

# Microinsurance for Brazil: The GILR-Bond

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Microfinance, in general, worries about alleviating poverty in the developing world. But, how do the poorest people avoid falling into poverty traps on their way to the middle class? What recourse do people have from becoming poor due to illness, natural disaster, or the loss of assets like livestock? Microinsurance is insurance that caters to the lowest income<sup>1</sup> groups in a country and serves those who are not usually served by private insurance. The microinsurance enterprise is comprised of several components and issues. First, microinsurance relies on massive market penetration. For microinsurance to work effectively, insurance contracts must be sold to vast numbers of people at very low rates and provide coverage against losses that are usually not large. Thus, microinsurers sell millions of contracts to turn a very small profit, with even total revenue volumes being small.

Second, microinsurers are known for having simple and direct underwriting methods, usually charging the same premium to risks that are roughly similar to one another. Claims handling in microinsurance must also be straight-forward, as insurers must guarantee many losses that are not easy to identify, evaluate, and reimburse.<sup>2</sup>Third, microinsurance contends with problems of commercialization. Often times, consumers in low-income households do not trust, understand, or desire to buy private insurance. Private insurance is regularly seen in these cases as deceitful (as insurers might not pay claims) and complex (as there are policy exceptions in insurance contracts that are difficult to explain).<sup>3</sup> Overall, private insurance is not well understood in the developing world, and is seen as unnecessary.<sup>4</sup> Most of these low income populations have lived their whole lives without ever purchasing this abstract service<sup>5</sup>.

Fourth, microinsurance is a product that low-income households must purchase in a combined fashion, with one policy covering multiple events. For example, the ideal microinsurance product would cover not only health risks and life risks to the wage earner, but also the family livestock.<sup>6</sup> There are many reasons why the combination of risk coverage is important in the commercialization of microrinsurance; consumers need to be convinced that the insurance they are buying is useful. As detailed earlier, centuries have kept low income households away from private insurance, and distrust is a cultural obstacle not easily overcome. As such, by

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combining multiple policies, the extent and usefulness of insurance can be better understood by those that would benefit most, but possess the least amount of insurance. As the old adage goes, “insurance is not bought, but sold.”

Given that, if consumers buy microinsurance worried about sickness, or a loss in the family. Consumers might also worry about their cattle or sheep or their house and the next typhoon. Thus, insurers need to sell a product that covers most of these risks, in order to sell a product that will reach the maximum number of people. The goal in microinsurance is to make a small profit and gain wide exposure to as many uncorrelated risks as possible.<sup>7</sup>

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If risks that are so disparate are pooled together, accurately underwritten, and claims are wisely handled, premiums on private insurance in developing countries can reach a minimum level not typically available.<sup>8</sup> For the most part, developing countries have small insurance markets in which risks are highly concentrated to certain areas. As such, for each consumer group there are different factors in different areas contributing to insurance premiums. For example, in one area, the property is tied to the same groups of people. In another the vehicles are the same make and model and the consumers drive in the same streets. Even crime and accident patterns can vary for different areas in the same city. However, if we move just a few barrios down, there is a whole new universe where risk patterns are completely, or at least partially, uncorrelated to the patterns in other areas. The biggest difference between developed countries and developing countries penetration standards for insurance is the breadth of low income households with insurance in the former when compared to the latter. Private insurance markets can become comparatively similar in both North and South America, if only the poor were reached.<sup>9</sup>

In concluding, the best way of selling, and developing, microinsurance is through the bulk purchase of risks which is easily understood by a broad band of income groups. To accomplish this, microinsurers must sell life, health, property, and livestock coverage to everybody in a slum, or poor barrio, with high co-pays and engage in short quick settlements for losses. For microinsurance to be financially feasible, premiums must be at the bare minimum for insurers to make a profit; low premiums guarantee penetration and cover the minimum expenditures of an earnest claims handling scheme.

However, all these worries, while common and quite important, are not the subject of investigation in this article. Rather, this article seeks to present a financial solution that can be used on a variety of microinsurance structures of underwriting, brokerage, and claims handling; the Group Insured Loss Ratio Bond (henceforth referred to as the GILR-Bond). Ultimately, the GILR-Bond provides microinsurers a way to charge lower insurance premiums due to the lower cost of capital.<sup>10</sup>

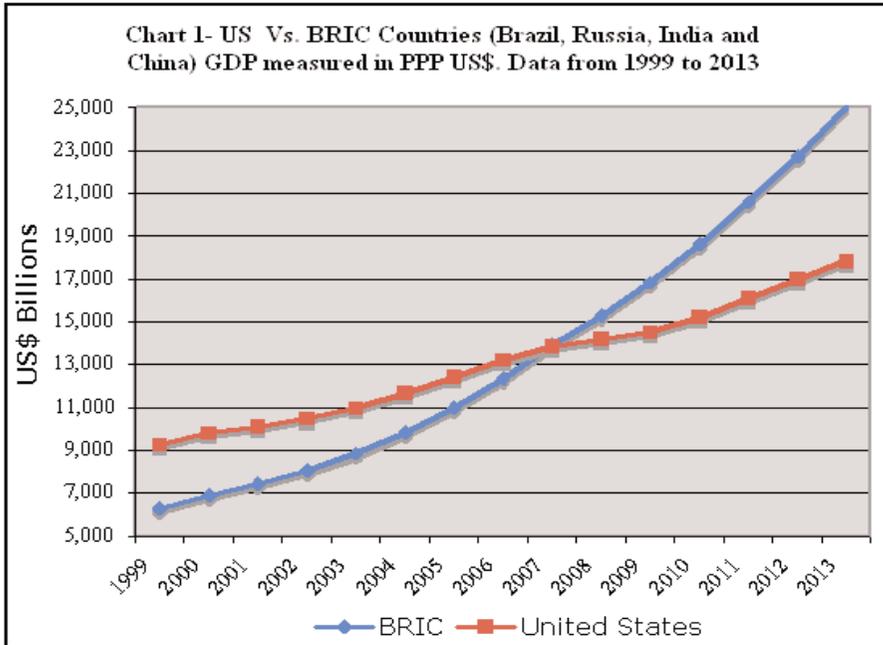
It should be noted early on, that this article is not concerned with developing smart operations, smoother claims handling, or good underwriting practices. Instead, this article explores how to decrease the cost of capital and increase the capacity to pay losses, deal with volatility, and purchase exposure. In all these regards, capital markets are widely recognized to be more capable in dealing with these concerns when compared to regular insurers. For instance, insurers face higher costs of capital than investors, yet insurers get funds into the marketplace the same as any other company. Insurers must also invest their fiercely regulated portfolio with meager returns and earn a profit. Meanwhile, insurers face ever growing adversity with regard to legal, judicial, and natural disaster issues; in the current business environment, it would almost seem that insurance regulators, consumer associations, jurors, and global warming all conspired to increase premiums.

These constraints considered, financial investors on the other hand have only to allocate exposures according to portfolio theory strategies; simply put, financial investors earn a profit by increasing the level of uncorrelated<sup>11</sup> exposure. In the end, financial investors have a low probability of default in an aggregate setting compared to a single insurer. Thus, financial investors can be more aggressive when investing their portfolio. Through aggressive diversification, consumers will experience lower premiums, which is crucial for both a wider and more sustainable market penetration of the microinsurance business.

## **LATIN AMERICA IN THE FRONT SEAT**

Until this day, Latin American markets use of derivative were traditionally not as robust as developed countries.<sup>12</sup> Usually, modern products<sup>13</sup> are well settled in developed countries before they timidly reach their first steps on emerging markets. The famous<sup>14</sup> Brazil, Russia, India, and China (BRIC) report in 2003 by Goldman Sachs' Jim O'Neill, stated that emerging markets are prone to take the lead in the world economy by 2050. Most recent data from the IMF shows that BRIC countries combined already have a larger economy than the United States. In addition, when Gross Domestic Product (GDP) is measured in purchasing power parity terms (at current dollar rates), the combined BRIC countries' GDP is still larger than the United State's GDP.

**FIGURE 1 – GDP GROSS DOMESTIC PRODUCT IN PURCHASE POWER PARITY TERMS (MEASURED IN CURRENT US\$ BILLIONS)** <sup>15</sup>



In an effort to better illustrate the gains from using and the ease of use associated with the GILR-Bond, this article will examine the theoretical entrance of this financial product in a BRIC country: Brazil. As will be demonstrated, the GILR-Bond capitalizes on the particular circumstances that make Brazil an advantageous place for business: the cash rich, commodity export driven South American giant has both weak financial services and insurance industry, in addition to soft financial sector regulation. Moreover, Brazil is currently a target market for microinsurance schemes, as a considerable share of its population is very poor and 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.

Having earlier discussed traditional issues surrounding microinsurance, and how microinsurers reduce the cost of capital in order to allow people to purchase cheaper coverage, this article will now debate microinsurance in the context of asset securitization in Brazil and will present the logic and model of the GILR-Bond. In essence, the GILR-Bond is the securitization of bulks of insurance contracts whose loss ratio is the underlying risk on a derivative swap. After discussing how the GILR-Bond works, the proceeding section analyzes Brazil's comparative advantages in launching the GILR-Bond. As it will be demonstrated, particular local circumstances related to Brazil's restricted capital markets and elitist insurance systems gave room

for the GILR-Bond to grow. The final section of this article deals with issues related to poverty reduction and the use of microinsurance in Brazil. This article concludes that the GILR-Bond could result in developing wider access to microinsurance and asset securitization in Brazil. The expansion of derivatives to a wider audience will provide lower costs of insurance and better guarantees for local entrepreneurs.

## **A PRODUCT TO DEMOCRATIZE DERIVATIVES - GILR-BOND**

### *What is a GILR-Bond?*

The Group Insured Loss Ratio Bond is a securitization of bulks of insurance contracts. In the GILR-Bond, groups of insured consumers exchange cash flows with investors, called GILR-Bond bondholders, who buy their risk. The insured consumers pay monthly premiums to the GILR-Bond bondholders, which pay the former's monthly losses. In essence, the GILR-Bond is an insurance-derivative swap,<sup>16</sup> which is a complete ceding treaty reinsurance agreement issued as a bond in the market. The GILR-Bond allows, as it will be explained below, many important advantages to insurance consumers such as lower premiums<sup>17</sup> and lower insurer insolvency risk.

### *What the GILR Bond is not - a Cat Bond*

Before we examine the GILR-Bond more closely, we must first determine what the GILR-Bond is not. Fundamentally, the GILR-Bond is the opposite of a derivative called a Cat bond.<sup>18</sup> A Cat bond is a catastrophic bond, which guarantees risks related to catastrophic events, such as natural disasters. A Cat bond is usually underwritten by very few firms, and it is sold in the market at very expensive rates.<sup>19</sup> Thus, only a few market players<sup>20</sup> can enjoy the benefits a Cat bond has to offer. As it will be shown below, the GILR-Bond essentially expands the coverage of Cat Bonds and derivatives to unsophisticated market 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, rather than 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. Accordingly, instead of paying catastrophic losses that have a very low occurrence probability, as Cat Bonds do, the GILR-Bond pays very small and frequent losses that occur on a daily basis. Because of aggregated frequency, and not individual value, GILR-Bonds can justify securitization<sup>21</sup> in a profitable manner.<sup>22</sup> These policies, pooled together, are the underlying risk for the derivative. Going back to our example, the final value in Brazilian reais is the total volume of premiums paid, minus the aggregate cost of all the losses of Rio de Janeiro drivers previously insured with Sul America.

### *Structure*

To better clarify the initial issuance of a GILR-Bond, we will rely on a hypothetical situation to better describe the GILR-Bond model. Imagine that all drivers who currently have insurance with Sul America in Rio de Janeiro pool their collective risk together with the assistance of an insurance broker, or even Sul America's underwriting team, to securitize their risk and issue a bond. That bond would yield a return based on the difference between premiums earned and repayment losses. Premiums earned in this sense, would mean the premiums paid by consumers of the insurance minus the brokers' commission, along with any underwriting and claims handling costs.

From there, the new bond would be traded at a clearinghouse. Initially, the bond would be underwritten by insurers and, hopefully, in the long run be underwritten by professional underwriters, whose historical function is to evaluate risk. The hypothetical clearinghouse could be set up at a Bolsa de Mercadorias e Futuros, which is little more than a simple derivatives market. In order to be an actor 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 market daily regulation of hedge funds could allow for a lower guarantees setting, in order to increase investors' spread and reduce the final potential premium to consumers.

### *The role of investors*

The general portfolio theory recommends<sup>23</sup> a larger exposure to uncorrelated risks in order to enhance the probability of return in the long run. Insurers have long held a monopoly over insurable risk, or pure risk. Under the GILR-Bond, investors can gain exposure to this risk that they were previously withheld from participating in.<sup>24</sup> Investors would eagerly buy exposure to this new financial tool, simply because this is a risk that today is still privy to only a few financial players.

Given the aggressive nature with which investors will purchase exposure into the new type of bond, a GILR-Bond's initial issuance must be aggressive, as insurers want to keep their business and profit averages intact. There is a deep conservatism in insurers which manifests as risk aversion. To stymie the effects of risk aversion, financial investors could be made to pay an initial "market entry" premium. As with any initial product issuance, investors may face tight profits and even meager losses, while insurers might distribute volatile risks before they begin to share reasonable products.<sup>25</sup>

A good alternative to deal with this initially adverse set of market conditions, may be to work with independent brokerage firms to re-direct some of their business to the GILR-Bond. This redirection could create the beginnings of competition between capital markets and the insurance industry;<sup>26</sup> with obvious chances at gains for consumers, investors, market solvency, and even insurers. In the end, investors can afford to charge lower premiums to gain exposure to these "insurable risks" at the beginning of the issuance when the risks passed on by insurers should be very volatile.

*The Role of the Insured Group:*

Under the GILR-Bond model, insured groups accept to transfer risk to financial investors instead of insurance companies. Interesting to note, consumers can make this operation of risk transference work regardless of what the desires of the insurance industry are. For example, a broker can pool the risks and securitize the contracts into a bond, after which, underwriters evaluate the risk history in the recent past. In this scenario, underwriters would operate in the same way as rating agencies have worked in advising real estate securitizations. While it is difficult to estimate possible premium reductions to consumers, the important thing is to recognize are the main elements of premium reduction

<b>ELEMENTS THAT WOULD ACCOUNT FOR HIGHER PREMIUM TO CONSUMERS:</b>	<b>DIRECT EFFECT</b>	<b>FINAL RESULT</b>
Insurers' initial extra-premium charge to sell their underwriting information	Lower return for bondholders	As a final result, consumers might not feel all the potential for premiums decrease that this financial tool does have. Yet, eventually it might catch up, as all these transition elements are subdued by the more institutional elements that allow for lower premium.
Initial volatility due to poor quality of risks initially sold to the market	High volatility to bondholders	
Litigation problems until regulations are settled.	Lower return for bondholders	

<b>ELEMENTS THAT WOULD ACCOUNT FOR PREMIUM REDUCTION TO CONSUMERS:</b>	<b>DIRECT EFFECT</b>	<b>FINAL RESULT</b>
Larger capacity of capital markets	More risks can be guaranteed	As a final result, insurers will bear lower cost of capital and will have more funds available to guarantee risks. Hence, consumers might experience lower premiums.
Lower regulatory restraints	More flexibility for business	
Lowers commercial costs	Larger profit margin	
Lower administrative costs	<b>Larger profit margin</b>	
Lower cost of capital	Larger profit margin	
More competition	Lower profit margin, low premiums	

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.

*The role of insurers:*

The insurer, in the model of securitization of insurance contracts presented here, is the underwriter. The first issue to consider about the role of the insurer in regards to the structure of the GILR-Bond issuance is the asymmetry of information naturally to arise between the insured group and financial market investors. Underwriters can act as a valuable safeguard against asymmetry of information, insofar that the underwriter evaluates contractual risks posed by the insured group to prospective bondholders, estimating premiums and expected returns. Insurers could take the role of risk evaluator in the beginning of the initial issuance as well.<sup>27</sup>

Under the GILR-Bond model, the insurance industry must dissociate itself from the idea that the underwriter is the retainer of risks; simply put, if a company evaluates a sound risk, it does not have to retain the risk in their books for a variable profit. In the GILR-Bond, underwriters should work for predetermined or contracted pay. Their profit should arise from their respectability in the market as accurate advisors, not from their capacity to acquire capital in the market. Furthermore, underwriting and claims handling should be kept together in the same company, as one activity reinforces the quality of the other. However, it is far from desirable to retain capital origination and reserves management in that same company.

Just like a rating agency, underwriters and claims handlers depend on market trust. In order to avoid a pro-market bias, regulators must play the same role they have historically played, by maintaining tight scrutiny of claims handling and underwriting standards. Under the model presented in this article, GILR-Bond premiums may not be adjusted to confirm return over investments during the duration of a contract. Although assessment models of insurance, which adjust premiums over time, are not very popular, they could be used in the beginning of a GILR-Bond issuance to smooth volatility associated with bad risks passed on by insurers. However, this is something that must be made very transparent in order to reduce lax claims handling. Claims handling can become overly generous if premiums can be monthly adjusted to cope with losses.

*Brokers, to pull the insured group together*

The question now becomes: Who would pool together all the contracts spread out in the market? In our model, this could be done through a brokerage house, or a group of syndicated insurance brokers. Ultimately, the brokers must convince consumers to create an insured group. It is prudent to note that this sort of event is not unheard of. In the 1970's in the United States, groups that promoted pooling contracts were called insurance-purchase groups, also known as risk retention groups<sup>28,29</sup> These days, risk retention groups are little more than modern "captive insurer" consumers.<sup>30</sup> For example, in Brazil, Petrobras has strong captive insurer operations based in the Caribbean. According to the GILR-Bond model, these groups of insured consumers should sell their "insurable" risk to bondholders willing to purchase exposure to pure risk. Ideally, the first pilot operations would be set up by insurers selling bulk of their risks, such as in 2001, when Prudential sold their life insurance operations. In that instance, Prudential securitized the bulk of its contracts and sold them as bonds in the market. This example represents a simplistic version of the complex financial product presented here, in terms of advantages to consumers and market players in general.

Microinsurance operations can be organized under this model as well. However, it is likely that the lack of financial history and risk experience might diminish demand, or heighten risk premiums charged by investors in the initial GILR-Bond issuances. Yet, the attractiveness of new risks might be strong enough to stimulate some demand for these microinsurance GILR-Bond issuances.

## **COMPARISON: INSURANCE CONTRACT AND THE GILR-BOND**

*Lower cost of capital*

Capital is scarcer and more expensive for insurers and reinsurers than it is for financial investors in general. Insurers also face heavier administrative and legal burdens and costs when compared to investment institutions such as hedge funds, mutual funds, and others. Hence, if financial institutions have lower costs in obtaining capital than do insurers, premiums charged to consumers<sup>31</sup> under the GILR-Bond might be cheaper than the ones charged by insurance companies..

*Portfolio theory*

One of the many risk classifications divides risks into price, credit, and pure risk.<sup>32</sup> Price risk is the 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 domain of an insurer's monopoly in the marketplace for most of financial history. In the GILR-Bond, when financial markets begin to add pure risk exposures into their portfolio, return-over-investment is more likely<sup>33</sup> to increase over the long run. According to portfolio theory, investment firms will buy some exposure to pure risks, even if risks are somewhat volatile at first.

*Lower risk of insolvency*

In the GILR-Bond model, the pool of insurance contract's risk is divided amongst thousands of bondholders instead of a single insurer, and this lowers the insolvency risk for consumers in the GILR-Bond. Market players must post a bond to be in the market, at a level to be determined by all appropriate regulatory agencies with jurisdiction over a given market: In Brazil, SUSEP, CVM and Banco Central would be the regulatory agencies in charge. In the United States, the SEC,<sup>34</sup> state insurance regulators,<sup>35</sup> and CTFC would likely oversee GILR-Bond activity. The clearinghouse is an administrative facility which holds no pure insurable risk, only default (credit) risk from the contracting parts (bondholder and insured group) above and beyond the bond posted to be in the market. Thus, it is not an insurer under any legal definition.<sup>36</sup>

For example, let's say an insured group's losses forecasted by underwriters amounts to 70 percent of the premium. But, due to an atypical year, this figure rises to 98 percent of the premium, and administrative costs jump to 19 percent (due to the extra work handling these claims and no reinsurance was purchased), then the bondholders will have to pay the remaining 19 percent of costs. If all fails, the clearing house discounts the bond.

*Lower premium to consumers*

In our model, the GILR-Bond is cheaper because it accesses excess capacity from capital markets, which means a lower cost of capital. Furthermore, there is demand for the GILR-Bond, as it offers pure risk to portfolios that are always eager for diversification.<sup>37</sup> The final effect of these mechanisms is that, in a competitive market, lower premiums for consumers are generated. Hence, lower premiums are caused by heightened demand and the lower cost of capital faced by investors when compared to insurers. Lower legal, administrative, and commercial costs, as explained earlier, are the other elements that contribute to a final product that is cheaper for all involved.

**GILR-BOND AND SECURITIZATION IN BRAZIL***The GILR-Bond in Brazil*

The GILR-Bond would likely blossom in Latin America for many reasons. For instance, Latin America has weak capital markets. Also, banks' and financial investors' portfolios are heavily concentrated in local government debt. Their equity holdings are what could be called the "usual suspects"; equity holdings in Latin America are typically composed of two or three stocks that control the stock market index. Further complicating matters, insurance companies in the region are usually tied to families with controlling interests. Given these facts, it is easy to imagine that financial investors' portfolios are not exposed to any noticeable depth of risk. Moreover, investors' portfolios in Latin America are not even exposed to the pure risk found in insurer's stock holdings, whereas in the United States, investors can at least purchase insurer's stocks in order to gain exposure to the pure risk associated with those stocks.

Thus, on one hand, investors have so little exposure to pure risk in Latin America that they would have a higher inclination to buy GILR-Bond than US companies, insofar that United States insurers' stocks are publicly traded. On the other hand, investors have a history of holding government bonds in an attempt to satiate their risk appetite. This behavior is due primarily to the strong moral hazard arising from weak institutional settings. This could be solved with a good legal framework to protect the GILR-Bond issuance.

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Luckily, the GILR-Bond has a variety of configurations it can assume to thrive under the current legal regimes in Latin America. First, insurance regulation is in its infancy in Latin America when compared to the US market.<sup>38</sup> In Brazil, most insurance regulation<sup>39</sup> comes from a single executive or legislative act, while in the United States there is an overabundance of statutes and decisions creating a confusing, intertwined<sup>40</sup> environment. In Brazil, considering the rather primitive nature of insurance regulations, it would be relatively easy to create statutes that generate many possibilities in pure risk securitization. Second, insurance regulators are federal in Latin America. In the United States, companies have to struggle with fifty individual authorities (one for each state), each writing different statutes and judging different court rulings. This cumbersome environment creates very little certainty. In Latin America and Brazil, a statute approved by one regulator is allowed to secure an issuance of the GILR-Bond in the whole country.

Another aspect to consider is the level of development of the insurance markets in Latin America. Insurance companies in the region represent a small fraction of Latin American countries' GDP. In 2007, the United States possessed a GDP that was a little over \$13 trillion<sup>41</sup> with 8.8 percent of the GDP coming from the insurance industry.<sup>42</sup> During the same time period, Brazil's GDP reached \$1 trillion,<sup>43</sup> with a mere 2.8 percent coming from Brazil's insurance industry.<sup>44</sup> In a country with two thirds of the US population, and a sizeably smaller insurance industry, it is not difficult to imagine the amount of risk insurers are not covering in Brazil. Surveys conducted in Latin America indicate that consumers want to guarantee risks, but do not purchase insurance. The same survey showed that those interviewed saw insurance as expensive and hard to understand.<sup>45</sup> With this untapped basin of potentially insurable risk, the GILR-Bond could cater to risks not served by the insurance industry in both Brazil and the rest of Latin America.

It is important to note here, that if the GILR-Bond was introduced in Brazil, it would not necessarily take business away from the already established insurance companies; the GILR-Bond could prosper by capitalizing on the gaps in coverage left open by the historically inefficient insurers in the region. If Latin American ever hopes to reduce the existing development and wealth gap with developed nations, Latin American countries must turn their deficiencies into assets.

As noted earlier, Brazil has weak capital markets meaning that Brazilian companies cannot go public very easily. Traditionally, the Brazilian stock market was based on few heavily traded stocks. This trend has slightly changed in recent years. For instance, 2007 was Brazil's golden era for companies willing to go public, with a record amount of 63 Initial Public Offerings (IPO). However, from 1995 to 2003 there were only six companies who went public. In 2004 there were only seven, and in 2005 there were nine companies to go public. The year of 2006 seemed to break this trend, with an abnormally high 26 companies going public.

Companies looking to go public in Brazil will have to search for capital that is more expensive and comes from less than competitive sources of funding (i.e. retail banks). Current market forecasts in Brazil call<sup>46</sup> for the reduction in the number of IPOs by half.<sup>47</sup> Meanwhile, interest rates in Brazil are among the highest in the world, averaging at 11.25 percent. The level of interest rates charged by local banks (which are themselves beneficiaries of a closed and protected financial system) to businesses is roughly 3 to 4 times that average. In February 2008, the average interest rate charged by retail banks to legal entities was 62.52 percent per year.<sup>48</sup> In a country where capital is so expensive, there is an intrinsic need for alternative forms of financing.

These factors go a long way in explaining why the stock market is so concentrated in Brazil; profitable companies cannot go public to mature their capital structures as they do in the United States. This concentration within the market is due primarily to weak institutional frameworks. Instead of lamenting this sad reality, or taking the politically difficult task of strengthening institutions, Brazil could take a "short cut" to solve these systemic inefficiencies.

*The shortcut*

The shortcut proposed to solve Brazil's systemic institutional failings is based on the above mentioned issues investors face when trying to diversify risk exposure in their portfolios. First, there is an excess of government debt in the Brazilian market. Additionally, there are also available only a few options to diversify investments outside of government debt in the same stock market. Even more so, the Brazilian market is dominated by only a few players. Thus, Brazilian portfolios are poorly balanced.

These failures though, offer some advantages: Given the weak penetration of traditional insurance companies into Brazil, the GILR-Bond does not face many obstacles in initial issuance. Additionally, there are outstanding risks in the Brazilian market that are not taken on by insurers. These factors operating together leave plenty of room for pure risk securitization in the Brazilian market and microinsurance. Finally, the commodity rich and cash rich Brazil has enjoyed foreign trade surpluses over the last four years totaling around \$40 Billion. The GILR-Bond in addition to providing insurance relief to the poor, could also operate as a financial product that would foster portfolio diversification and, ultimately, wealth creation without the long wait associated with maturing institutions.

**THE GILR-BOND MODEL AFFECTING LOWEST INCOME LEVELS**

Suffice it to say, microfinance solutions aim to solve recurring problems that affect low-income households. The current lack of penetration by local insurance markets to purchase someone's life, property, and health risks is indeed a burden. If people cannot insure their mini-vans which they sell hotdogs from 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 not only impoverish him or her, but all of their children as well. Insurance policies could be the solution to these and other problems, but insurance is seen as very expensive. Besides, consumers do not trust insurers to pay back a loss.

The problems of insurance availability and excessive costs are real in the developing world according to market surveys conducted by the Inter-American Development Bank in Latin America. This does not mean that the availability of insurance for impoverished people is a way out of poverty. However, insurance is certainly a way for people to avoid descending into poverty again. Similarly, the existence of initial capital in to pay a premium is something that differentiates insurance from other financial services;<sup>49</sup> while both are inherently financial transactions, the reduction of the number of people who become poor due to circumstances beyond their control is only within the realm of insurance (public or private).

In regard to entrepreneurship, insurance helps struggling companies avoid bankruptcy, while simultaneously promoting sustainability. Entrepreneurs that purchase more insurance are less likely to go out of business than a rival that purchases little or no coverage; insurers do not guarantee wealth, but they absorb the

risks entrepreneurs are not comfortable holding. Let us examine a realistic example: Paulo sells limes at the traffic lights of Belo Horizonte (Brazil). As Paulo prospers, he pays other kids to sell limes around the area as well. Over time, Paulo becomes worried that someone might steal from his main box with thousands of limes. Paulo might pay some off-duty local security guard to look after his box of limes. Paulo and the guard might even agree that if the limes disappear, the security guard must reimburse for the lost merchandise. This example explains insurance its most primitive and simple form. However, suppose that the security guard steals the limes for himself. Alternatively, the security guard may never reimburse Paulo for lost limes. These last two examples, demonstrate the main failure of insurance in the developing world; weak institutions.

In the end, microentrepreneurs in developing countries have one problem: they will have to sell many thousands of theoretical and literal limes, hire many people, and purchase many assets before they ever secure their first formal insurance coverage. Microinsurance and the GILR-Bond work well in countries where the financial sector structure is weak and insurance penetration is low. These mechanisms support cheaper insurance and the expansion of insurance contract coverage. Moreover, if a well structured insurance operation of microinsurance comes along, with tailor made underwriting, claims handling, and, commercialization, the GILR-Bond would thrive in providing cheaper capital for the new insurance operation.

The availability of alternative risk management tools like the GILR-Bond will not only drive the premiums of insurance down, but it will also enhance capital market's institutional development. A higher volume of funds directed to guarantee losses and wider levels of securitization, will enhance capital markets which will profit from more diverse options to balance risk portfolios. Ultimately, more companies and more entrepreneurs in the market place 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 overall poverty levels.

Even in agricultural settings, the story may be very similar. If there is a greater 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 does food become cheaper on the internal market, but jobs also become plentiful. The multiplying effects of insurance as a wealth guarantor are innumerable. The availability of cheaper insurance in Brazil and the rest of the developing world would lead to greater prosperity, more jobs, and less people falling into inescapable poverty due to risks they cannot control.

## CONCLUSION

If Brazil, Latin America, or most other developing countries cannot make complicated market reforms due to the intricacies of their internal policies and politics, these countries have the burden of finding new tools to diminish existing

institutional gaps. The GILR-Bond is a financial tool based on the securitization of insurable risks. The GILR-Bond allows for consumers to enjoy lower premiums and guarantees more risks currently out of the scope of more formal insurance companies. Insurance contracts securitization, combined with underwriting, commercialization, and claims handling strategies might facilitate the receipt of more insurance coverage to more of the four billion people who live on less than two dollars a day. The GILR-Bond has other advantages as well. The GILR-Bond allows financial investors to purchase different and varied risk exposures, and lower solvency risk for the insured group.

In Brazil the GILR-Bond has additional advantages: For instance, the insurance regulatory system in Brazil is federal and less burdensome than the state based United States' system. Also, few companies go public and the cost of capital is very high due to interest rates. As a consequence, there are only a few stocks that control the majority of market trade. This situation yields a scenario where portfolio diversification is less than optimum. The demand for non-correlated risk products is higher in Brazil than in more "normal" developed markets. Thus, the GILR-Bond can bring more variety and different risks to the rather small securities menu in Latin American.

### Notes

<sup>1</sup> Rajeev Ahuja, "Micro Insurance in India," in *India Insurance Report, Series I*, ed. H. Chaturvedi et al. (Greater Noida, India: Allied Publishers, 2005), 362.

<sup>2</sup> A good discussion on the need to publish easier rules for claims handling and payment delivery to consumers is available at: IAIS-CGAP Working Group, *Issues of Regulation and Supervision of Microinsurance*, June 2007. Available at: [http://www.iaisweb.org/\\_\\_temp/Issues\\_Paper\\_in\\_regulation\\_and\\_supervision\\_of\\_microinsurance\\_\\_June\\_2007.pdf](http://www.iaisweb.org/__temp/Issues_Paper_in_regulation_and_supervision_of_microinsurance__June_2007.pdf) (accessed May 27, 2008): 22 and 56.

<sup>3</sup> Pietro Masci et al., "Insurance Market Development in Latin America and the Caribbean," *Inter-American Development Bank*, August 2007. 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> (accessed May 27, 2008).

<sup>4</sup> Preker explains that microinsurance can break the mold of traditional insurance. Especially when microinsurance 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 microinsurance) is a good way of acquiring protection against this unforeseeable event. David M. Dror and Alexander S. Preker eds., "Health insurance and reinsurance at the community level" in *Social Reinsurance: A New Approach to Sustainable Community Health Financing*, (Washington, DC: World Bank), 107.

<sup>5</sup> Craig F. Churchill et al., "Making Insurance Work for Microfinance Institutions," *International Labour Organization*, 2003. Available at: [http://www.ilo.org/public/libdoc/ilo/2003/103B09\\_30\\_engl.pdf](http://www.ilo.org/public/libdoc/ilo/2003/103B09_30_engl.pdf) (accessed May 27, 2008), 90.

<sup>6</sup> Michael J. McCord, "Visions of the Future of Microinsurance, and Thoughts on Getting There," *USAID*, March 2008. Available at: [http://www.microinsurancecentre.org/UploadDocuments/MicroInsurance\\_Note\\_9\\_Future\\_of\\_Microinsurance%5B1%5D.pdf](http://www.microinsurancecentre.org/UploadDocuments/MicroInsurance_Note_9_Future_of_Microinsurance%5B1%5D.pdf) (accessed May 27, 2008).

<sup>7</sup> About pooling different risks together see Beatriz Amendariz and Jonathan Murdoch, *The Economics of Microfinance*, (MIT Press, 2005), 16.

<sup>8</sup> The passage on health insurance has good insight on pooling different coverage together in the same microinsurance product, McCord, "Visions of the Future of Microinsurance," 14.

<sup>9</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. See Jan Martin Witte and Wolfgang Reinicke, "Business Unusual: Facilitating United Nations Reform through Partnership," *United Nations*, 2005. Available at: [www.unglobalcompact.org/docs/news\\_events/8.1/bun\\_part1.pdf](http://www.unglobalcompact.org/docs/news_events/8.1/bun_part1.pdf) (accessed May 28, 2008), 39.

<sup>10</sup> Scott E. Harrington et al., *Risk Management and Insurance* (New York: McGraw Hill, 2004), 316.

<sup>11</sup> Samuel H. Cox et al., "Economic Aspects of Securitization Risk," *Astin Bulletin* 30, no 1 (2000): 157-193. Available at: <http://www.casualtyactuarialsociety.org/library/astin/vol30no1/157.pdf> (accessed May 28, 2008).

<sup>12</sup> Augusto de la Torre and Sergio L. Schmukler, *Emerging Capital Markets and Globalization: the Latin American Experience*, (Washington, DC: IBRD and World Bank, 2007), 15.

<sup>13</sup> J. David Cummins, "CAT Bonds and Other Risk-Linked Securities: State of the Market and Recent Developments," (November 19, 2007). Available at: <http://ssrn.com/abstract=1057401> (accessed May 28, 2008).

<sup>14</sup> Goldman Sachs, *Global Economics Paper No. 99 Dreaming with BRICs: the Path to 2050* (October 2003). Available at: <http://www2.goldmansachs.com/ideas/brics/brics-dream.html> (accessed May 28, 2008).

<sup>15</sup> Data taken from: International Monetary Fund Data and Statistics, "World Economic Outlook Database April 2008: The Report for Selected Countries and Subjects," *International Monetary Fund*, <http://www.imf.org/external/pubs/ft/weo/2008/01/weodata/weorept.aspx?pr.x=62&pr.y=11&csy=1999&cy=2013&scsm=1&ssd=1&sort=country&ds=.&br=1&c=223%2C924%2C922%2C534%2C111&s=PPPGDP&grp=0&a=> (accessed August 16, 2008).

<sup>16</sup> A Swap is a series of exchange of cash flows with the counterpart according to a pre set index. See National Futures Associations, "Glossary," National Futures Associations, <http://www.nfa.futures.org/BasicNet/glossary.aspx?term=S> (accessed August 16, 2008).

<sup>17</sup> Kenneth A Froot, "Introduction," in *The Financing of Catastrophe Risk*, ed. Kenneth A. Froot (Chicago: University of Chicago Press, 1999), 12.

<sup>18</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>19</sup> Ibid.

<sup>20</sup> Samuel H. Cox et al., "Economic Aspects of Securitization Risk," 163.

<sup>21</sup> Samuel H. Cox et al., "Economic Aspects of Securitization Risk," 165.

<sup>22</sup> In that regard, securitizations of insurance contracts work just as regular microinsurance.

<sup>23</sup> Peter Bernstien, *Against the Gods: The Remarkable Story of Risk* (Canada: John Wiley & Sons, Inc, 1996), 122.

<sup>24</sup> Samuel H. Cox et al., "Economic Aspects of Securitization Risk," 163.

<sup>25</sup> Samuel H. Cox et al., "Economic Aspects of Securitization Risk," 165.

<sup>26</sup> "Purchasing reinsurance is essentially a capital structure decision, with equity capital and reinsurance acting as substitutes." Lawrence A Berger et al., "Reinsurance and the Liability Crisis," *Journal of Risk and Uncertainty* 5, no. 3 (July 1992): 253-272, quoted in Lawrence S. Powell and David W. Sommer, "Internal Versus External Capital Markets in the Insurance Industry: The Role of Reinsurance," Available at: <http://aria.org/RTS/proceedings/2003/Powell&Sommer%20Risk%20Theory%20Final%20Submission.pdf> (accessed August 28, 2008).

<sup>27</sup> For a discussion on the asymmetry of information between primary insurers and reinsurers, and how the asymmetry affects costs and forms of reinsurance available, see Jean-Baptiste L. Eslyn and Anthony M. Santomero, "The Design of Private Reinsurance Contracts," *The Journal of Financial Intermediation* 9, no. 3 (July 2000): 274-297.

<sup>28</sup>\*\*\* Eric Mills Holmes & Mark S. Rhodes Appleman on Insurance, 2D, 9, Vol. 1, 293, West Publishing Co. (1996) (1941)

<sup>29</sup> US Regulation on the GILR-Bond is that of a risk retention group and some elements of securities.

<sup>30</sup> Harrington et al., *Risk Management and Insurance*, 316.

<sup>31</sup> With regard to reinsurance's high prices in international markets, see Kenneth A Froot, "Introduction," in *The Financing of Catastrophe Risk*, ed. Kenneth A. Froot (Chicago: University of Chicago Press, 1999).

<sup>32</sup> "Price risk refers to uncertainty over the magnitude of cash flows due to possible changes in output and input in prices" Harrington et al., *Risk Management and Insurance*, 5; "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" Ibid., 5; "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" Ibid., 6.

<sup>33</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.” Harrington et al., *Risk Management and Insurance*, 59.

<sup>34</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>35</sup> \*\*\*\*See e.g. State ex rel. Consumers League v. 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 Eric Mills Holmes & Mark S. Rhodes Appleman on Insurance, 2D, 18, Vol. 1, 54, West Publishing Co. (1996) (1941)

<sup>36</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.

<sup>37</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.” See Harrington et al., *Risk Management and Insurance*, 59.

<sup>38</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.” ” Kathleen Heald Ettlinger, Hamilton, Krohm – State Insurance Regulation, 67, 1st Ed. (1995). 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. See generally” Kathleen Heald Ettlinger, Hamilton, and Krohm – State Insurance Regulation, 62-64, 1st Ed. (1995).

<sup>39</sup> Decree-Law 73 from 1966

<sup>40</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>41</sup> IMF estimate is US\$ 13,194 Billion. Data available at International Monetary Fund Data and Statistics, “World Economic Outlook Database October 2007: The Report for Selected Countries and Subjects, United States,” International Monetary Fund, <http://www.imf.org/external/pubs/ft/weo/2007/02/weodata/weorept.aspx?sy=2006&ey=2008&scsm=1&sd=1&sort=country&ds=.&br=1&c=111&s=NGDPD&grp=0&a=&pr.x=46&pr.y=9> (accessed August 17, 2008).

<sup>42</sup> The US insurance business amounts to US\$ 1,168 Billion, according to Swiss-re sigma report. “World Insurance in 2006: Premiums Come Back to Life,” *Swiss Re Sigma Report*, December 2007. Available at: [http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance\\_Appendix\\_update.pdf](http://www.swissre.com/resources/f04b168047d1993ea149b728409d653c-WorldInsurance_Appendix_update.pdf) (accessed August 17, 2008).

<sup>43</sup> IMF estimate is US\$ 1,067 Billion. Data available at International Monetary Fund Data and Statistics, “World Economic Outlook Database October 2007: The Report for Selected Countries and Subjects, Brazil, International Monetary Fund, <http://www.imf.org/external/pubs/ft/weo/2007/02/weodata/weorept.aspx?sy=2006&ey=2008&scsm=1&sd=1&sort=country&ds=.&br=1&c=223&s=NGDPD&grp=0&a=&pr.x=29&pr.y=10> (accessed August 17, 2008).

<sup>44</sup> Brazilian insurance business amounts to US\$ 30 Billion, according to Swiss-re sigma report. “World Insurance in 2006.”

<sup>45</sup> Pietro Masci et al., *Insurance Market Development in Latin American and the Caribbean* (Washington, DC: Inter-American Development Bank, 2007), 18. Available at: <http://www.iadb.org/PUBLICATIONS/search.cfm?language=English&searchLang=E&keywords=&title=&>

author=masci&topics=&countries=&resCategory=&fromYear=&toYear=&cx=0&cy=0 (accessed August 17, 2008), 18.

<sup>46</sup> “2008: Um ano nao muito promissory para ofertas iniciais da Bolsa (IPOs),” *O Globo Online*, April 21, 2008. 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) (accessed August 16, 2008).

<sup>47</sup> Giuliana Napolitano, “Um ano mais fraco para os IPOs,” *Abril.com*, August 16, 2008.

Available at: <http://portalexame.abril.com.br/revista/exame/edicoes/0911/financas/m0150926.html> (accessed August 16, 2008).

<sup>48</sup> “Taxa de juros para pessoa física fica estável em fevereiro,” *FolhaOnline*, March 14, 2008. Available at: <http://www1.folha.uol.com.br/folha/dinheiro/ult91u382085.shtml> (accessed August 16, 2008).

<sup>49</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.