

# EMPIRICAL EVIDENCE ON THE EFFECTS OF SOCIAL WELFARE AND TAXATION ON INSURANCE

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*In this paper is realized an empirical analysis of the influence of social welfare and taxation on insurance. The analysis is performed on a sample of 36 countries and a horizon of 3 years (2005, 2007 and 2008), being tested 4 linear regression models (life premium subscribed, non-life premiums subscribed, number of companies and number of employees in the insurance sector). The results of study confirm a relationship between the development level of countries and insurance, but exclude the existence of the relationship between taxation and insurance.*

Keywords: insurance, premiums, taxation, economic development

JEL codes: G22, H24, H25

## **1. Introduction**

In today's financial crisis emphasized by high unemployment, fulminate bankruptcy of many firms and impossibility of quantification of negative economic and social consequences, the taxation of insurance represents an important issue both for insurers and the European or/and national supervisory body of insurance market, and also for individuals or/and legal entities.

In addition, the CEA – the European Insurance and Reinsurance Federation – draws attention frequently to the negative effects of the tax deduction of certain premiums for the European budget proposal. Closely following the G20 process, the CEA tries to insure that consistent measures are taken across the globe, to avoid regulatory fragmentation and reduce market distortions. In some European countries the fiscal treatment granted to the insurance products subscribed under the 2<sup>nd</sup> and the 3<sup>rd</sup> pillar of Solvency II is not generally different from the one that is usually foreseen for a normal investment product. This is why EU attempts to harmonize first the national legislations regarding the taxation and then those relating to insurance (as specified in the quantitative impact studies QIS 1-5), aiming to ensure: (1) adequate financial resources and system of governance, supervisory review process, public disclosure and regulated reporting requirements (according to Solvency II); and (2) certain level of own funds to limit the risk of insolvency.

This action encountered serious difficulties arising from the existing differences between regulations, terms of economic and social life, traditions and culture, lack of information regarding the usefulness of insurance and their political group interests. Taking in consideration the significance of fiscal considerations in the decision to subscribe insurances contracts, different European countries, including Romania, have tried and managed through its fiscal laws to apply different ways for fiscal deductibility of insurance expenses. In fact, after 1990, in the majority states worldwide, this form of fiscal relaxation through deductibility stimulated growth of gross premiums subscribed per capita.

In this article we continue our investigation on the fiscal and economic effects on insurance on global level. Our first study (Sucala *et al.*, 2009) focused on years 2005 and 2007 using a sample of 36

countries. Here we add year 2008 and use the same 36 countries for consistency in the results and their explanation.

## **2. Fundamental concepts in the taxation of insurance activities**

The taxation of insurance should be regarded and analyzed both from the perspective of gross premiums subscribed and received by insurance companies and services from the insurer. Regarding the taxation of insurance, it can be tackled by technical and socio-professional perspectives.

Technical approach to taxation of life and non-life insurance can be achieved through taxation of insurance premiums and/or insurance indemnities. The taxation of insurance premiums summarized either on their deductibility/non-deductibility, either to reduce tax.

The deductibility/non-deductibility of premiums is capped and capping may operate individually or globally in insurance products, in fixed amount (per person, couple, husband and family member) or percentage of total taxable income and in the form of limiting on bonus, income, premiums and income. Tax reduction instead is always limited, and operate in absolute size, in the percentage share of tax or part of income, in the amount determined by the law.

Tax benefits of the insurer may be achieved through the analysis of rents in the form of payments through periodic sums insured. Periodic payments for operating are different from one country to another, and its taxation may be total, partial differential or exempted. In case of insured sum we find taxation or non-taxation of the amount insured by the insurance policy (known as capital) and/or non-taxation or taxation differences between the amounts paid by the insurer and the total insurance premiums paid by the insured person.

Socio-professional approach concerns taxation of insurance premiums through the different socio-professional categories (natural persons, legal persons, authorized persons) and the pensions insurance.

Insurers' benefits may take various forms (daily allowances, sums insured in case of life or death, rents, amounts provided for single-premium policy, those with capitalization) depending on the policy and concluded the nature of risk covered. Taxation of these benefits are achieved with the principles and logic of tax (a tax on insurance premiums or benefits), but depends on the binding and/or voluntary policy.

Today, the CEA works on the review of existing legislation of VAT invoicing. The introduction of mandatory VAT invoicing requirements for insurance services would create delicate problems and material difficulties for the economic operators.

## **3. Literature review**

Boyer (2002) presents an interesting case in USA where the taxation of insurance benefits is preferable to the taxation of premiums. When insurance fraud is present - in the form of ex post moral hazard - a tax on insurance premiums increases the number of fraudulent claims in the economy, whereas a tax on insurance benefits may reduce fraud. More importantly, however, policyholders are made better off with a benefit tax than with a premium tax.

Altenburger *et al.* (2008) develop a common solution for the separation problem in accounting and in taxation which is innovative, theoretically correct and practically applicable. The principal design innovation is the way of distinction of different deposit components and their classification into different types. Dividing them into 'implicit' and 'explicit' deposit components delivers the theoretically correct results for unbundling of insurance contracts both for accounting and tax purposes.

Tzeng and Huang (2004) examine in their paper the impact of tax deductions on optimal insurance contracts. Their results show that the implementation of tax deductions increases the deductible but may or may not decrease the coinsurance.

Grace *et al.* (2008) using a state-level panel data set from 1992-2004 for the property-casualty insurance industry, find in their paper that the insurance premium tax has a negative but modest effect on employment in the insurance industry.

In the recent Romanian literature there is an increasing interest in the field of insurance.

According to Mateoc *et al.* (2008) the evolution of insurance in the Romanian context can be separated into three consecutive periods: (1) the years 1871-1948 in which the insurance activity emerged, the first company being called “Dacia”; (2) the period between 1949-1990 in which the insurance activity continued under state institutions and the State Insurance Administration was founded; and (3) the reform period of 1990-2010, in which this sector regained its true importance in the economy.

Stoicescu and Teodorescu (2003) published a research regarding the national insurance market in the context of accession to the European Union, paper which draws a comparison between the insurance system in Romania and other European countries in 2002, where they highlight the low level of insurance premiums subscribed by the population reported, and the low value of the insurance premiums subscribed per capita.

Once with the introduction of the optional insurance premiums (the 3rd pillar of the pension system), the interest for debate over insurance taxation has increased. Various studies have addressed the level of deductibility of voluntary health insurance premiums from the date of introduction of these premiums and concluded that their interest for signing them was well below the level at which employers might be tempted to purchase such policies for their employees (Mosoianu, 2007). After the study was published, the value of deductibility of health insurance premiums was changed, meaning the increase of them.

Insurance in our country is characterized by an incipient state of development compared to the developed countries where insurance is part of tradition and education. Factors leading to the limitation in the interest about insurance in Romania concern at least the following courses of action: misunderstanding the role of insurance and thus ignoring the benefits that arise from the signing of an insurance policy, lack of interest in insurance, low proportion of middle class correlated with the financial factor, the existence of unfair competition practices, too little inspired management and focused on immediate advantages, problems related to inflation, unemployment, low income citizens. (Cristea *et al.* 2008).

Countries that have a culture in insurance activities have implemented certain tax advantages for insured persons, one of which is the deductibility of insurance premiums. By comparison, Romania is situated very low as the deductibility of insurance premiums is concerned and our legal approach tends to develop insurance premiums at a level considered satisfactory compared to the average states of the European Union. Thus, in March 2008 PRIMM magazine published a comparative study of the evolution of insurance in Romania between 1997-2007 (Ghetu and Doreonceanu, 2008) which shows that the evolution of insurance premiums subscribed were growing, but in terms of the degree of penetration in GDP and insurance density per capita, which had a tendency to increase during the period under study, are well below the average of the European Union countries.

According to Ionescu (2008) the degree of insurance penetration and the level of insurance density has increased in the least five years (the period under analysis is 2003-2007). This is further confirmed by a longitudinal study on the economic significance of insurance market (on 11 years), in which Cristea *et al.* (2009) found that insurance is connected to economic growth.

#### **4. Hypotheses, variables and data sources**

Based on the general economic literature we can suppose that the level of life of the society is linked to the capability of the people to spend for security purposes. This can explain the lack of interest in insurance in Romania, as discussed by Cristea *et al.*, 2008 and 2009; Ionescu (2008). Therefore we issue the following hypothesis:

##### ***H1: The level of life is positively associated with insurance activity.***

On the basis of the previously presented literature (Boyer, 2002; Grace *et al.*, 2008; Stoicescu and Teodorescu, 2003; Mosoianu, 2007) we conjecture a negative relationship between taxation and insurance activities, i.e. as the level of taxation decreases this favors and stimulates the insurance sector. Our next hypothesis is therefore:

**H2: Taxation is negatively associated with insurance activity.**

Since we are interested on the effect of several factors on insurance activity, we developed the following variables:

- Proxies for insurance activity: *premiums subscribed* (life and non-life premiums, mil. USD), *number of companies* and *number of employees* in the insurance sector;
- Proxy for level of life: *GDP per capita* (USD/inhabitant);
- Proxy for taxation: *premium tax* (life and non-life, mil. USD).

The underlying econometric model is:

$$\text{Insurance activity} = \alpha_0 + \alpha_1 \text{Level of life} + \alpha_2 \text{Taxation} + \epsilon$$

Our sample comprises 36 countries worldwide. Since these countries are followed by most of the (international) regulators and institutions, we consider them as the most relevant, securing the representativeness of our sample on international level. To enhance the robustness of the research we collected data for 3 years (2005, 2007 and 2008) as specified below:

Table 1. Sources of data

Variable	Data source
<b>Year 2008</b>	
GDP, population, premiums	<a href="http://www.iii.org/international/toc/">http://www.iii.org/international/toc/</a>
No. of companies, employees	<a href="http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf">http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf</a> <a href="http://www.nsi.bg">www.nsi.bg</a>
Premium taxation	<a href="http://www.pwc.com/sg/en/international-comparison-of-insurance-taxation-2009/index.jhtml">http://www.pwc.com/sg/en/international-comparison-of-insurance-taxation-2009/index.jhtml</a> <a href="http://www.mabisz.hu/english/publication/yearbook/index.html">http://www.mabisz.hu/english/publication/yearbook/index.html</a>
<b>Year 2007</b>	
GDP, population, premiums	<a href="http://www.iii.org/international/toc/">http://www.iii.org/international/toc/</a>
No. of companies, employees	<a href="http://stats.oecd.org/wbos/index.aspx?r=341031">http://stats.oecd.org/wbos/index.aspx?r=341031</a> <a href="http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf">http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf</a> <a href="http://www.nsi.bg">www.nsi.bg</a> <a href="http://www.csa-isc.ro">www.csa-isc.ro</a>
Premium taxation	<a href="http://www.pwc.com/extweb/pwcpublishations.nsf/docid/f5e7616e79072bfcca256fc000a3ad0">http://www.pwc.com/extweb/pwcpublishations.nsf/docid/f5e7616e79072bfcca256fc000a3ad0</a> <a href="http://www.mabisz.hu/english/publication/yearbook/index.html">http://www.mabisz.hu/english/publication/yearbook/index.html</a>
<b>Year 2005</b>	
GDP, population, premiums	<a href="http://server.iii.org/yy_obj_data/binary/772943_1_0/international_fact_book_2006-2007.pdf">http://server.iii.org/yy_obj_data/binary/772943_1_0/international_fact_book_2006-2007.pdf</a> <a href="http://server.iii.org/yy_obj_data/binary/789034_1_0/international_fact_book_2007-2008.pdf">http://server.iii.org/yy_obj_data/binary/789034_1_0/international_fact_book_2007-2008.pdf</a>
No. of companies, employees	<a href="http://stats.oecd.org/wbos/index.aspx?r=341031">http://stats.oecd.org/wbos/index.aspx?r=341031</a> <a href="http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf">http://www.cea.eu/uploads/DocumentsLibrary/documents/1224519688_eif.pdf</a> <a href="http://www.nsi.bg">www.nsi.bg</a> <a href="http://www.csa-isc.ro">www.csa-isc.ro</a>
Premium taxation	<a href="http://www.pwc.com/extweb/pwcpublishations.nsf/docid/d0f9b818a9d597f9ca25730f0012f17e">http://www.pwc.com/extweb/pwcpublishations.nsf/docid/d0f9b818a9d597f9ca25730f0012f17e</a> <a href="http://www.mabisz.hu/english/publication/yearbook/index.html">http://www.mabisz.hu/english/publication/yearbook/index.html</a>

**5. Data Analysis and Discussion of Results**

For the analysis of our data we used SPSS 17.0 software. Since we lack the necessary space here to discuss the technical issues related to the analysis (please see Table 2 for these details), we explain the steps as we generated the findings.

Three years have been analyzed as we found fiscal data only for these years (Table 1, taxation). For each year we ran four models, testing all the proxies for “insurance activity”, such as: life premiums subscribed, non-life premiums subscribed, number of companies and number of employees in the insurance sector and the corresponding dependent variables (see model specifications in Table 2).

According to our findings, GDP per capita is positively associated with the insurance activity proxies on acceptable significance levels (t-values are positive and the computed significance is between 5%

and 10%), as is shown by models 1, 2 and 3 in all 3 years, which confirm that the level of life has a significant impact on insurance.

Model 4 behaves differently, where the number of employees is used as proxy for the insurance activity. We believe this is for data management reasons, since the status of 'employment' is defined differently in the countries worldwide (some count only full time contracts while others include also collaborators), thus the data being heterogeneous.

We therefore accept the first hypothesis, according to which the level of life is positively associated with insurance activity.

Table 2. Results generated

<b>Panel A. Year 2008</b>				
<i>Model 1: Life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	1.981	0.057	
Life premium taxation	-	-0.148	0.883	0.064
<i>Model 2: Non-life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	1.951	0.060	
Non-life premium taxation	-	-0.399	0.693	0.057
<i>Model 3: Companies = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	0.734	0.475	
Number of companies	-	1.311	0.211	0.115
<b>Panel B. Year 2007</b>				
<i>Model 1: Life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.182	0.037	
Life premium taxation	-	-0.203	0.841	0.087
<i>Model 2: Non-life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.062	0.048	
Non-life premium taxation	-	-0.499	0.622	0.071
<i>Model 3: Companies = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.196	0.039	
Number of companies	-	-1.393	0.178	0.121
<i>Model 4: Employees = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	1.240	0.232	
Number of employees	-	-0.970	0.346	0.013
<b>Panel C. Year 2005</b>				
<i>Model 1: Life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.639	0.013	
Life premium taxation	-	-0.060	0.953	0.139
<i>Model 2: Non-life premiums = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.471	0.019	
Non-life premium taxation	-	-0.717	0.479	0.120
<i>Model 3: Companies = <math>\alpha_0 + \alpha_1</math> GDP per capita + <math>\alpha_2</math> Non-life premium taxation + <math>\epsilon</math></i>				
	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	2.655	0.015	
Number of companies	-	-1.235	0.231	0.183

**Model 4:**  $Employees = \alpha_0 + \alpha_1 \text{ GDP per capita} + \alpha_2 \text{ Non-life premium taxation} + \varepsilon$

	Sign	t	Signif.	Adj. R <sup>2</sup>
GDP per capita	+	1.580	0.132	
Number of employees	-	-1.078	0.295	0.031

As the connection between taxation and insurance is concerned, our empirical findings do not support the hypothesis we developed (H2), since the t-values of the taxation variable are not significant in neither of the models on an acceptable level (5% and 10%). One can observe, however, that the predicted negative sign is always verified (we have negative t-values for the taxation variable). This situation can be explained as a result of many specific rules in legislation that exist from one country to other. We must therefore reject the second hypothesis, according to which the level of taxation is negatively associated with the insurance activity.

## 6. Conclusions

Growing interest of companies for insurance is due to global economic evolution in recent years, and especially the economic crisis. This interest is manifested as a result of the company's desire to ensure against risks to which they are subjected, and to ensure their employees in this respect, companies benefiting from the various fiscal facilities offered by any countries.

On the other hand, regarding the interest for insurance is manifested by IASB (there are concerns regarding insurance taxation dealt with through the Exposure Draft of IAS 12 Income Taxes conducted in 2009). At the European level through European Directives is attempting to achieve and strengthen the solvency of insurance companies, job insecurity and financial difficulties of firms create negative economic repercussions on the insurance.

A form of fiscal loosening in this field would be very welcome, so that the interest for insurance to be able to record an increase, and we mention the experience of the Central and East European countries, where, especially after 1990, the volume of insurance premiums distributed per capita has increased substantially due to favorable tax deductibility of insurance premiums.

## References

1. Altenburger, O. A., Goettsche, M. and Kuntner, M. (2008) Unbundling of Insurance Contracts for Accounting and Tax Purposes – One Common Solution for two Problems, working paper, downloaded from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1142817](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1142817), on: 08.03.2008
2. Boyer, M. M. (2002) Insurance Taxation and Insurance Fraud, *Journal a Public Economic Theory*, 2, pp. 101-34
3. Cristea, M., Domnisoru, S. and Dracea, R. (2008) Fiscalitatea asigurarilor în România comparativ cu alternativele existente în diverse țări, *Revista Română de Fiscalitate*, downloaded from: <http://www.contabilul.ro/a/2805/fiscalitatea-asigurarilor-in-romania-comparativ-cu-alternativele-existente-in-diverse-tari.html>, on 08.03.2009
4. Cristea, M., Dracea, R. and Tomescu, I. (2009) The economic significance of insurance market. Statistical study in Romania, *Metalurgia International*, vol. XIV, special issue, no. 16, pp. 131-136
5. Ghetu, D. and Doreonceanu, O. (2008) Asigurări în România. Dinamică și potențial, downloaded from: [http://www.xprimm.ro/download/za-craiova-2008/za\\_dolj.ppt](http://www.xprimm.ro/download/za-craiova-2008/za_dolj.ppt), on 08.03.2009
6. Grace, M.F., Sjoquist, D.L. and Wheeler, L.A. (2008) The effect of insurance premium taxes on employment, working paper, downloaded from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1260392](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1260392) on 08.03.2009
7. Ionescu, R. (2008) Demand tendencies on the Romanian insurance market, *Metalurgia International*, vol. XIII, no. 10, pp. 84-86
8. Mateoc, T., Darvasi, D., Seulean, V. and Mateoc Sirb, N. (2008) A study on the evolution of Romanian insurance market in a European context, *Bulletin UASVM, Horticulture*, 65(2), pp. 209-213
9. Mosoianu, A. (2007) Asigurările private de sănătate suferă de... fiscalitate, *Săptămâna Financiară*, April, 27, downloaded from: <http://asigurari.rol.ro/content/view/70/4/>, on 08.03.2009
10. Stoicescu, B. and Teodorescu, D. (2003) Fiscalitatea pe piata românească de asigurări în contextul procesului de aderare la Uniunea Europeană, downloaded from: <http://www.finmedia.ro/conferences/arhiva/2003/prezentari/20031022/Dorin%20Teodorescu.pps>, on 08.03.2009
11. Sucala, L., Vladu, B., Fekete, S. and Fatacean, G. (2009) Social welfare and taxation on insurance. An international empirical study, download from: <http://steconomice.uoradea.ro/anale/volume/2009/v3-finances-banks-and-accountancy/199.pdf>
12. Tzeng, L. Y. and Huang, R. J. (2004) The optimal insurance contract with tax deductions, *Academia Economic Papers*, 32(2), pp. 313-34