SUSTAINABILITY AS A STRATEGIC RISK APPROACH: SUSTAINABILITY OPTION INTO NON-LIFE INSURANCE PRICING

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Sustainability: concept

DEVELOPMENT THAT MEETS THE NEEDS OF THE PRESENT, WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS

If it emerges at all, a sustainable global economy will emerge through an era of intense technological, economic, social and political metamorphosis. We can distinguish four main types of ‘value webs’: ‘locusts’, ‘caterpillars’, ‘butterflies’ and ‘honeybees’

Real Options: a new application to sustainability

• Stewart Myers of the MIT Sloan School of Management wrote about real options in 1977. In the recent years, this approach has developed an increasingly more important position.

• These options can be a **good tool** to make a project flexible in relation to the market changes analyzing each scenario and identifying the most appropriate corporate action.

• There are real options when **there is the possibility to choose different strategies during the project’s life** and, as a consequence, to change the size, opportunity and risk of a project’s cash flows.

• Real options can be applied for business choices also related to risk mitigation.
Sustainability Option

- Quantitative tool helpful in measuring the impact of sustainability on decision making: Pedol Model

The value of the real option (RO) is:
\[ RO = \left(1 - p\right) * \left(Z - G\right) * v^T - C \]

Basic NPV:
\[ Basic \ NPV = \left[p * S + \left(1 - p\right) * (-Z)\right] * v^T - X \]

Sustainable NPV:
\[ Sustainable \ NPV = \left[p * S + \left(1 - p\right) * (-G)\right] * v^T - X - C = Basic \ NPV + RO \]

Variables:
- Initial cost of project = X
- Initial cost of security/sustainability = C
- WACC = i
- Cash-in of the project = S
- Loss without sustainability = -Z
- Loss with sustainability = -G
- Maturity = T
Sustainability in Insurance Sector

THE EU AND GOVERNMENTS AROUND THE WORLD ARE COMMITTED TO A MORE SUSTAINABLE ECONOMY AND SOCIETY

• Many studies are being published, such as:

1. International Association of Insurance Supervisors
   - *Issues Paper on Climate Change Risks to the Insurance Sector, 2018*

2. Principle for Sustainable Insurance
   - *The 4th factor: Underwriting for sustainable development in surety bonds, 2018*
   - *Underwriting environmental, social and governance risks in non-life insurance business: The first ESG guide for the global insurance industry, 2019*
Sustainability into non-life insurance pricing

• This is an exploratory approach to introduce ESG risk factors in underwriting processes to identify, mitigate and assess properly the impact of ESG risks

• The insurer recognizes investments and benefits of a sustainable strategy that mitigates the risk, so as to apply a reduction of premium in favor of the policyholder:

\[
\text{sustainability } P = \tau \cdot V - f(RO)
\]

Where
- \( \tau \) is the premium rate
- \( V \) is the exposure
- \( RO \) is the Sustainability Option
- \( f(.) \) is a discount function, \( \in (0, \tau \cdot V) \)
Take aways

• SUSTAINABILITY IS A STRATEGY

• ADOPTING SUSTAINABILITY HAS SEVERAL POINTS OF STRENGTH: *ex-ante benefits* e.g. organization’s prevention against adverse events; *ex-post benefits* e.g. pre-qualified intervention plans for containing the loss and saving important intangible assets, e.g. reputation

• SUSTAINABILITY OPTION IS VALUABLE AND IT CAN BE USED AS A STRATEGIC MANAGEMENT TOOL, when it is a risk mitigation instrument linked with sustainable factors

• INSURANCE COMPANIES CAN RECOGNIZE A LOWER RISK PROFILE TO COMPANIES/ POLICYHOLDERS INVESTING IN SUSTAINABILITY, and their capacity to generate and maintain value over time

• This study WOULD LIKE TO BE A CONTRIBUTION TO ENCOURAGE THE DEVELOPMENT AND THE ADOPTION OF INSTRUMENTS USEFUL FOR ESTIMATING COMPETITIVE ADVANTAGES FOR THOSE WHO INVEST IN SUSTAINABILITY, advantages also deriving from insurance products
Main References

- Pedol M., Sustainability Option: Application to BP's Deepwater Horizon Case, presented at the 22nd Annual International Real Options Conference held at Düsseldorf, Germany, June 21-23, 2018
- Pedol M. - Cabot T., Quantify Sustainability: a new factor inside insurance pricing, 2015, published by Argo Group International Holding, Ltd
Thank you.