

Annual Meeting Symposium
Financial Globalization: Its Potential for Risk Management
October 12, 2007

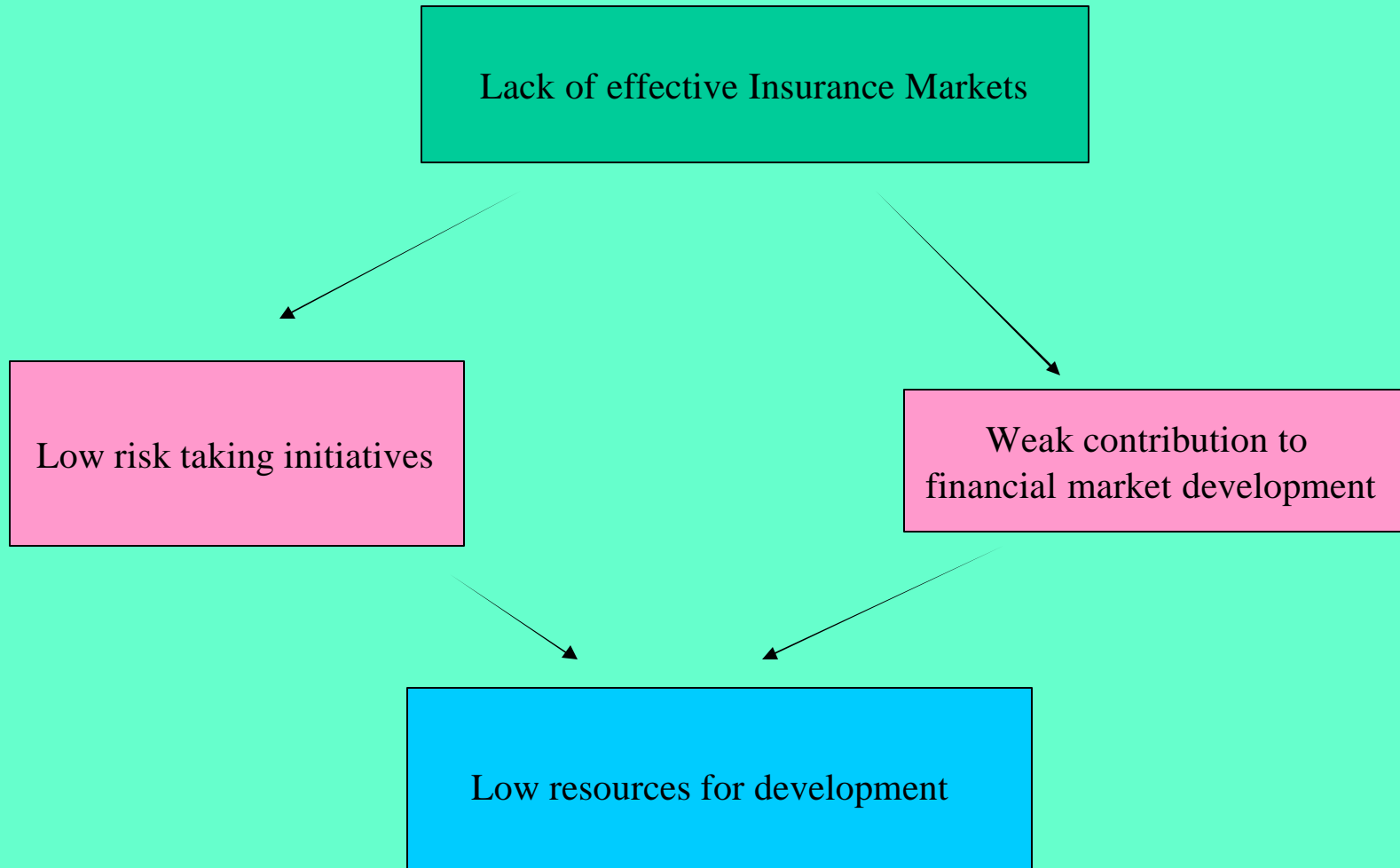
**Insurance Effectiveness and Entrepreneurship in Latin
America**

Pietro Masci

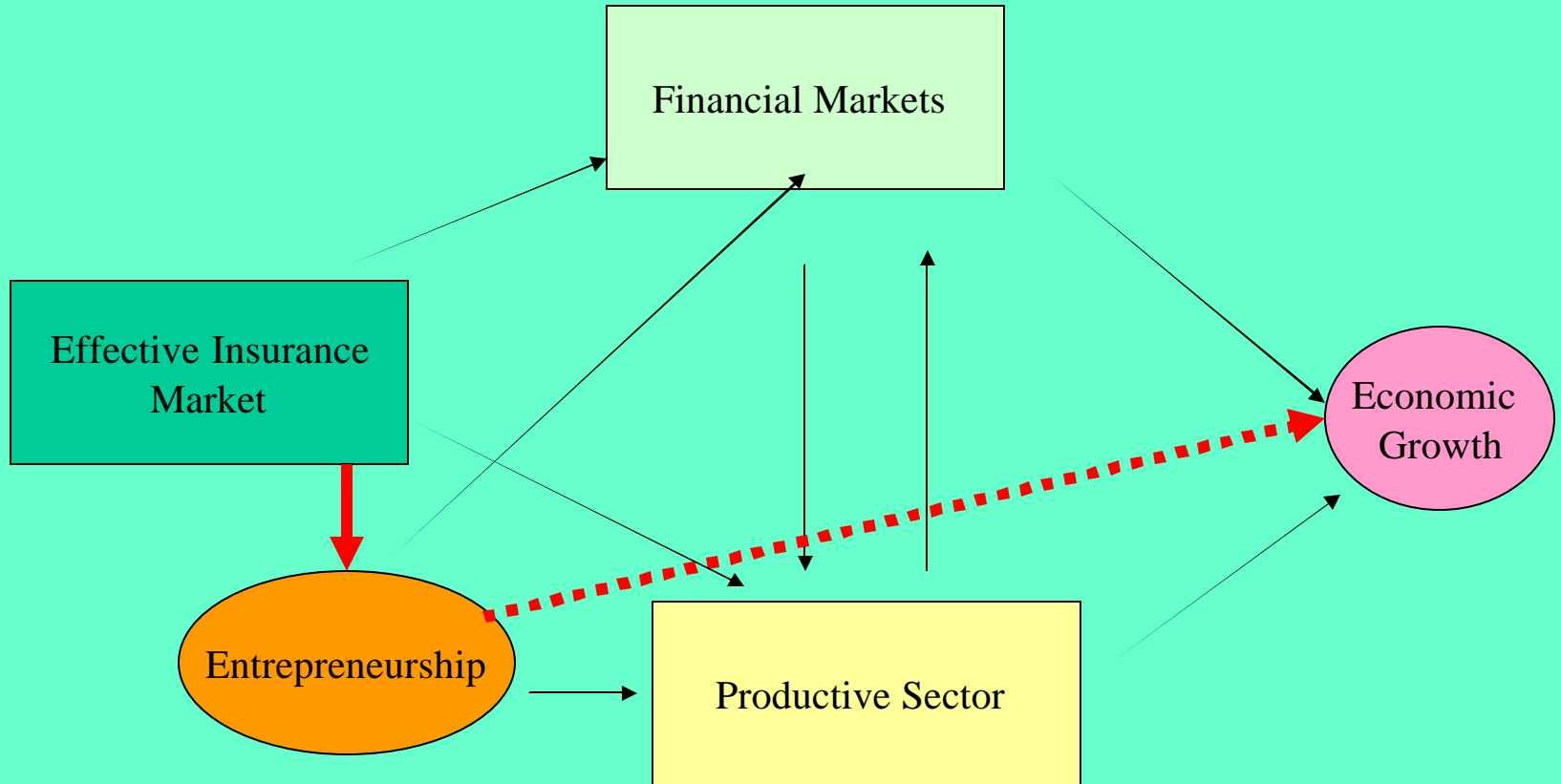
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Lack of Effective Insurance Markets



Framework for Insurance Markets



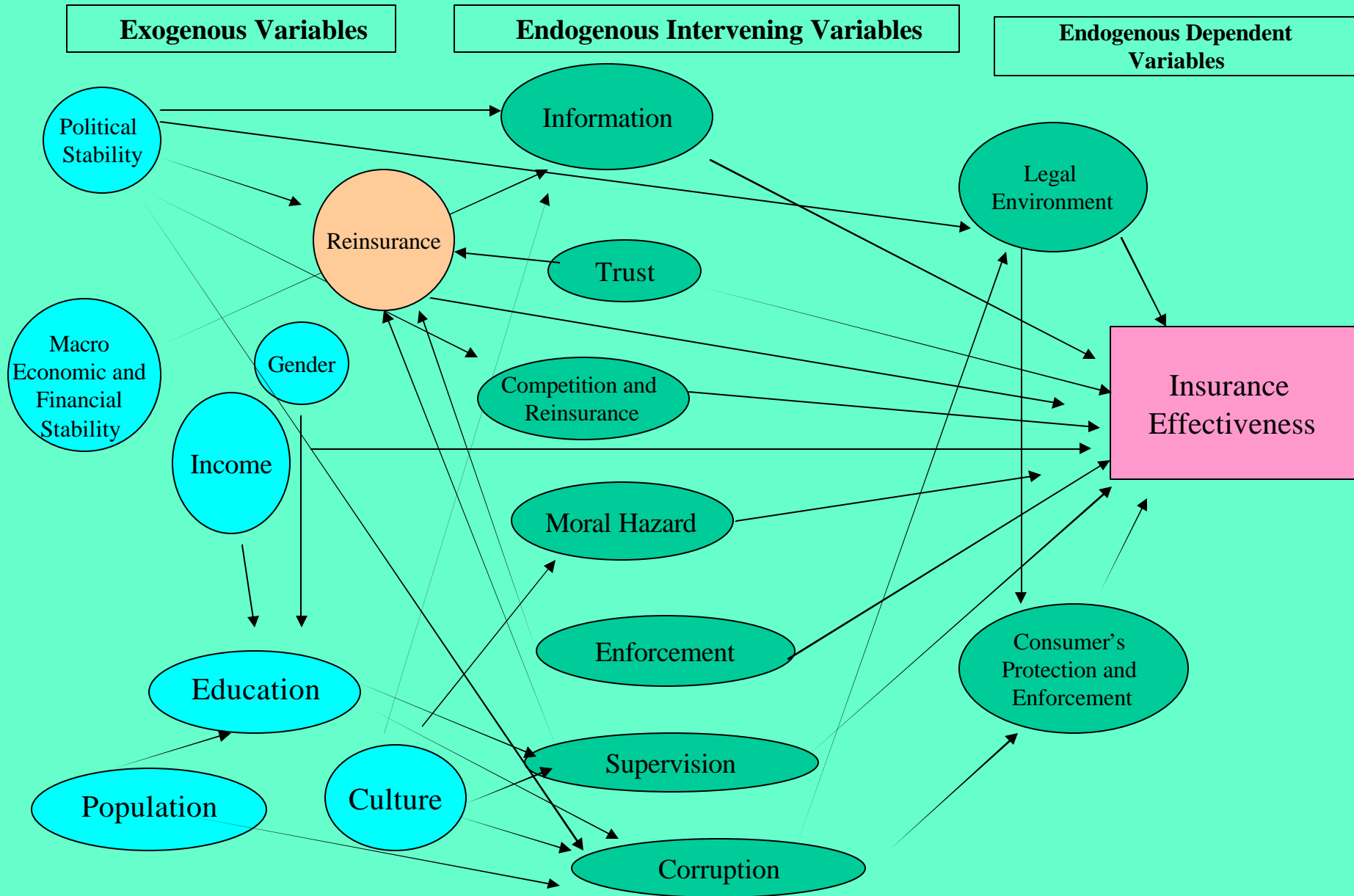
Uncertainty, Risk and Entrepreneurship

- Risk preferences differ from one person to another. This motivates individual decisions regarding asset composition, occupation and job changes. This also affects willingness to accept uncertainty to become an entrepreneur.
- The lack of transparent insurance markets and correctly priced insurance products direct people considered risk neutral to become more risk averse. People willing to incur in riskier activities such as starting a business may become less risk neutral due to weak insurance products.
- Frail institutional setting, unclear rules of the games and wrong incentives create “excessive” uncertainty. This reduces the amount of entrepreneurs willing to start a business, and the degree of innovation of said businesses.
- Informal sector assets brought into the formal economy (De Soto) are used as collateral to small-business lending. The newly brought-in assets need to be insured against uncertainty and risk. Strategies for asset-building and protection have evolved in the United States, but not in emerging countries.

Research Questions

- The objective is to articulate and empirically test:
 - i) The effectiveness of insurance markets; and
 - ii) The relationship between insurance availability (e.g., P&C, life, health, agriculture, credit risk) and sustainability of entrepreneurship.
- This analysis looks at Latin America and Brazil, using the USA as a benchmark.
- This research is part of a greater policy study on the role of insurance in economic activity in Latin America.

i) Structural Model for the Effectiveness of Insurance Market in LAC



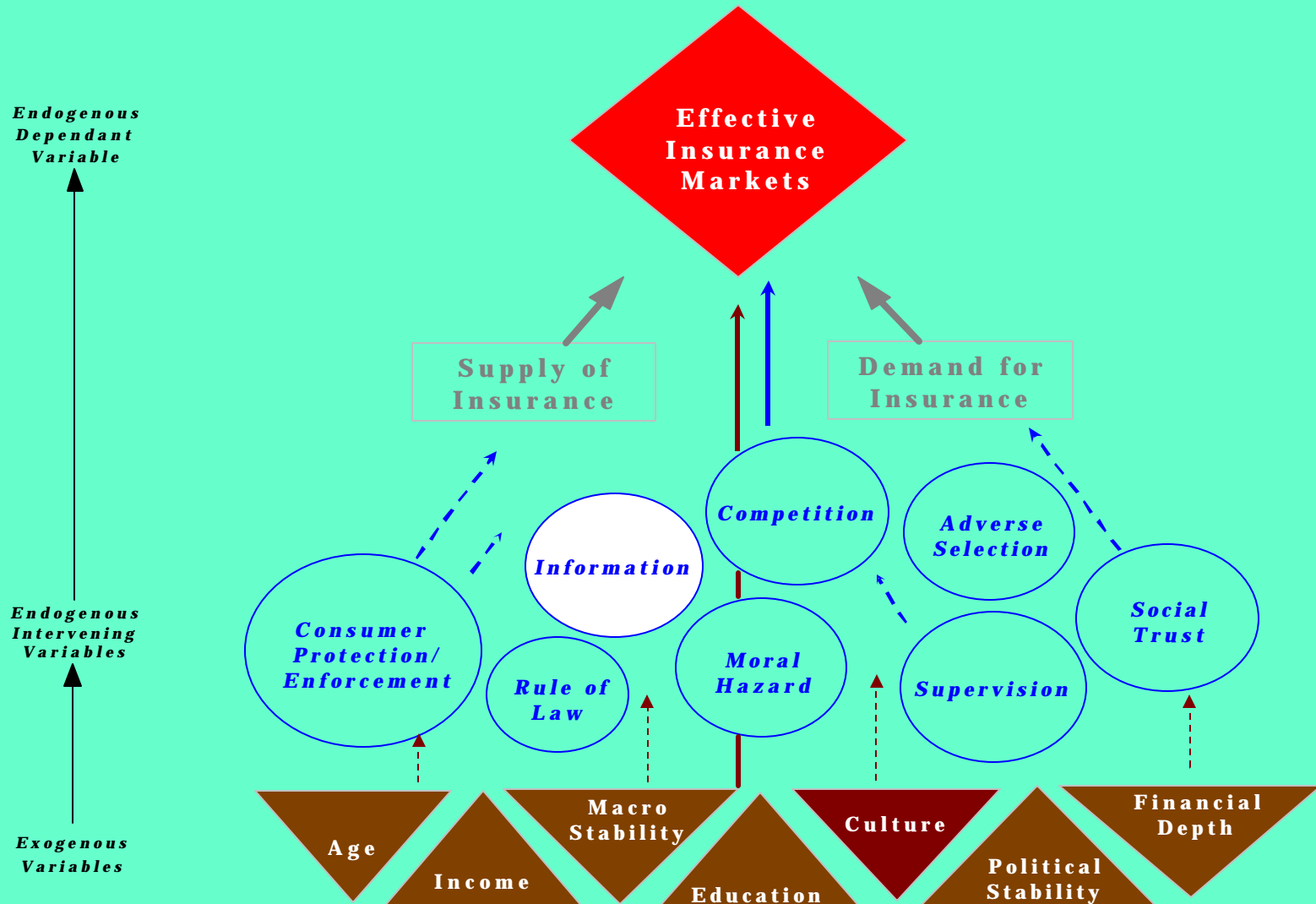
ii) Insurance and Entrepreneurship

- An effective insurance market reduces uncertainty and supports economic activity and entrepreneurship. The equation below relates entrepreneurship and business activity to insurance:
- $$\text{Entrepreneurship} = a_0 + a_1 \text{Business Insurance} + a_2 \text{Social Insurance} + a_3 \text{Dummy state} + a_4 \text{Control variable} + \text{error} \quad [1]$$
- Entrepreneurship is the dependent variable. It is difficult to define and measure it in developed countries, and even more so in emerging markets. It could be measured in different ways. For instance, total number of companies is a gross and unsophisticated measure of business activity and entrepreneurship. More accurate measures include: the number of start-ups, LLC's, level of self-employment, number of SMEs paying taxes and total SME's revenue volume.
- Insurance – the independent variable would be measured by insurance penetration, total volume of premium paid.

**i) Structural Model for effective Insurance Markets
in Latin America**

Our Focus: “Effectiveness”

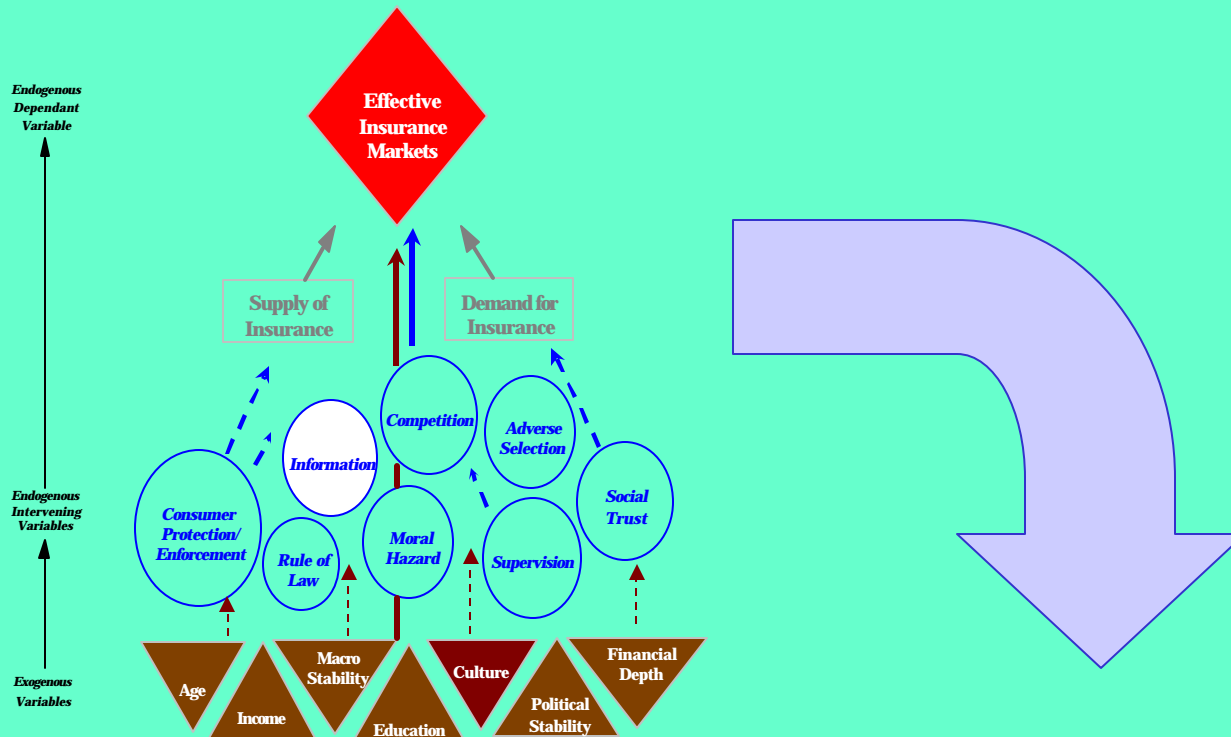
Figure 1 : Structural Model for LAC Insurance Markets



Results:

Specification

Figure 1 : Structural Model for LAC Insurance Markets



$$Eff_i = a + info_i b_1 + indep_i b_2 + enforc_i b_3 + superv_i b_4 + ext_i b_5 + int_i b_6 + e_i$$

Results: Pros and cons.

Pros:

- + It allows to quantify the relationships among variables;
- + It allows to control effects produced by other variables;

Cons:

- It has a limited number of observations;
- It has non-observed factors arising from people interviewed.

Results:



1. Positive Relationship with application of the Law
2. Negative relationship with a permissive supervision
3. Positive relationship with protection against external factors

	Effectiveness Index	Costly coverage	Hard to understand Products	Poor Claims Handling
Information	-0.1	-0.19	-0.09	-0.01
Independence	0.06	0.06	0.04	0.09
Rule of Law	0.17	0.07	0.23	0.2
Supervisor	-0.09	-0.05	-0.06	-0.18
External	0.24	0.07	0.27	0.37
Internal	-0.09	0.14	-0.27	-0.16
observations		149	149	149
S-root	0.1	0.04	0.07	0.1
Significant at 10%				
Significant at 5%				



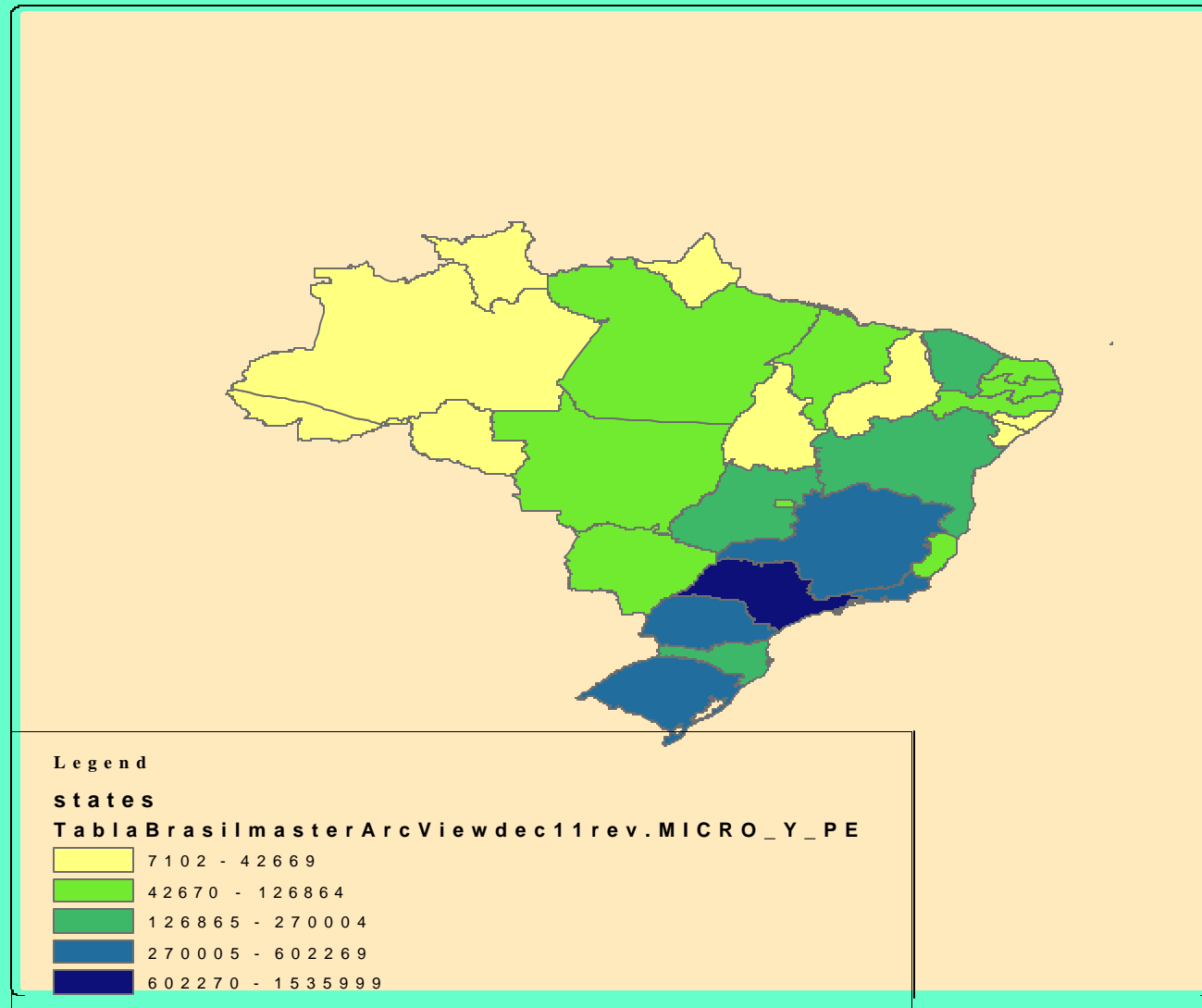
Results:

- Similar results.
- Robust

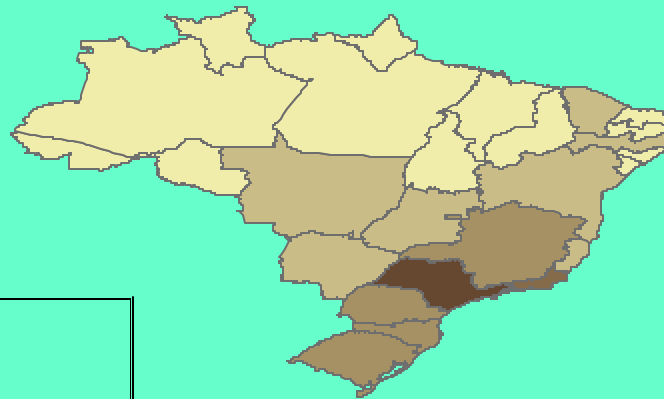
	Costly coverage	Hard to understand Products	Poor Claims Handling
Information	-0.27	-0.13	-0.01
Independence	0.07	0.05	0.1
Rule of Law	0.11	0.3	0.23
Supervisor	-0.06	-0.08	-0.22
External	0.09	0.36	0.45
Internal	0.21	-0.31	-0.18
observations	149	149	149
S-root	0.2	0.03	0.04
Significant at 10%			
Significant at 5%			

ii) The Relationship between Insurance and Entrepreneurship

Number of Small and Medium Companies by States



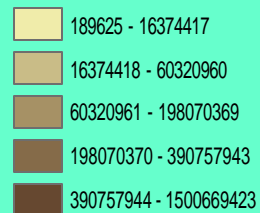
Total Volume of Insurance premium



Legend

states

TablaBrasilmasterArcViewdec11rev.LIABILITY_



Insurance and Entrepreneurship in Brazil

Source	SS	df	MS		Number of obs	162
					F(3, 158)	593.27
Model	263.727324	3	87.9091079		Prob > F	0
Residual	23.4120126	158	.148177295		R-squared	0.9185
					Adj R-squared	0.9169
Total	287.139336	161	1.78347414		Root MSE	0.38494
Inmpe	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
lnpremium	0.4779559	0.0209295	22.84	0.000	0.4366182	0.5192936
dummy3	-0.4460617	0.0969219	-4.6	0.000	-0.6374913	-0.254632
se	3.39E-11	1.23E-11	2.77	0.006	9.68E-12	5.81E-11
_cons	3.55141	0.3787181	9.38	0.000	2.803407	4.299413

SE: Health and Education - (R\$): - value of expenditure for education and health in each state (R\$ million)

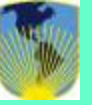
Premium: Total volume of premium to cover business liability risk, on each year, each state of Brazil, from 1999 to 2005. The currency is Brazilian Reais (R\$).

Dummy 3 : States at the North or South of Brazil

Insurance and Entrepreneurship in Lima

p40	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
p41	0.1418263	0.149792	0.95	0.345	-0.1534148 0.4370674
p42	0.0099762	0.009751	1.02	0.307	-0.0092431 0.0291955
p43	-0.0022147	0.0057458	-0.39	0.7	-0.0135397 0.0091102
p44_1	0.0016825	0.0026868	0.63	0.532	-0.0036131 0.0069782
p45	0.1991728	0.0587992	3.39	0.001	0.0832792 0.3150665
_cons	1.325917	0.2723139	4.87	0	0.7891845 1.86265

P45: trust in the judicial system



Public Policy Implications for Effective Insurance Markets

1. **Rule of Law and Judicial system** → Minimum Requirements
2. **Favorable External Conditions** → Minimum Requirements
3. **“Rigorous” Supervision** → Adequate and applicable norms

Thank you!

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