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## Micro-Insurance for Brazil: The GILR-Bond

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### Summary

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While microfinance in general worries about relieving people from poverty, micro-insurance focuses on helping people from falling into poverty traps on their way to the middle-class. In order to avoid people from becoming poor due to illness, natural disasters, lack of savings or loss of assets or livestock, developing countries must invest in micro-insurance. In the specific case of Brazil, while there is still plenty of room for insurance expansion, local insurers do not seem to be up for the job. Hence microinsurers must try to serve this untapped demand. This article brings to light the issue of securitization of assets in Brazil as a way to reduce cost of capital for insurers and micro-insurers. It presents a new financial product called the GILR-Bond, or the securitization of large bulks of insurance contracts. Securitization has plenty of advantages over traditional insurance. It ends up costing less to consumers, as financial markets face lower cost of capital and have more capacity than do regular insurers. It also represents a lower insolvency risk to customers, as pulverized bondholders (as a whole) are more solvent than a single insurer. The GILR-Bond is particularly adequate to the current Brazilian capital market reality. Insurance and capital markets weaknesses associated with friendly legal environment, allow micro-insurance to play an important social role. They reach those unreached by financial services, and turn a profit on the process.

### Key Words

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Micro-insurance; micro-insurers; microfinance; GILR-Bond; securitization; Brazil.

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## Sinopsis

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### Micro-seguros para o Brasil: El GILR-Bond

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## Resumen

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Mientras que la microfinanza en general se preocupa en como aliviar las personas de la pobreza, el micro-seguro se centra en ayudar a las personas en no caer en las trampas de la pobreza en su trayectoria hacia la clase media. Para evitar que las personas empobrezcan en virtud de enfermedades, desastres naturales, ausencia de ahorros, pérdida de activos o de bienes semovientes, los países en desarrollo deben invertir en el micro-seguro. En el caso específico de Brasil, a pesar de todavía haber gran espacio para la expansión del micro-seguros, los aseguradores locales parecen no estar preparados para este desafío. Por lo tanto, los micro-aseguradores deben intentar atender a esta no explotada demanda. Este artículo trae a la luz el tema de la securitización de activos en Brasil como una forma de reducir los costos de capital para los aseguradores y micro-aseguradores. Presenta un nuevo producto financiero llamado de *GILR-Bond* (*General Incident Loss Reporting – Informe de Pérdidas de Accidentes Generales*), o securitización de grandes volúmenes de contratos de seguro. La securitización proporciona larga ventaja sobre el seguro tradicional. Termina costando menos al consumidor, en la medida que los mercados financieros tienen costos más bajos de capital y más capacidad en comparación al asegurador regular. También representa un riesgo de insolvencia más bajo para el consumidor, una vez que los tenedores de bonos pulverizados (como un todo) son más solventes que un asegurador único. El *GILR-Bond* es particularmente adecuado para la actual realidad del mercado de capitales de Brasil. Las debilidades de los mercados de seguros y de capitales asociados con el ambiente legal amigable permiten al micro-seguro representar un importante papel social. Atienden a los inalcanzables por los servicios financieros y logran la obtención de utilidades en el proceso.

## Palabras-Clave

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Micro-seguro; micro-aseguradores; microfinanza; *GILR-Bond*; securitización; Brasil.

## Sumario

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## 1. Introduction

This article debates micro-insurance in the context of asset securitization in Brazil. There is a chapter zero, which explains the traditional issues of micro-insurance: how to improve underwriting, claims handling, commercialization and reduce administrative costs to allow large numbers of consumers with little or no funds to buy insurance. After that, this article moves to answer a different question: How could micro-insurers reduce cost of capital, in order to allow for people to purchase cheaper micro-insurance coverage?

The first chapter presents this product called the GILR-Bond. Basically, it is the securitization of a bulk of insurance contracts whose loss ratio is the underlying risk on a derivative swap. The following chapter lists Brazil's comparative advantages to launch the GILR-Bond. Particular local circumstances related to Brazil's restricted capital markets and elitist insurance systems give room for the GILR-Bond to grow. The final chapter plays with issues related to poverty reduction and the use of micro-insurance in Brazil. It concludes that the GILR-Bond could result in growing access to micro-insurance, and thus asset securitization in Brazil. The democratization of derivatives to a wider audience will allow lower cost of micro-insurance and better guarantees for local entrepreneurs.

## 2. Micro-insurance and the GILR-Bond

Micro-insurance<sup>1</sup> is insurance that caters to the lowest income (AHUJA, 2005)<sup>2</sup> groups in a country. It serves those who are not usually served by private insurance business. There are other components related to the micro-insurance business. The first is massive penetration. Insurance contracts must be sold to vast numbers of people at very low rates. It must provide coverage against losses that are usually not large. Thus, micro-insurers sell millions of contracts to turn a very small profit (CRAIG; REINHART, QURESHI, 2006)<sup>3</sup>. Sometimes even total revenue volumes are not large. Micro-insurers are known for having simple and direct underwriting methods, usually charging the same premium to risks that are roughly similar to each other. Claims handling must be even more straight-forward. Insurers must guarantee losses that are easy to identify (IAIS, 2007, p. 22 and 56)<sup>4</sup>, evaluate, and pay<sup>5</sup>. One good manner of handle these claims are parametric index<sup>6</sup>. Parametric index (ALDERMAN; HAQUE, 2007)<sup>7</sup> confer to the insured consumer a certain amount of funds related to a figure published by a public indicator. Parametric indicators work well with climate and temperature indicators.

<sup>1</sup> All the information on this chapter zero, which delimitates the realm of the article, comes from the many perspectives on micro-insurance available at McCord (2008).

<sup>2</sup> The author explains that neither the government nor private sector solutions are able to cater to low- income households.

<sup>3</sup> A good explanation on how insurers, regulators, NGOs and local community associations need to pull their strings together in order to make micro-insurance to function properly.

<sup>4</sup> Page 5, item 4, available at: [www.rmi.nccu.edu.tw/apria/docs/Concurrent%20III/Session%204/4607Apria2007MicIns.doc](http://www.rmi.nccu.edu.tw/apria/docs/Concurrent%20III/Session%204/4607Apria2007MicIns.doc).

<sup>5</sup> A good discussion on the need to publish easier rules for claims handling and payment delivery to consumers.

<sup>6</sup> For a good understanding of how parametric index work, see annex 1 for the World Bank presented on: [www.siteresources.worldbank.org/PROJECTS/Resources/CatastropheRiskInsurance.pdf](http://www.siteresources.worldbank.org/PROJECTS/Resources/CatastropheRiskInsurance.pdf).

<sup>7</sup> On this article, the author explains that one of the solutions for turning parametric index insurance attractive to people in rural areas is to sell it combined with other agricultural inputs. The sale of fertilizers and seeds tied with parametric insurance allows for deep penetration and lower premiums for all consumers.

For instance: Consumers in a certain area tend to spend more funds in energy costs when summers are warmer. Insurers can easily guarantee that risk to consumers. If summers are hotter, according to official temperature rates, consumers can earn a certain amount of extra funds<sup>8</sup>. These are the so-called weather<sup>9</sup> derivatives. There might be interesting manners to fit these services into more traditional insurance products.

Another issue that is important to micro-insurance is commercialization. Consumers in low-income households do not trust, understand, or desire to buy insurance. Insurance is seen as deceitful, as insurers might not pay claims (MASCI; WEBB; TEJERINA, 2007, p. 18)<sup>10</sup>. Insurance is seen as complex<sup>11</sup>, as there are exceptions hard to explain. Insurance is seen as unnecessary<sup>12</sup>, as most of their acquaintances have lived their whole lives without ever purchasing this abstract service<sup>13</sup>.

Micro-insurance is also a product that low-income households must purchase in a combined fashion. The ideal micro-insurance product covers not only health risks and life risks of the wage earner, but also the family livestock<sup>14</sup>. There are many reasons why the combination of risks is important to the commercialization. First, consumers need to be convinced that insurance is useful. All the cultural obstacles are not easy to be overcome in a brief period of time (KANBUR; LUSTIG, 2000, p. 10)<sup>15</sup>. Centuries have kept low-income households away from insurance. One micro-insurance company with grant funds<sup>16</sup> from international organizations could hardly breach this unbreakable cultural barrier if all available coverage lines are not sold together<sup>17</sup>. As the old adage<sup>18</sup> goes: "Insurance is not bought, but sold" (SMITS; ELGAR, 2006, p. 319-320)<sup>19</sup>.

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<sup>8</sup> Not to mention the current rising energy prices straining on poor people's meager wages.

<sup>9</sup> A good explanation on weather derivatives is available at: <http://www.cme.com/files/weatherde.pdf>.

<sup>10</sup> This research for Latin America, where all these survey findings were introduced into a policy document is available at: <http://www.iadb.org/PUBLICATIONS/search.cfm?language=English&searchLang=E&keywords=&title=&author=masci&topics=&countries=&resCategory=&fromYear=&toYear=&x=0&y=0>.

<sup>11</sup> Id.

<sup>12</sup> Preker explains that microinsurance can break the mold of traditional insurance. Especially when micro-insurance operations are transparent, have low overhead, and consumers understand that everybody else is paying the same. Hence, consumers that already know that a loss can cause severe damage to his or her livelihood, starts to believe that insurance (through micro-insurance) is a good way of acquiring protection against this unforeseeable event (DROR; PREKER, apud: DROR, 2002, p. 107).

<sup>13</sup> A throughout debate of the options to commercialize micro-insurance to vast numbers of people, including a wise discussion about voluntary and compulsory insurance could be seen at page 90 of Churchill; Liber; McCord; Roth (2003).

<sup>14</sup> McCord (2008): the passage on health insurance, page 14, has a good insight on pooling different coverage together in the same micro-insurance product.

<sup>15</sup> Ravi Kanbur explains the importance of respecting cultural traditions. In India, the SEWA microfinance scheme works with women in villages. Kanbur explains that microinsurance should try to follow the same strategy.

<sup>16</sup> As these grants provided by Bill and Melinda Gates Foundation: <http://www.opportunity.org/NETCOMMUNITY/Page.aspx?pid=458&srcid=265> and these: <http://www.nextbillion.net/newsroom/2007/12/20/ilo-and-gates-foundation-announce-microinsurance-initiative>.

<sup>17</sup> Id.

<sup>18</sup> [http://microfinancegateway.org/resource\\_centers/insurance/focus\\_notes/\\_note\\_1](http://microfinancegateway.org/resource_centers/insurance/focus_notes/_note_1).

<sup>19</sup> An interesting take on that old adage comes from Smits and Elgar the Elgar. They explain that the continental European tradition of insurance has a solidarity element intrinsic to the insurance operation. Thus, insurance is sold, not bought. The agent is seen as a representative of the insurer, and is relatively loosely regulated. In the Anglo-Saxon world, the insurance tradition comes from the Maritime law. The intermediary is the broker, who is seen as a representative of the insured. The broker is highly regulated, as he has plenty of autonomy to negotiate the contracts, which are mostly short-term deals. In this tradition, "Insurance is bought, not sold".

If consumers buy micro-insurance, it might be because they are afraid of falling ill. It might be because they are afraid the wage earner might lose his earning capabilities. They might worry about the loss of a family's cattle or sheep. They might worry that their house will fall in the next typhoon or storm. Thus, the insurer needs to sell his product that covers most of these risks, in order to reach a maximum number of people. The goal is to make a small profit and gain wide exposure to as many uncorrelated risks as possible<sup>20</sup>.

If risks so far apart from each other are pooled together, accurately underwritten and wisely claims handled, premiums can reach a minimum scientific level not available in commercial insurance products in developing countries<sup>21</sup>. Developing countries have small insurance markets in which risks are concentrated. These risks are not spread out to reach the broader population. Their property is tied in the same areas, their vehicles are the same models, and they drive in the same streets, and are subject to the same crime and accidents patterns. There is a whole new universe just a few barrios down the street where risk patterns are completely or at least partially uncorrelated to the usual business these insurers have booked for decades<sup>22</sup>. The big difference between developed countries and developing countries penetration standards is the breadth of low-income households with insurance in the former and the latter. Insurance markets can reach comparative ratios of countries GDPs in both North and South America, if only the poor were reached (WITTE; REINEICKE, 2005, p. 39, box 11)<sup>23</sup>.

Concluding, the best way of selling micro-insurance is through bulk purchase of risks easy to understand to a broad thick income group. Thus, microinsurers must sell life, health, property, and livestock coverage to everybody in a slum<sup>24</sup>, or poor barrio, with high co-pays, short quick settlement for losses, arbitrated through parametric indicators widely known. Premium must be the bare minimum for insurers to make a profit. Low premiums guarantee penetration and cover the minimum expenditures of an earnest claims handling scheme.

All these worries, very common and important, are not the realm of this article. This article presents financial solutions that can be used on a variety of micro-insurance structures of underwriting, brokerage and claims handling schemes. The financial product GILR-Bond allows for micro-insurers to charge lower spreads because of lower cost of capital

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<sup>20</sup> About pooling different risks together, see De Aghion; Murdoch, 2005, p. 16.

<sup>21</sup> McCord (2008): the passage on health insurance, page 14, has a good insight on pooling different coverage together in the same micro-insurance product.

<sup>22</sup> Amongst the four billion people that live on less than two dollars a day, only 10 million have insurance coverage.

<sup>23</sup> The United Nations has started in 2004 a partnership with Allianz, a German Insurer, to increase insurance penetration on this population that lives on less than US\$ 2 a day. Their term life policy charges a US\$ 1.05 premium and provides US\$ 420 to surviving families.

<sup>24</sup> About the importance of community involvement on microinsurance operations, please see: <http://www.villagebanking.org/site/c.erKPI2PCloE/b.2394109/k.BEA3/Home.htm>.

(HARRINGTON; NIEHAUS, 2004)<sup>25</sup>. This article is not tied to smart operations, smooth claims handling, or sharp underwriting. It is all about how little will cost your capital, and how big is your capacity to pay losses, face volatility and buy exposure. In all these regards, capital markets are widely recognized to be far more able to perform than are regular insurers. Insurers face higher costs of capital than investors. Insurers get funds in the market as any other company. Insurers must invest their fiercely regulated portfolio with meager returns, and earn a profit. Meanwhile Insurers face ever-growing adversities with regard to legal, judicial, and natural disasters issues. It feels as if insurance regulators, consumers associations, jurors, and global warming all conspired to increase premiums. Financial investors have to allocate exposures according to portfolio theory strategies. They earn a profit by increasing the level of uncorrelated exposures (COX; FAIRCHILD; PEDERSEN, 2000, p. 157-193)<sup>26</sup>. Financial investors have a low probability of default in an aggregate basis, compared to a single insurer. Thus, they can be more aggressive investing their portfolio. Consumers can experience lower premium, which is crucial for wider and more sustainable market penetration in the micro-insurance business<sup>27</sup>.

This is the issue of this article. All the rest is out of its scope.

## 2.1. Latin America in the front seat

Until this day, Latin American markets were way behind developed countries in the use of derivatives (DE LA TORRE; SCHMUKLER, 2007, p. 15). If regional capital markets were to take a role in the derivatives ride, they would take the backseat. Usually, modern products (CUMMINS, 2007) are well settled in developed countries well before they timidly reach their first steps on emerging markets. The famous BRIC report that Goldman Sachs' Jim O'Neill wrote in 2003 stated that Emerging Markets are prone to take over the lead in world economy by 2050<sup>28</sup>. Most recent data from the IMF shows that BRIC countries have already a larger economy than the US. Their GDP measured in Purchase Power Parity terms, at current US\$, is already larger than the USA's GDP.

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<sup>25</sup> It is very important to solidify the concept of cheaper capital costs in financial markets. Here follows this explanation presented by Harrington and Niehaus: "... Because insurers hold capital to ensure that they will be able to perform their contractual promises (pay claims) to policyholders, the cost of holding this capital is an additional cost of insurance contracts. In contrast, once two parties with negatively correlated exposures have been identified, a comparatively small amount of capital is needed to ensure contractual performance on a derivative contract that hedges the risk of both parties. The reason is that the derivative contract will require a payment only when the firm's cash flows otherwise would be high. For example, an oil user who has purchased an oil forward contract will have to pay the seller of the forward contract (the oil producer) when oil prices are low, which is when the oil user has relatively high cash flows from operations, conversely, the oil producer will have to pay the oil user when oil prices are high, which is when the oil producer has relatively high cash flows. Provided derivative contracts are used to hedge, the contractual parties should need comparatively little capital to bond their performance under the derivative contract. Insurers, on the other hand, typically hold considerable capital to bond their performance to policyholders."

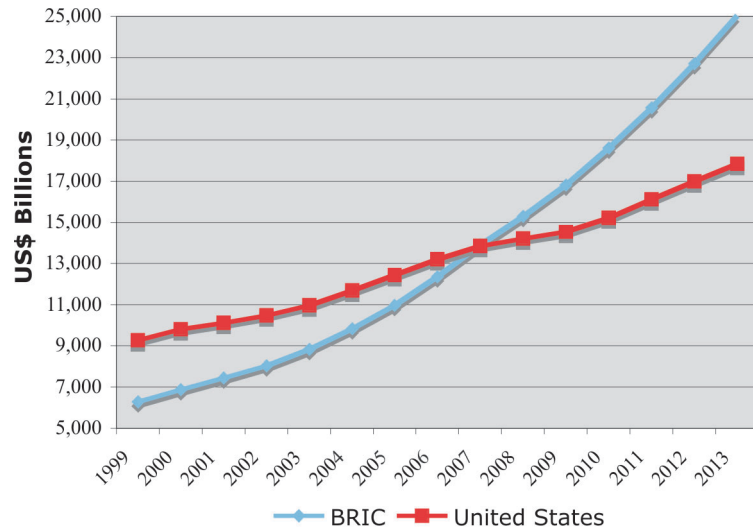
<sup>26</sup> "A market is said to be complete if every pattern of cash flows can be replicated by some portfolio of securities that are traded in the market. The payoffs from insurance-based securities, whose cash flows may depend on hurricanes, earthquakes and so on, cannot be closely approximated by a portfolio of the traditional assets that are already traded in the market such as stocks and bonds."

<sup>27</sup> All these issues will be presented in the next chapters.

<sup>28</sup> <http://www2.goldmansachs.com/ideas/brics/index.html>.

**Chart 1 – GDP Gross Domestic Product in PPP – Purchase Power Parity terms, measured in current US\$ Billions. Data from IMF: Economic Outlook April 2008 Edition. Data from 1999 to 2007 is official country data. 2008 to 2012 data are IMF Estimates. Data Available at: [www.imf.org](http://www.imf.org)<sup>29</sup>**

US Vs. BRIC Countries (Brazil, Russia, India and China)  
GDP measured in PPP US\$. Data from 1999 to 2013



Hence, the financial product now presented in this article aims to be marketed directly in a BRIC country: Brazil. This financial product will capitalize the particular circumstances that make Brazil an advantageous place for business. The cash rich commodity export driven South American giant has weak financial services and insurance industry. It also has soft financial sector regulation. Finally, it is a target market for micro-insurance schemes, as a considerable share of its population is very poor. Besides, regular insurance products do not reach most Brazilians. The GILR-bond needs countries with cash rich capital markets starving for uncorrelated risks to improve sound portfolio management practices to thrive.

### 3. A product to democratize derivatives – GILR-Bond

#### 3.1. What is it?

The Group Insured Loss Ratio Bond (GILR-Bond) is a mere securitization of bulks of insurance contracts (SWISS RE, 2002, p. 12)<sup>30</sup>. The group of insured consumers exchanges cash flows with investors who buy their risk, called GILR-Bond bondholders. The former pays monthly premiums to the latter, which pay the former's monthly losses. In a nutshell, it is an

<sup>29</sup> The data that filled this chart was taken from a research table available on that link: <http://www.imf.org/external/pubs/ft/weo/2008/01/weodata/weorept.aspx?pr.x=62&pr.y=11&sy=1999&ey=2013&scsm=1&ssd=1&sort=country&ds=.&br=1&c=223%2C924%2C922%2C534%2C111&s=PPPGDP&grp=0&a=>.

<sup>30</sup> "In the past, (...) risks have been guaranteed through reinsurance or finite risk arrangements. As financial officers have adopted a more integrated view of risk, incorporating both insurable and financial risks, an extended arsenal of risk financial tools has been developed. This 'arsenal' includes not only traditional reinsurance and financial reinsurance products, but also financial markets products. These would include structured financing and insurance derivatives to transfer insurance risks to the capital markets".

insurance-derivative swap<sup>31</sup>. It is a 100% ceding treaty reinsurance agreement issued as a bond in the market. It allows, as it will be explained below, many important advantages to insurance consumers. Just to name a few: it allows for lower premiums<sup>32</sup> and lower insurer insolvency risk.

### 3.2. What it is not – Cat bond

This product was drafted as the opposite of a derivative called Cat bond<sup>33</sup>. A Cat bond is a catastrophic bond that guarantees risks related to catastrophic events, such as natural disasters. It is usually underwritten by very few firms, and it is sold in the market at very expensive rates<sup>34</sup>. Thus, only very few market players (COX; FAIRCHILD; PEDERSEN, 2000, p. 157-193)<sup>35</sup> can actually enjoy its benefits. As it will be shown below, the GILR-Bond democratizes Cat Bonds and derivatives in general to unsophisticated players.

Instead of guaranteeing high-severity, low-frequency risks, as Cat Bonds do, the GILR-Bond guarantees low-severity, high-frequency risks. This means that, instead of guaranteeing losses caused by a category-four hurricane that might hit Cancun, the GILR-Bond guarantees all Rio de Janeiro drivers insured with Sul America<sup>36</sup>. Thus, instead of paying catastrophic losses that have a 1 in a 100 year occurrence probability, as Cat Bonds do, The GILR-Bonds pay very small and frequent losses that occur on a daily basis. Because of their aggregated frequency, and not their individual value, they can justify the securitization (COX; FAIRCHILD; PEDERSEN, 2000, p. 157-193)<sup>37</sup>. operation in a profitable manner<sup>38</sup>. These policies, pooled together, are the underlying risk for the derivative. The final value in Brazilian reais is the total volume of premium paid, minus the aggregate cost of all the losses of these Rio de Janeiro drivers previously insured with Sul America.

### 3.3. Structure<sup>39</sup>

This is how the first issuance of the GILR-Bond would be set up:

All drivers who currently have insurance with Sul America in Rio de Janeiro pull their risk together with the assistance of an insurance broker, or Sul America's underwriting team to securitize that risk and issue a bond. That bond would yield a return based on the difference between premium earned and losses. Premium earned would mean premium paid by consumers minus brokers' commission, underwriting and claims handling costs.

<sup>31</sup> A Swap is a series of exchange of cash flows with the counterpart according to a pre set index. See more at: <http://www.nfa.futures.org/BasicNet/glossary.aspx?term=S>.

<sup>32</sup> Regarding the high prices of reinsurance in the international markets, a product that without a shadow of doubt increase cost of insurance to the consumer, see Froot (1999): "Writing reinsurance at anywhere near actuarially fair premiums is viewed as being against shareholders' best interests".

<sup>33</sup> [http://www.house.gov/apps/list/hearing/financialsvcs\\_dem/seo\\_revised\\_testimony.pdf](http://www.house.gov/apps/list/hearing/financialsvcs_dem/seo_revised_testimony.pdf).

<sup>34</sup> Id.

<sup>35</sup> "During 1997 and 1998 there were successful catastrophe risk bond issues by USAA, Swiss Re, Winterthur, St. Paul Re, and others".

<sup>36</sup> Insurance company based in Rio de Janeiro, Brazil. Website: <http://www.sulamerica.com.br/>.

<sup>37</sup> "As a broad definition, securitization means "the bundling or repackaging of rights to future cash flows for sale in capital markets". In all the cases we mention here, and more generally in all of the deals we know of, the repackaging provides a more efficient allocation of risk".

<sup>38</sup> In that regard, securitizations of insurance contracts work just as regular microinsurance.

<sup>39</sup> Cox; Fairchild; Pedersen, op. cit., p. 157-193: "The securitization technology applies to many kinds of risk, not merely catastrophe risk. In asset and liability securitizations the common structure typically involves four entities: retail customers, a retail contract issuer, a special purpose company, and investors".

This Bond would be traded on a clearinghouse. At first, the bond would be underwritten by insurers, and hopefully in the long run underwritten by professional underwriters. That is in fact underwriters' traditional historical function, i.e. merely evaluating the risk<sup>40</sup>. The clearinghouse could be set up at BM&F<sup>41</sup> over-the-counter derivatives market. In order to play in that market, investors would have to post a bond, which would vary according to the size of exposures that investors would have on that market. Alternatively, aggressive mark to market daily regulation of hedge funds would allow for lower guarantees setting, in order to increase investors' spread and reduce final potential premium to consumers.

### 3.4. The role of investors

Investors would eagerly<sup>42</sup> buy exposure to this new financial tool. Simply because this is a risk that today is still privy to a few financial players. Insurers have long held this monopoly over insurable risk or pure risk. Now, investors can gain exposure to these bonds, and they would certainly pay a premium for that (COX; FAIRCHILD; PEDERSEN, 2000, p. 157-193)<sup>43</sup>. The general portfolio theory recommends<sup>44</sup> a larger exposure to uncorrelated risks in order to enhance the probability of return on the long run. Portfolios all over the world would eagerly attend to purchase this new risk, which once has come contaminated in insurance companies stocks, but that now is separated and free from other impurities.

The product launching must be aggressive, because Insurers want to keep their business and profit averages intact. There is a deep conservatism in insurers which is more heightened than in the rest of the population. It is called<sup>45</sup> risk aversion<sup>46</sup>. Financial investors ought to pay an initial "market entry" premium to turn this product into reality. Investors might need to face tight profits or even meager losses in the first operations of this type. Insurers might pass out the very worst (COX; FAIRCHILD;

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<sup>40</sup> As the famous underwriters of the Lloyds of London started in the early 17<sup>th</sup> Century, by merely evaluating risk offered at the Lloyd's Cafe. The risk takers were the capitalists, the so called Names, who employed those underwriters (JERRY, 1996, p. 40). It is also worth to mention this following piece of historical information: "By 1688, it was customary for a person interested in obtaining insurance on a particular vessel or cargo to go to Lloyd's and circulate among those present a slip of paper upon which was written a description of a vessel or cargo, the identity or nature of the captain and crew, the voyage contemplated and the amount of insurance desired. Any one interested in insuring the vessel or cargo would write beneath the description their name or initials, followed by the amount for which that person was willing to be held liable in the event of a loss. The term "underwriter" evolved from this practice. In 1692, Lloyd's moved to Lombard Street." (JERRY, op. cit., p. 18).

<sup>41</sup> BM&F stands for Futures and Commodities Exchange. The name in Portuguese is "Bolsa de Mercadorias e Futuros".

<sup>42</sup> [http://www.riskglossary.com/link/portfolio\\_theory.htm](http://www.riskglossary.com/link/portfolio_theory.htm).

<sup>43</sup> "At the 1997 Swiss Actuarial Summer School held at the University of Lausanne we heard from Winterthur actuaries of a proposal to issue bonds which would transfer mortality risk to bondholders. It seems intuitively clear to us that mortality risk has low covariance with the stock market and thus we expect these bonds would be attractive to investors".

<sup>44</sup> Diversification is scientifically proven by the Law of Large Numbers: "Suppose you toss a coin over and over. The Law of Large Numbers does not tell you that the average of yours throws will approach 50% as you increase the number of throws; simple mathematics can tell you that, sparing you the tedious business of tossing the coin over and over. Rather, the law states that increasing the number of throws will correspondingly increase the probability that the ratio of heads thrown to total throws will vary from 50% by less than some stated amount, no matter how small. The world 'vary' is what matters. The search is not for the true mean of 50% but for the probability that the error between the observed average and the true average will be less than, say, 2% – in other words, that increasing the number of throws will increase the probability that the observed average will fall within 2% of the true average" (BERNSTEIN, 1996, p. 122).

<sup>45</sup> <http://cepa.newschool.edu/het/essays/uncert/aversion.htm>.

<sup>46</sup> <http://hspm.sph.sc.edu/Courses/Econ/RiskA/RiskA.html>.

PEDERSEN, 2000, p. 157-193)<sup>47</sup>, volatile risks before they share reasonable products. A good alternative might be to work with independent brokerage firms to re-direct some of their business to this type of issuances. That would create the beginnings of much wanted competition between capital markets and insurance industry<sup>48</sup>, with obvious chances of gains for consumers, investors, market solvency and even insurers themselves. Investors can afford to charge lower premiums to gain exposure to these “insurable risks” in the beginning, when the risks passed away by insurers should be very volatile.

### 3.5. The role of the insured group

The insured group should accept to transfer risk to financial investors instead of insurance companies<sup>49</sup>. Consumers can make this whole operation work regardless of what the insurance industry wants. A broker can pool the risks, securitizing these contracts into a bond, after underwriters evaluate the risk history in the recent past. Underwriters would work in the same way as rating agencies have worked advising real estate securitizations. It is difficult to estimate premium reduction (COX; FAIRCHILD; PEDERSEN, 2000, p. 157-193)<sup>50</sup> to consumers. The important thing is to recognize their main elements.

Larger capacity of capital markets + lower regulatory restraints + lowers commercial costs+ lower administrative costs + more competition + lower cost of capital.

The elements that would account for higher premium to consumers are:

Insurers' initial premium to sell their underwriting information + initial volatility due to poor quality of risks initially sold to the market + litigation problems until regulation is settled.

While the former are all structural and permanent factors, the latter are all transitory in nature. Thus, the GILR-Bond product is sustainable in nature, even if it faces some difficult problems at its first issuances. This is what consumers must understand while involving in this operation.

### 3.6. The role of insurers

The insurer, in the model of securitization of insurance contracts presented here, is the underwriter (SWISS RE, 2002, p. 12). The first issue to consider, with regard to the structure of the GILR-bond issuance, is asymmetry of information (ARROW, 1963)<sup>51</sup> between the insured group

<sup>47</sup> “Insurance risk securitizations present a moral hazard problem that has to be addressed. The insurer has an incentive to apply the coverage to a loss so it will not have to pay a coupon (...).”

<sup>48</sup> “Purchasing reinsurance is essentially a capital structure decision, with equity capital and reinsurance acting as substitutes” available at: Berger; Cummins; Tennyson (1992, p. 253-272). The article was quoted at another publication available at: <http://aria.org/RTS/proceedings/2003/Powell&Sommer%20Risk%20Theory%20Final%20Submission.pdf>.

<sup>49</sup> Id.

<sup>50</sup> “In the United States some companies offer very attractive term life insurance rates on selected lives in a very competitive market. There is little experience to indicate what the ultimate mortality will be for these select lives. Securitization would allow very long term coverage of the risk that ultimate mortality will diverge greatly from projected mortality for the selected lives”.

<sup>51</sup> In his article, Arrow explains that asymmetric information does not allow consumers to negotiate with doctors on a level playing field. Doctors can make consumers over spend resources (i.e. exams, drugs, even procedures). Arrow also explains that Insurers, as third party payers, are also less able to understand health needs of its consumers than doctors.

and financial market investors. That is where the underwriter comes<sup>52</sup>. The underwriter evaluates contractual risks posed by the insured group to prospective bondholders, estimating premium and expected return. Insurers could play that risk evaluation role from the beginning, selling their financial opinion for a fee. They might also charge a fee for claims-handling services.

The insurance industry must dissociate itself from the idea that the underwriter is the retainer of risks. It is not because a company evaluates a sound risk, that it has to retain it in their books for a variable profit. Underwriting can be a standalone service performed for a fixed fee. Variable return is not tied to risk evaluation. Underwriters can and should work for a determined pay. Their profit should arise from their respectability in the market as accurate advisors, not from their capacity to acquire capital in the market, through equity or debt, invest reserves, handle claims, pay brokers, manage their human resources framework, and capture a variable profit after their quarterly earnings report. Underwriting and claims handling should be kept together on the same company, as one activity reinforces the quality of the other. But it is far from desirable to retain capital origination and reserves management on that same company as well.

Just like a rating agency, these underwriters and claims handlers depend on market trust or perception of said trust. In order to avoid a pro-market bias, regulators must play the same role as they have done, keeping tight scrutiny for claims handling and underwriting standards. Under this model presented on this article, GILR-Bond premium may not be adjusted to confirm return over investments during the duration of a contract, i.e. one year. Although assessment models of insurance, adjusting premiums over time are not very popular, this could be used in the beginning to smooth volatility on bad risks passed away by insurers. It is one possibility in order to avoid jeopardizing a whole new product over bad performances in bad years. This is however, something that must be made very transparently, in order to reduce lax claims handling. Claims handling can become overly generous if premiums can be monthly adjusted to cope with losses.

### **3.7. Brokers, to pull the insured group together**

Who would pull all these contracts spread out in the market? Well, that can be done through a brokerage house, or a group of syndicated insurance brokers. They must convince consumers to create an insured group. This happened before, in the 1970's in the USA. They were called insurance-purchase groups, also known as risk retention (HOLMES; RHODES, 1996, p. 293) groups<sup>53</sup>. These days, they go around as modern "captive insurer" consumers (HARRINGTON; NIEHAUS, 2004, 589,6 and 302)<sup>54</sup>. In Brazil, Petrobras has strong captive insurer operations

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<sup>52</sup> For a discussion on asymmetric information between primary insurers and reinsurers, and how that affects how much it costs and in which forms is reinsurance available, see Jean-Baptiste; Santomero (2000, p. 274-297).

<sup>53</sup> US Regulation on the GILR-Bond is that of a risk retention group and some elements of securities.

<sup>54</sup> "Although technically not captive insurers, risk retention groups have most of the characteristics of group captives (...) Prior to 1981, the formation of pooling arrangements among firms was hindered by the requirement that pooling arrangements generally had to satisfy state insurance regulations in order to legally provide primary insurance".

based in the Caribbean<sup>55</sup>. According to our product GILR-Bond, these groups of insured consumers should sell their “insurable” risk to bondholders willing to get some exposure to pure risk. But ideally, the first pilot operations would be set up by insurers selling bulk of their risks. This happened before in 2001 when Prudential<sup>56</sup> sold their life insurance operations. Prudential securitized the bulk of its contracts and sold them as bonds in the market. This is a good start, but it is far from the complex financial product presented here, in terms of advantages to consumers and market players in general.

Micro-insurance operations can be organized as well. However, it is likely that the lack of history and risk experience might cramp demand, or heighten risk premium charged by investors willing to buy exposure to these initial GILR-Bond issuances. Yet, the attractiveness of new risks might be strong enough to allow some demand for these micro-insurance GILR-Bond issuances.

### 3.8. Comparison: Insurance contract and the GILR-Bond

- a) Lower cost of capital  
Capital to insurers and reinsurers is scarcer and more expensive than it is to financial investors in general. Insurers also face heavier administrative and legal burdens and costs than do investment institutions such as hedge funds<sup>57</sup>, mutual funds<sup>58</sup> and others. Hence, if financial institutions face lower cost of capital than do insurers, premium charged to consumers<sup>59</sup> might be cheaper than the one charged by insurance companies, in an even more competitive market.
- b) Portfolio theory  
One of the many risk classifications divides risks into price, credit and pure risk (HARRINGTON; NIEHAUS, 2004, p. 5, 6)<sup>60</sup>. Price risk is the

<sup>55</sup> Bear is the name of the captive. It does not retain risk, it just puts it into the market: <http://64.233.169.104/search?q=cache:qGNhbqmqzAFcJ:www2.petrobras.com.br/ri/ing/ConhecaPetrobras/FatoresRisco/GerenciamentoRiscos.asp+petrobras+captive+operations&hl=en&ct=clnk&cd=1&gl=us&client=safari>.

<sup>56</sup> In December 2001, Prudential Financial executed a closed block securitization of participating insurance policies simultaneous with its demutualization. Prudential issued 110 million “class A” shares in its initial public offering, raising approximately \$3 billion, and distributed an additional 456 million shares to policyholders. At the same time, it securitized the closed block by issuing debt securities and “class B” equity, which holds the residual interest in the block. The Prudential closed block transaction is representative of an emerging class of whole business securitizations, “through which an entire operating business is isolated, its operations codified in servicing agreements, and its cash flows dedicated to investors” (Millette, et al., 2002, p. 403, apud Cummins, 2005).

<sup>57</sup> Regarding the clearing house exemptions on regulation of the Commodities Futures Modernization Act of 2000 see generally at the commodity Futures Modernization Act of 2000, Simpson Thacher & Bartlett, 2, at [www.simpsonthacher.com/FSL5CS/memos/memos664.asp](http://www.simpsonthacher.com/FSL5CS/memos/memos664.asp) (March 25th 2002). Because the CFMA defines as eligible contract participants most players that will be trading the GILR-Bond. Financial institutions, hedge funds, investment companies, certain commodity pools, large corporations and partnerships, certain commodity pools, large corporations and partnerships among others.

<sup>58</sup> <http://www.sec.gov/investor/pubs/inwsmf.htm>.

<sup>59</sup> With regard to reinsurance’s high prices in international markets, see Froot (op. cit., p. 12). Reinsurance is a product that affects final cost of insurance to consumers on a direct basis.

<sup>60</sup> “Price risk refers to uncertainty over the magnitude of cash flows due to possible changes in output and input in prices”. (...) “The risk that a firm’s customers and the parties to which it has lent money will fail to make promised payments is known as credit risk”. (...) “Pure risk sometimes is defined as risk where the random outcome can only result in loss (produce a cash outflow); that is, no outcome involving a gain (cash inflow) is possible. But this is also true for other uncertain cash outflows faced by firms (e.g. the cost of raw materials). This definition also ignores the fact that businesses or individuals gain financially whenever losses from pure risk are less than expected. The gain is no different in substance from the gain that would occur if the price of raw materials dropped so that the firm could buy them more cheaply”.

type of risk generally associated with inputs and outputs from a given corporation. Credit risk, is the risk associated with the possibility of default and pure risk is the risk generally spread through insurance contracts. Pure risks have long been the object of an insurer's monopoly hardly challenged for most of financial history. When financial markets institutions become able and allowed to book pure risk exposures in their portfolio, return-over-investment is more likely (HARRINGTON; NIEHAUS, 2004, p. 59)<sup>61</sup> than not to increase over the long run. Thus, according to portfolio theory, investment firms will book some exposure to pure risks, as soon as they are allowed to do so, even if risks are somewhat volatile<sup>62</sup> at first.

c) Lower risk of insolvency<sup>63</sup>

Because on the GILR-Bond model, the pool of insurance contract's risk is pulverized in thousands of bondholders, instead of a single insurer, insolvency risk is lower for consumers. Market players must post a bond to play in that market, at the level to be determined by all regulatory agencies with jurisdiction over this market: In Brazil, SUSEP, CVM and Banco Central. In the USA, it would be the SEC<sup>64</sup>, state insurance regulators<sup>65</sup> and CTFC<sup>66</sup>. The clearinghouse is an administrative facility, which holds no pure insurable risk, only default (credit) risk from the contracting parts (bondholder and group insured) above and beyond the bond posted to play in the market. Thus, it is not an insurer under any legal definition<sup>67</sup>.

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<sup>61</sup> "Just mentioning the key mathematical and logical concepts that explain this issue: 'a probability distribution describes the possible outcomes and the probabilities of those outcomes for a random variable. Standard deviation or variance is a measure of probable variation around the expected value of a probability distribution for a random variable and thus, of the risk (unpredictability) of the variable'. Those are the basis for insurance contracts diversification, but work on the other hand for investment and diversification for better return as well (i.e. if one can understand that lower probability of losses means better return on investments)".

<sup>62</sup> "From 1871 to 1958, stock yields exceeded bonds yields by an average of about 1.3 percentage points, with only three transitory reversals, the last in 1929. In an article in Fortune Magazine for March of 1959 Gilbert Burke declared, "It has been practically an article of faith in the U.S. that good stocks must yield more income than good bonds, and that when they do not, their prices will promptly fall" (see Bank Credit Analyst, 1995). There is reason to believe that stocks yielded more than bonds even before 1871, which is the starting point for reliable stock market data. Since 1958, bond yields have exceeded stock yields by an average of 3.5 percentage points. As cited in Bernstein (op. cit., p. 334).

<sup>63</sup> "Moreover, if default occurs, the magnitude of the loss is presumably smaller, as a single counterpart represents only a small portion of the portfolio. Credit enhancing arrangements (such as collateral agreements) and the establishment of credit limits for each part are also helpful in managing the credit risk incurred through the use of derivatives" (SWISS RE, op. cit., p. 6).

<sup>64</sup> In SEC V. W.J. Howey Co. 328 U.S. 293, 90 L. ED. 1244, 66 S.Ct 1100 (1946) each investor acquired an individual parcel of citrus fruit acreage together with a portion of the profits arising from the promoter's management of the citrus grove, id at. 295-296. The Supreme Court held in Howey that an investment contract is a security if the investors (1) expect profits from (2) a common enterprise that (3) depends upon the efforts of others. Id. at 298-299.

<sup>65</sup> See e.g. State ex rel. Consumers League vs. Ratchford, 1982, 457 N.E. 2d 878, 8 Ohio appl 3d 420 (court held that superintendent of insurance had a clear duty either to require certain issuers of credit life insurance to show cause why their rates should not be reduced, or to make the reductions through disapproval filings requiring a credible loss ratio of 50%) cited in Holmes and Rhodes (op. cit., p. 54).

<sup>66</sup> See generally at the commodity Futures Modernization Act of 2000, Simpson Thacher & Bartlett, 2, at [www.simpsonthacher.com/FSL5CS/memos/memos664.asp](http://www.simpsonthacher.com/FSL5CS/memos/memos664.asp) (March 25th 2002).

<sup>67</sup> Most legal definitions of insurer in the US revolve around the idea of retaining risk, marketing to the public, with the objective of profit.

For example: So, if the group insured losses forecasted by underwriters amounts to 70% of premium, but because of an atypical year, or poor claims handling grip of losses, this figure mounts to 98% of premium, and administrative costs jump to 19% due to the extra work handling these claims, and no reinsurance was purchased, then the bondholder will have to pay the remaining 17% of costs. If all fails, the clearing house discounts the bond.

d) Lower premium to consumers

The GILR- Bond yield index is the offsetting difference between the loss ratio and the premiums paid by the insured. One might ask: Is this enough? Well, it has allowed insurers to live well up to this day, with far greater cost of capital than investment firms must bear. Thus, it seems very likely that it is enough. GILR-Bond is cheaper because it accesses excess capacity from capital markets, which means lower cost of capital. There is demand for GILR-Bond as it offers pure risk to portfolios that are always eager to diversification ((HARRINGTON; NIEHAUS, 2004, p. 59)<sup>68</sup>. The final effect in a competitive market is lower premium for consumers. Hence lower premium is caused by heightened demand, and lower cost of capital faced by investors when compared to insurers. Lower legal, administrative, and commercial costs, as explained throughout this article, are other elements that contribute to a final product that is cheaper to all.

## 4. GILR-Bond and securitization in Brazil

### 4.1. The GILR-Bond in Brazil

The GILR-Bond is prone to blossom in the region. Latin America has weak capital markets system. Banks and financial investors' portfolios are heavily concentrated in local government debt. Their equity holdings are the "usual suspects"<sup>69</sup>: two or three stocks that control the stock market index. To make matters worst, Insurance companies in the region are usually tied to families with controlling interest<sup>70</sup>. It is easy to imagine that financial investors' portfolios are not exposed to a depth of risks. Moreover, these portfolios are not even exposed to pure risk through insurer's stock holdings. In the US, at least investors can purchase insurer's stocks<sup>71</sup>, in order to gain exposure to pure risk<sup>72</sup>.

<sup>68</sup> "A probability distribution describes the possible outcomes and the probabilities of those outcomes for a random variable. Standard deviation or variance is a measure of probable variation around the expected value of a probability distribution for a random variable and thus, of the risk (unpredictability) of the variable".

<sup>69</sup> Petrobras and Vale represent a third of the Brazilian stock market index: <http://www.bovespa.com.br/Mercado/RendaVariavel/Indices/FormConsultaCarteiraP.asp?Indice=lbovespa>.

<sup>70</sup> Explaining the steps taking by the very few insurers and health plans who went public: [http://www.sindseg.com.br/areas/sala\\_imprensa/colunistas\\_texto.asp?id=172](http://www.sindseg.com.br/areas/sala_imprensa/colunistas_texto.asp?id=172).

<sup>71</sup> A brief list of insurance companies traded at the NYSE is available at: <http://www.nyse.com/about/listed/1120128534205.html?ListedComp=All>.

<sup>72</sup> "The exchange may also attract investors and speculators to participate in profits from the underwriting experience of the reporting companies. In effect, these players would be taking pure insurance risk, as opposed to the insurance, management and economic risk they would assume in purchasing insurance company stocks" (SWISS RE, op. cit., p. 26).

Thus, on one hand, investors have so little exposure to pure risk, that they would have a higher inclination to buy GILR-Bond than US companies, because at least in the US insurers' stocks are publicly traded. On the other hand, investors are so used to hold government bonds that their risk appetite is reduced, due to strong moral hazard arising from weak institutional settings. This can be solved with a good legal framework to protect the GILR-Bond issuance.

The GILR-Bond has plenty of possibilities to thrive under legal aspects in the region. First of all, insurance regulation is at its infancy in the region, when compared to the US market (ETTLINGER; HAMILTON; KROHM, 1995, p. 67, 62-64)<sup>73</sup>. In Brazil, most insurance regulation<sup>74</sup> comes from one Act, whereas in the US there are plenty of statutes<sup>75</sup> and decisions<sup>76</sup> creating a confusing<sup>77</sup> environment<sup>78</sup>. It would be relatively easy to create statutes allowing for far wider possibilities in pure risk securitization. Second, insurance regulators are federal in the region. In the US, companies have to struggle with 50 different authorities, writing different statutes, facing different court rulings. This cumbersome process creates very little certainty. In Latin America and Brazil, a good statute approved with one regulator is good to allow a secure issuance of the GILR-Bond in the whole country.

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<sup>73</sup> "In 1944, a landmark decision by the U.S. Supreme Court declared that insurance was interstate commerce subject to federal regulation. As such, the Anti-Trust provisions of the Sherman, Clayton, and Robinson-Patman Acts applied to the business of insurance. In Effect, this decision outlawed the coordinated rating that associations like SEUA were doing unless states actively supervised rating". (...) In fact, this question that caused legislature to promote Mc Carran Ferguson Act has been back on the scene very recently. In fact, 19 state attorneys in 1989 started a law suit against ISO, with the same claims of "sharing data about losses to create rate and price fixing (or manipulation). That, if done in other industries, would not be allowed, because of the anti trust issues it arises. Nevertheless, in the insurance industry is necessary, mainly because the amount of data held by one insurer is not enough to predict with certainty what prices the insurer should file in order to face future expected losses".

<sup>74</sup> Decree-Law 73 from 1966.

<sup>75</sup> " On the other hand State Law could not dispose on:

- common law causes of action for failure to provide benefits to insureds;
- stockholders protection ( which would be governed by Securities Federal Acts);
- regulation of annuities contracts (also under SEC rules and examination); and
- Retirement plans for state employees (ruled by ERISA)." John F. Wagner Jr. Supreme Court's view as to validity, construction, and application of McCarran-Ferguson Act (15 USCS §§ 1011-1015), concerning regulation of business of insurance by state or federal law, at Lexus – Lexsee 125 L. Ed. 2d 879.

<sup>76</sup> United States V South-Eastern Underwriters Ass' n 322 US 533 (1944).

<sup>77</sup> Congress has expressly put all his power to support state regulation of the business of insurance, to sustain such regulation from any attack regarding the commerce clause (Art. I, § 8, cl 3), subject only to the exceptions expressly provided for by other constitutional provisions. Supreme court concluded from the Act that: uniformity is not in the public interest, unless when specifically provided; State taxes which might have held discriminatory did not place a burden in interstate commerce that it should not bear in the competition with local business.

<sup>78</sup> In "Prudential Ins. Co. vs. Benjamin" (Prudential Ins. Co. vs. Benjamin, 1946, 328 US 408, 90 L Ed 1342), it is observed that the business of insurance regulation and taxation is on the State's hand, and Mc Carran Ferguson just enhance that other federal legislations must not prevail, (e.g. interstate commercial clause), as follows: "The power of Congress over commerce exercised entirely without reference to coordinated action of the states is not restricted, except as the Constitution expressly provides, by any limitation which forbids it to discriminate against interstate commerce and in favor of local trade. Its plenary scope enables Congress not only to promote but also to prohibit interstate commerce, as it has done frequently and for a great variety of reasons. That power does not run down a one-way street or one of narrowly fixed dimensions. Congress may keep the way open, confine it broadly or closely, or close it entirely, subject only to the restrictions placed upon its authority by other constitutional provisions and the requirement that it shall not invade the domains of action reserved exclusively for the states. This broad authority Congress may exercise alone, subject to those limitations, or in conjunction with coordinated action by the states".

Another aspect is the level of development of the insurance market as a whole. Insurance companies in the region represent a small fraction of these countries small GDP. The US GDP is US\$ 13 Trillion<sup>79</sup> and 8.8% comes from the insurance business<sup>80</sup>. Brazil's GDP reached US\$ 1 Trillion<sup>81</sup>, and a mere 2.8% comes from insurance<sup>82</sup>. In a country with two thirds of the US population, it is easy to imagine the amount of risks insurers are not covering. Surveys conducted in Latin America indicate that consumers want to guarantee risks but do not buy insurance. The survey showed insurance is seen as expensive and hard to understand, according to consumers (MASCI; WEBB; TEJERINA, 2007, p. 18). Hence the GILR-Bond could cater to risks not served by the insurance industry.

This means that, if the GILR-Bond was introduced in Brazil, it would not necessarily take business off insurance companies' books. GILR-Bond could prosper filling the blanks left open by the historic inefficiencies of insurers in the region. Latin American countries must turn their deficiencies into assets. It is the quickest way to reduce the existing gap with developed nations.

Another problem that Brazil has is its weak capital markets. Companies cannot go public very easily. The stock market is based on few heavily traded stocks. 2007 was Brazil's golden year for companies willing to go public. Accordingly, there were 63 IPO's. From 1995 to 2003 there were 6 companies who went public. 2004 had 7, 2005 9 and 2006 26. From 1995 to 2005 there were two companies going public on average per year<sup>83</sup>. Brazil is preparing for the global crisis and there is plenty of volatility in the market. Companies looking to go public will have to search for capital on more expensive and less competitive sources of funding (i.e. retail banks). The official market forecast consensus<sup>84</sup> is to reduce by half the number of IPOs<sup>85</sup>. Meanwhile, interest rates in Brazil are still the highest in the world, at 11.25%. The spread charged by local banks, themselves beneficiaries of a closed and protected financial system, is roughly 3 to 4 times that value, on average. The average interest rate charged by retail banks to legal entities was 62.52% per year, on February 2008<sup>86</sup>. In a country where capital is so expensive, there is an intrinsic need for alternative forms of financing.

This is why the stock market is so concentrated in Brazil: because profitable companies cannot go public, to mature their capital structure, as they do in the US. This happens because of weak institutional

<sup>79</sup> IMF estimate is US\$ 13,194 Billion, available at: <http://www.imf.org/external/pubs/ft/weo/2007/02/weodata/weorept.aspx?sy=2006&ey=2008&scsm=1&ssd=1&sort=country&ds=.&br=1&c=111&s=NGDPD&grp=0&a=&pr.x=46&pr.y=9>.

<sup>80</sup> The US insurance business amounts to US\$ 1,168 Billion, according to Swiss-re sigma report. This report is available at: [http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance\\_Appendix\\_update.pdf](http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance_Appendix_update.pdf).

<sup>81</sup> IMF estimate is US\$ 1,067 Billion, available at: <http://www.imf.org/external/pubs/ft/weo/2007/02/weodata/weorept.aspx?sy=2006&ey=2008&scsm=1&ssd=1&sort=country&ds=.&br=1&c=223&s=NGDPD&grp=0&a=&pr.x=29&pr.y=10>.

<sup>82</sup> Brazilian insurance business amounts to US\$ 30 Billion, according to Swiss-re sigma report. This report is available at: [http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance\\_Appendix\\_update.pdf](http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance_Appendix_update.pdf).

<sup>83</sup> Available at: <http://economia.uol.com.br/ultnot/2008/01/02/ult4294u908.jhtm>.

<sup>84</sup> Available at: [http://oglobo.globo.com/economia/mat/2008/04/21/2008\\_um\\_ano\\_nao\\_muito\\_promissor\\_para\\_ofertas\\_iniciais\\_da\\_bolsa\\_ipos\\_-426982999.asp](http://oglobo.globo.com/economia/mat/2008/04/21/2008_um_ano_nao_muito_promissor_para_ofertas_iniciais_da_bolsa_ipos_-426982999.asp).

<sup>85</sup> Available at: <http://portalexame.abril.com.br/revista/exame/edicoes/0911/financas/m0150926.html>.

<sup>86</sup> <http://www1.folha.uol.com.br/folha/dinheiro/ult91u382085.shtml>.

framework. Instead of lamenting on this reality, or taking the incredibly politically difficult task of strengthening institutions, Brazil could take a short cut. Because of its own inefficiencies, this short cut should help indeed capital markets.

#### 4.2. The shortcut

The shortcut proposed is based on all the above-mentioned issues investors face while trying to diversify risk exposures. First, there is an excess of government debt in the market. There are also few options to diversify investments in a stock market dominated by few players. Thus, their portfolio is poorly balanced. Investors cannot buy insurers' stocks, as mostly are privately held<sup>87</sup>. Another advantage of Brazil to implement the GILR-Bond is its weak insurance market penetration. There are outstanding risks in the market that are not taken by insurers. There is plenty of room for pure risk securitization in that market, and micro-insurance. Finally, the commodity rich, cash rich, Brazil has enjoyed foreign trade surpluses for that in the last four years around US\$ 40 Billion. The GILR-Bond is a financial product that can tackle the many sides of this issue, without needing to wait for more mature institutionalization of capital markets.

#### 5. The GILR-Bond model affecting lowest income levels

Suffice to say that microfinance solutions aim to solve resilient problems that affect low-income households in an unequal way. The lack of penetration in the local insurance markets to purchase someone's life, property and health risks is indeed a burden. If people cannot insure their mini-vans, on the back of which they sell hotdogs for a living in the streets of Sao Paulo, a robbery might drive them back to poverty. If the head of household cannot contract health insurance in Lima, the arrival of cancer might provoke poverty not only to him or her, but to all of his or her children. Term life insurance policies could be the solution to their problems. But insurance is seen as very expensive. Besides, consumers do not trust insurers to pay when a loss arises (MASCI; WEBB; TEJERINA, 2007, p. 18).

Those problems of lack of insurance availability and excessive cost are real, according to market surveys conducted by the Inter-American Development Bank in Latin America (MASCI; WEBB; TEJERINA, 2007, p. 18). The availability of insurance for regular people to buy is not necessarily a way out of poverty. But it is definitely a way for people to avoid descending, or returning into poverty again. The existence of some initial capital in order to pay a premium is something that differentiates insurance from other financial services<sup>88</sup>. But the reduction of the number of people who becomes poor due to circumstances beyond their control is due to insurance (public or private).

With regard to entrepreneurship, insurance avoids bankruptcy and leads to sustainability. Entrepreneurs that purchase more insurance are less likely to go out of business than their rivals that purchases little or no coverage. Insurers do not guarantee wealth, but they absorb the risks entrepreneurs do not feel comfortable withholding. Thus, a down to

<sup>87</sup> Few insurers are starting to go public in Brazil, in a mild effort with inconclusive results.

<sup>88</sup> These might require some asset to work as collateral in a loan. Insurers are unique as they charge consumers to participate in the financial activity, instead of providing cash upfront and charging it at a later time.

earth example: Paulo sells limes at the traffic lights of Belo Horizonte (Brazil). As he prospers, he pays some kids to sell them around the area as well. He then becomes worried that someone might steal from his main box with thousands of limes. He might pay some off-duty local security guy from the area to look after this box. They might even agree that if the limes disappear, the security guy must reimburse for the lost merchandise. This is insurance. Primitive and simple, but it is insurance. But perhaps the security guy might steal the limes himself. Alternatively, he might never pay a dime to the poor entrepreneur from the streets if the limes are simply lost. This is “weak institutions”.

Micro-entrepreneurs in developing countries have one problem. They will have to sell many thousands of limes, hire many people, and purchase many assets, before they actually get to purchase his first formal insurance coverage. Micro-insurance in general and The GILR-Bond in specific work well in countries where the financial sector structure is weak, and where insurance penetration is low. It allows for cheaper insurance. Vast numbers of people can contract coverage. If a structured operation of micro-insurance comes along, with tailor made underwriting, claims handling, commercialization to reach the vast masses of poor entrepreneurs, then the GILR-Bond would strive providing cheaper capital for the scheme.

The availability of alternative risk management<sup>89</sup> tools like the GILR-Bond will not only drive the premium of insurance down, because of the advantages presented throughout this article, but it will also enhance capital markets institutional development. More volume of funds directed to guarantee losses, and wider levels of securitization will enhance capital markets, which will also profit from wider options to balance risk portfolios. More companies and more entrepreneurs on the market create more jobs for developing nations. With more jobs and more successful entrepreneurs, or less bankrupt entrepreneurs, the lowest income groups will be able to reduce their poverty levels.

On agricultural settings, the story might be very similar. If there is more availability of agricultural insurance, through the use of the GILR-Bond, fewer farmers will go bankrupt due to natural disasters or global warming and climate change. If more farmers harvest, not only food gets cheaper on the internal market, but also jobs become plentiful on the fields. The multiplying effects of insurance as a wealth guarantor are innumerable. The availability of cheaper insurance in Brazil would lead to more prosperity, more jobs, and less people falling into the trap of poverty due to risks they cannot control.

## 6. Conclusion

If Brazil, Latin America, or most developing countries cannot make complicated market reforms due to the intricacies of their internal policies, they might have the burden of finding new attractive tools to cover up that institutional gap. The GILR-Bond is a financial tool based on the securitization of insurable risks. It allows for consumers to enjoy lower

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<sup>89</sup> “Risk management means many things to many people. It can be defined as a discipline for living with the possibility that future event may cause harm, or as the probability that results will deviate from the expected. Whatever the definition, risk management, including proactive risk financing, provides a competitive advantage and allows organizations to experiment and take calculated chances in ways that were not possible before” (SWISS RE, op. cit., 2002).

premium. It guarantees more risks currently out of the reach of formal insurance companies. Insurance contracts securitization, pulled together with underwriting, commercialization and claims handling strategies might do the trick. It might allow for more than the few millions amongst the four billion people who live on less than two dollars a day get more insurance coverage.

But the GILR-Bond has other advantages. It allows for financial investors to purchase different and more varied risk exposures. It allows for lower solvency risk for the insured group. Brazil has even more advantages, if this product is launched there, instead of the USA. The insurance regulatory system is federal, and then less burdensome than the state based US system. Few companies go public and cost of capital is very high due to interest rates. As a consequence, there are few stocks that control the market trade. This creates a situation where portfolio diversification is less than optimum. The demand for non-correlated risk products is higher than in more "normal" developed markets. Thus, this product brings more variety and different risks to the small securities menu served in the region to local investors. Brazilian Consumers and investors will rejoice.

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