

**BUSINESS PLAN MODELING OF
A MICROINSURANCE UNIT**

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BUSINESS PLAN MODELING OF A MICROINSURANCE UNIT

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1. Introduction

Microinsurance, which is within the microfinance policy of the Brazilian government, has the following goals: to facilitate and expand the access to credit for formal and informal micro entrepreneurs, aiming at generating income and employment; to facilitate and expand the access to financial services (bank accounts, savings accounts, insurance and credit) for the low-income population, ensuring greater citizenship; to increase the number and the participation of credit cooperatives in the financial system; to reduce the informality; and to decrease the interest rates on financing.

The situation of the socio-economically disadvantaged populations is a concern for observers of the global trend. This concern is justified by the importance of the humanitarian issues involved and by the social, economic, political and even environmental consequences, caused by inequality and poverty. International experts, in the most important forums, have been working hard to find solutions to promote poverty reduction and social inclusion. Several studies carried out at international level indicate that in the poorest countries, a minuscule fraction of the population has some type of insurance coverage. However, generally speaking, it is exactly the poorest families who are at risk.

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The situation in Brazil is very similar since the poorest portion of the population is exposed to all kinds of risks, both due to the nature of activities they are engaged in and to the conditions in which they live in their poor communities. This part of the population does not know the protection through insurance and tend to manage their risks by using personal savings, emergency loans or by seeking official networks of social protection. However, these alternatives are not always adequate and are often unable to provide the protection needed by this poorer segment.

The Microinsurance is then presented as an alternative to contribute towards economic growth and human development, having a significant presence in a segment that lies somewhere between a financial service and social protection. Microinsurance is also part of the government policy to reduce poverty through the access to savings, credit and insurance for the low-income population.

Hence, the same way some instruments in the field of microfinance, such as microcredit and savings accounts, help people progress and acquire assets, microinsurance also helps these people to protect their profits, thus becoming a powerful tool for social inclusion.

2. Business Plan – Microinsurance Unit

The SUSEP Circular 311 establishes the minimum elements that must be observed when preparing the business plans of insurance companies (Annex 1).

Although the objective of this study is to prepare a pilot project for a unit of microinsurance, and not one for an insurance company, these minimum

requirements have been observed in developing the business plan presented in the following topics.

2.1 Executive Summary

The study identified a range of immediate opportunities for the development of microinsurance products. A research of the Brazilian Institute of Geography and Statistics (IBGE) has indicated the existence of 85 million Brazilians, with income of up to three minimum wages. Currently, this portion of the population does not have any insurance coverage. Retail banks, already operating microcredit and public service providers offer an effective network for the immediate commercialization of microinsurance. In addition to these sales channels, agents of production can also be used, after a suitable period of training, as an attempt to better understand the product.

The economic environment is favorable for the launch of microinsurance products, as inflation is under control and interest rate shows a downward trend. With the expected recovery of economic activity from next year onwards, this positive scenario will be complete, thus creating conditions to boost up the demand for insurance products.

Some essential requirements remain to be addressed to ensure the success of microinsurance products. The main requirements are the definition of a clear policy for the sector and the establishment of an appropriate regulation for the microinsurance product.

The objective of the study is the modeling of the business plan for a pilot project of a Microinsurance Department. The feasibility analysis has shown it to be a viable project with a very attractive return, from an economic point of view. Studies of sensitivity of the Net Present Value and Internal Rate of Return, calculated with the method of Monte Carlo's simulations, have confirmed these favorable diagnoses.

Future researches should be developed to explore some opportunities for microinsurance products identified in this study.

Among these opportunities, we highlight the study of the use of a network of agents through community leaders. Another opportunity that deserves to be analyzed is the ability to attract micro entrepreneurs to the insurance market. Presently, this segment has no access to traditional insurance to protect their businesses. The use of the Internet as a channel for microinsurance commercialization shall also be subject to further investigation. The opportunity of these studies will be dictated by the speed of the digital inclusion of low-income classes.

2.2. Objective of the business

The purpose of the business is the assembly of a unit of microinsurance, within the framework of a traditional insurance company since, at the current stage of development of the market for microinsurance products, the creation of a specialist insurer with this specific objective is not justified.

2.3 Mission of the enterprise

The mission of the enterprise is to develop, commercialize and operate microinsurance products that meet the needs of policyholders, providing profitability to investors in a business managed within the generally accepted standards of corporate governance.

2.4 Strategic Objectives

In an initial phase, the focus should be concentrated on life insurance in the form of group life, following settlements by SUSEP, clearly specifying the low-income population as a target. The covers currently set by SUSEP for the *popular product*, such as basic coverage for death due to any cause, additional coverage of funeral assistance and basic basket would fully meet the demand.

These characteristics provide an effective social protection for the product. This operation should be developed through agents.

In a second phase, the objective will be to operate with micro entrepreneurs, covering the specific risks of this segment, which today is totally devoid of insurance protection.

A further step will be to develop a network of financial intermediaries interested in working with microinsurance along with leaders of poor communities.

2.5 Market

Microinsurance has as its main goal to preserve personal or family socioeconomic conditions of the low-income population through insurance protection.

The low-income population in Brazil, for the purpose of microinsurance, is the segment of the population with a monthly per capita income of up to three times the minimum wage level. This definition took into account not only the conclusions of the SUSEP WG's studies, but also the level of per capita income of the Brazilian population, which is about three times the minimum wage. According to the calculations by the IBGE, through the National Household Sample Survey (*Pesquisa Nacional por Amostra de Domicílios - PNAD - 2006*), the overall population at the low-income level amounts to 85 million people. It is important that this low-income concept be incorporated in the specific regulations of SUSEP in order to disseminate a consensus about its understanding by all parties involved and/or interested.

CLASSES OF MONTHLY EARNINGS IN MINIMUM WAGE

No income

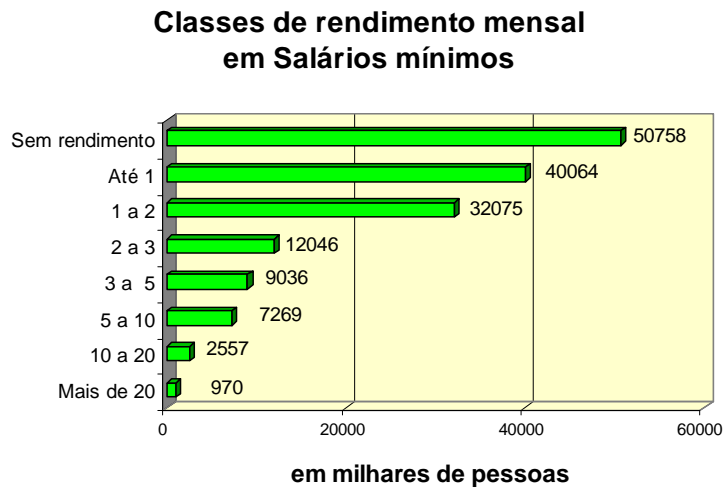
Up to 1

Between 1 and 2

Between 2 and 3

Between 3 and 5

Between 5 and 10
Between 10 and 20
More than 20
In thousands of people



Source: IBGE – PNAD 2006

An important point to be considered in the market segmentation based on the characteristics of the potential consumer profile is that he is predominantly urban. It is towards this segment that commercialization efforts should be directed. Another important characteristic in the formulation of marketing plans is that electricity providers serve almost all urban households. Moreover, a relevant portion is served by other services, the providers of which represent potential distribution channels for microinsurance products, while also acting as networks for collecting premiums.

2.6 Organizational Structure

Given the objective of the business (to set up a unit of microinsurance) and the initial phase of the strategic objectives, the existence of an insurance company that operates life insurance, duly structured and organized to

efficiently operate the product, and to reach its business goals as established in the planning phase, is expected.

Among the activities performed by a life insurance company in the conducting of its business, we could highlight the identification of customer needs in the segment of the market that will concentrate the efforts.

After the stage where one identifies a clear target market and type of product wanted and needed, comes the stage of product development. At this stage, the product formatting, its pricing, the marketing strategy and channels of distribution, underwriting guidelines, procedures for customer services and the procedures for settling claims are developed.

The next step is the activity of distribution of products, which, due to the characteristics and peculiarities of microinsurance, will involve a large number of agents. These agents should be specifically trained so as to have a clear understanding of the product they will sell.

Another important activity is the management of products, comprising the processing of the insurance proposal, underwriting, policy issuance, customer services to policyholders and loss adjustment.

It is extremely important to mention the group of activities which ensure the insurer's success and enable him to meet his obligations to policyholders and provide profitability to shareholders. This group of activities includes investment management, solvency guarantees and profitability, compliance with the requirements regarding the financial statements and compliance with other legal obligations.

The microinsurance unit, depending on the organizational structure of the insurer, may be characterized as a Superintendence or Department of Microinsurance. This department, in carrying out its operations, continuously interacts with all functional areas of a life insurer, such as actuarial, underwriting, marketing, Customer Services, claims, investments, accounting, legal, audit, HR and Information Systems. Moreover, the activities of a life

insurer require a significant integration and coordination among its various functional areas.

Considering the peculiarities of the product and the concept of a department inserted in the structure of an insurer, the most appropriate form of organization capable of providing a more efficient management is through a central producer of results. Depending on the dynamics of its evolution, in terms of size of business and diversification of geographical areas of operation, the central producer of results will evolve into a strategic business unit with more autonomy and independence from its parent company.

The department, as a central producer of results, will be responsible for its own income and expenditure. The structure can be very compact with a superintendent or manager responsible for the profitability of the department and some supervisors who will make the interface both with the agents at the end of the production chain, and with support areas through connecting channels with the insurer.

In order to allow senior management to clearly evaluate the performance of the Department of Microinsurance in terms of profitability and business development in relation to the established targets, it is essential to adopt technical criteria for cost appropriations. These criteria may be based on apportionment according to the intensity and frequency of use of the insurer support areas. As the department's businesses evolves, the experience will show that some apportionment may not be significant for performance evaluation, while others will deserve more attention due to the fact that its effects are more relevant for the results of the department.

3. Economic Scenario

3.1 Inflation

The first element of fundamental importance for the formulation of economic scenarios is the behavior of inflation.

Contador, Ferraz and Azevedo (1999, p.9-25), while examining the international experience confirm that the inflation rate has a significant impact on the insurance industry, including the life and no-life sectors, leading to different patterns growth. An extensive bibliography supported by empirical evidences concludes that inflation negatively affects the industry and was one of the most active factors in inhibiting the Brazilian market and other countries with inflationary culture. It appears that the inflation rate affects the market, on both the demand and the supply side. In the first case, there is the deterioration of income distribution, which reduces the mass of potential consumers. On the supply side, insurance companies are affected since inflation confuses accounting adjustments, and profitability of reserves and actuarial plans. Moreover, we can see that profit and the capital structure of insurance companies are affected by the impact of inflation on interest rates.

The introduction of the Real Plan (Plano Real, in Portuguese) in July 1994 brought several macroeconomic benefits to Brazil. The inflation was controlled, the indexation was ended and the currency became stable. These factors brought a greater investment horizon to investors, since in periods of high inflation there is neither motivation nor a friendly environment for investments in the long term. The stability brought about by the Real Plan has generated demand for new products and services and opened a window of opportunity for insurance companies, with regard to the access to private savings.

Regarding coverage for survival, until the beginning of 2002 there were not many plans sold by insurance companies with this type of coverage in the Brazilian market. This stemmed in large part from the

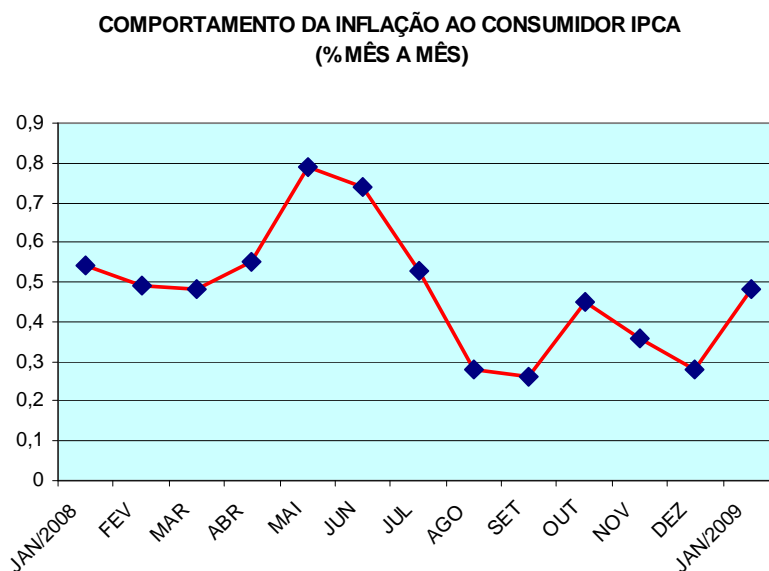
inflationary process experienced by the Brazilian economy during the 80's and the first half of the 90's.

In reviewing the most recent behavior of inflation through the IPCA (National Extensive Consumer Price Index) variation, which is the official index that measures inflation at the consumer level, we found that during 2008 the monthly changes were usually below the range of 0.45% / 0.55%, except for May and June.

In January 2009, the IBGE reported inflation to consumers, showing a stronger pace than expected, rising 0.48% higher than the rate of 0.28% in December 2008, but still below the rate of 0.54 % seen in January 2008. For the past 12 months, the index has accumulated a 5.84% variation.

BEHAVIOR OF INFLATION IN RELATION TO THE CONSUMER –
IPCA
(% MONTH BY MONTH)

Jan/2008 Feb Mar Apr May Jun Jul Aug Sep Nov Dec Jan/2009



Source: IBGE

The goal pursued by the government during 2009 is of 4.5% per year, with a margin of 2% up or down. After the outbreak of the current global economic crisis, with the consequent slowdown of the Brazilian economy, it is natural that the rate to be pursued by the monetary authorities is lower than the current.

Whereas it is still early to have a clear view of the effects and duration of the current crisis, it is recommended to work with a scenario of inflation of 4% per year, slightly below the central target for the years 2009, 2010 and 2011.

3.2 Interest rate

The second component of the economic scenario is related to levels of interest rates. Several studies have already demonstrated the profound consequences that these rates and their variations have on the economy as a

whole and on the insurance market in particular. These impacts are felt both on the side of demand, policyholders, and on the side of supply, insurers. In the first case, it substantially affects the process of decision making by the insured, in searching optimization of applications for his/her limited resources. On the other hand, it can cause positive or negative effects on insurers' profitability, as well as changes in the management of their investments.

The Selic rate (daily interest rate indicator calculated by the Central Bank of Brazil) is the benchmark interest rate of the Brazilian economy and the most important instrument of monetary policy. This rate has remained at very high real levels, placing Brazil among the economies with the highest interest rates in the world.

From September 2007 onwards, the Selic rate had shown a steady growth, reaching a level of 13.75% per year in September 2008, where it remained until January 20, 2009. The maintenance of these rate levels reflected the concern of monetary authorities with the economic activity level, which was showing signs of heating up by November 2008.

At the meeting of COPOM - Monetary Policy Committee – on January 21, 2009, a drastic change in the trend in the Selic rate was decided on with a reduction of one percentual point, making it 12.75% per year. The data released by the IBGE on the performance of the industrial sector in the last quarter of 2008 recorded a strong retraction on the activity of that sector. This decline provoked a sharp fall in the GDP to 3.6% between October and December 2008 in relation to the previous quarter. With the strong slowdown of the economy, a space for application of a more aggressive monetary policy emerged with frequent cuts on the benchmark interest rate. Confirming this expectation of the market, on March 11, 2009, the Monetary Policy Committee (COPOM) reduced the Selic rate from 12.75% to 11.25% per year.

EVOLUTION OF THE SELIC RATE (per year, in %)

06 / 06 / 2007	12,00	04 / 06 / 2008	12,25
18 / 07 / 2007	11,50	23 / 07 / 2008	13,00
05 / 09 / 2007	11,25	10 / 09 / 2008	13,75
17 / 10 / 2007	11,25	29 / 10 / 2008	13,75
05 / 12 / 2007	11,25	10 / 12 / 2008	13,75
23 / 01 / 2008	11,25	21 / 01 / 2009	12,75
05 / 03 / 2008	11,25	11 / 03 / 2009	11,25
16 / 04 / 2008	11,75		

Source: Banco Central do Brasil (Central Bank of Brazil)

Although the reduction in the basic interest rate has been significant, the level set is still considered high by most analysts. However, if confirmed the downtrend in the next rate setting, we can expect relevant changes in the decisions to be taken by economic agents.

It is important to point out that the level of the Selic rate indicates the basic level, while its variation indicates the trend for the financial market in general. However, the rates used by a variety of credit modalities available to consumers, are of much higher levels, varying significantly amongst the different credit institutions. This is because the spreads, the difference between the funding cost of banks and the costs charged to customers, have grown constantly and differ widely among a big number of institutions. This increase in spreads has offset the decline in the benchmark interest rate of the economy, such as occurred in January 2009.

This increase in spreads combined with the deterioration of the labor market from the end of 2008 has caused adverse effects on default of

individuals (delay over 90 days). According to Central Bank data, the default for the various forms of credit amounted to 8.3% of loans in December 2008. According to the studies of FIAP - Faculty Paulista of Informatics and Management, about 60% of households with income of up to 3 times the minimum wage started the year of 2009 with some delay on bills payments. The number is higher than the 45% recorded in early 2008.

The rise in default is also being reflected in the results of banks that have already announced the formation of high provisions to protect themselves against future losses.

Given the framework described above and the clear signs of economic slowdown at the end of 2008, according to the IBGE survey, financial market analysts believe that there is room for more frequent falls of the Selic rate.

Therefore, and keeping the compatibility with the inflation target scenario, it is realistic to adopt a projection of the Selic rate to a level of 10% per year for 2009, of 9% per year for 2010, and 8% per year for 2011.

3.3 Activity Level

Direct impacts of the current global economic crisis on the Brazilian economy are being felt, mainly, on two clearly different fronts.

The first is through the financial market that with the deregulation of capital account provided greater freedom to capital flow for the purchase and sale of stocks, bonds and other securities. The immediate impacts have occurred due to the fall of the stock exchange and to the devaluation of the official exchange. Furthermore, the reduction of liquidity in international financial markets is resulting in an increased cost of external refinancing for Brazilian companies, in addition to a decrease in domestic credits to exporting firms.

The other front is the international trade because of the sharp slowdown that is occurring in the economies of the U.S., Europe and Japan. Impacts on the balance of payments, which had already been occurring before the crisis, were reflected on the drop of the demand and international prices of commodities that comprise the majority portion of Brazilian exports. The data on the trade balance, released by the Ministry of Development, Industry and Foreign Trade, recorded a sharp drop in exports in the last quarter of 2008, causing a loss of R\$ 8.3 billion in that period. Besides these negative results at the end of 2008, the global economic crisis has meant that, in January 2009, the Brazilian foreign trade registered the worst monthly result for the last eight years. The trade balance showed a deficit of R\$ 518 million. The last monthly negative result occurred in March 2001, when the deficit stood at US\$ 272 million.

It is clear that the external vulnerability of the Brazilian economy, in both the financial and trading fronts, manifested itself, creating restrictions on the ability to grow and consequently causing negative effects on the employment level.

In a report released in January 2009, the International Monetary Fund (IMF) reviewed the forecasts of economic growth, disclosed in November 2008. The new forecast is that the world economy will grow by only 0.5% in 2009, which is characterized as the weakest expansion since the Second World War. That means a sharp drop compared to the previous forecast made in November 2008, indicating growth of 2.2% in 2009. That prediction was based on the premise that emerging economies would manage to hold back the slowdown in rich countries and even show a compensatory growth. However, this was not what happened and soon countries like the BRICs have come to acknowledge the effects of the crisis. In the same IMF review, the growth forecast in 2009 for Brazil fell from 3% to 1.8%.

Analysts' forecasts about the behavior of the Brazilian economy are also being reviewed after the data disclosure from the monthly survey on the industry sector, made by the Brazilian Institute of Geography and Statistics (IBGE) for December 2008. The figures indicate a sharp drop in performance of the Brazilian industry in December 2008. The production sector fell by 12.4% compared to November 2008 and by 14.5% compared to December 2007, the largest drops observed since 1991 according to IBGE surveys. Even more serious is the fact that the third consecutive month of contraction was registered in comparison with the previous month, which meant a drop of 19.8% in production, in the last quarter of 2008.

**EVOLUTION OF THE INDUSTRIAL PRODUCTION
YEAR 2008 IN %**

COMPARED TO THE PREVIOUS MONTH		COMPARED TO THE SAME MONTH OF 2007	
JANUARY	1,6	JANUARY	8,7
FEBRUARY	-0,6	FEBRUARY	9,7
MARCH	0,6	MARCH	1,5
APRIL	0,2	APRIL	10,0
MAY	-0,9	MAY	2,4
JUNE	3,0	JUNE	6,5
JULY	1,2	JULY	8,8
AUGUST	-1,3	AUGUST	1,9
SEPTEMBER	1,4	SEPTEMBER	9,7
OCTOBER	-1,4	OCTOBER	1,1
NOVEMBER	-7,2	NOVEMBER	-6,4
DECEMBER	-12,4	DECEMBER	-14,5

Source: Monthly Survey on Industrial Sector – Brazilian Institute of Geography and Statistics (IBGE) disclosed on 02/03/2009

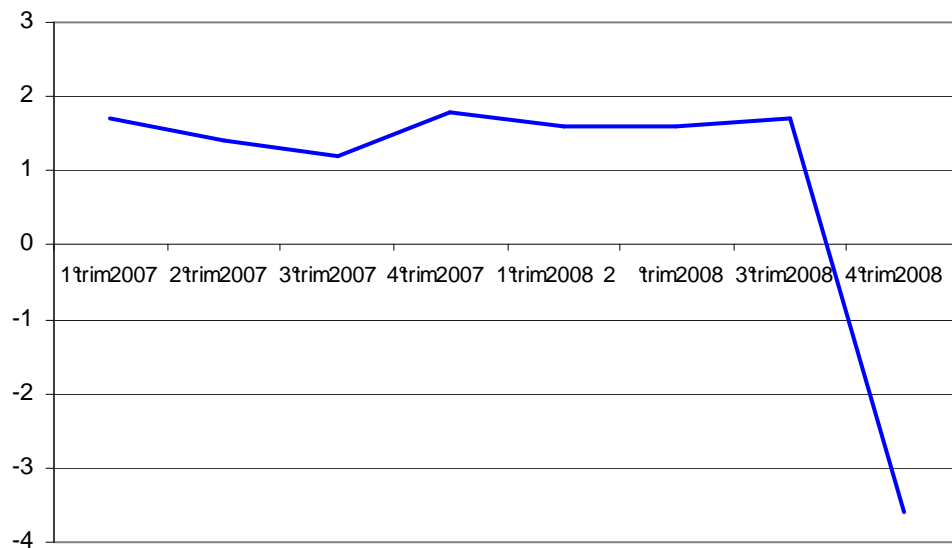
As a direct consequence of this production drop, the Brazilian industrial sector has cut 1.8% of its staff in December compared to November, the biggest drop since 2001, which was the beginning of the historical series of the IBGE survey. Previously, the cut of 0.7% in October 2003 was the worst one. Three consecutive months of layoffs decreased the total number of employees in the sector by 2.5%. Only in the São Paulo industry, according to the Federation of Industries of Sao Paulo State (FIESP), 130,000 employees were laid off in December 2008, after 30,000 had already been fired in November.

The deterioration of the external sector and the sharp deceleration of the industrial sector led to an impact on the performance of the Brazilian economy in the last quarter of 2008. According to data released by the IBGE's Coordination of National Accounts, the Gross Domestic Product (GDP) fell by 3.6% in the fourth quarter in relation to the previous quarter. Even with this record drop at the end of the year, Brazil's GDP reached the end of 2008 with an expansion of 5.1%, totaling R\$ 2.9 trillion.

**PERFORMANCE OF THE ECONOMY GROSS DOMESTIC PRODUCT (GDP)
VARIATION IN RELATION TO THE PREVIOUS QUARTER
(in %)**

1st Quarter/2007 2nd Quarter/2007 3rd Quarter/2007 4th Quarter/2007
1st Quarter/2008 2nd Quarter/2008 3rd Quarter/2008 4th Quarter/2008

**DESEMPENHO DA ECONOMIA PRODUTO INTERNO BRUTO(PIB)
VARIÇÃO FRENTE AO TRIMESTRE ANTERIOR
(em %)**



Source: IBGE

The scenario for 2009 is rather gloomy, pointing to a weak growth of GDP, with an elevation of about 1%. A possible early recovery of the Brazilian economy in late 2009 will depend on the world situation. This situation is now worse than in previous recovery cycles. If this recovery happens it will be possible to project a GDP growth of 3% for 2010 and of 4% for 2011.

4. Financial Projections

4.1 Balance Sheet

The balance sheet is an important accountancy report of insurance companies. This report presents the patrimonial profile of the company at any given moment. Its presentation, in form of ledger, shows the assets and rights of the company, represented by the accounts of Active, on the left hand side. The accounts of Liabilities represent the obligations to third parties or to shareholders, which are presented on the right hand side.

In the project modeling of the Department of Microinsurance, it was considered that the Net Result of each period is transferred automatically to the parent insurer and is incorporated into its total equity. Therefore, it does not seem applicable to perform an analysis of the balance sheet for a Department of Microinsurance. The financial projections were directed mainly to the Free Cash Flow.

4.2 Profit and Loss Statement and Cash Flow

When designing the pilot project of the Department of Microinsurance of a traditional insurer, some basic premises presented below were adopted:

a) Product

This department would operate at an early stage, a product of the life insurance group.

b) Preoperational investments

We considered the investments required to cover the costs of development, implementation and product launch. A significant portion of these investments refers to the development of information systems. These systems are crucial to efficiently address the management and operation of microinsurance products in the business of a life insurance group. The most significant disbursement of R\$ 700,000.00 occurs in the first year. For the

second year and third year investments of R\$ 200,000.00 for each period were budgeted.

PREOPERATIONAL INVESTMENTS (in R\$)

Investment Nature	Year 1	Year 2	Year 3
Product development, implementation and launch	200.000	50.000	50.000
Marketing programs and campaigns	200.000	40.000	40.000
Development and implementation of management and operation systems	100.000	30.000	30.000
Control systems of operations and agents' fee	100.000	30.000	30.000
Training programs for agents	100.000	50.000	50.000
Total of investments	700.000	200.000	200.000

c) Sales

The total number of simplified policies available per year will grow gradually, from twenty thousand simplified policies in the first operational year, to reach the level of one hundred thousand simplified policies after the fourth year of operations. The gross premium was budgeted at R\$ 5.00 a month per simplified policy.

d) Covers and Insured Values

The basic coverage purchased is of death due to any cause, with an Insured Value of R\$ 15,000.00. The additional coverage is for funeral assistance with indemnity of up to R\$ 1,500.00. For the purposes of this study, we adopted an average mortality rate estimated at 1.7 deaths per one thousand people, regardless of sex or age.

e) Agents' fee and expenses

The agents will receive a fee of 15% on the gross premium. Administrative and operational expenses estimated at R\$ 180,000.00 per year in the first two years and R\$ 200,000.00 in subsequent years.

ADMINISTRATIVE AND OPERATIONAL EXPENSES (in R\$)

Nature of Expenses	Year 1	Year 2	Year 3 onwards
Wages and responsibilities (1 manager and 2 supervisors)	120.000	120.000	133.000
Administrative expenses (office maintenance, I.T., support for other management areas)	60.000	60.000	67.000
Total of expenses	180.000	180.000	200.000

f) Financial revenues

Financial revenues represent a return of R\$ 13.000,00 per year on a financial investment of R\$ 100,000.00, carried out at the beginning of the operational phase.

g) Taxes

For the purposes of these projections, a tax of 25% on operating result was assumed.

The result of the financial projections is presented in the statement below, in which the values of the net profit combined with preoperational investments form the free cash flow.

PREOPERATIONAL INVESTMENTS in R\$	
YEAR 0	700.000
YEAR 1	200.000
YEAR 2	200.000

PROFIT AND LOSS STATEMENT in R\$					
	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
Simplified Policies	20000	50000	70000	100000	100000
PREMIUMS	1200000	3000000	4200000	6000000	6000000
LOSSES	561000	1402500	1963500	2805000	2805000
FEES	180000	450000	630000	900000	900000
GROSS PROFIT	459000	1147500	1606500	2295000	2295000
ADM/OPER EXP.	180000	180000	200000	200000	200000
FINANCIAL REVENUE	13000	13000	13000	13000	13000
OPERATIONAL RESULT	292000	980500	1419500	2108000	2108000
TAXES	73000	245125	354875	527000	527000
NET PROFIT	219000	735375	1064625	1581000	1581000

4.3 Sensitivity Analysis

Traditional methods of evaluation for investment projects are based on a deterministic analysis of indicators in few scenarios; a pessimistic scenario, an optimistic scenario and a likely scenario. However, these indicators, due to the complexity and uncertainties of the market, cannot capture the reality. In most cases, the decisions made regarding the feasibility of an investment project are carried out in an environment of uncertainty. This complicates the assessment of a project when deterministic indicators are used.

Currently, we use simulation techniques in the evaluation of the efficiency of a project. These techniques, which minimize the uncertainties, are

important tools to support the decision making process. With these techniques, indicators fail to be deterministic and become stochastic, i.e., probabilistic indicators. The technique of simulation, using the Monte Carlo method, is a sophisticated approach based on statistics. The application of this technique in sensitivity analysis in the evaluation of projects requires the generation of free cash flows, using probabilistic distributions of the decision criteria adopted. This process is repeated many times, reducing uncertainty in the decision making process. The Monte Carlo simulation is used in this study for the sensitivity analysis of parameters: Net Present Value (NPV) and Internal Rate of Return (IRR). The combination of simulation of the modeling for these two parameters provides more tools for the decision on the project in question.

The Net Present Value is the difference between the present value of the entries in the projected cash flow and the present value of preoperational investments. The positive and negative flows are discounted in order to consider the value of capital over time. The rate used to reflect the opportunity cost of capital is entitled the Minimum Rate of Attractiveness (MRA). This rate represents the rate with which the investor could employ the capital with a very low risk. In the sensitivity analysis of NPV we used a MRA of 12%.

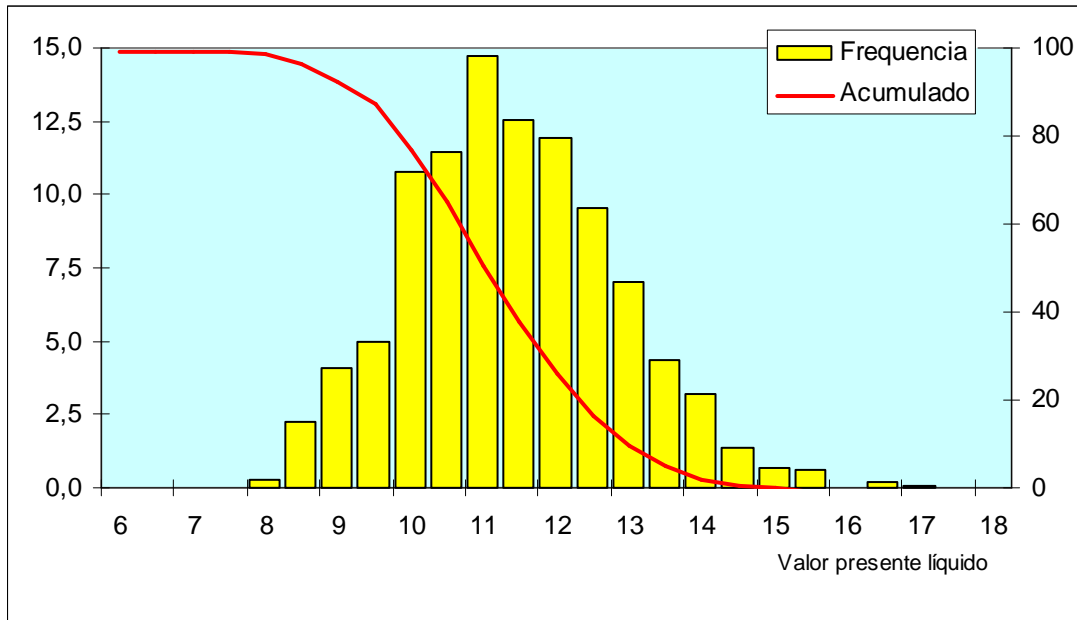
After running the simulation, using 1030 iterations, representing many situations, we obtained the probability distribution of NPV (Annex 2). This probability distribution is shown in the chart below.

Distribution of probability of NPV

Frequency

Accumulated

Net Present Value



In R\$ million

Through the simulation of results with the NPV the minimum value of R\$ 8 million and the maximum value of R\$ 17 million were found. The average value of the NPV calculated in the simulations was R\$ 11.3 million. The region with the highest probability of the NPV ranges between R\$ 9.5 million and R\$ 13 million, with 80% probability of finding the NPV within this range of values.

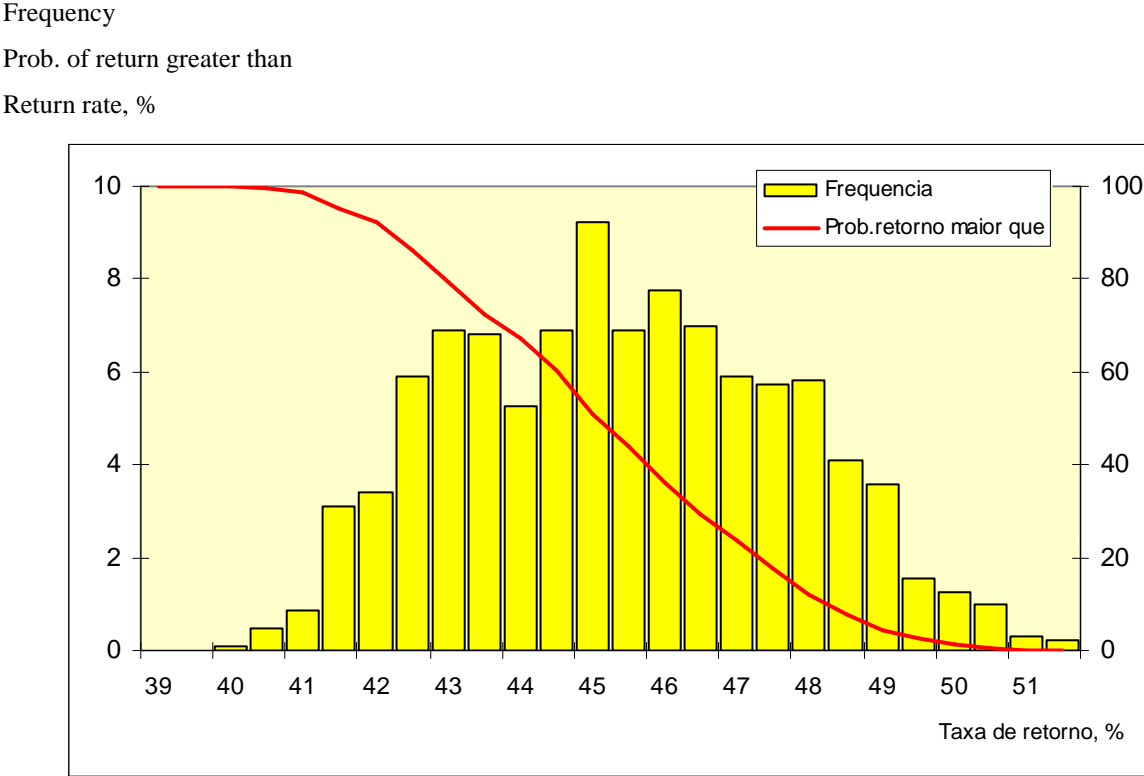
The sensitivity analysis, represented in the curve of probability distribution, confirms the viability of the project of the Department of Microinsurance in several simulated situations for the NPV.

Another parameter analyzed is the Internal Rate of Return. The IRR is the discount rate that makes the Net Present Value (NPV) of the cash flow null. Projects that have an IRR greater than the Minimum Rate of Attractiveness (MRA) are considered economically viable. This rate is closely linked to the NPV. When the IRR is higher than the MRA it is an indication of a positive NPV and therefore the project is viable. The greater the difference in favor of

the IRR in relation to the MRA, the greater the attractiveness of the return on investment.

Similarly to the simulations performed for the NPV, 1030 iterations of the model representing different situations with respect to the Internal Rate of Return (IRR) were made (Annex 3). The simulation results generated the probability distribution of the IRR which is represented in the chart below.

Probability Distribution of the IRR



The average value found for the IRR was 45.4%, which is a rate that means a high degree of attractiveness for the return of investments. The minimum value was 40.0% and the maximum value found was 51.5%.

The level of sophistication of the results, provided by the use of the Monte Carlo method, is much higher than what is achieved when using traditional methods. Questions with respect to the probability of achieving an IRR above a certain

value are quickly answered. As an example, the probability of an IRR higher than the 46.5% is 30.0%, or the probability of an IRR higher than the 47.5% is 18.0%. This flexibility achieved through the probability distribution of the IRR provides numerous and valuable benefits to the decision maker.

Several other considerations can be made from the probability distribution of the IRR. The determination, for example, of the region with the highest probability of occurrence of IRR is extremely important in the decision making process on a project. In this simulation, we can infer that there is a 90% probability of the IRR to be located in a range between 41.0% and 50.5%. This measure makes the investor more confident that the IRR will be in a range quite above the Minimum Rate of Attractiveness of 12.0%. This magnitude of the IRR attributes a high degree of attractiveness to the return on investment required by the Department of Microinsurance.

5. Investment Policy

The management of investments for the Department of Microinsurance will be developed within the organizational structure of the insurance company, which this department is bound to. The Investment Department of the insurer operates these functional activities within the standards established by the company. As defined in the basic premises of the project assembly of the Department of Microinsurance, the product initially operated would be group life. In life insurance group, the policies are issued as temporary policies of life insurance, with an option for annual renewal. It is also recognized that premiums are sufficient to cover benefits and expenses expected for the current year. Therefore, the return on investment is not an important factor when calculating the premium rate. Moreover, considering the characteristic of short-term coverage, there is no requirement to establish technical reserves. An investment portfolio made at the beginning of operations in the amount of R\$ 100,000.00 was considered in the financial projections. The expected return of R\$ 13,000.00

per year would be used for covering small administrative costs, without having to resort to transfers from the parent company.

6. Information Technology Policy

The information technology (IT) policy of the Department of Microinsurance must be conducted within the overall IT policy of the insurance company, which this department is bound to.

An insurance company must manage its information effectively in order to become more competitive than its competitors. Thus, it may also provide a better service to its customers.

Effective management of information requires the use of computer technology. The use of this technology takes for granted heavy investment in system development. In the case of a Department of Microinsurance, operating within the organizational structure of an insurer, only a small portion of these investments would be absorbed. This burden could be imputed proportionately to sales of microinsurance in relation to the total sales of the insurer. Another form of covering the costs would be through an apportionment according to the frequency of use of the insurer's information systems by the Department of Microinsurance.

The main set of information systems used by a Department of Microinsurance, includes systems that record its business transactions. Another important set of information systems uses data from systems of record transactions and generates management reports. These reports are very useful for the management of the department when evaluating the performance of the business unit. They are also useful in assisting the decision making process for the correction of deviations related to targets established in the planning. The microinsurance product has particular characteristics, such as mass product, premium with relatively small value, issuing of numerous simplified policies, diversified distribution channels, large numbers of agents, and the need for quick settlement of claims. These

characteristics require the development of special systems for the effective management of microinsurance products. These special systems must be managed in a decentralized system from the insurer's global systems in order to accelerate the processing of information. This decentralization, however, should not affect the compatibility nor the possibility of integration with the insurer's global systems. The observation of this principle allows the top management staff to always be able to evaluate the performance of the insurer as a whole.

7. Reinsurance Policy

If the insurance companies accept all the risks offered to them, it can endanger its solvency margin. The main mechanisms used by insurers to transfer risks are the co-insurance and the reinsurance. Reinsurance is used when the insurer issues policies with high values. A string of voluminous losses could jeopardize its financial health. With the mechanism of reinsurance, an insurer transfers all or part of the bulky risk to other insurers in the market.

In the project of the Department of Microinsurance, the use of the instrument of reinsurance does not apply due to the small amounts of the claims.

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Annex 1

MINISTRY OF FINANCE

Superintendência de Seguros Privados

SUSEP CIRCULAR 311, of December 27, 2005.

It refers to the minimum elements that should be observed in preparing the business plan to be submitted to SUSEP by insurance companies, Annuity companies and open private pension funds.

THE SUPERINTENDENT OF THE SUPERINTENDÊNCIA DE SEGUROS PRIVADOS – SUSEP, in the form of art. 36, item "b", the Decree-Law 73, of November 21, 1966, using the power granted by Art. 16 of the CNSP Resolution 73, of May 13, 2002, and considering the dispositions in the process of SUSEP 15414.001910/2005-38,

DECIDES:

Art. 1 To set minimum elements to be observed in preparation of the business plan to be submitted to SUSEP by supervised companies, when requested by the Superintendence.

Sole Paragraph. For the purposes of this Circular, insurance, annuities and open private pension funds organizations shall be considered as supervised companies and entities.

Art. 2 The business plan should include the planning of the supervised company or entity for the period of 3 (three) years, starting from its preparation.

Art. 3 Companies should develop or update their business plans, at least by the delivery date of the financial statements of each year, containing the minimum time scope for planning, according to the art. 2 of this Circular, and the plan may be requested at any time by the Superintendence.

§ 1 The business plan should be signed by at least two directors of the supervised company or entity.

§ 2 The SUSEP's employee, who ask for the business plan should take all steps to maintain its confidentiality, in accordance the supplementary regulations to be issued by SUSEP.

§ 3 The delivery of the business plan may only be requested by Heads of Department.

Page 2 of the SUSEP CIRCULAR 311, of December 27, 2005.

§ 4 For companies in the process of initiation of activities or transfer of control, the business plan should be prepared and delivered to SUSEP at the time of submission of the application process for approval.

Article 4 The business plan should provide at least the following items:

- I - the supervised company's strategic goals;
- II – details of the organizational structure, consistent with its business plan and with clear determination of responsibilities assigned to various levels of the supervised society;
- III - description of the economic scenario, in which the supervised company or entity expects to do business;
- IV - financial projections, showing the equity evolution in the given period, with the identification of funding sources that enable these developments;
- V - investment policy;
- VI - the company's policy in relation to information technology – I.T.;
- VII – insurance lines, to which the supervised company or entity intends to operate with and their foreseen participations in its total revenue; and
- VIII - reinsurance policy.

Art. 5 The description of the economic scenario under item III of art. 4 of this Circular should include the following parameters:

I – interest rate, projected to the following cases:

- a) basic rate of the economy;
- b) rate of return on Assets; and
- c) rate of return on Liabilities.

II –projected inflation

III - projected rate of economic expansion, considering the economic performance indicators more related to the expected sales revenue.

Art. 6 Financial projections should be made considering a quarterly basis for the scenario referred to in item III of art. 4 of this Circular, with the items below:

I – balance sheet and profit and loss statement of the fiscal year; and
II – cash flow in Reais.

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Sole Paragraph. The activities highlighted in the cash flow in item II of this article should be segregated in operating activities, investing activities, financing activities and the final balance (cash increase or decrease).

Art. 7 This Circular shall enter into force on the date of its publication, immediately employing the authorization procedures regarding control and operation transfer of new companies or entities, and companies or organizations already authorized to operate by SUSEP from 2007 onwards, and the business plan must be ready by December 31, 2006.

RENÊ GARCIA JR.
Superintendent

Annex 2

RESULTS OF THE SIMULATION NET PRESENT VALUE

<i>Block</i>	<i>Frequency</i>	<i>%</i>	<i>% ac.</i>	<i>Prob.></i>
6,0	0	0,00	0,00	99,00
6,5	0	0,00	0,00	99,00
7,0	0	0,00	0,00	99,00
7,5	0	0,00	0,00	99,00
8,0	3	0,29	0,29	98,71
8,5	23	2,23	2,52	96,48
9,0	42	4,08	6,60	92,40
9,5	51	4,95	11,55	87,45
10,0	111	10,78	22,33	76,67
10,5	118	11,46	33,79	65,21
11,0	152	14,76	48,54	50,46
11,5	129	12,52	61,07	37,93
12,0	123	11,94	73,01	25,99
12,5	98	9,51	82,52	16,48
13,0	72	6,99	89,51	9,49
13,5	45	4,37	93,88	5,12
14,0	33	3,20	97,09	1,91
14,5	14	1,36	98,45	0,55
15,0	7	0,68	99,13	-0,13
15,5	6	0,58	99,71	-0,71
16,0	0	0,00	99,71	-0,71
16,5	2	0,19	99,90	-0,90
17,0	1	0,10	100,00	-1,00
17,5	0	0,00	100,00	-1,00
18,0	0	0,00	100,00	-1,00
18,5	0	0,00	100,00	-1,00
19,0	0	0,00	100,00	-1,00
19,5	0	0,00	100,00	-1,00
20,0	0	0,00	100,00	-1,00
More	0	0,00	100,00	-1,00
	1030	100,00		

Annex 3

**RESULTS OF THE SIMULATION
INTERNAL RATE OF RETURN**

<i>Block</i>	<i>Frequency</i>	<i>%</i>	<i>Accumulated</i>	<i>Inverse accum.</i>
39,0	0	0,000	0,000	100,000
39,5	0	0,000	0,000	100,000
40,0	1	0,097	0,097	99,903
40,5	5	0,485	0,583	99,417
41,0	9	0,874	1,456	98,544
41,5	32	3,107	4,563	95,437
42,0	35	3,398	7,961	92,039
42,5	61	5,922	13,883	86,117
43,0	71	6,893	20,777	79,223
43,5	70	6,796	27,573	72,427
44,0	54	5,243	32,816	67,184
44,5	71	6,893	39,709	60,291
45,0	95	9,223	48,932	51,068
45,5	71	6,893	55,825	44,175
46,0	80	7,767	63,592	36,408
46,5	72	6,990	70,583	29,417
47,0	61	5,922	76,505	23,495
47,5	59	5,728	82,233	17,767
48,0	60	5,825	88,058	11,942
48,5	42	4,078	92,136	7,864
49,0	37	3,592	95,728	4,272
49,5	16	1,553	97,282	2,718
50,0	13	1,262	98,544	1,456
50,5	10	0,971	99,515	0,485
51,0	3	0,291	99,806	0,194
51,5	2	0,194	100,000	0,000
More	0	0,000	100,000	0,000
total	1030	100,000		