

BRIEFING SHEET

WILLIS ENTERPRISE & RISK FINANCE

RISK TOLERANCE AND RISK APPETITE

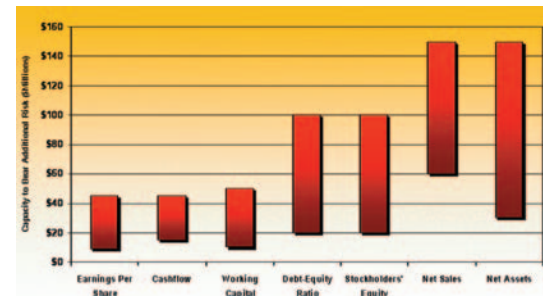
RISK TOLERANCE DESCRIBES AN ENTITY'S FINANCIAL CAPACITY TO ACCEPT RISK

The metrics for calculating risk tolerance can address *liquidity, capital adequacy and asset impairment; e.g., EPS, cash flow, debt-equity ratio and other measurements, such as those shown in this graph*. Based on the entity's business strategies, some metrics may be given a higher weighting than others. These metrics can be combined in order to create a single risk threshold. Other constraints in the form of covenant restrictions or regulatory capital requirements can also be introduced into the risk tolerance model.

Risk tolerance should be articulated in a way that satisfies the interests of all of key constituencies (i.e., shareholders, regulators, rating agencies, board members, management and employees). Each of these stakeholders will likely have a different perspective on what risks and volatility the organization can accept. For instance, rating agencies (e.g., S&P, Moody's) are mainly concerned about the creditworthiness of issuers of securities and their financial obligations, whereas shareholders are primarily concerned with the earnings volatility to

the value of their stock (i.e., EPS). A risk tolerance assessment, therefore, should include multiple metrics to address the different interests of all major stakeholders.

RISK-BEARING CAPACITY USING VARIOUS FINANCIAL METRICS



In summary, risk tolerance can be described as a function of:

- The relationship of risk to liquidity, capital adequacy and asset impairment measured by the most appropriate financial metrics
- The organization's business strategy, which in turn is related to its stated goals,

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expectations of stakeholders, type of industry, size, composition, age of assets, stage of its life cycle

- Constraints imposed by legal, regulatory and contractual requirements

While specific steps in determining risk tolerance vary from one organization to another, there is a logical flow of activities that leads to this calculation. The main steps in the calculation are:

1. Select specific variables or key financial indicators, such as net tangible assets, net working capital, EBIT
2. Create risk volatility thresholds of selected variables, individually and in the aggregate
3. Stress test selected thresholds against own historical loss experience and potential exposure
4. Stress test selected thresholds against overall industry loss performance

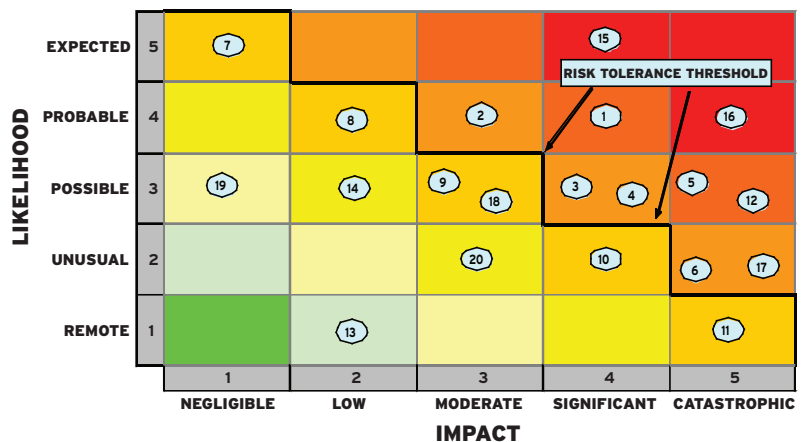
A recent empirical study measured the financial risk tolerance for the top 50 largest US-based oil companies over a 20-year period¹. The study results indicate that there is high correlation between the propensity of risk taking and performance, competitiveness and returns on assets. The findings also indicate that managers who establish their risk tolerance level and make appropriate resource allocations achieve significantly higher returns than those who don't.

RISK APPETITE DESCRIBES AN ENTITY'S PHILOSOPHICAL VIEW OF RISK-TAKING

Risk appetite may or may not be aligned with risk tolerance. In other words, even if the risk tolerance of an organization supports additional assumption of risk, the organization's risk appetite may drive a decision not to assume that additional risk. Risk appetite influences the broad parameters for a business, such as the types of activities a business engages in as well as the time horizon

for its investment activities. It is a contributing factor to the overall business vision. One way to assess risk appetite is through the use of an effective risk mapping process.

A risk map illustrates how risks compare to each other in terms of estimated likelihood and impact. In the example shown below, the most frequently expected risks are those toward the top of the map, and the most severe risks are on the right side of the map. It is a relatively easy additional step to establish a risk tolerance threshold to reflect the dividing line between risks the organization deems to require explicit action and those risks which do not (i.e., are tolerable). The goal is to move all risks within the acceptable range of the risk tolerance threshold through the implementation of improved controls.



BENEFITS OF DEFINING RISK TOLERANCE AND RISK APPETITE

- Improve the quality of risk/reward decisions
- Make risk retention decisions on a more realistic and informed basis
- Better understand how each function of the business contributes to the overall riskiness of the business
- Better meet expectations of key stakeholders

CONTACT

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¹ Michael R. Walls. "Corporate Risk-Taking and performance: A 20-year look at the petroleum industry." *Journal of Petroleum Science and Engineering*, Volume 48, Issues 3-4, 15 September 2005, Pages 127-140.