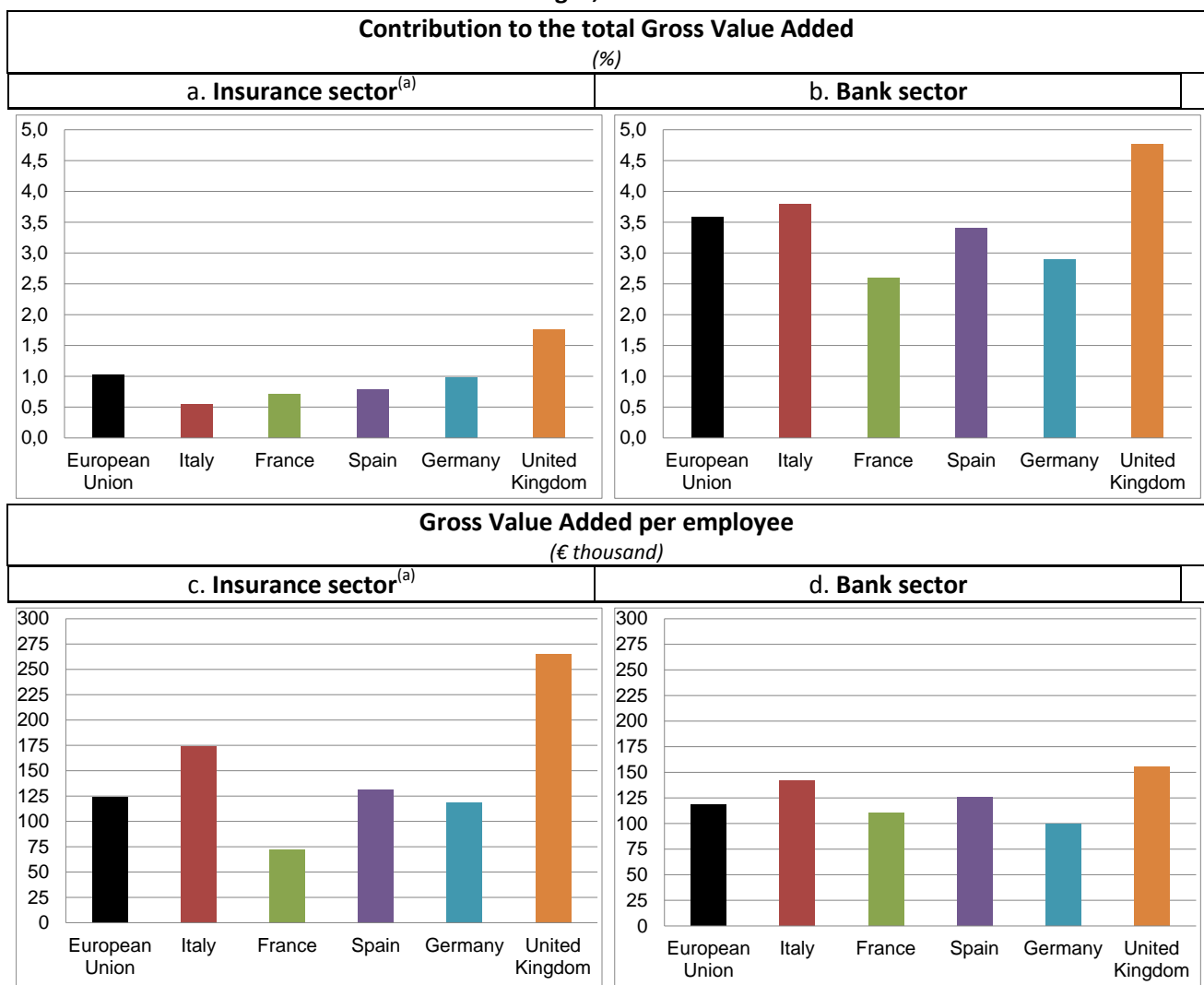
Source: Eurostat, database of National Accounts. The European Union comprises 28 countries and also UK.
(a) It includes insurance, reinsurance and pension funding, except compulsory social security.

4.5 The Gross Value Added of the Italian insurance companies

The evolution of the *GVA* of the Italian insurance sector in the years 2005-2017 is now analyzed. For simplicity the insurance companies which are not *bancassurance* are collected within a unique group labeled "Other companies". This intertemporal assessment requires to deflate all the *GVA* components, in

order to avoid having time variations affected by the different value of money. This adjustment is obtained with the same deflator used for the premiums (tab. A.2). This deflation, based on the Cost of Living Index for the Italian Households, could appear an approximation in the light of the difficulties of correctly deflating insurance output highlighted by the literature (Hornstein and Prescott, 1991; Weiss, 1987). The risk of measurement errors are however quite contained, since the inflation rate was very limited in the period examined (the overall increase of the price level has been 18.4%, on average 1.42% *per annum*).

A first relevant fact is that the *GVA* produced in the non-life sectors is on average 68% higher than that generated in life insurance (5,255 million euros against 3,135 euros, tab. A.6), even if non-life premiums are only a third of those collected for life products (tab. A2). The gap is mainly due to the different sizes of change in provisions, which is subtracted to obtain the *GVA* (it is worth 31.7% of the premiums in life, but only less than 0.1% in non-life, tab. A.7, tab. A.8 and fig. 6). This happens because life insurance products typically have a multi-period horizon, with policyholders' claims generally requiring years to mature. It follows that life insurance companies have to accumulate substantial provisions and to update them at the end of every year in order to be operational and this aspect is not fully captured by the National Accounts, which take a year-by-year approach in their added-value appraisal.

This advantage for non-life sectors in terms of value-added creation is only partially offset by their intermediate costs, higher than those of life sectors (on average, 26.1% as opposed to 5.0%), and by lower incremental premiums (on average, 5.8% as opposed to 15.9%). Non-life higher costs are mainly due to higher per-policy commissions in these sectors (as a share of premiums), caused by the fact that a great share of the commissions rewarding the product seller is fixed and is to be compared against an average per-policy premium considerably smaller for non-life products compared to life ones.

The lower incremental premiums for the non-life sectors (as a share of the premiums collected) mainly stem from the shorter maturity of the assets covering the provisions of these products, which typically protect the policyholder over a one-year horizon.

Figure 6 – **Contribution of the components of Gross Value Added (*GVA*)**
Italian insurance companies, averages for the years 2005–2017

a. Life *GVA*	b. Non-life *GVA*
100=contribution of life premiums	*100=contribution of non-life premiums*
(Averages for the years 2005-2017)	*(Averages for the years 2005-2017)*
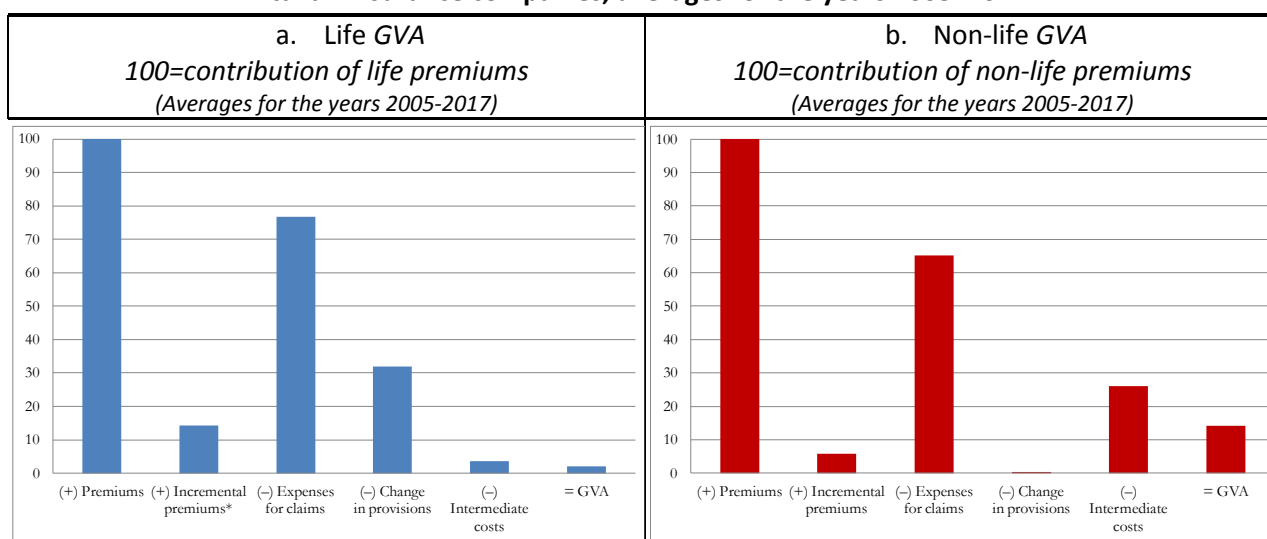
Source: IVASS.
(*) It includes total capital gains.

Focusing on value added creation for the life sector, a surprising combination of facts is that the *bancassurance* companies are more productive in terms of per-employee *GVA,* compared to the other

insurers (409,500 euro per employee versus 274,200), but the reverse is true when *GVA* is expressed as a ratio of premiums (2% as opposed to 4.2%). The first indicator is another evidence of *bancassurance* companies' advantage in exploiting the synergies provided by belonging to big financial conglomerates. These synergies make possible for a *bancassurance* company to use less personnel units compared to a traditional insurer of similar characteristics.

When *GVA* is measured in terms of premiums, the traditional insurers' superiority derives from incremental premiums (representing the income of financial investment) being less relevant for the *bancassurance* companies (10.3% of the premiums, as opposed to 18.5% for the other insurers, tab. A.7 and fig. 7).

Figure 7 – **Contribution of the components of life insurance Gross Value Added (*GVA*)**
Italian insurance companies, averages for the years 2005–2017

a. *Bancassurance* companies[(a)] *100=contribution of life premiums* *(Averages for the years 2005-2017)*	b. Other companies *100=contribution of life premiums* *(Averages for the years 2005-2017)*
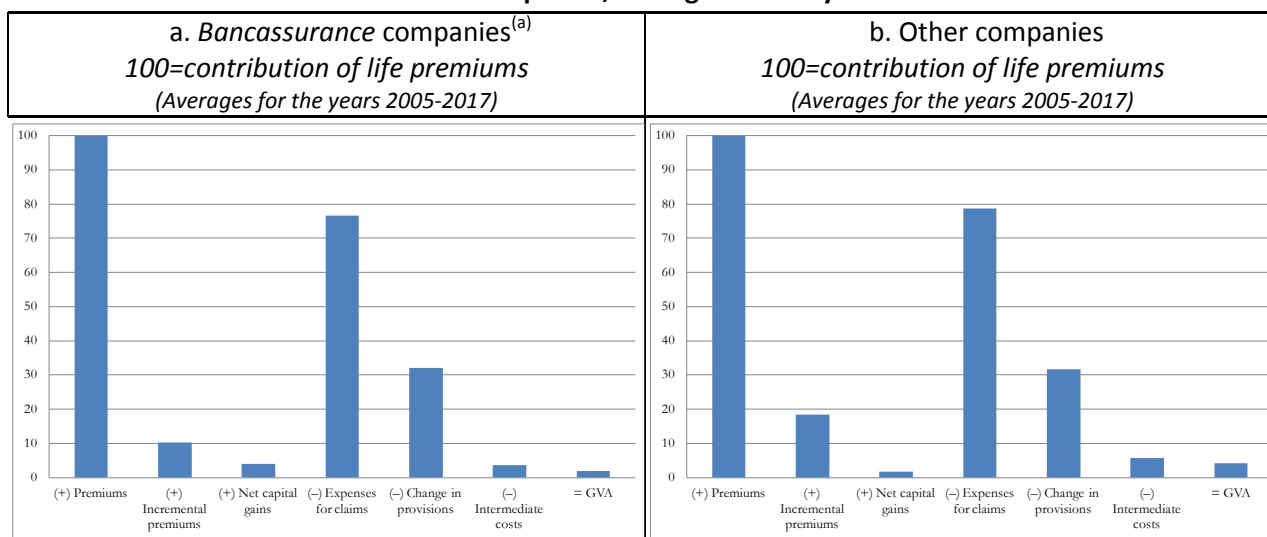
(a) Insurance companies with equity majority owned by a bank group.

The gap is stable over the years considered: better capital gains and lower intermediate costs for the *bancassurance* companies (respectively 4.0% and 3.6% against 1.7% and 5.7%) do not make up for this disadvantage. As a result, one hundred euro of life premiums yield only 2 euro of *GVA* for the *bancassurance* companies, which rise up to 4.2 euro for the other insurers.

Lower incremental premiums for the *bancassurance* companies are found both for financial and non-financial life products. However, this disadvantage does not entail that the *bancassurance* companies are less profitable than the other companies in the life sectors, since it should be taken into account that for these enterprises the overall profit is generated at the group level, where some cost items for the insurance segment become elements of profit. For instance, the commissions (a part of intermediate costs) reward the utilization of the group's bank branches as well as of their personnel. They are composed of standard commissions and also of the share of the management fees not kept by the insurer. These latter items compensate the agents selling the products (bank branches in most cases) and can be considered additional commissions (fig. 8.a).

These commissions represent therefore a real cost only for the traditional insurers, in which bank groups do not have a controlling stake. When expressed as a share of total life premiums, additional commissions are higher for the *bancassurance* companies and bring about levels of total commissions (obtained by summing up standard and additional commissions) quite similar for the *bancassurance* companies and the other insurers (fig. 8.b).

Figure 8 – **Additional and total commissions paid for product distribution in the life sectors**
Italian insurance companies, 2008–2017
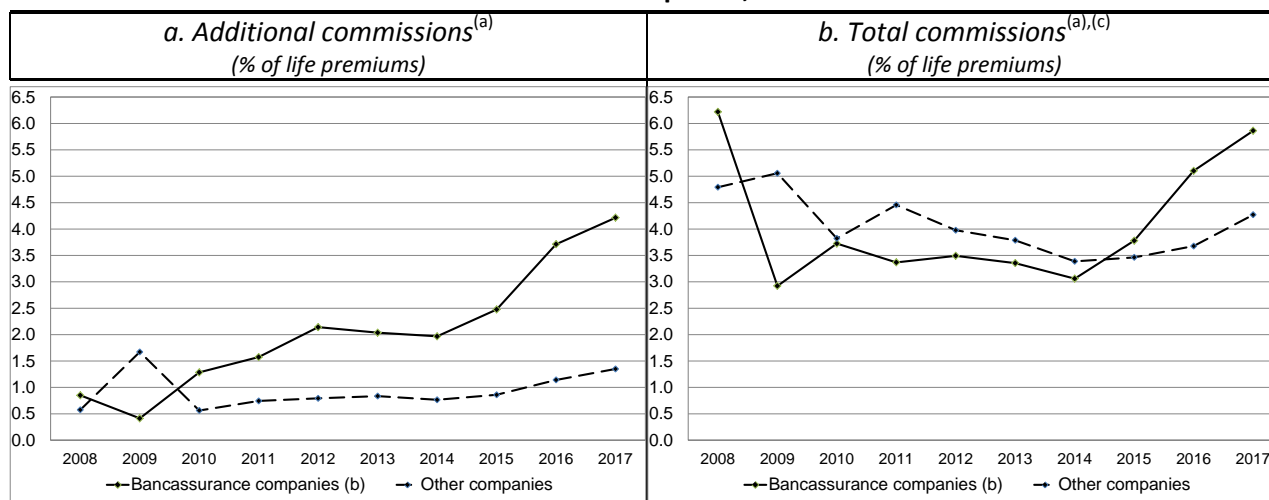
(a)Additional commissions not available for the years before 2008. – (b) Insurance companies with equity majority owned by a bank group. – (c) Sum of standard and additional commissions.

In conclusion, the bank groups controlling an insurance company earn a profit from the insurance business both by receiving a share of the company's profit as the most relevant shareholder and also by getting a compensation for the physical and human resources they turn to the management of the insurance products. This feature is common for life and non-life sectors, where the creation of *GVA* does not reveal noticeable differences between *bancassurance* companies and other insurers (tab. A.8).

The section that follows will focus only on company-level profit and will take a closer look at how it is formed.

5   The econometric model

5.1   Outline of the model

The construction of *GVA* provides a complete framework of insurance companies' income sources, from which the cost elements have to be subtracted, in order to produce the final result. It is therefore important to measure through a conditional model the degree of association of profits (the numerator of *ROE*) with these income elements, in order to understand the relative importance of two different income sources:

1) the one derived from premium collection;

2) the one generated from the management of financial assets.

For this purpose, two distinct analyses for the life and non-life sectors are carried out, taking into account that the two businesses are structurally different and as such separately treated in the *GVA* construction. The analysis does not explicitly investigate the direction of causality.

Since a relevant issue is the role played by the ownership type in determining companies' profitability, this categorical variable is also used as covariate. Since it is time-invariant, ordinary least squares (*OLS*) estimates are used at first, because a fixed-effect model, which would more efficiently exploit the panel data structure with repeated observations of the same unit, cannot estimate these coefficients.

Using *OLS* on a dataset containing with multiple occurrences of the same unit requires correcting the standard error of the coefficients to take into account of the clustering effect (Rogers, 1994), in order to avoid overrating the precision of the estimates.

At first, profits and all the other monetary variables used as covariates are converted into natural logarithm (indicated with *log* from now on). The models with the dependent expressed in *log* are also called *loglinear* models (Verbeek, 2008, pp. 78-83). The main rationale for this choice is the need to reduce the level of model heteroskedasticity, quite relevant in this case, since the Italian insurance companies' size is very variable. The conversion implies that the coefficient of a covariate in l*og* measures the relative change in the dependent variable, owing to the relative change of one percent point of the covariate. This quantity is commonly called elasticity and is supposed constant in *loglinear* models. Likewise, the coefficient of a dummy referring to a category of a discrete covariate can be similarly interpreted as the relative change of the dependent variable, owing to the change of the covariate from its reference category to the one of interest.

The following model is therefore considered:

$$\log(profit)_{i,t} = \beta_0 + \sum_{j \in GVA} \beta_j \log(x_{i,j,t}) + \sum_{k \in OTHER} \gamma_k \log(z_{i,k,t}) + \sum_{m \in CLASS} \theta_m \delta_{i,m} + \sum_{l \in PERIOD} \delta_l d_l + \varepsilon_{i,t} \qquad [1]$$

The covariates belong to four groups: *GVA*, *OTHER*, *PERIOD*, *CLASS*.

GVA indicates the elements used for computing the Gross Value Added, *OTHER* denotes the other time-varying covariates, *CLASS* are the dummies for the time-invariant qualitative characteristics, PERIOD collects the dummies for the three periods considered (2005-2008, 2009-2014, 2015-2017), which control for exogenous macroeconomic variation common to all companies.

5.2 Data used in the model

The aim is to assess the performances of the insurers controlled by bank groups as opposed to those of the companies that are either independent or in turn are controlled by insurance groups. Accordingly, the models are estimated for traditional and *bancassurance* companies, discarding both the insurers controlled by public bodies and those owned by non-financial firms. The main consequence of the exclusion of the first group of insurers is leaving out two insurers, specialized in the life and non-life sectors respectively, which are controlled by the Italian Post. An additional reason for not considering these two companies is that their organizational and cost structures are highly peculiar, because they distribute their products through the extended network of Italian post offices.[6] The exclusion of the second group of insurers is not relevant, since they collect a negligible share of the total premiums (tab. A.2).

5.3 The model covariates

A short summary of the characteristics of the covariates used in the model, commonly used in the applied literature on insurance companies, is presented below.

Distribution costs. A typical insurance company distributes its products through a variety of intermediaries (banks, independent agents, brokers), with only a minority of the premiums collected directly. The efficient use of these channels is relevant in determining profit levels. This relevance is recognized in the literature on insurers' efficiency, which has used stochastic production frontier methods or Data Envelopment

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[6] This exclusion is also chosen by Spotorno *et al.* (2016).

Analysis, known under the acronym of DEA (see for example Fécher *et al.*, 1993 for an analysis of the efficiency of the French insurance industry, or, more recently, Mahlberg and Url, 2010, for a productivity study of the German insurers). Other studies not dealing with efficiency analysis use distribution costs as a control variable in econometric linear models determining insurers' performance (Spotorno *et al.*, 2016). The role of distribution costs is even more important in measuring the differential profitability of *bancassurance* companies, since they tend to use the channel of bank branches more frequently than the other insurers.

Therefore, one of the covariates is the *log* of commission costs, a straightforward measure of distribution direct costs. Administrative costs are not considered, since they are highly correlated with company size, also included among the covariates.

Product mix. The possible role of product diversification in influencing insurers' profitability in the non-life sectors is an intensely debated topic. Various studies, based on different methodologies and datasets, have reached contrasting results (Moro and Anderloni, 2014).

For the life sector, the relevant fact is the growing dichotomy between traditional products with a guaranteed return and financial products with only a limited protection against demographic risk. These latter products aim to generate returns by investing in mutual funds or index-linked bonds. Their main features are that the policyholder bears most of the risk (Fiordelisi and Ricci, 2011) and accordingly lower levels of prudential capitals are imposed on the insurers by their regulators. The *bancassurance* companies have a superior propensity to sell financial products, which enables them to better exploit the controlling bank's experience in designing and selling traditional saving products.

The model takes into account the product mix by using as covariate the *log* of the share of premiums relative to financial products for the life business and the *log* of the share of premiums relative to motor car insurance for the non-life sectors.

Size. Whether size enhances efficiency or profitability is a relevant policy issue in financial market regulation. Whereas there is a general consensus on the positive relationship between size and economic performances in the insurance sector as a whole (Fiordelisi and Ricci, 2011) and, more restrictively, in the non-life sectors (Moro and Anderloni, 2014), in the life sectors the evidence is less clear-cut.

Given the uncertainty of the variable effect, one of the model covariates is a 4-level classification of size, based on a combination of the sizes of non-life premiums and life technical provisions. This variable allows to estimate three separate coefficients, in order to capture any non-linearity in the association of profitability with size.[7]

Reinsurance. This form of risk sharing is used in the non-life sectors rather more intensively than in the life ones. Among the positive effects of non-life reinsurance highlighted by the literature, reduction of loss ratio volatility and increase of firm performances are those most relevant (provided reinsurance is kept below acceptable levels), even if the two benefits tend to occur with increasing costs (Moro and Anderloni, 2014). In the life sectors, no clear advantage of reinsurance has so far clearly emerged. A rationale for its use is the reduction of prudential capital absorption, which might generate different behaviors from traditional insurers and from *bancassurance* companies, given the dissimilarity of their funding structures (Spotorno *et al.*, 2016).

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[7] The classification of size is the one officially used by the Italian insurance regulator (IVASS) for supervisory and reporting purposes (see Appendix).

A covariate of the models used in the paper is the *log* of the reinsurance ratio, i.e. the ratio of the premiums ceded to reinsurers over the total premium underwritten.

Diversification of the insurance activity across sectors. The degree of activity diversification is a relevant factor explaining insurers' different strategic choices, also determined by whether a company specializes in the life or the non-life sectors or chooses to operate in both ones. In order to take this factor into account, a dummy is used, indicating a diversified insurer collecting life and non-life premiums.

The main distributional parameters of the variables used in the regression show a high level of heterogeneity across Italian companies (tab. 2), comparable to that found in France (Fécher *et al.*, 1993) and Germany (Mahlberg and Url, 2011). Heterogeneity seems to characterize the insurance sector also for the synthetic performance indicators computed in efficiency analyses and used to compare firms within a single country (see or example Hardwick, 1997, for a study of the life insurance sector in the UK).

Table 2 – **Company-level variables used in the regression model**
Italian insurance companies, 2005-2017

	total number of observations	first quartile	median	mean	third quartile	standard deviation
Quantitative variables						
Life profit (€ thousand)	917	0.0	4,848.0	32,303.3	25,553.0	116,974.4
Life premiums (€ thousand)	918	97,398.0	375,407.5	1,184,193.1	1,254,060.0	2,180,834.8
Life incremental premiums (€ thousand)	913	15,249.7	53,727.0	189,051.2	164,765.8	387,744.4
Life capital gains (€ thousand)	918	-584.0	1,997.0	28,548.3	24,273.0	227,881.7
Life commissions for intermediaries (€ thousand)	917	3,081.0	10,775.5	34,766.1	30,062.0	63,316.0
Non-life profit (€ thousand)	918	-20.5	1,153.0	13,917.6	8,145.5	83,360.3
Non-life premiums (€ thousand)	917	11,356.0	54,838.0	346,619.1	232,023.0	840,859.9
Non-life incremental premiums (€ thousand)	918	224.0	1,616.9	20,487.0	10,665.5	61,286.2
Non-life commissions for intermediaries (€ thousand)	1,264	1,483.0	9,706.0	57,464.6	39,375.0	140,050.6
Share of life premiums as financial products (%)	1,283	1.0	9.0	22.0	31.0	28.0
Share of life premiums collected through bank branches (%)	1,262	1.0	42.0	49.0	99.0	44.0
Share of life gross premiums ceded to reinsurers (%)	1,282	0.0	1.0	4.0	3.0	9.0
Share of non-life premiums collected through bank branches (%)	1,246	0.0	0.0	20.0	6.0	37.0
Share of non-life gross premiums ceded to reinsurers (%)	1,282	4.0	12.0	22.0	36.0	23.0
Share of non-life premiums collected for car insurance (%)	1,246	0.0	31.0	33.0	62.0	33.0
Categorical variables						
total number of observations	1,868					
Ownership type (frequencies, %)						
Traditional insurers	77.2					
Bancassurance companies (a)	14.7					
Insurers controlled by private non-financial firms	3.3					
Insurers controlled by public bodies	4.8					
Diversification (frequencies, %)						
Active only in life	39.1					
Active only in non-life	50.7					
Active both in life and non-life	10.1					
Size(frequencies, %)						
Small	3.4					
Medium	10.7					
Big	33.0					
Very big	52.9					

Number of obervations per year

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
181	177	167	165	159	150	144	137	133	124	117	110	104

Source: IVASS.
(a) Insurance companies with equity majority owned by a bank group.

5.4   Regression results

Five specifications are considered, all with *log* of profit as dependent variable. The first one contains only the *bancassurance* dummy, the second adds those relative to size. The third specification is the first

including *logs* of quantitative variables and contains only those derived from the *GVA* decomposition. The fourth one adds the main indicators of company behavior in the line of business considered (life or non-life sectors). The fifth and most complete specification adds the main behavioral indicators interacted with the *bancassurance* dummy, in order to measure any differential effects for this group.

An important issue is whether there are changes of the model fitting capability and its coefficients over the period considered. This possibility is taken into account by estimating the model over the whole 2005-2017 period and separately for the three sub-periods 2005-2008, 2009-2014 and 2015-2017, corresponding to three distinct phases of the Italian economic cycle. Only the most complete specification is considered for these last regressions.

5.4.1 Life sectors

Starting from the life sectors, the first relevant result is that the dummy for *bancassurance* companies is not significant (tab. 3). The dummies for size (model 2) indicate that profits tend to increase with it the first time they are introduced (in specification 2), but this effect weakens with the introduction of the additional covariates.

Looking at the quantitative variables, a relevant fact is that the coefficient of the *log* of premiums is not significant in (3) and becomes negative and significant in (4) and (5). On the other hand, the coefficients relative to the *log* of supplementary premiums (measuring the return of assets investment) and to the *log* of capital gains are always positive and significant whenever they are used. The relevant finding is therefore that the main positive association of profitability is that with financial profits and capital gains, the two financial components of the *GVA*. Using the results of the most complete specification (5), if all the other covariates do not change, a one-point increase of financial profits or capital gains implies a profit increase respectively of 0.84% and 0.23%, whereas a one-point increase in premium volume is associated with a 0.26% decrease of profits .

Two other interesting facts emerge:

1) the positive coefficient for the *log* of commissions is statistically significant (*p-value* between 0.01 and 0.5), implying that the effort to obtain a profitable product mix is obtained by increasing the expenses for the distribution network;

2) the coefficient for the *log* of the reinsurance ratio is significant and negative, a clue that in the life sectors the insurers make a passive use of reinsurance, as a way to prevent further losses and do not regard it as an active instrument to increase their profitability.

Some interesting additions to the previous results are obtained from the separate regressions over the three time intervals (2005-2008, 2009-2014, 2015-2017), even if with less statistical significance due to the reduced number of units.

The highest size and significance of the capital gains coefficient (even slightly below the conventional 10% threshold) are found for the years 2015-2017 of slow exit from the negative peak of the crisis, when the European Central Bank was buying large amounts of financial assets through its program of quantitative easing, aiming to increase the value of similar assets in the balance sheets of their owners.

A positive relation between profit and sale of financial products emerges for the pre-crisis years 2005-2008 and it specifically regards the *bancassurance* companies, as shown by the positive sign and the significance of the two coefficients (amounting respectively to 0.173 and 0.486) relative to the *log* of the financial

products premiums and to the same variable interacted with the *bancassurance* dummy. This is consistent (fig. 4.b) with the fact that the *bancassurance* companies had been selling life policies with a high financial content much in that period more than the other insurers, and only since 2009 they rebalanced their product mix by increasing the weight of traditional life products with guaranteed returns. Moreover, the coefficient of the *bancassurance* dummy is significantly negative (–3.166) for the crisis years 2009-2014, as a possible consequence of the expensive effort to shed the excess of financial product, which took some years to accomplish. For the crisis years 2009-2014, the two coefficients for the *log* of the commissions and to the same variable interacted with the *bancassurance* dummy are both positive and significant, with the latter one being bigger than the former (0.305 versus 0.187). Also this result may stem from *bancassurance* companies' drive to rebalance their product mix, which probably forced them to increase the utilization of distribution channels more expensive than bank branches (as shown in fig. 2.c).

A final point concerns the negative coefficient of the *log* of the reinsurance ratio, significant only for the two sub-periods 2009-2014 and 2015-2017, corresponding to the economic crisis and the following slow recovery. This is a further evidence of the defensive utilization of reinsurance by the Italian companies, which mainly rely on this instrument when profitability levels are at serious risk.

5.4.2 Non-life sectors

Similarly to what observed in the regressions for life profits, the *bancassurance* dummy is not significant, while those for size are positive significant when introduced for the first time, a clue to the positive correlation of size with profit, although they lose progressively both their size and their significance with the introduction of the additional covariates (tab. 4).

Looking at the effect of the two *GVA* components used as covariates, they are both positive, but only the coefficient relative to the *log* of the supplementary premiums (the return of assets investment) is significant.

Also in this case, the utilization of reinsurance is defensive, since the coefficient relative to the *log* of the reinsurance ratio is negative and strongly significant. The magnitude of the coefficient is greater than that of the life sectors, in accordance with the fact that reinsurance is structurally more relevant in non-life. Once again, the defensive utilization of reinsurance is stronger in the crisis and post-crisis years.

Table 3 – **Life sectors: Ordinary Least Squares estimates for the factors associated to profit**[a]
Italian insurance companies, 2005-2017

Independent variables	Dependent variable: profit (log)							
	(1)	(2)	(3)	(4)	(5)			
	2005-2017	2005-2017	2005-2017	2005-2017	2005-2017	2005-2008	2009-2014	2015-2017
ownership type: *traditional insurers as reference*								
ownership: bancassurance companies (b)	0.307	-0.181	-0.120	-0.170	-1.214	3.835	-3.166**	2.166
	(0.64)	(-0.82)	(-0.76)	(-1.39)	(-1.65)	(1.66)	(-2.45)	(0.99)
type of activity: *companies operating only in the non-life sector as reference*								
type of activity: companies operating both in life and non-life sectors		-0.455	0.224	0.195	0.233	0.008	0.503	-0.970*
		(-1.55)	(0.96)	(0.66)	(0.77)	(0.02)	(1.47)	(-1.78)
insurer's dimension: *small size as reference*								
size: Average		2.054***	0.436	0.129	0.135	1.163**	-0.272	1.700***
		(8.60)	(1.57)	(0.58)	(0.58)	(2.58)	(-0.99)	(3.40)
size: Big		3.174***	0.295	-0.203	-0.231	1.467*	-0.820**	2.858***
		(12.07)	(0.79)	(-0.60)	(-0.66)	(2.00)	(-2.22)	(4.35)
size: Very big		4.648***	0.497	-0.094	-0.170	2.326**	-1.466***	4.487***
		(11.78)	(0.91)	(-0.22)	(-0.38)	(2.03)	(-2.75)	(5.67)
premiums (log)			-0.083	-0.299**	-0.260**	-0.043	-0.245*	-0.580*
			(-0.65)	(-2.60)	(-2.34)	(-0.16)	(-1.96)	(-2.01)
supplem. premiums (log)			0.761***	0.835***	0.840***	0.366**	1.036***	0.816***
			(4.30)	(7.60)	(7.73)	(2.02)	(9.59)	(3.53)
capital gains (log)			0.169***	0.234***	0.231***	0.059	0.115	0.216
			(3.17)	(3.74)	(3.68)	(0.70)	(1.38)	(1.44)
share of financial products (log)				-0.005	0.006	0.173*	0.038	-0.056
				(-0.11)	(0.14)	(1.99)	(0.70)	(-0.33)
expenses for commissions (log)				0.230**	0.184**	0.310*	0.187**	0.413*
				(2.54)	(2.39)	(1.68)	(2.04)	(1.80)
share of premiums by bank branches (log)				-0.053	-0.056	0.007	-0.077	-0.080
				(-1.00)	(-1.04)	(0.10)	(-1.19)	(-0.77)
share of gross premiums ceded to reinsurers (log)				-0.091**	-0.090**	-0.027	-0.108**	-0.213**
				(-2.19)	(-2.16)	(-0.49)	(-2.02)	(-2.32)
bancass. share of financial products (log)					-0.056	0.486***	-0.077	0.247
					(-0.69)	(3.09)	(-0.84)	(1.16)
bancass. expenses for commissions (log)					0.091	-0.370	0.305**	-0.344
					(1.37)	(-1.52)	(2.53)	(-1.58)
bancass. share of premiums by bank branches (log)					-0.186	-0.503*	0.356	-1.085
					(-0.98)	(-1.76)	(0.48)	(-0.41)
Constant	9.215***	7.319***	0.005	-1.280	-1.361	1.597	-1.821*	0.705
	(43.58)	(34.29)	(0.00)	(-1.15)	(-1.23)	(0.82)	(-1.70)	(0.24)
N	654	654	454	376	376	86	200	90
Adjusted r-square	0.002	0.518	0.652	0.682	0.681	0.732	0.701	0.641

Source: IVASS.

(a)***: p-value less than 0.01, **: p-value between 0.01 and 0.05, *=p-value between than 0.05 and 0.1 (t-values of the coefficients reported below within round brackets). – Standard errors computed considering the same company repeated over time as a cluster. – All the estimates include dummies for the three periods 2005-2008, 2009-2014, 2015-2017 for the regressions over the whole time interval considered and year-level dummies for the separate regressions over each period. – (b) Insurance company with equity majority owned by a bank group.

Italian insurance companies, 2005-2017

	(1)	(2)	(3)	(4)	(5)			
Independent variables	2005-2017	2005-2017	2005-2017	2005-2017	2005-2017	2005-2008	2009-2014	2015-2017
Dependent variable: profit (log)								
ownership type: *traditional insurers as reference*								
ownership: bancassurance companies (b)	-0.663	0.281	0.173	0.150	-0.143	6.481	-4.412	-1.170
	(-1.41)	(0.72)	(0.58)	(0.38)	(-0.06)	(1.62)	(-0.85)	(-0.23)
type of activity: *companies operating only in the non-life sector as reference*								
type of activity: companies operating both in life and non-life sectors		1.127***	0.681***	0.591	0.603	0.697*	1.120	-0.395
insurer's dimension: *small size as reference*								
size: Average		2.036***	0.598**	-0.209	-0.167	-0.189	-0.361	2.149***
		(8.33)	(2.01)	(-0.50)	(-0.40)	(-0.15)	(-0.43)	(6.01)
size: Big		3.323***	1.262***	0.113	0.177	0.157	0.025	3.757***
		(8.10)	(2.75)	(0.16)	(0.26)	(0.09)	(0.02)	(7.34)
size: Very big		3.752***	1.438**	0.608	0.675	0.482	0.616	4.096***
		(4.59)	(2.52)	(0.77)	(0.86)	(0.23)	(0.38)	(3.90)
premiums (log)			0.129	0.486	0.437	0.189	0.575	-0.103
			(0.96)	(1.45)	(1.39)	(0.41)	(1.10)	(-0.22)
supplem. premiums (log)			0.380***	0.500**	0.529**	0.780**	0.447	0.620***
			(3.80)	(2.29)	(2.59)	(2.68)	(1.57)	(2.91)
expenses for commissions (log)				-0.122	-0.115	-0.165	-0.166	-0.045
				(-1.10)	(-1.07)	(-1.00)	(-0.83)	(-0.19)
share of premiums by bank branches (log)				0.090*	0.094*	0.041	0.134*	0.087
				(1.72)	(1.77)	(0.46)	(1.82)	(1.42)
share of gross premiums ceded to reinsurers (log)				-0.298***	-0.293***	-0.086	-0.409***	-0.404**
				(-3.35)	(-3.24)	(-0.33)	(-2.89)	(-2.49)
share of motor car insurance premiums (log)					-0.040	-0.083	-0.034	-0.067
					(-0.94)	(-0.60)	(-0.43)	(-0.81)
bancass. expenses for commissions (log)					0.012	-0.625	0.382	0.133
					(0.05)	(-1.35)	(0.75)	(0.29)
bancass. share of premiums by bank branches (log)					-0.161	-0.002	-0.356	-0.130
					(-0.99)	(-0.01)	(-1.38)	(-0.51)
Constant	8.435***	6.707***	3.146***	-0.964	-0.716	1.049	-1.130	4.001
	(36.52)	(33.87)	(2.88)	(-0.48)	(-0.36)	(0.30)	(-0.26)	(1.00)
N	746	746	742	338	338	93	162	83
Adjusted r-square	0.007	0.552	0.665	0.626	0.625	0.397	0.658	0.734

Source: IVASS.

(a)***: p-value less than 0.01, **: p-value between 0.01 and 0.05, *=p-value between than 0.05 and 0.1 (t-values of the coefficients reported below within round brackets). – Standard errors computed considering the same company repeated over time as a cluster. – All the estimates include dummies for the three periods 2005-2008, 2009-2014, 2015-2017 for the regressions over the whole time interval considered and year-level dummies for the separate regressions over each period, not reported for brevity. – (b) Insurance company with equity majority owned by a bank group.

5.5 Robustness check

The *OLS* models estimated in the previous subsection may suffer from the bias caused by omitted variables. More specifically, insurance companies' managerial ability, not observable, might be a relevant omitted variable, potentially highly correlated both with the actually used covariates and with those omitted. Managerial ability is strongly correlated with time-invariant characteristics, but some correlation patterns may also exist with time-varying variables. For these reasons, the introduction of individual fixed effects, reasonable proxies of managerial ability, may lessen the omitted-variable problems (Verbeek, 2008, pp. 356-369).

The fixed effect of each company can be estimated on the panel dataset by using fixed- or random-effects models (Verbeek, 2008). The two dummies for *bancassurance* company and diversified activity in life and non-life sectors are not considered among the covariates, since both of them are time-invariant and the fixed-effects model could not estimate their coefficients. This limitation has no big effects, since the previous *OLS* models have shown the weak association of these dummies with the dependent variables.

The following equation is now considered:

$$\log(profit)_{i,t} = \alpha_i + \sum_{j \in GVA} \beta_j \log(x_{i,j,t}) + \sum_{k \in OTHER} \gamma_k \log(z_{i,k,t}) + \sum_{l \in PERIOD} \delta_l d_l + \varepsilon_{i,t} \qquad [2]$$

The two main differences between the equations [1] and [2] are that in [2]:
1) an intercept for each unit α_i, measuring the individual effects, replaces the common intercept β_0 of [1];
2) the time-invariant covariates collected in the *CLASS* group in [1] are not considered.

Between the two available choices of fixed- and random effects models, the second is more efficient, since its estimates are based on the variability existing both within the single unit and between the different units, whereas the fixed-effects model uses only the first kind of variability. The constraint of random-effects estimates is that they are consistent as long as the individual effects α_i are uncorrelated with the other covariates. This assumption is not strictly required for fixed-effects estimates and it can be tested through the Hausman test.

The two robustness-check models for the life and non-life sectors are computed over the whole period 2005-2017 on the most complete specification considered, labeled with (5) in tables 3 and 4 (leaving out the time-invariant characteristics, as explained above). For the life sectors, the Hausman test cannot reject the null hypothesis of lack of correlation between individual effects and the other covariates, but it is highly significant in the case of non-life. Therefore, the coefficients for the life sectors are estimated with the random-effects model, whereas the fixed-effects model is used for those of non-life.

The overall fit of the two models is satisfactory (tab. 5), particularly for the life sectors. It is an evidence of the robustness of the modeling approach the fact that the main coefficients do not show relevant variations compared to their *OLS* values. As usual, the coefficients estimated with random effects (for the life sectors) are closer to those estimated with *OLS*, compared to the fixed-effects coefficients of non-life sectors, where the negative coefficient for the share of premiums collected in motor car insurance becomes weakly significant.

Table 5 – Random-effects and fixed-effects estimates for the factors associated to profit[a]

Italian insurance companies, 2005-2017

Life sectors		Non life sectors	
Random effects		*Fixed effects*	
Dependent variable: profit (log)		Dependent variable: profit (log)	
insurer's dimension: small size as reference		insurer's dimension: small size as reference	
size: Average	0.205 (1.01)	size: Average	-0.319 (-0.92)
size: Big	-0.047 (-0.17)	size: Big	-0.346 (-0.49)
size: Very big	0.203 (0.48)	size: Very big	0.089 (0.09)
premiums (log)	-0.305** (-2.45)	premiums (log)	-0.491 (-1.46)
supplem. premiums (log)	0.771*** (7.49)	supplem. premiums (log)	0.791*** (4.24)
capital gains (log)	0.213*** (4.23)	expenses for commissions (log)	-0.016 (-0.08)
share of financial products (log)	-0.006 (-0.14)	share of premiums by bank branches (log)	-0.093 (-1.49)
expenses for commissions (log)	0.250*** (2.95)	share of gross premiums ceded to reinsurers (log)	-0.281*** (-2.80)
share of premiums by bank branches (log)	-0.070* (-1.88)	share of motor car insurance premiums (log)	-0.164* (-1.69)
share of gross premiums ceded to reinsurers (log)	-0.078* (-1.94)	bancass. expenses for commissions (log)	0.137 (1.32)
bancass. share of financial products (log)	-0.042 (-0.56)	bancass. share of premiums by bank branches (log)	0.560 (1.63)
bancass. expenses for commissions (log)	-0.030 (-1.08)	Constant	6.399*** (3.09)
bancass. share of premiums by bank branches (log)	-0.176 (-0.58)		
Constant	-0.430 (-0.45)		
N	376	N	338
R-sq:		R-sq:	
within	0.1998	within	0.2009
between	0.8458	between	0.5371
overall	0.6918	overall	0.3757
H0: corr(u_i, X) = 0		H0: corr(u_i, X) = 0	
Wald chi2(13)	17.89	Wald chi2(11)	28.90
Prob > chi2	0.2687	Prob > chi2	0.0068

Source: IVASS.

(a)***: p-value less than 0.01, **: p-value between 0.01 and 0.05, *=p-value between than 0.05 and 0.1 (t-values of the coefficients reported below within round brackets). – All the estimates include dummies for the three periods 2005-2008, 2009-2014, 2015, not reported for brevity.

6 Conclusions

The paper looks into the main performance indicators of the Italian insurance companies in the recent years 2005-2017. The companies are classified according to the type of their ownership, with the main aim of separating those controlled by banks (*bancassurance* companies) from the others. This separation is justified by the economic importance of the integration of the financial sector, which in Europe mainly took place through the expansion of many banks into the insurance business.

The performances are measured in terms both of Gross Value Added (*GVA*), computed with the same methodology used in the official National Accounts and of Return on Equity (*ROE*). An econometric model looks for the main associations between profit and the income elements that generate the *GVA*, controlling for the main characteristics of the insurers.

The main findings of the paper are reported below.

1) During all the years considered (2005-2017), the *bancassurance* companies' per-employee *GVA* was higher than that of the other companies in the life sectors, where their business is concentrated (409,500 euro as opposed to 274,200), but it is lower when *GVA* is expressed as a share of the premiums collected (2.0% against 4.2%). These two gaps are stable over all the years considered. The first result is explained by *bancassurance* companies' smaller size (measured by number of employees) compared to the other insurers' (as shown by higher levels of per capita premiums), a likely effect of the synergies possible within a composite financial group. The second result is generated by *bancassurance* companies' lower levels of financial profits, not balanced by their higher capital gains and lower intermediate costs.
2) Profitability measured in terms of *ROE* is on average higher for *bancassurance* companies (7.7% against 6.4%), as a consequence of their better performances in the years 2009-2017.
3) A linear-modeling exercise that looks for the main *GVA* components associated with profit finds that the leading associations are those of profitability with the ability to get high returns from financial investment. This result holds for life sectors and for non-life ones alike. The type of ownership (i.e. the distinction between *bancassurance* companies and other insurers) is not significant in this context, an evidence of the high variability existing within the two groups of insurance companies.

The main cautions in interpreting the results of the present study are that they are based on a single market of a major European Country and that it supports its conclusions by using econometric techniques that need further improvements for their results to be causally interpreted. It clearly follows that future developments of the study could proceed along two directions: 1) exploring whether the results obtained are also valid in other European insurance markets; 2) refining the econometric methods of the modeling, in order to increase its capability of deriving causal inferences.

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Appendix

Statistical tables

Table A.1 – **Number of companies**
Italian insurance companies, 2005–2017

Year		Type of ownership											
	Bancassurance companies[a]		Other companies									Total	
			Total		of which								
					Traditional insurers		Insurers controlled by public bodies		Insures controlled by private non-financial firms				
	Number	%	Number	%	Number	%	Number	%	Number	%		Number	%
Total													
2005	22	12.2	158	87.8	149	82.8	8	4.4	1	0.6		180	100.0
2006	21	12.0	154	88.0	145	82.9	8	4.6	1	0.6		175	100.0
2007	23	13.9	143	86.1	132	79.5	8	4.8	3	1.8		166	100.0
2008	24	14.8	138	85.2	128	79.0	6	3.7	4	2.5		162	100.0
2009	24	15.2	134	84.8	123	77.8	6	3.8	5	3.2		158	100.0
2010	24	16.1	125	83.9	113	75.8	7	4.7	5	3.4		149	100.0
2011	21	14.6	123	85.4	110	76.4	7	4.9	6	4.2		144	100.0
2012	21	15.3	116	84.7	103	75.2	7	5.1	6	4.4		137	100.0
2013	19	14.3	114	85.7	101	75.9	7	5.3	6	4.5		133	100.0
2014	19	15.4	104	84.6	91	74.0	7	5.7	6	4.9		123	100.0
2015	19	16.2	98	83.8	86	73.5	6	5.1	6	5.1		117	100.0
2016	18	16.4	92	83.6	80	72.7	6	5.5	6	5.5		110	100.0
2017	20	19.2	84	80.8	73	70.2	6	5.8	5	4.8		104	100.0
Average	*21*	*14.8*	*122*	*85.2*	*110*	*77.2*	*7*	*4.8*	*5*	*3.2*		*143*	*100.0*
Active both in life and non-life													
2005	14	19.7	57	80.3	53	74.6	3	4.2	1	1.4		71	100.0
2006	14	20.0	56	80.0	52	74.3	3	4.3	1	1.4		70	100.0
2007	15	21.7	54	78.3	50	72.5	3	4.3	1	1.4		69	100.0
2008	14	21.2	52	78.8	49	74.2	2	3.0	1	1.5		66	100.0
2009	14	22.2	49	77.8	46	73.0	2	3.2	1	1.6		63	100.0
2010	15	24.6	46	75.4	43	70.5	2	3.3	1	1.6		61	100.0
2011	12	21.1	45	78.9	42	73.7	2	3.5	1	1.8		57	100.0
2012	12	23.1	40	76.9	37	71.2	2	3.8	1	1.9		52	100.0
2013	11	22.0	39	78.0	36	72.0	2	4.0	1	2.0		50	100.0
2014	11	23.4	36	76.6	33	70.2	2	4.3	1	2.1		47	100.0
2015	11	25.0	33	75.0	30	68.2	2	4.5	1	2.3		44	100.0
2016	11	26.8	30	73.2	27	65.9	2	4.9	1	2.4		41	100.0
2017	12	31.6	26	68.4	23	60.5	2	5.3	1	2.6		38	100.0
Average	*13*	*22.8*	*43*	*77.2*	*40*	*71.5*	*2*	*4.0*	*1*	*1.8*		*56*	*100.0*
Active only in life													
2005	8	8.9	82	91.1	78	86.7	4	4.4	0	0.0		90	100.0
2006	7	8.1	79	91.9	75	87.2	4	4.7	0	0.0		86	100.0
2007	8	9.9	73	90.1	67	82.7	4	4.9	2	2.5		81	100.0
2008	10	12.5	70	87.5	64	80.0	3	3.8	3	3.8		80	100.0
2009	10	12.5	70	87.5	63	78.8	3	3.8	4	5.0		80	100.0
2010	9	12.2	65	87.8	56	75.7	5	6.8	4	5.4		74	100.0
2011	9	12.3	64	87.7	54	74.0	5	6.8	5	6.8		73	100.0
2012	9	12.7	62	87.3	52	73.2	5	7.0	5	7.0		71	100.0
2013	8	11.6	61	88.4	51	73.9	5	7.2	5	7.2		69	100.0
2014	8	12.5	56	87.5	46	71.9	5	7.8	5	7.8		64	100.0
2015	8	13.1	53	86.9	44	72.1	4	6.6	5	8.2		61	100.0
2016	7	12.3	50	87.7	41	71.9	4	7.0	5	8.8		57	100.0
2017	8	14.8	46	85.2	38	70.4	4	7.4	4	7.4		54	100.0
Average	*8*	*11.6*	*64*	*88.4*	*56*	*77.6*	*4*	*5.9*	*4*	*5.0*		*72*	*100.0*
Active only in non-life													
2005	0	0.0	19	100.0	18	94.7	1	5.3	0	0.0		19	100.0
2006	0	0.0	19	100.0	18	94.7	1	5.3	0	0.0		19	100.0
2007	0	0.0	16	100.0	15	93.8	1	6.3	0	0.0		16	100.0
2008	0	0.0	16	100.0	15	93.8	1	6.3	0	0.0		16	100.0
2009	0	0.0	15	100.0	14	93.3	1	6.7	0	0.0		15	100.0
2010	0	0.0	14	100.0	14	100.0	0	0.0	0	0.0		14	100.0
2011	0	0.0	14	100.0	14	100.0	0	0.0	0	0.0		14	100.0
2012	0	0.0	14	100.0	14	100.0	0	0.0	0	0.0		14	100.0
2013	0	0.0	14	100.0	14	100.0	0	0.0	0	0.0		14	100.0
2014	0	0.0	12	100.0	12	100.0	0	0.0	0	0.0		12	100.0
2015	0	0.0	12	100.0	12	100.0	0	0.0	0	0.0		12	100.0
2016	0	0.0	12	100.0	12	100.0	0	0.0	0	0.0		12	100.0
2017	0	0.0	12	100.0	12	100.0	0	0.0	0	0.0		12	100.0
Average	*0*	*0.0*	*15*	*100.0*	*14*	*97.4*	*0*	*2.6*	*0*	*0.0*		*15*	*100.0*

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Table A.2 – **Total premiums collected**
Italian insurance companies, 2005–2017

Year	Bancassurance companies[a]		Other companies Total		of which Traditional insurers		Insurers controlled by public bodies		Insurers controlled by private non-financial firms		Total	
	€ million at constant 2017 prices	%	€ million at constant 2017 prices	%	€ million at constant 2017 prices	%	€ million at constant 2017 prices	%	€ million at constant 2017 prices	%	€ million at constant 2017 prices	%
Total												
2005	25,770	20.2	101,894	79.8	93,816	73.5	8,077	6.3	1	0.0	127,663	100.0
2006	23,656	19.3	98,992	80.7	90,927	74.1	8,065	6.6	1	0.0	122,648	100.0
2007	19,127	17.4	90,624	82.6	83,269	75.9	7,354	6.7	1	0.0	109,751	100.0
2008	14,232	14.5	84,046	85.5	77,011	78.4	7,018	7.1	17	0.0	98,278	100.0
2009	32,193	25.5	94,251	74.5	85,514	67.6	8,710	6.9	27	0.0	126,444	100.0
2010	33,245	25.0	99,726	75.0	88,427	66.5	11,259	8.5	40	0.0	132,971	100.0
2011	29,455	25.9	84,140	74.1	73,184	64.4	10,919	9.6	37	0.0	113,595	100.0
2012	25,257	23.9	80,593	76.1	68,967	65.2	11,574	10.9	52	0.0	105,850	100.0
2013	31,979	26.8	87,190	73.2	72,933	61.2	14,126	11.9	132	0.1	119,169	100.0
2014	40,246	28.1	103,216	71.9	86,636	60.4	16,368	11.4	211	0.1	143,462	100.0
2015	40,243	27.3	107,250	72.7	87,836	59.6	19,118	13.0	296	0.2	147,493	100.0
2016	30,328	22.6	103,763	77.4	82,606	61.6	20,810	15.5	347	0.3	134,091	100.0
2017	29,493	22.5	101,778	77.5	80,070	61.0	21,172	16.1	536	0.4	131,271	100.0
Average	**28,863**	**23.3**	**95,189**	**76.7**	**82,400**	**66.4**	**12,659**	**23.3**	**131**	**0.1**	**124,053**	**10.2**
Life												
2005	24,893	28.5	62,480	71.5	55,362	63.4	7,118	8.1	1	0.0	87,374	100.0
2006	22,718	27.6	59,495	72.4	52,392	63.7	7,103	8.6	1	0.0	82,214	100.0
2007	18,048	25.7	52,205	74.3	45,765	65.1	6,438	9.2	1	0.0	70,252	100.0
2008	13,167	21.7	47,451	78.3	41,256	68.1	6,194	10.2	1	0.0	60,618	100.0
2009	31,173	34.9	58,166	65.1	50,284	56.3	7,881	8.8	1	0.0	89,339	100.0
2010	32,145	32.8	65,751	67.2	55,361	56.6	10,389	10.6	1	0.0	97,897	100.0
2011	28,283	36.1	49,968	63.9	39,889	51.0	10,078	12.9	1	0.0	78,251	100.0
2012	24,144	33.6	47,737	66.4	36,944	51.4	10,792	15.0	1	0.0	71,881	100.0
2013	30,962	35.7	55,647	64.3	42,290	48.8	13,356	15.4	1	0.0	86,608	100.0
2014	39,335	35.2	72,522	64.8	56,905	50.9	15,616	14.0	1	0.0	111,856	100.0
2015	39,306	33.7	77,236	66.3	58,850	50.5	18,381	15.8	5	0.0	116,542	100.0
2016	29,402	28.2	74,807	71.8	54,699	52.5	20,089	19.3	19	0.0	104,208	100.0
2017	28,024	28.4	70,705	71.6	50,334	51.0	20,354	20.6	17	0.0	98,730	100.0
Average	**27,815**	**0.0**	**61,090**	**0.0**	**49,256**	**0.0**	**11,830**	**0.0**	**4**	**0.0**	**88,905**	**0.0**
Non-life												
2005	877	2.2	39,413	97.8	38,454	95.4	960	2.4	0	0.0	40,290	100.0
2006	938	2.3	39,497	97.7	38,535	95.3	962	2.4	0	0.0	40,435	100.0
2007	1,079	2.7	38,420	97.3	37,504	94.9	916	2.3	1	0.0	39,499	100.0
2008	1,066	2.8	36,595	97.2	35,755	94.9	824	2.2	16	0.0	37,660	100.0
2009	1,020	2.7	36,086	97.3	35,230	94.9	829	2.2	27	0.1	37,105	100.0
2010	1,099	3.1	33,975	96.9	33,066	94.3	870	2.5	39	0.1	35,075	100.0
2011	1,172	3.3	34,172	96.7	33,295	94.2	841	2.4	36	0.1	35,344	100.0
2012	1,112	3.3	32,856	96.7	32,023	94.3	781	2.3	52	0.2	33,969	100.0
2013	1,017	3.1	31,544	96.9	30,643	94.1	770	2.4	131	0.4	32,561	100.0
2014	911	2.9	30,694	97.1	29,732	94.1	752	2.4	210	0.7	31,605	100.0
2015	937	3.0	30,014	97.0	28,986	93.7	737	2.4	291	0.9	30,951	100.0
2016	927	3.1	28,956	96.9	27,908	93.4	720	2.4	328	1.1	29,883	100.0
2017	1,469	4.5	31,072	95.5	29,737	91.4	818	2.5	518	1.6	32,542	100.0
Average	**1,048**	**0.0**	**34,100**	**0.0**	**33,144**	**0.0**	**829**	**0.0**	**127**	**0.0**	**35,148**	**0.0**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Table A.3 – **Average premiums collected by a company**
Italian insurance companies, 2005–2017

Year	Bancassurance companies[a]	Other companies Total	Traditional insurers	Insurers controlled by public bodies	Insurers controlled by private non-financial firms	Total
	€ million at constant 2017 prices	€ million at constant 2017 prices	€ million at constant 2017 prices	€ million at constant 2017 prices	€ million at constant 2017 prices	€ million at constant 2017 prices
Total						
2005	1,171.4	644.9	629.6	1,009.6	0.6	709.2
2006	1,126.5	642.8	627.1	1,008.1	0.6	700.8
2007	831.6	633.7	630.8	919.3	0.4	661.2
2008	593.0	609.0	601.6	1,169.7	4.3	606.7
2009	1,341.4	703.4	695.2	1,451.7	5.4	800.3
2010	1,385.2	797.8	782.5	1,608.5	8.1	892.4
2011	1,402.6	684.1	665.3	1,559.8	6.2	788.9
2012	1,202.7	694.8	669.6	1,653.4	8.7	772.6
2013	1,683.1	764.8	722.1	2,017.9	22.0	896.0
2014	2,118.2	992.5	952.0	2,338.4	35.2	1,166.4
2015	2,118.1	1,094.4	1,021.3	3,186.3	49.3	1,260.6
2016	1,684.9	1,127.9	1,032.6	3,468.3	57.8	1,219.0
2017	1,474.7	1,211.6	1,096.9	3,528.7	107.1	1,262.2
Average	**1,364.5**	**781.7**	**747.0**	**1,849.1**	**28.3**	**868.0**
Life						
2005	1,778.1	822.1	779.7	1,779.4	0.6	485.4
2006	1,622.7	793.3	748.5	1,775.6	0.6	469.8
2007	1,203.2	745.8	704.1	1,609.6	0.7	423.2
2008	940.5	697.8	644.6	2,064.8	0.9	374.2
2009	2,226.7	908.8	838.1	2,627.1	0.7	565.4
2010	2,143.0	1,095.9	971.3	5,194.4	1.1	657.0
2011	2,356.9	846.9	712.3	5,039.1	1.0	543.4
2012	2,012.0	884.0	724.4	5,396.0	0.8	524.7
2013	2,814.7	1,049.9	845.8	6,677.8	1.0	651.2
2014	3,575.9	1,510.9	1,264.5	7,808.2	0.8	909.4
2015	3,573.3	1,716.4	1,401.2	9,190.5	5.1	996.1
2016	2,672.9	1,781.1	1,402.5	10,044.7	18.7	947.3
2017	2,335.3	1,860.7	1,438.1	10,177.2	17.5	1,974.6
Average	**2,178.3**	**1,056.1**	**908.3**	**4,523.2**	**3.8**	**640.7**
Non-life						
2005	79.7	351.9	362.8	159.9	0.0	223.8
2006	93.8	362.4	374.1	160.4	0.0	231.1
2007	98.1	376.7	403.3	130.8	0.3	237.9
2008	82.0	365.9	392.9	137.3	5.5	232.5
2009	78.4	368.2	400.3	138.1	6.6	234.8
2010	91.6	373.4	413.3	124.3	9.8	235.4
2011	106.5	384.0	432.4	120.1	7.2	245.4
2012	101.1	386.5	438.7	111.6	10.3	247.9
2013	101.7	389.4	437.8	128.3	26.2	244.8
2014	91.1	414.8	471.9	125.4	42.1	257.0
2015	93.7	422.7	475.2	147.4	58.1	264.5
2016	103.0	425.8	481.2	144.1	65.6	271.7
2017	146.9	509.4	561.1	204.4	129.6	439.8
Average	**96.6**	**388.5**	**424.1**	**138.2**	**35.1**	**250.0**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Table A.4 – **Total number of employees**

Italian insurance companies, 2005–2017

Year	Bancassurance companies[a]		Other companies								Total	
			Total		Traditional insurers		Insurers controlled by public bodies		Insurers controlled by private non-financial firms			
	number	%	number	%	number	%	number	%	number	%	number	%
Total												
2005	1,771	4.3	39,447	95.7	38,473	93.3	967	2.3	7	0.0	41,218	100.0
2006	1,901	4.6	39,516	95.4	38,507	93.0	1,002	2.4	7	0.0	41,417	100.0
2007	2,067	5.2	37,895	94.8	36,819	92.1	1,044	2.6	32	0.1	39,962	100.0
2008	2,374	5.9	38,153	94.1	36,967	91.2	1,110	2.7	76	0.2	40,527	100.0
2009	2,312	5.4	40,461	94.6	39,194	91.6	1,155	2.7	112	0.3	42,773	100.0
2010	2,462	5.8	39,952	94.2	38,627	91.1	1,183	2.8	142	0.3	42,414	100.0
2011	2,303	5.5	39,633	94.5	38,218	91.1	1,262	3.0	153	0.4	41,936	100.0
2012	2,420	5.8	39,465	94.2	38,010	90.7	1,292	3.1	163	0.4	41,885	100.0
2013	2,374	5.8	38,501	94.2	37,029	90.6	1,310	3.2	162	0.4	40,875	100.0
2014	2,392	5.8	38,799	94.2	37,341	90.7	1,304	3.2	154	0.4	41,191	100.0
2015	2,488	6.0	38,988	94.0	37,502	90.4	1,304	3.1	182	0.4	41,476	100.0
2016	2,389	5.7	39,287	94.3	37,768	90.6	1,310	3.1	209	0.5	41,676	100.0
2017	2,829	7.0	37,629	93.0	36,123	89.3	1,328	3.3	178	0.4	40,458	100.0
Average	**2,314**	**5.6**	**39,056**	**94.4**	**37,737**	**91.2**	**1,198**	**5.6**	**121**	**0.3**	**41,370**	**2.9**
Life[b]												
2005	1,025	10.1	9,157	89.9	9,026	88.6	124	1.2	7	0.1	10,183	100.0
2006	1,172	11.3	9,201	88.7	9,057	87.3	137	1.3	7	0.1	10,373	100.0
2007	1,312	12.7	9,033	87.3	8,873	85.8	154	1.5	6	0.1	10,345	100.0
2008	1,533	14.1	9,315	85.9	9,146	84.3	162	1.5	7	0.1	10,849	100.0
2009	1,389	13.5	8,883	86.5	8,698	84.7	180	1.8	5	0.0	10,272	100.0
2010	1,503	14.0	9,266	86.0	9,063	84.2	198	1.8	5	0.0	10,769	100.0
2011	1,284	12.3	9,119	87.7	8,889	85.4	225	2.2	5	0.0	10,403	100.0
2012	1,367	13.1	9,105	86.9	8,818	84.2	282	2.7	5	0.0	10,472	100.0
2013	1,364	11.9	10,120	88.1	9,805	85.4	310	2.7	5	0.0	11,484	100.0
2014	1,371	12.1	9,964	87.9	9,632	85.0	326	2.9	6	0.1	11,335	100.0
2015	1,446	13.1	9,581	86.9	9,208	83.5	365	3.3	8	0.1	11,027	100.0
2016	1,459	13.0	9,739	87.0	9,325	83.3	406	3.6	8	0.1	11,198	100.0
2017	1,730	15.6	9,343	84.4	8,900	80.4	436	3.9	7	0.1	11,073	100.0
Average	**1,381**	**0.0**	**9,371**	**0.0**	**9,111**	**0.0**	**254**	**0.0**	**6**	**0.0**	**10,753**	**0.0**
Non-life[c]												
2005	746	2.4	30,290	97.6	29,447	94.9	843	2.7	0	0.0	31,035	100.0
2006	729	2.3	30,315	97.7	29,450	94.9	865	2.8	0	0.0	31,044	100.0
2007	755	2.5	28,862	97.5	27,946	94.4	890	3.0	26	0.1	29,617	100.0
2008	841	2.8	28,838	97.2	27,821	93.7	948	3.2	69	0.2	29,678	100.0
2009	923	2.8	31,578	97.2	30,496	93.8	975	3.0	107	0.3	32,501	100.0
2010	959	3.0	30,686	97.0	29,564	93.4	985	3.1	137	0.4	31,645	100.0
2011	1,019	3.2	30,514	96.8	29,329	93.0	1,037	3.3	148	0.5	31,533	100.0
2012	1,053	3.4	30,360	96.6	29,192	92.9	1,010	3.2	158	0.5	31,413	100.0
2013	1,010	3.4	28,381	96.6	27,224	92.6	1,000	3.4	157	0.5	29,391	100.0
2014	1,021	3.4	28,835	96.6	27,709	92.8	978	3.3	148	0.5	29,856	100.0
2015	1,042	3.4	29,407	96.6	28,294	92.9	939	3.1	174	0.6	30,449	100.0
2016	930	3.1	29,548	96.9	28,443	93.3	904	3.0	201	0.7	30,478	100.0
2017	1,099	3.7	28,286	96.3	27,223	92.6	892	3.0	171	0.6	29,385	100.0
Average	**933**	**0.0**	**29,685**	**0.0**	**28,626**	**0.0**	**944**	**0.0**	**115**	**0.0**	**30,617**	**0.0**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group. – (b) Life and non-life workforce size estimated respectively by multiplying the share of life and non-life labor costs over total labor costs by the total number of employees.

Table A.5 –**Return on Equity (ROE)**
Italian insurance companies, 2005–2017

Year	Bancassurance companies[a]	Other companies Total	of which Traditional insurers	of which Insurers controlled by public bodies	of which Insurers controlled by private non-financial firms	Total
	%	%	%	%	%	%
Total						
2005	11.1	11.2	11.3	10.3	0.0	11.2
2006	8.7	10.2	10.2	9.4	0.0	10.1
2007	5.4	12.0	12.0	13.9	-6.2	11.4
2008	-19.8	-3.4	-3.5	-1.1	-10.0	-4.8
2009	16.6	5.9	5.9	4.7	-24.3	6.8
2010	-2.9	-1.2	-1.2	-1.1	-25.0	-1.4
2011	-15.2	-6.6	-7.3	5.9	4.8	-7.6
2012	23.7	8.4	7.5	23.1	11.0	10.3
2013	8.0	8.1	8.0	9.4	4.0	8.1
2014	13.1	8.8	8.7	11.1	13.7	9.2
2015	9.9	8.5	8.3	11.1	12.4	8.6
2016	14.2	7.9	7.7	11.6	13.2	8.6
2017	9.2	8.9	8.5	15.2	8.7	9.0
Average	**7.7**	**6.4**	**6.2**	**10.7**	**6.2**	**6.6**
Life						
2005	11.7	10.5	10.5	13.9	0.0	10.7
2006	9.9	8.6	8.5	10.9	0.0	8.8
2007	5.7	10.6	10.6	9.1	0.1	9.9
2008	-20.5	-6.2	-6.7	4.1	-8.2	-8.2
2009	18.3	10.8	10.7	13.1	0.2	11.8
2010	-1.6	1.5	1.4	2.8	-0.7	1.0
2011	-16.0	-8.0	-8.8	5.1	-5.9	-9.3
2012	26.7	12.5	11.3	27.0	10.6	15.2
2013	9.6	7.7	7.6	9.4	0.6	8.0
2014	12.8	8.6	8.4	10.5	-2.3	9.2
2015	10.0	9.6	9.5	10.2	-13.1	9.6
2016	14.8	8.1	7.8	11.3	-54.5	9.2
2017	9.7	9.0	8.3	16.1	-9.6	9.1
Average	**8.5**	**6.9**	**6.6**	**11.8**	**-3.7**	**7.2**
Non-life						
2005	5.3	11.9	12.1	6.3		11.8
2006	-4.2	11.7	11.8	7.1		11.5
2007	2.1	13.6	13.3	20.8	-11.7	13.4
2008	-12.8	-0.7	-0.4	-10.6	-10.5	-0.9
2009	-1.4	-0.1	0.2	-12.2	-31.2	-0.1
2010	-17.5	-4.5	-4.3	-10.0	-30.4	-4.8
2011	-5.1	-5.1	-5.5	8.1	6.3	-5.1
2012	-53.9	2.9	2.7	9.1	11.1	2.2
2013	-15.9	8.6	8.6	9.7	4.3	8.2
2014	15.4	9.1	8.9	13.4	14.5	9.2
2015	8.3	7.1	6.9	14.8	13.3	7.2
2016	9.4	7.7	7.5	12.7	14.7	7.8
2017	5.3	8.8	8.7	12.1	9.1	8.7
Average	**-0.9**	**5.9**	**5.9**	**7.5**	**7.2**	**5.8**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Table A.6 – **Gross value added (*GVA*): total, per-company and per-employee levels (life and non-life sectors)**
Italian insurance companies, 2005–2017

Year	Bancassurance companies[a]				Other companies				Total			
	Total GVA € million at constant 2017 prices	% of premiums	GVA per company € million at constant 2017 prices	GVA per employee € at constant 2017 prices	Total GVA € million at constant 2017 prices	% of premiums	GVA per company € million at constant 2017 prices	GVA per employee € at constant 2017 prices	Total GVA € million at constant 2017 prices	% of premiums	GVA per company € million at constant 2017 prices	GVA per employee € at constant 2017 prices
Life												
2005	369	1.5	26.3	359,700	2,444	3.9	32.2	266,900	2,813	3.2	31.3	276,200
2006	524	2.3	37.5	447,500	2,721	4.7	36.8	295,800	3,246	4.0	36.9	312,900
2007	606	3.3	40.4	462,100	3,433	6.6	49.0	380,000	4,039	5.7	47.5	390,400
2008	765	5.8	54.6	498,700	3,829	8.1	56.3	411,100	4,594	7.6	56.0	423,400
2009	304	1.0	21.7	218,500	1,205	2.1	18.8	135,700	1,509	1.7	19.3	146,900
2010	417	1.3	27.8	277,400	1,999	3.1	33.3	215,800	2,416	2.5	32.2	224,400
2011	619	2.2	51.6	482,300	2,600	5.3	44.1	285,100	3,219	4.2	45.3	309,400
2012	717	3.0	59.8	524,800	2,257	4.8	41.8	247,800	2,974	4.2	45.1	284,000
2013	490	1.6	44.6	359,600	1,932	3.5	36.5	191,000	2,423	2.8	37.9	211,000
2014	496	1.3	45.1	362,200	1,624	2.3	33.8	163,000	2,121	1.9	35.9	187,100
2015	442	1.1	40.2	306,000	2,578	3.4	57.3	269,000	3,020	2.6	53.9	273,900
2016	900	2.9	81.8	616,800	3,384	4.6	80.6	347,500	4,284	4.1	80.8	382,600
2017	701	2.5	63.8	405,500	3,395	4.8	91.8	363,400	4,096	4.2	85.3	369,900
Average	**566**	**2.0**	**44.6**	**409,500**	**2,569**	**4.2**	**44.5**	**274,200**	**3,135**	**3.5**	**44.5**	**291,500**
Non-life												
2005	120	11.8	10.9	161,000	6,046	14.9	57.6	199,600	6,166	14.8	53.2	198,700
2006	60	5.6	6.0	82,800	5,802	14.3	57.4	191,400	5,862	14.1	52.8	188,800
2007	126	10.4	11.4	166,400	6,351	15.7	62.9	220,100	6,477	15.6	57.8	218,700
2008	90	7.4	7.0	107,500	5,005	12.8	48.6	173,600	5,096	12.7	43.9	171,700
2009	76	6.2	5.8	82,000	2,157	5.6	22.0	68,300	2,233	5.7	20.1	68,700
2010	29	2.3	2.4	29,800	2,844	7.9	30.6	92,700	2,873	7.7	27.4	90,800
2011	117	8.9	10.7	115,000	3,604	10.1	40.0	118,100	3,721	10.0	36.8	118,000
2012	-84	-6.9	-7.6	-79,900	5,563	16.0	66.2	183,200	5,479	15.2	57.7	174,400
2013	86	8.0	8.6	85,200	6,009	18.2	73.3	211,700	6,095	17.8	66.2	207,400
2014	185	19.2	18.5	181,400	6,244	19.5	83.3	216,500	6,429	19.5	75.6	215,300
2015	155	15.8	15.5	148,600	6,215	20.1	86.3	211,400	6,370	20.0	77.7	209,200
2016	143	14.6	15.9	154,100	5,690	18.6	83.7	192,600	5,833	18.5	75.8	191,400
2017	153	11.8	15.3	139,500	5,532	18.8	89.2	195,600	5,686	18.5	79.0	193,500
Average	**97**	**8.5**	**8.9**	**103,600**	**5,159**	**14.7**	**59.1**	**173,800**	**5,255**	**14.5**	**53.6**	**171,600**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Table A.7 – **Components of the Gross Value Added (*GVA*) for the life sectors**
Italian insurance companies, 2005-2017

Type of company	Components of life *GVA*	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average
								100=Premiums							
Bancassurance companies [a]	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	11.6	13.1	17.2	20.0	7.4	8.1	10.5	12.7	9.4	8.1	7.9	9.8	9.9	**10.3**
	of which: provisions return	8.8	10.8	13.9	17.8	7.0	8.2	11.2	14.0	10.9	9.5	9.9	12.7	14.2	**11.0**
	Net capital gains (+)	13.1	3.4	-7.7	-49.2	13.8	5.3	-4.5	13.7	7.0	7.2	2.5	5.2	7.9	**4.0**
	Expenses for claims (–)	61.3	83.0	133.0	146.3	53.9	71.1	92.8	104.0	75.2	54.0	60.0	64.6	82.2	**76.7**
	Changes in provisions (–)	56.0	24.4	-34.3	-88.7	62.9	37.5	8.1	16.6	37.1	58.1	47.0	44.9	30.4	**32.0**
	Intermediate costs (–)	5.9	6.9	7.5	7.5	3.4	3.5	3.0	2.8	2.5	2.0	2.3	2.7	3.2	**3.6**
	GVA	1.5	2.3	3.3	5.8	1.0	1.3	2.2	3.0	1.6	1.3	1.1	2.9	2.5	**2.0**
Other companies	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	15.0	14.7	21.6	24.4	18.2	16.5	22.7	24.1	20.3	16.8	16.1	17.1	17.9	**18.5**
	of which: provisions return	14.8	18.1	20.6	22.9	17.2	16.1	22.8	24.5	21.7	18.6	17.9	19.0	19.9	**19.3**
	Net capital gains (+)	7.9	2.5	-2.8	-25.1	13.2	2.6	-5.0	9.7	3.6	4.2	1.2	1.2	2.6	**1.7**
	Expenses for claims (–)	57.8	82.6	115.3	112.2	79.5	75.6	104.8	109.0	80.7	61.3	63.1	58.8	68.5	**79.0**
	Changes in provisions (–)	55.6	26.7	-10.7	-28.4	44.1	35.0	0.9	13.9	34.2	52.7	46.1	50.0	42.3	**31.6**
	Intermediate costs (–)	5.7	6.5	7.6	7.3	5.7	5.4	6.7	6.0	5.5	4.7	4.6	4.9	5.3	**5.7**
	GVA	3.9	4.7	6.6	8.1	2.1	3.1	5.3	4.8	3.5	2.3	3.4	4.6	4.8	**4.2**
Total	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	14.1	14.2	20.4	23.4	14.4	13.7	18.3	20.2	16.4	13.7	13.3	14.9	15.6	**15.9**
	of which: provisions return	13.1	16.0	18.9	21.8	13.6	13.5	18.5	20.9	17.8	15.4	15.2	17.1	18.3	**16.7**
	Net capital gains (+)	9.4	2.8	-4.1	-30.4	13.4	3.5	-4.8	11.0	4.9	5.3	1.6	2.4	4.1	**2.4**
	Expenses for claims (–)	58.8	82.8	119.9	119.7	70.5	74.1	100.4	107.3	78.7	58.7	62.1	60.5	72.4	**78.3**
	Changes in provisions (–)	55.7	26.1	-16.8	-41.6	50.7	35.9	3.5	14.8	35.2	54.6	46.4	48.5	39.0	**31.7**
	Intermediate costs (–)	5.8	6.6	7.5	7.3	4.9	4.7	5.3	4.9	4.4	3.7	3.8	4.3	4.7	**5.0**
	GVA	3.2	4.0	5.7	7.6	1.7	2.5	4.2	4.2	2.8	1.9	2.6	4.1	4.2	**3.5**

Source: IVASS.
(a) Insurance companies with equity majority owned by a bank group.

Type of company	Components of non-life *GVA*	Years													Average
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
		100=Premiums													
Bancassurance companies [a]	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	2.4	2.9	4.1	4.9	3.4	3.2	3.7	4.2	4.6	4.7	3.8	3.1	3.0	**3.7**
	of which: provisions return	3.1	3.7	5.0	5.9	4.2	3.9	4.4	4.7	5.5	6.0	5.0	4.3	4.0	**4.6**
	Expenses for claims (–)	61.6	65.8	61.2	67.4	65.9	68.9	63.4	82.6	61.5	52.6	51.9	48.6	55.5	**62.5**
	Changes in provisions (–)	0.0	0.3	0.3	0.4	-0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	**0.1**
	Intermediate costs (–)	29.0	31.3	32.3	29.8	31.5	32.1	31.5	28.4	35.1	32.8	36.0	39.7	35.6	**32.7**
	GVA	11.8	5.6	10.4	7.4	6.2	2.3	8.9	-6.9	8.0	19.2	15.8	14.6	11.8	**8.5**
Other companies	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	7.2	5.7	7.6	7.9	5.7	5.2	5.2	5.4	5.0	5.3	5.1	5.4	5.3	**5.9**
	of which: provisions return	11.1	8.7	10.6	10.2	7.6	7.1	6.9	7.3	7.9	8.8	8.2	9.2	9.5	**8.7**
	Expenses for claims (–)	65.9	66.8	66.1	70.7	75.1	72.1	69.6	67.2	60.5	57.6	57.6	57.9	58.8	**65.3**
	Changes in provisions (–)	0.0	0.2	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	**0.0**
	Intermediate costs (–)	26.4	24.4	25.7	24.5	24.9	25.2	25.5	22.1	26.4	28.1	27.3	28.9	27.6	**25.8**
	GVA	14.9	14.3	15.7	12.8	5.6	7.9	10.1	16.0	18.2	19.5	20.1	18.6	18.8	**14.7**
Total	Premiums (+)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**
	Incremental premiums (+)	7.1	5.6	7.5	7.8	5.6	5.2	5.1	5.3	5.0	5.3	5.1	5.3	5.2	**5.8**
	of which: provisions return	10.9	8.6	10.4	10.1	7.5	7.0	6.8	7.2	7.8	8.7	8.1	9.0	9.3	**8.6**
	Expenses for claims (–)	65.8	66.8	66.0	70.6	74.8	72.0	69.4	67.7	60.5	57.5	57.4	57.6	58.7	**65.2**
	Changes in provisions (–)	0.0	0.2	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	**0.0**
	Intermediate costs (–)	26.4	24.6	25.9	24.6	25.1	25.5	25.7	22.3	26.7	28.3	27.5	29.2	28.0	**26.1**
	GVA	14.8	14.1	15.6	12.7	5.7	7.7	10.0	15.2	17.8	19.5	20.0	18.5	18.5	**14.5**

Source: IVASS.

(a) Insurance companies with equity majority owned by a bank group.

Classification by insurance companies' size according to levels of life technical provisions and non-life premiums

In the present paper an insurance company is classified as:

1) very big, if its life technical provisions are greater than or equal to 25 million euros or, if it is active only in the non-life sectors, its premiums are greater than or equal to 4 million euros;

2) big, if its life technical provisions are between 10 million euros and 25 million euros or, if it is active only in the non-life sectors, its premiums are between 1 million euros and 4 million euros;

3) average, if its life technical provisions are between 2 million euros and 10 million euros or, if it is active only in the non-life sectors, its premiums are between 0.1 million euros and 1 million euros;

4) small, if its life technical provisions are less than 2 million euros or, if it is active only in the non-life sectors, its premiums are less than 0.1 million euros.