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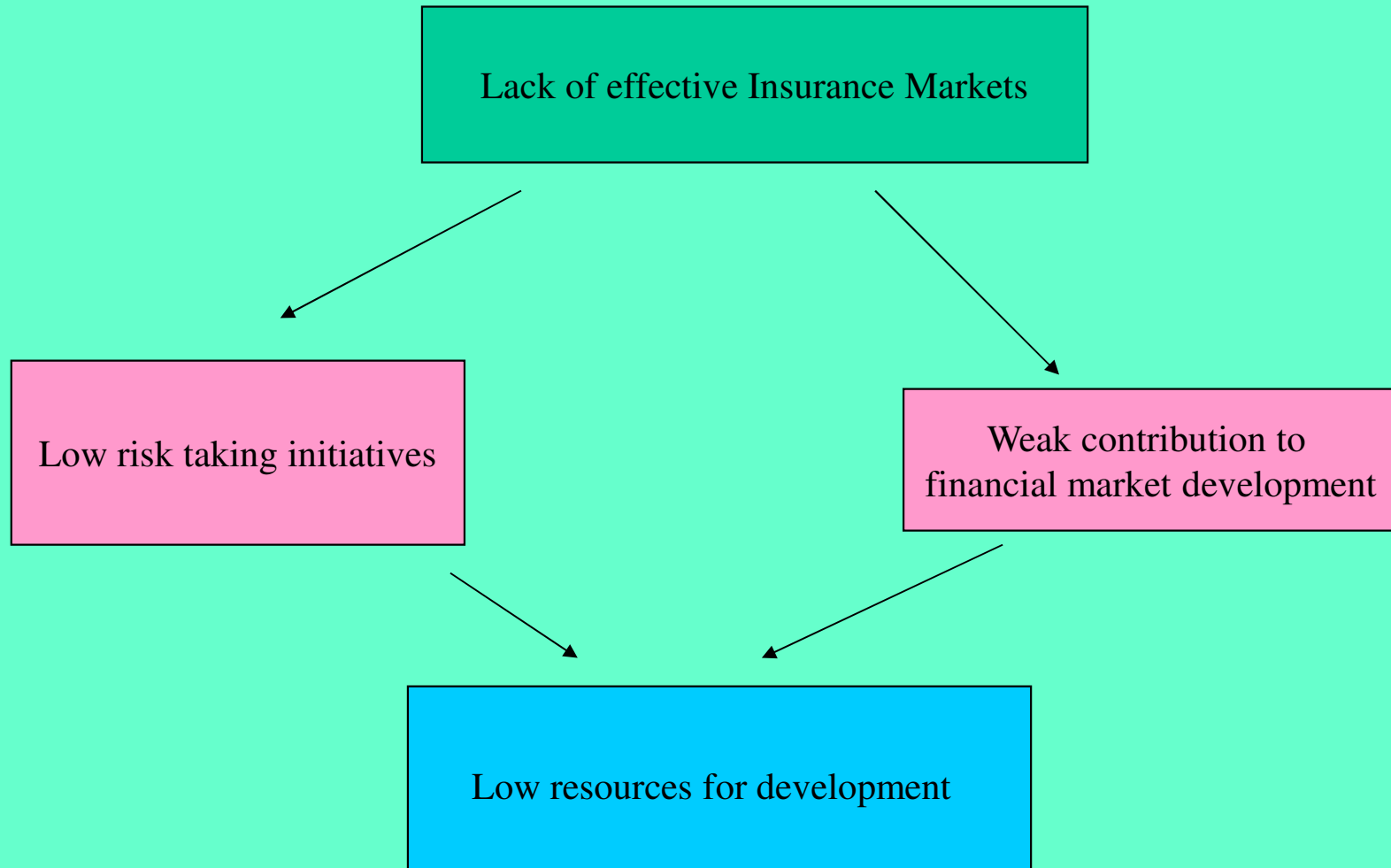
**Risk Aversion, Entrepreneurship, and Economic Activity**

Pietro Masci

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- Framework

- Theory

- Research Question

- Data

- Descriptive Analysis

- Regressions

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Lack of Effective Insurance Markets

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                    ┌─────────────────────────────┐
                    │  Lack of effective Insurance │
                    │           Markets            │
                    └─────────────────────────────┘
                       ↙                     ↘
┌──────────────────────────┐      ┌──────────────────────────┐
│ Low risk taking initiatives│      │   Weak contribution to   │
│                          │      │ financial market development│
└──────────────────────────┘      └──────────────────────────┘
                       ↘                     ↙
                    ┌─────────────────────────────┐
                    │  Low resources for development│
                    └─────────────────────────────┘
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Framework for Insurance Markets
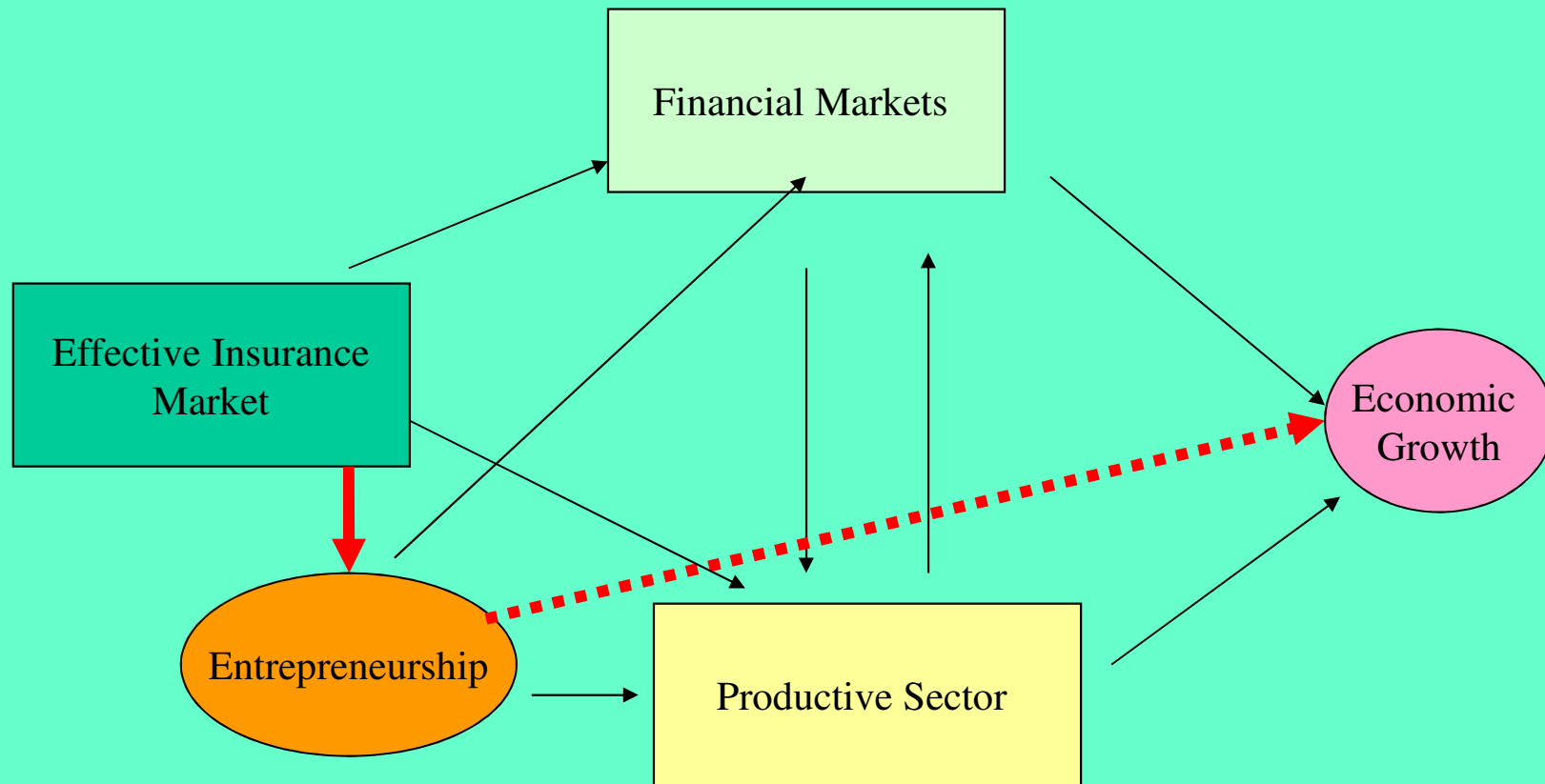
Some Considerations on Uncertainty, Risk and Entrepreneurship

- Risk preferences differ across individuals and these differences have considerable explanatory power for individual decisions including those related to asset composition, occupation, job changes and willingness to accept some uncertainty and become an entrepreneur.

- Weak institutional setting, unclear rules of the game, lack of trust, wrong incentives create greater and possibly "excessive" uncertainty to start a business.

  - The lack of a transparent insurance markets and correctly priced insurance products direct people – who might be willing to take greater risks such as those of starting a business - to be more risk-averse than they appear to be and unwilling to face "excessive" uncertainty involved in starting a business. Steeper Utility Curves in emerging economies

- The wealth levels in emerging economies is much lower than in developed economies and make individuals more risk averse.

Utility Curve and Wealth

Wealth, Utility and Risk
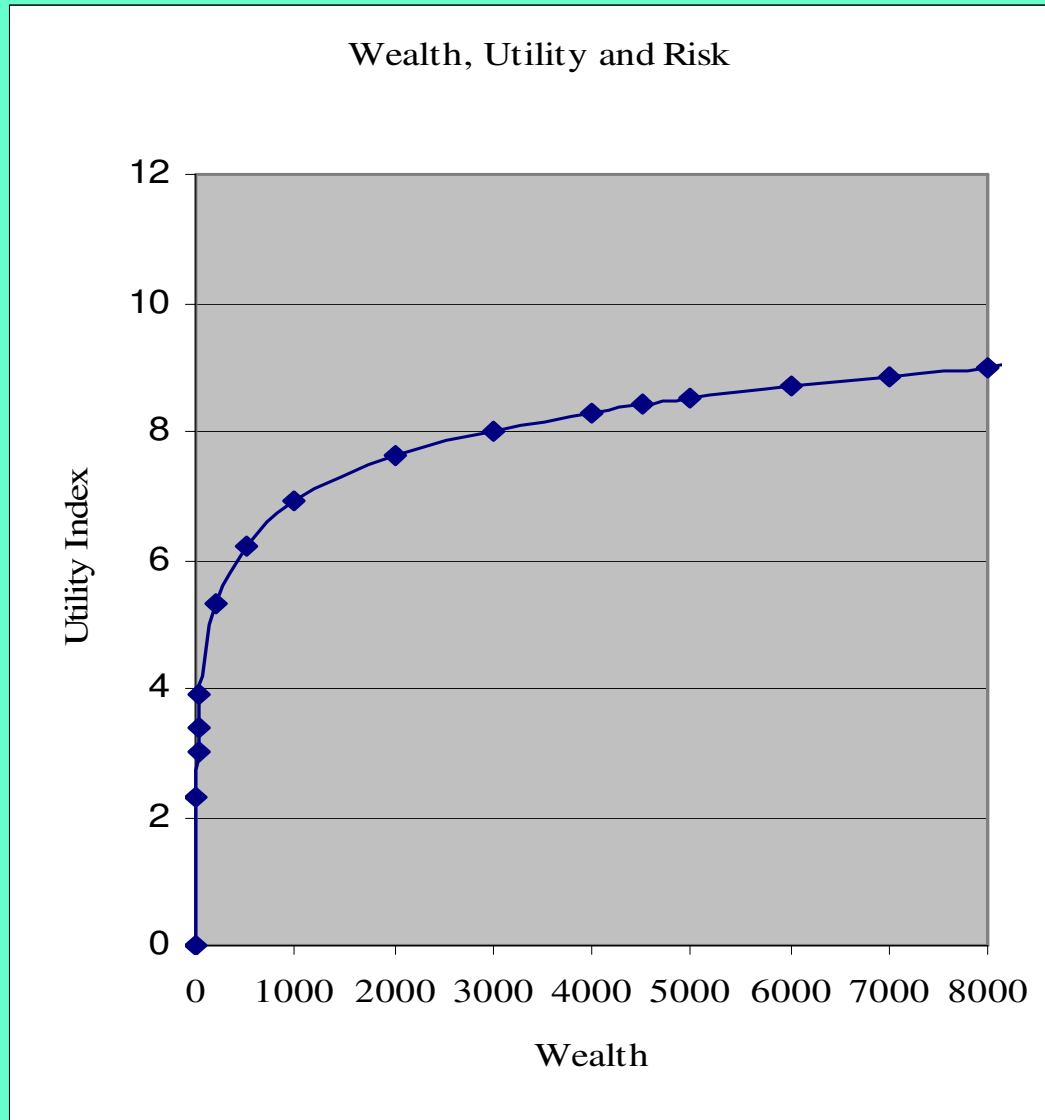
Utility Curve and Wealth

- Therefore, in an emerging economy there are two factors that make individuals more risk averse:
  - i) the shape – concavity - of the utility function; and
  - ii) being in the lower part of any utility function.

- The shape of the utility function, more concavity in emerging economies, depends on the uncertainty of the institutional environment and the inefficiencies of the market institutions including insurance, i.e., more concave curves of utility imply more risk aversion, i.e., individuals in emerging economies face steeper curves and therefore they resort to be more risk averse.

- The second factor is linked with the fact that emerging economies are less wealthy and individuals are more risk averse.

Risk Aversion and Entrepreneurship in Emerging Countries

- In emerging countries the degree of risk aversion is greater and given the low level of wealth and income, individuals tend to insure less and to bear more risk in an inefficient form.

- From the point of view of the entrepreneur, I assume that entrepreneurial activity cannot be insured against it. However, the unreliable institutional settings of emerging countries and the low level of "wealth" create an *excessive uncertainty* that discourage entrepreneurs to initiating businesses. Quite the contrary in developed economies – and United States represents the typical example where economic activity "per se" is not insured. However, the institutional setting includes the recognition of profit and the widespread use of insurance as an effective market institution to cover various specific aspects of the business activity. In emerging economies, an "*additional earning premium*" may be necessary to compensate risk averse businesses owners and entrepreneurs for the greater uncertainty associated with their incomes (see Hamilton 2000, p.605).

- The high level of risk premium could be also regarded as an indicator that in emerging countries there is a great potential for buying (and selling) insurance, which however is not exploited and insurance markets remain underserved and underdeveloped.

Research Questions

- The area of research includes several research questions:
    - What are the factors that prevent economic operators from buying insurance products?
    - Is insurance market effective in emerging countries and in particular in Latin America and the Caribbean?
    - Is insurance supporting economic activity and entrepreneurship in the Latin America and the Caribbean environment?
    - Is social insurance having a negative influence over entrepreneurship? .

- The analysis intends to look at Latin America, Brazil, Peru and other countries and consider the USA where favorable institutional conditions for insurance and entrepreneurship exist as a sort of benchmark.

- This research is part of a greater study directed to identify the role of insurance in the economic activity and derive policy implications for Latin America and the Caribbean (LAC).

Research Plan

Entrepreneurship and Economic Activity

Literature Review: developed and emerging countries

From Uncertainty to Risk/ Institutions

Insurance and Economic Growth

Effective Insurance Markets

Test Relationship: Entrepreneurship and Insurance

Data USA

Survey/Data GEM -World Bank

Insurance and Financial Markets

Factors for effective insurance

Survey Peru

Data Brazil

Literature Review

Literature Review

Regulation   Supervision   Enforcement   Culture

Review Relationship:
•Data ASSAL
•Data WB - IMF

Review Relationship:
•Data ASSAL
•Data Swiss RE / Davy

Test Relationship Factors that affect the Effectiveness of Insurance Latin America and Caribbean

Survey Supervisors/Associations/Companies in lAC

Survey Peru

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Specific Research Question

Analyzing what are the factors and variables that prevent economic operators including "entrepreneurs" from buying insurance products is expected to provide a new area of analysis, research and prompt policy actions.

- In this respect, I would test the following:

    - Factors relevant for buying insurance based on descriptive analysis;

    - Factors relevant on buying insurance: including information, knowledge of supervision, trust on supervision, trust on legal system and legislation, trust in the judicial system, premium or cost of insurance;

    - Factors relevant in trusting insurance companies: including information, knowledge of supervision, trust on supervision, trust on legal system and legislation, trust in the judicial system. It also includes various factors such as financial strength of the company, premium or cost of the insurance.

Main Features of the Survey of Enterprises in Lima, Peru

- Lima concentrates 42% of the population of Urban Peru; 60% of the total of income of the urban population; and, a middle-class that almost duplicates the one of all the rest of the country. Lima counts with 2 million homes and 8,3 million people

- The estimation is that only 25% of the inhabitants of Lima count on a private insurance, being basically those that belong to the higher income brackets that count on certain capacity to generate savings.

- In Peru, the insurance market is characterized by the low level of knowledge in the users and non users as well. This lack of information is slightly more evident in the low income bracket and micro enterprises.

- The segment analyzed in the study (micro, small and medium companies) reaches 5% of the total of formal companies that operate in the country.

- More of 80% of the companies has some type of insurance, unlike families where only 49% have one. It is observed that the size of the company influences in a decisive way the possession of insurance policy.

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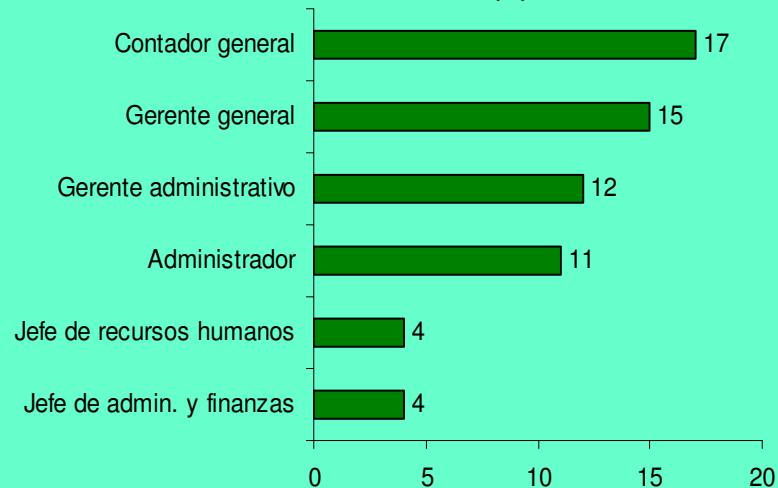# Proporcion de Utilizo de Seguro

No Usuarios

17%
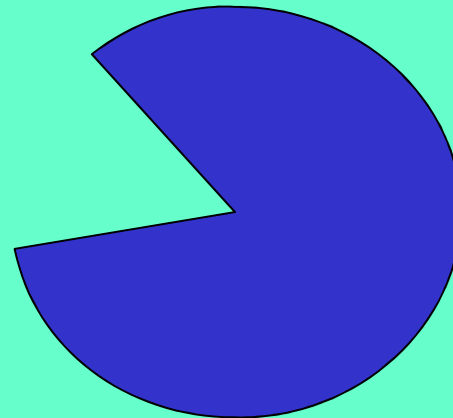
Usuarios

83%

Características de la encuesta a empresas

To have a better understanding of the demand of insurance among companies of various type a survey of 225 micro, small and medium size enterprises in the Lima Metropolitan area was undertaken.

PRINCIPALES CARGOS OCUPADOS POR EL ENCARGADO DE LA ADQUISICIÓN Y SELECCIÓN DE SEGUROS
(%)

Cargo	%
Contador general	17
Gerente general	15
Gerente administrativo	12
Administrador	11
Jefe de recursos humanos	4
Jefe de admin. y finanzas	4

El cargo de la persona responsable de la adquisición y selección de seguros varía según empresa.

225 encuestados

Fuente: Evaluación del mercado de seguros – pequeñas y medianas empresas, APOYO Opinión y Mercado, Octubre-Noviembre 2005.

DETALLE DE LA ENCUESTA

Técnica del estudio
Cuantitativo de carácter concluyente mediante entrevistas telefónicas.

Universo
Ejecutivo que toma decisión de compra de seguros en pequeñas y medianas empresas en Lima Metropolitana.

Distribución de la muestra
La encuesta se culminará con cuotas según tamaño de la empresa. La muestra se distribuyó de la siguiente manera:
- 84 encuestas a empresas medianas
- 141 encuestas a empresas pequeñas

Margen de error El margen de error +/- 6,53%

Elaboración del cuestionario
Se tuvo especial cuidado en la elaboración del cuestionario realizando dos pruebas piloto.
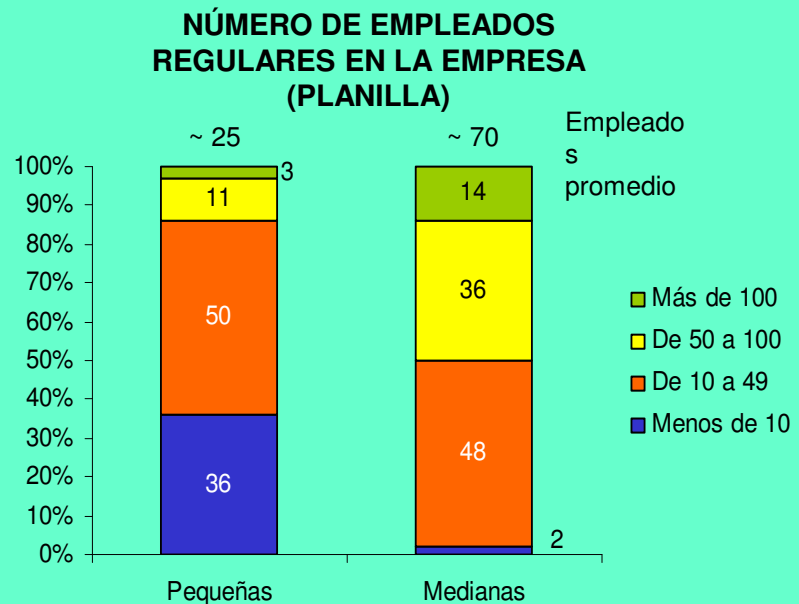
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Perfil de los encuestados (1)

The distribution is 74% small and micro companies and 26% medium size companies

TIPO DE EMPRESA ENCUESTADA AL CORTE DEL CAMPO PRELIMINAR

Facturan entre US$ 150 mil y US$ 839 mil correspondiente a ventas anuales brutas.

Pequeñas empresas 74%

Medianas empresas 26%

Facturan entre US$ 840 mil y US$ 15 MM correspondiente a ventas anuales brutas.

225 encuestados

Perfil de los encuestados (2)

The micro and small companies interviewed have on average 25 employees; while the medium size companies have 75 employees.

NÚMERO DE EMPLEADOS REGULARES EN LA EMPRESA (PLANILLA)

~ 25   ~ 70   Empleados promedio

Pequeñas: Menos de 10: 36, De 10 a 49: 50, De 50 a 100: 11, Más de 100: 3

Medianas: Menos de 10: 2, De 10 a 49: 48, De 50 a 100: 36, Más de 100: 14

Legend:
- Más de 100
- De 50 a 100
- De 10 a 49
- Menos de 10

SECTOR AL QUE PERTENECE LA EMPRESA

- Agropecuario 2%
- Manufactura 21%
- Comercio 43%
- Servicios 34%

Fuente: Evaluación del mercado de seguros – pequeñas y medianas empresas (225 encuestas), APOYO Opinión y Mercado, Octubre-Noviembre 2005.
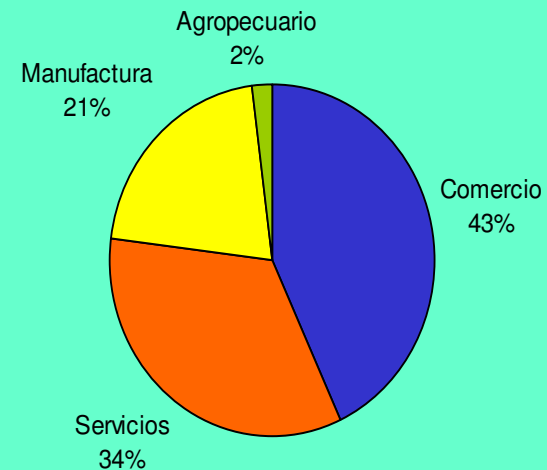
The companies interviewed belong to the trade, service , manufacturing and agro-business sectors.

Descriptive Analysis

- The knowledge of business owners (i.e., micro, small and medium enterprises) about the insurance market is limited particularly with respect to small and micro enterprises. The use of insurance increases with the medium size companies, i.e., number of employees and level of sales.

- A 33% of the small enterprises did not know or it could not give the name of an insurance broker. In the case of the medium enterprises, the ignorance of brokers only ascended to a 7%.

- Between the known insurance policies more are those related to natural disasters, SOAT (mandatory auto insurance) and civil responsibility - damages to third party. It should be notices nevertheless, the low level of knowledge of the insurance policies that are obligatory solely for companies like those of work-risk and life law (only 30%).

- The cost of insurance (premium) is one of the most important factors that business owners consider when buying insurance together with the process to obtain satisfaction on claims and financial strength of the insurance company. The analysis below shows that premium is a perfect predictor of buying insurance.

- Interviewed business owners feel some confidence – more than families (this part of the survey is not analyzed here) - in the insuring companies and in the regulator; although it is stronger between the medium companies and towards the private sector agents of the system.

- The main reason that small and medium size enterprises buy insurance policies are for protecting its employees (45%). In the case of the medium company almost 60% acquired it, whereas only a 39% of the small companies took the insurance for the protection of their employees.33% of the small and medium enterprises acquired an insurance policy because of obligatory legal considerations.

- In general, business owners consider a number of attributes before acquiring an insurance policy. Nevertheless, the trustworthiness in broker, the cost of the insurance and the financial strength of the insurance company are the most important attributes

- Near 40% of the business owners consider that it does not need any additional insurance. When they perceive they need additional coverage, the insurance policy is not acquired because lack of availability of resources or perception of a high cost.

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Factors relevant for buying insurance

Logistic Regression				Number of Obs=		225
				LR chi2(3)	=	57
				Prob>	chi2 =	0
Log Likelihood	=	-65.299913	Pseudo	R2	=	0.3038

p06	Odds Ratio	Std.Err.	z	P>|z|	[95%	Conf. Interval]
f02b	7.66826	3.096213	5.05	0	3.475419	16.91946
p40	1.648381	0.4214192	1.95	0.051	0.9987172	2.720651
p45	1.665997	0.4783538	1.78	0.075	0.9490102	2.924676

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Comments

- The type of company by number of employees (f02b) has a large explanatory power and the interpretation is that the increase of one level of the type of company increases the odds of buying insurance by more that 7.5 times given that all other variables in the model are held constant. It is statistically significant.

- The trust in the insurance companies (p40) is important and practically significant at the 5% level. It says that the increase of one level of trust in the insurance company – measured on a scale of 1 to 5- increases the odds of buying insurance by 1.65 given that all other variables in the model are held constant.

- The trust on the judicial system (p45) is also a relevant factor – although significant at the 10%. Also in this case, the increase of one level of trust in the judicial system – measured on a scale of 1 to 5- increases the odds of buying insurance by 1.66 given that all other variables in the model are held constant.

Factors relevant in trusting insurance companies

Ordered Logistic Regression					Number of obs =	175
					LR chi2(9)=	46.7
					Prob > chi2 =	0
Log likelihood = -168.14552					Pseudo R2=	0.1219
p40	Odds Ratio	Std.Err.	z	P>|z|	[95% Conf. Interval]	
p01	1.920084	0.4689988	2.67	0.008	1.189614	3.099091
p42	1.49878	0.3099658	1.96	0.05	0.9993078	2.247899
p43	1.731253	0.3707923	2.56	0.01	1.137768	2.634312
p44_1	1.964188	0.5057471	2.62	0.009	1.185802	3.253523
/cut1	1.898048	1.212597			-0.4785987	4.274696
/cut2	4.086203	1.094137			1.941735	6.230672
/cut3	5.995905	1.128264			3.784548	8.207262
/cut4	9.731188	1.304274			7.174858	12.28752

Comments

- The table above shows that the response variable, trust towards insurance companies (p40), is influenced by the level of information (p01); trust in the supervisory agency (p42); trust in the judicial system (p43); and consumer protection (p44_1).

  In all the cases, they are statistically significant at the 5%. This implies that a unit increase in level of information, trust in the supervisory agency, trust in the legal system and in the consumer protection – all measured on a Likert scale 1 to 5 - would improve the odds ratio of trusting insurance companies by 1.96 (for the consumer agency), 1.73 (trust in the judicial system), 1.49 (trust in the supervisory agency), and 1.92 (level of information) given that all other variables in the model are held constant.

- The assumption of proportionality holds (i.e., **omodel** test has a chi-square of 20.25 and a p=0.0625, which is not significant at the 0.05 and therefore we do not reject the proportionality).

- The results confirm the great relevance that various aspects of the institutional setting have on the development of insurance markets.

Comments

It is also worth to underline that the level of premium does not enter the model as it constitutes a perfect predictor.

In other words, people and business owners understand that premium is high, but it looks like that they would be prepared to accept it provided they feel comfortable with a series of other problems – trust in the insurance companies.

Conclusions

- The results of the logit and ordered logit analysis indicate that the role of the institutional system and its various components is crucial to the existence of trust and to the working of an effective insurance market.

- The role of trust is well known (Fukuyama 1996) and this paper extends the analysis of trust to the insurance market in emerging countries. In this respect, the paper also helps to identify the specific "gaps " and consequent public policy initiatives directed to improve the insurance markets and thus favor economic activity and entrepreneurship and create opportunities for economic growth.

- As a first step, I would argue that the institutional settings, e.g., rule of law, judicial system, supervision, judicial role and enforcement should reach at least a minimum level that would boost the trust of individuals and entrepreneurs.

- The results seem to say that individual and business owners are not concerned much about premia- as they know that they are unfair and also too high for the level of wealth in emerging countries. However, in an environment with high and unfair prices, the functioning of a reliable institutional environment is essential. Basically, people are not willing to pay a higher price and still face uncertainty.

Two Parallel Strategies

- Improve the institutional setting. In this respect, one of the policies would be to promote market institutions like insurance that in turn would facilitate entrepreneurship, which prompts economic growth. Public policies directed to encourage effective insurance would reduce risk aversion – an endogenous variable- curtail uncertainty creating a more favorable risk attitude, help to set fair prices for insurance products and improve the prospects for entrepreneurship, economic activity and economic growth.

- Implement the intuition of De Soto (2002, 2003) of discovering and evaluating the "*hidden assets*" of property in emerging countries. The assets that emerge in the informal sector, which according to De Soto's insight, can be used for economic transactions and become the basis of entrepreneurial activity, need to be shielded from uncertainty and risk, through some kind of insurance.

  This would produce a wealth effect, reduce risk aversion, increase the demand of insurance and prompt economic activity and growth.