

Risk Appetite as a Core Element of ERM: Definition and Process

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Abstract

Risk appetite represents how much risk an organization is willing to assume consistently with its strategy. Each business strategy implies some amount of risk, in terms of the uncertainty of the results will be achieved; therefore, risk appetite represents a fundamental element of enterprise risk management (ERM) as it sets the risk strategies and allows framing for the current risk profile.

The goal of this paper is to describe the general idea of risk appetite, its implementation framework and the process to set it within a bank with a strong focus on the interactions with other processes such as planning and control, performance evaluation and communication.

It should be remarked that risk appetite requires as precondition a proper risk management framework to be in place, e.g. risk identification, measurement and reporting.

Even if risk appetite is a managerial tool, it should comply with regulatory requirements that are shortly described. To provide a full understanding of the risk appetite implementation, how it could be implemented in two other industries—an oil company and a manufacturing firm such as a carmaker—are described.

Paper type: Applied.

Keywords: Risk appetite, ERM, planning, capital adequacy, performance evaluation, corporate governance, risk control, stress test, banking regulation.

1. Introduction

Risk cannot be eliminated from corporate management because it stems from the unpredictability of the outcome of business decisions.

Consequently, each company sets up, or it is expected to set up, an enterprise risk management (ERM) framework, made by a set of processes, methodologies and tools to ensure the risk is kept within acceptable levels, i.e., consistent with the company risk tolerance that should be set by the senior management and board of directors. The recent crisis and the subsequent amount of company defaults, above all in the financial service industry, underlined the importance of a proper and effective ERM.

Therefore, risk appetite represents the core of ERM as it represents the yardstick to compare the current risk profile to.

It proves to be more effective if it is embedded in the planning processes in order to have a “forward-looking” ERM that is not a mere reporting or controlling framework.

Furthermore, there is a growing trend of greater transparency regarding current and target levels of risk as are represented in the risk appetite.

The goal of this paper is to describe the general idea of risk appetite, the process to set it up within a bank and the interactions with other processes. Examples of applications in sectors other than financial services are also provided.

Besides this foreword, the paper is organized as follows. The first section presents the risk appetite framework and its components for a bank, taken as a paradigm. Sections 2 and 3 respectively deal with the process and the governance while section 4 looks at regulatory requirements. The extension to other industries besides banks is described in section 5, while the last section summarizes some implementation pitfalls.

2. Risk Appetite Framework

Risk appetite is a widely spread concept that needs to be structured in a dedicated framework to be implemented in a financial institution. In a more detailed fashion, this framework is formed with the items listed below, which will be described in the following sections:

- The definition of risk appetite
- Analysis of the relevant stakeholders and their expectations
- Sets of metrics that could describe the risk appetite
- Purpose of the risk appetite and its usage
- The process to set risk appetite

2.1. Risk Appetite Definition

Risk appetite represents the decision of how much risk an organization is willing to assume consistently with its strategy. Each business strategy implies some amount of risk, in terms of uncertainty of the results that will be achieved.

Even if risk appetite is a widespread concept, the starting point of its framework is the bank defining risk appetite consistently within its culture and business model. This step could sound trivial but it is needed to set up a common ground to avoid any misunderstanding.

In this paper, a broad definition is proposed as follows in order to be applied not only to banks or financial companies but across all industries:

“Risk appetite is represented by the losses the company is willing and able to stand in order to reach the target results, where potential losses could also be represented by their drivers.”

It is appropriate to emphasize that the definition of risk appetite both in terms of variables included and their values depends on the bank’s business model and related risk profile; for instance, a commercial bank should have a stronger focus on credit risk while a merchant bank on market one.

The level of risk appetite metrics depends on the bank’s strategy because the higher the target profits, the higher the risks assumed, which means greater risk appetite.

2.2. Analysis of Stakeholders

The risk appetite must be compared and set consistently with the stakeholders’ expectations and requirements because it is a key component of the bank’s strategy. In fact, all stakeholders deem the amount of risk held by a bank as well its evolution over time to be a core issue.

Broadly speaking, the following categories of stakeholders are considered:

- Debtholders
- Shareholders
- Regulators and supervisors
- Governments

2.2.1. Debtholders

The debtholders are those that provide the bank with its funding and are mainly interested in the solvency of the bank, i.e., the capacity to fully and in a timely manner keep all the bank's obligations.

Even if all are bank creditors, it is appropriate to put them in three groups:

- Depositors
- Banks
- Bondholders

First, as long as there is a guarantee scheme that refunds deposits in full, depositors could be uninterested in the bank management, including its risk appetite.

As in the recent financial crisis, many governments provided blanket guarantees (e.g., Germany and Ireland) that exceeded the scheme underpinning the banking system; therefore in this paper, the focus is on the last two groups.

With this regard, the decision-making process of banks' bondholders often relies materially on the evaluation of the issuer as expressed by its rating.

That means the primary focus of a bondholder is on capital and liquidity strength as a proxy of the bank solvency as also represented by the rating agencies and their evaluation mechanisms. In fact, from a debtholder's point of view, capital acts as a buffer to absorb losses because it is more junior than any kind of debt.

2.2.2. Shareholders

Shareholders profit is defined in a residual way, i.e., what is left from the bank income after all the other stakeholders have been paid back could also mean suffering a loss.

Therefore, shareholders are interested mainly in the bank's profitability and its variability over time because their decision-making criteria are if the bank's expected profits are adequate in comparison to the carried risks. Consequently, shareholders' concerns about the risk appetite are represented by the earning variability and its drivers.

Often, shareholders' perspective could be proxied by the equity analysts that express the potential evolution of the bank value.

2.2.3. Regulators and Supervisors

Regulators and supervisors play a key role in the financial markets and strongly impact the behavior of the different players. Concerning the risk appetite, several regulatory elements shape it heavily in terms of tools and amounts. This includes the Basel Accord, where regulators set out the key metrics for assessing banks' risks, capital and capital adequacy, namely the risk weighted assets (RWA), Tier 1 and then their ratio, defined as Tier 1 ratio.

Such influences have been strengthened in the forthcoming innovations to the regulatory framework Basel III, where compulsory metrics are introduced not only with regard to capital adequacy but also concerning liquidity.

On the other hand, it is fundamental how supervisors use such metrics in assessing the banks' soundness in their on- and off-site examinations. In a more detailed way, supervisors pay careful attention to the bank's decision-making process and the outcome in terms of the actual risk profile. That means supervisors are not only interested in mere solvability but also in medium-term business sustainability and therefore have a perspective that exceeds the debtholders'.

Banks' risk appetite frameworks then both heavily rely on regulatory metrics and on supervisory expectations as embedded in current and forthcoming regulation.

2.2.4. Governments

There is a new category of stakeholders—government—both in terms of lawmakers reshaping the legislative landscape, e.g., with the Dodd-Frank Act in United States and the Capital Requirement Directive (CRD) in the European Union, and as a special kind of shareholder further to bailing out some financial institutions.

As a matter of fact, State interventions extended deposit guarantee schemes and supported banks via loans, with actual lending or guarantees offered, or by security repurchase agreements, massive bond-purchase programs and huge recapitalizations.

Therefore, governments are keener on keeping banks from suffering large losses or being able to withstand the losses to avoid additional burden for the taxpayers. For instance, the Volcker Rule could be seen as a pre-emptive measure to prevent banks from assuming too much risk. Therefore, bank decision on risk appetite cannot be not compliant with government expectations.

Moreover, governments often became banks' shareholders and thus they could substantially set the risk appetite while in other cases they negotiated covenants and action plans as a condition of rescue packages, which could materially impact risk appetite, for instance, leading to disposing of or shutting down some business lines deemed too risky.

2.3. Set of Metrics

The aforementioned definition of risk appetite must be translated in a set of metrics in order to be embedded into the bank management.

In this section, first the criteria underlying the choice of the variables will be outlined to set up a general structure, then the main categories will be described and, for each of them, some examples will be provided.

The metrics belonging to the same category broadly address the same issue, but there is no unique or obvious choice as it depends on what targets the bank wants to achieve and the issues the bank would like to stress. Of course the choice of the metrics heavily relies on the bank business model, system development and degree of sophistication, for instance if there are economic capital in place or not. The metrics chosen to steer the business activities and three kinds of paradigms will be presented in section 2.2.

2.3.1. Criteria for the Metrics

The full embedding of risk appetite into the bank's processes requires translating the definition of risk appetite into a full set of metrics that should meet some broad criteria, which are outlined below.

First, such metrics must be quantifiable in order to properly steer the business as qualitative statements could not provide an unambiguous target.

Second, the set of metrics should be able to provide a full picture of the bank's risk profile. That could be achieved either by using synthetic metrics, i.e., metrics that represent the aggregation of risks, or the main variables for the key risks. This potential choice will be described in section 2.3.2.

We would like to underline that completeness of the risk profile is meant across the subsidiaries and the business lines.

Needless to say, if the risk profile should not be adequately captured, the risk appetite could turn out to be useless or even misleading.

On the other hand, the risk appetite is effective only if it is cascaded down to all the subsidiaries and/or business lines. In this process, the metrics could be transformed to be applied at a more detailed level.

Third, the metrics should be able to capture and represent completely the risk financing, i.e., the means to fund the losses, realized or potential, that could show up. In a more detailed way, the unexpected losses are faced by capital and therefore are represented in the capital adequacy domain. Expected losses, on the other hand, are funded as cost because they represent a component of business running, for instance, provisions in the performing portfolio that are set aside in commercial lending.

2.3.2. Proposed Set of Metrics

In order to be properly used in running the bank's business, the picked-up metrics should be able to address the concerns of all the relevant stakeholders, namely stockholders, bondholders, regulators/supervisors and governments. In this paper, the proposed risk appetite framework is made by the following categories of metrics to provide a clear target setting to support business activities and meet the stakeholders' expectations:

- Capital adequacy
- Earning variability
- Liquidity
- Risk
- Business specific

The metrics above address the perspective of stakeholders as outlined in the previous section while providing a strong control of the business activities according to a framework flexible enough to be applied across all companies. For instance, capital adequacy is the main concern of regulators/supervisors as well as a focus issue of rating agencies, while shareholders are concerned with earning variability and governments with both of them, while everyone is interested in risk levels.

For each category, some metrics are presented as well as their purposes and usages.

It is appropriate to emphasize that in the proposed framework, risk appetite sets out the boundary conditions business activities should be run within. Therefore, we do not include the variables that usually represent the economic targets such as revenues, profits or value creation, e.g., as represented by Economic Value Added™ (EVA) or risk-adjusted return on risk-adjusted capital (RARORAC).

Risk appetite, as discussed in section 3, should be led, or at least jointly led, by the risk management functions and not be involved in setting profitability targets.

2.3.3. Capital Adequacy Metrics

Although capital adequacy is a clear concept, it could be described under different points of view represented below, with regulatory rulings playing the lion's share.

Pillar 1

Pillar 1 is a component of the Basel framework and represents the minimum capital requirements banks have to hold. Needless to say, the metrics envisaged in Pillar 1 must be included in the risk appetite framework to avoid the bank not being compliant with the mandatory regulatory regime.

In a more detailed way, the related metrics are the following:

- *Tier 1 ratio*, defined as the ratio of Tier 1 to RWA, where the former represents the high quality capital and the latter the standard regulatory measure of risks¹
- *Total capital ratio*, defined as total capital, made by the sum of Tier 1 and Tier 2, divided by RWA
- *Core Tier 1 ratio*, Core Tier 1 represents the highest quality component of Tier 1 and it is expressed as percentage of RWA

While the first two metrics are regulatory, the last is a common market benchmark widely used above all by rating agencies and equity analysts.

The recent financial crisis proved that these indicators could not be reliable enough and then regulators introduced a simplified and more robust metric, i.e., the leverage ratio. Actually, this happens to be more a set of metrics than a specific metric and could be defined as the ratio of total assets to equity.

Pillar 2

While metrics envisaged in Basel II Pillar 1 make up a standard yardstick to assess the capital adequacy across all financial institutions, under Pillar 2, banks are strongly encouraged to develop their own tailor-made risk measures that address some of the shortcomings of regulatory measures.

Unexpected loss is then represented by the economic or internal capital, which is a statistical measure assessing the maximum potential loss with a set confidence level.²

Economic capital is supposed to capture the diversification among the different risk types and the concentration or diversification within each risk type.

¹ In a more detailed fashion, Tier 1 is made up by equity plus some debt instruments named "hybrids" minus some items to be deducted as shareholdings in other financial institutions. RWA are the weighted sum of the banks' assets by coefficients, usually between 0 and 100 percent, that represent their risk. Tier 2 is made up by debt instruments that are the most junior of all, besides the hybrids.

² Economic capital should be the aggregated economic capital, i.e., the aggregation of the economic capital related to single risk types. Basel II legislation speaks about internal capital that is supposed to.

These effects are not captured by RWA because they are the sum of those related to trading items and credit positions, which means assuming no diversification among risk types. Moreover, RWA are calculated on the assumption of a perfectly granular credit portfolio, i.e., made by a very large number of totally uncorrelated counterparties, and therefore they do not reckon with concentration risk.

Consistently with the economic capital concept, banks could develop their own metric of available capital that could be wider than a regulatory metric or, as a first definition, equal to that. The related capital adequacy metric, also name as risk-bearing capacity, is the ratio of available capital to economic or internal capital.

Other Metrics

There are a few other, less common types of metrics. For instance, a new metric has been used to represent a bank's capital: the tangible common equity (TCE), namely the equity less preferred or saving shares and minus intangible assets that are more difficult to dispose of in critical situations or with very unpredictable selling prices. The consequent capital adequacy metric is the ratio of TCE to RWA or the simpler TCE to total assets.

Usage

It is recommended to include a couple capital adequacy variables in the risk appetite framework as minimum. Of course, at least one should be related to Pillar 1, and the choice depends on the strategic view of the bank. If it deems that both capital and subordinates are scarce resources in terms of market availability, it should consider the total capital ratio. Otherwise, it could deal with the Tier 1 or Core Tier 1 ratio, where the latter is most suitable should the bank be listed or publicly rated as it is a common market benchmark.

The Pillar 2 metric could be useful for sophisticated institutions as it offers a complementary view rather than the regulatory one. Above all, it is suitable for banks with a diversified portfolio or investment banks with large market exposures. Nevertheless, capital ratios according to Pillar 1 and Pillar 2 must be set consistently to avoid any inconsistencies.

In any case, leverage ratio should be included because it provides a more robust approach and a direct comparability with competitors, besides having been recently added as a regulatory requirement to Basel III.

2.3.4. Earning Variability Metrics

Shareholders are interested in the bank's profits and its variability but while the former is out of the risk appetite scope, the latter should be in.

The most obvious metric is earning at risk (EaR), which represents the volatility of the profits. This is a statistical variable used as a proxy of the potential return variability. This metric could be assessed under a historical perspective or a forward-looking one, where the future volatility is expressed in the function of the forecast business portfolio.

As for leverage ratio, EaR is more a family of metrics than an individual one as there are several degrees of freedom in defining it. First, there are different statistical procedures, data frequencies and time series lengths, besides the different definitions of earnings that could be adopted, such as:

- Net or tax gross profits
- Profits or other profitability measures such as earnings before interest, taxes, depreciation and amortization (EBITDA)
- Profits with/without extraordinary items

Another metric could be the probability of loss. Even if it sounds interesting, it is difficult to measure and pretty unstable and therefore we do not deem it appropriate to include it in the risk appetite framework. Nevertheless, this metric could be meaningful for banks with heavy trading operations where the number of days with negative profit and losses could be used as a proxy.

To minimize the risk of losses, a very useful indicator for commercial banks is the cost of risk, defined as the ratio of credit losses to credit exposure.

Credit exposure could be expressed in terms of RWA, notional amount or exposure at default (EAD). Notional amount is the plainest measure but it is not very forward looking as it does not capture the potential evolution over time. This is represented by the EAD, a statistical measure forecasting the exposure to counterparty should it default, for instance, fully using the committed credit lines. On the other hand, neither of them provide insight about the position risk that is, for instance, measured with RWA.

Lastly, we would also underline that earning variability must be included in risk appetite because it directly impacts the capital adequacy as retained profits make up the largest capital source.

Usage

Commercial banks are highly recommended to adopt cost of risk as one of their metrics as credit risk is the most important risk category. The exact definition depends on the overall strategy and on the availability of statistical parameters to further the adoption of internal models. To facilitate the discussion with business functions, as discussed in section 1.5, it is better used as credit exposure on a simple notional basis or with RWA, while for credit losses, the accounting provisions offer a more straightforward link with profit.

More sophisticated banks are better able to develop EaR but a monthly series of income statements are needed to have a reliable statistical measure. That implies quite a good control system to achieve the necessary data quality. This is not so straightforward should the company have undergone merger and acquisition operations or material reorganization, which could cause data breaks.

The choice of the metric underlying EaR depends on the bank strategy in terms of performance management. Net profits offer the clearest solution and the most straightforward alignment with shareholders' expectations and capital adequacy. On the other hand, it is affected by tax code and extraordinary events most employees could not be accountable for, as discussed in section 1.4 and 1.5, and therefore it is more appropriate to adopt a metric such as EBITDA or gross operating income that better represent the recurrent profits.

2.3.5. Liquidity Metrics

Liquidity proved to be the most lethal risk factor in the recent crisis and can be absolutely neither disregarded nor underestimated as also stressed by the regulatory innovations, both in Basel III and the Dodd-Frank Act.

Liquidity is actively managed by banks and there are several metrics with this regard. The proposed approach is to include in the risk appetite the key variables that set the tone and then derive the other variables consistently.

The risk appetite framework should at least include a metric for short-term liquidity and another for the structural liquidity, i.e., on the medium/long term.

As a short-term metric, the survival period could be used: It is the time horizon bank operations could be kept running should no other funding be available. Otherwise the expected net cash flow, or gap,³ could be considered over a short-time horizon such as a month.

With medium-term liquidity, the cumulated liquidity gap or the ratio of assets and liabilities with an expiry date above one year could be considered.

Naturally, the new metrics proposed as part of Basel III, namely the liquidity coverage ratio and the net stable funding ratio, belong to this category, and they are, respectively, on short and medium term.

Usage

There is no clear solution, provided that liquidity is covered on both the short and the medium term; therefore, at least two indicators are recommended. For the time being, each institution could keep the metrics already in use but should begin monitoring the new metrics because of Basel III.

³ The net flow, or gap, is represented as the difference between cash inflows, positive, and the cash outflows, negative. As it is a forward-looking measure, it is a forecast. With this regard, a key issue to be ruled by the liquidity policy is the counterbalancing capacity, i.e., the amount of securities, mainly government bonds, that could be sold or repoed to increase liquidity.

2.3.6. Risk Metrics

Risk metrics are implicitly included in the capital adequacy section as their denominators provide an overall assessment of risk, e.g., aggregated economic capital or the sum of RWA. Nevertheless, it could be appropriate that a risk appetite statement directly includes some risk metrics.

A key goal of this section could be to either address some specific concerns or cover those issues not included in the previous sections, such as concentration risk because it is not captured by RWA. Therefore, the risk appetite framework should include a metric representing the concentration risk, such as the maximum exposure of the five or 10 customers, called concentration 5 or 10 (C5, C10), that often are scaled to the overall lending portfolio or equity.

These metrics turn out to be quite robust and not very data demanding while the indicators mostly used in economic literature, e.g., Herfindal or logarithmic indexes, are very data intensive and not so easy to use. Moreover, the exposures that could more directly cause a bank collapse are mainly the largest ones.

Although credit concentration is usually related to loan portfolio, it holds also for counterparty credit risk that stems from trading operations over the counter (OTC). For instance, institutions with relevant trading operations set limits to the maximum exposure for each counterparty.

Above all in this section, reputational risk should be covered. With this regard, no financial or statistical metrics would prove to be very reliable as a dented reputation could lead to total business disruption, as shown by the very quick collapse of Arthur Andersen because of its involvement in Enron's default. Nevertheless, some metrics could be introduced for reputational risk, such as indexes regarding:

- Customer satisfaction
- Negative news coverage
- Number of complaints

Of course, such broad metrics could be matched with more specific measurements such as number of days to process a credit file for commercial banks while, for brokerage houses, the average time to process an order might be applicable.

Even if such metrics are not expressed in dollar terms, they actually represent the drivers for a potential decrease of profitability, i.e., a loss.

A key tool for risk management and control is stress testing, which provides an assessment of potential losses and increase of risk in crisis conditions. Although it is gaining more and more ground in risk management and capital adequacy assessment, we would not include it as a metric in the risk appetite framework as it is more for controlling purposes and not for steering purposes because it represents a highly unusual situation. Nevertheless, stress testing could be used as a tool to set targets and limits as described in section 2.3.

Usage

Provided that a metric on reputational risk is recommended, it could be a customer satisfaction gauge that includes all the relevant issues, even if it should be clear that this metric has a large amount of noise because it depends on many factors out of the bank scope such as the economic cycle.

A concentration metric is needed for those institutions with material credit operations that do not use economic capital in the capital adequacy section.

2.3.7. Business Specific Metrics

The four sections above provide quite a good overview of the risk factors; nevertheless, some institutions could deem it important to introduce some specific measures of their business model.

An example is the diversification of funding sources. Besides keeping the aforementioned constraints in terms of cash flows, limits on the counterparties and products could be added to avoid the sudden drying up of a liquidity source, which could doom a bank. Limits could include:

- A maximum amount of a single product such as certificates of deposit or bonds on the overall amount of liabilities
- A maximum amount of liquidity provided by wholesale markets versus retail markets
- A maximum amount of liquidity provided by a single counterparty

Another example is about distribution channels. If a financial institution relies on external agents or networks, such as asset management houses, it could be appropriate to introduce a cap in the revenues through each channel.

In this section, any metric related to insurance or asset management should the bank actually belong to a financial conglomerate should obviously be included.

Usage

This section should be adopted by institutions with quite a special risk profile that require ad hoc metrics. Of course, some of the metrics mentioned above could be included in other guidelines such as the liquidity policies.

2.4. Purposes of Risk Appetite

The overall target of risk appetite is to ensure the long-term viability of business activities by avoiding excessive risk taking, which could put in peril the bank's survival.

This is achieved firstly by checking if the current risk profile is aligned with the business strategy, in order to understand if there is room for assuming additional risks or if the risk levels need to be decreased.

Secondly, risk appetite provides senior management with an understanding of risks and their links with business strategies that allows establishing boundaries to maximize value within.

Lastly, risk appetite is a managerial tool that also satisfies some regulatory requirements, mainly related to Basel II Pillar 2 (see section 4).

2.4.1. Monitoring vs. Business Steering Perspective

The aforementioned targets could be achieved in two manners: either by setting up risk appetite for mere controlling purposes or as a strong leverage to steer the business.

Should risk appetite be used only for controlling purposes, it becomes a mere monitoring tool and so it is used under a backward-looking perspective. That implies it could include quite a large number of metrics, for instance more than thirty, with a high level of detail, and it is mainly run by the risk management department. All the remedial actions are then prompted on an ex post basis and therefore could turn out to be too late and ineffective.

On the other hand, risk appetite could be used in a more effective way to steer the business with a forward-looking approach. This requires risk appetite to be embedded in the planning process that commands a compact number of metrics to facilitate the multilateral discussion among risk management, planning and business functions; otherwise, it could become too cumbersome to be cascaded down. In any case, period risk appetite monitoring is put in place further to the budget.

In this paper, we adopt the latter approach to provide better support for holistic ERM as business steering is the actual added value of the risk appetite.

The two manners could be combined in a kind of step-by-step approach where the monitoring could be used as a preliminary stage to allow a full understanding of the metrics, after which the business steering method would be put in place.

The aforementioned approach quite heavily impacts the shape of the risk appetite framework itself, in terms of:

- Interactions with other processes (section 2.5)
- Processes to set risk appetite (see section 2), including the choice of metrics (see section 2.2)
- Governance (see section 3)

2.5. Interactions with Other Processes

As stated above, risk appetite is meant to set the boundary conditions for business development, but its effectiveness depends on how it is embedded in the other processes, namely:

- Planning, that is the natural setting for risk appetite
- Risk control, including the derivation of operational limits
- Performance evaluation
- Communication

The interactions in the budgeting are described in detail in section 3.4, where the process of setting risk appetite is described while here the interactions with the other processes are analyzed.

2.5.1. Risk Control

Risk appetite is the key of risk control as it first identifies the most relevant variables and then sets the yardstick to compare them to.

In fact, risk appetite leads the senior management to set the maximum level of risk that could be tolerated and this is necessary to properly control risks; for example, when the risks exceed the set thresholds, remedial actions are to be taken according to the escalation procedure such as that described in section 3.6.

Furthermore, the metrics that form the risk appetite framework set the tone for the other risk variables (see section 2.5) and therefore assume a pivotal role in the risk control itself.

2.5.2. Performance Evaluation

Risk appetite effectively steers business only if the performance evaluation and the related incentive programs are linked to it. For instance, if the senior management performance evaluation and related incentive package are granted relying on a basket of indicators, those must include some of the risk appetite metrics.

Otherwise, risk appetite metrics could act as pre-conditions for package payment, that is to say packages are paid in full to partially if and only if the risk appetite thresholds have been respected.

To ensure the full alignment of people's behavior with the risk appetite, it should be linked to performance measurement with the maximum level of detail possible, i.e., cascaded down to the maximum number of employees. This means identifying for each organizational level the most appropriate metrics to be used for performance measurement. A pattern could include:

- Senior management
 - Chief executive officer, chief financial officer and chief risk officer: all metrics
 - Global head of business lines: metrics regarding capital adequacy, leverage ratio, cost of risk, reputational risk of their business lines

- Middle management (country level)
 - Country head: all metrics at national level
 - Head of business lines: metrics at national level regarding capital adequacy, leverage ratio, cost of risk, reputational risk
- Operating level
 - Credit officer: cost of risk of managed portfolio
 - Trader: value at risk (VaR) of the managed portfolio

A way to include risk appetite in the performance evaluation is to adopt value creation metrics where one component is the absorbed capital.

This is an implicit way that quickly puts risk appetite in the performance evaluation, where similar metrics are already used, but it does not allow a clear understanding of the actual risk impact.

With regard to performance evaluation, a key issue is the accountability, i.e., the results of each manager should be assessed only based on the variable he/she can directly impact and is responsible for, otherwise the incentive system could demotivate employees.

2.5.3. Communication

Risk appetite is then completely effective if it supports the company communication to the stakeholders and other market players.

In fact, a clear statement and communication of risk appetite are key elements in the evaluation performed by:

- Shareholders, actual or potential, to assess if the expected premium is consistent with the risk embedded as represented by risk appetite
- Debtholders to decide if purchasing bank's liabilities
- Rating agencies in the assessment process

It is taken for granted that risk appetite is reported to supervisory authorities. Nevertheless, the main channels of communication are presentations to analysts, in annual or quarterly results, budgets or industrial plans. Consistently, it should be always included in the review with rating agencies.

Furthermore, the risk appetite must be part of the more formalized communication in terms of financial reporting and the disclosure regime under Pillar 3 of Basel III.

We would also like to underline that risk appetite is a very powerful tool not only with regard to external communication but also to internal communication because it provides a clear understanding of the strategic attitude of the bank and if the current level of risk is acceptable.

3. Process

Setting a risk appetite framework as described above requires an exhaustive process that we can represent with the following steps, each step detailed in a dedicated subsection.

3.1. Risk Identification

The first phase of setting the risk appetite is identifying the risks assumed by the bank in order to be sure they are fully included in the framework. Most complex risks such as credit and market should be articulated in subcategories. Market risk factors could include:

- Equity risk
- Interest rate risk
- Credit risk⁴
- Liquidity risk⁵
- Foreign currency (FX) risk
- Commodity risk
- Volatility risk
- Correlation risk

Credit risk could be dispersed downward according to the business activity:

- Commercial lending
 - Counterparty risk that coincides with issuer risk
 - Concentration risk with regard to single name and industries
- Trading
 - Derivatives and security lending: counterparty risk
 - Securities: settlement risk
 - Bonds: issuer risk

Then it is necessary to identify the scope of risk appetite in terms of business lines and/or subsidiaries and the risks associated with each of them should be included in the analysis.

This phase is often overlooked but a careful assessment of risks bears a huge added value as it allows recognition of potential sources of losses and offers a review of the risks embedded in each business line and product.

3.2. Choosing Metrics

The second phase is choosing the metrics that will make up the risk appetite framework.

With this regard, the following criteria could be outlined:

- Overall purpose, as stated above. Here we choose a risk appetite framework fully embedded in the planning process, and therefore with a small number of metrics, e.g. about 10.

⁴ Here it is expressed in terms of credit spread risk.

⁵ Here it is meant as the liquidity of security, i.e., the depth of the market and the potential losses due to its thinness.

- The nature of the bank, that is to say,
 - Universal vs. specialized, either commercial or investment bank
 - Global vs. regional or local⁶
 - Reliance on internal vs. standardized models⁷

As an example, we propose three paradigms of bank types and the consequent risk appetite framework.

TABLE I
Paradigms of Risk Appetite Framework for Different Bank Types

Bank type	Cross border	Investment	Commercial
Features	Universal	Specialized	Specialized
	Global	Global	Regional/local
	Internal model	Internal model	Standard model
Risk appetite metrics			
Cap adequacy	Tier 1/Core Tier 1 ratio	Tier 1/Core Tier 1 ratio	Total capital ratio
	Leverage ratio	Leverage ratio	Leverage ratio
	Risk-bearing capacity	Risk-bearing capacity	–
Earning variability	Earning at risk	Earning at risk	–
	Cost of risk	Number negative daily PL	Cost of risk
Liquidity	Survival period	Survival period	Survival period
	Structural liquidity	–	Structural liquidity
Reputational risk	Customer satisfaction	–	Customer satisfaction
	News coverage	News coverage	News coverage
	Number of complaints	–	Number of complaints
Business specific	–	Max repo as funding	Concentration risk
	–	Max daily VaR	–

3.3. Setting Targets and Limits

The full implementation of the risk appetite needs a target and a limit to be set for each metric in order to define the optimal and acceptable levels.

The approach we suggest is to set an overarching criterion and then dispersing it downward to settle targets and limits for each metric. We suggest that the approach could be either a target rating or capital remuneration, the main driver of share price, respectively according to a bondholder or stockholder point of view. That leads to identifying some variables as primary while the others are derived as followers.

⁶ A bank is labeled as regional if it carries out operations in a few countries while local if only in one country or even to a smaller extent.

⁷ Internal models have to be understood both as used for regulatory reporting, i.e., calculating RWA, or as economic capital assessments.

In the debtholder perspective, the bank aligns to the implicit requirements related to a rating target such as AA. The main variables are then capital levels because they represent the first guarantee against default while profits and their variability are set consistently with the capital absorption. For instance, capital ratios could be directly inferred from the rating agencies guidelines or by the comparison with competitors with the desired target rating.

Shareholders are keen on return on capital and so the metric to be checked is profit variability, a key input in setting the equity premium. Capital levels are such as to allow assuming the risk level compatible with the required profit expectations.

Debtholder Perspective

An example of a proposal is presented on how to set targets and limits with a debtholder perspective, which is quite close to supervisors' and governments' expectations.

The suggested approach is to prioritize the variables and then for each, first set the target or the limit and then derive the other.

Below are some examples of target and limit setting, mainly focusing on capital adequacy variables, as they are the primary variables in the chosen approach.

Capital Adequacy

Tier 1 and total capital ratios have a minimum level set by regulatory requirements, which are currently at 4 percent and 8 percent and under Basel III will be increased to 6 percent and 10.5 percent.⁸ Nevertheless, some supervisors already deem at least 6 percent an appropriate Core Tier 1 level. Therefore, the limits could match the aforementioned regulatory requirements.

Targets are, on the other hand, set according to the target rating or benchmarking analysis, as they are not foreseen in the regulatory framework because they must be decided by the bank using the Internal Capital Adequacy Assessment Process (ICAAP, see section 4).

The targets and limits should be robust, i.e., hold in whatever market conditions, and therefore targets and limits should undergo a scenario analysis, e.g., checking that under a crisis, the decrease from the target value is above the limit.

This approach could be used to set the target starting from or ending at the limit, which means calibrating the range between the start and the finish with scenario analysis.

On the other hand, risk-bearing capacity has a natural limit to 100 percent and the target could be set either with the scenario analysis or with a desiderate ratio between RWA and economic capital, having set the available capital consistently with a budget forecast.

⁸ Including the Capital Conservation buffer set to 2.5 percent.

Liquidity

Structural and short-term liquidity should be set according to the forecast about the capacity to raise funding on the medium term, i.e., the gap between the assets and liabilities should be equal to the potential new funding. The target is set according to the expected values while the limit is set to pessimistic assumption. The difference of the two is a manifestation of the risk tolerance of the institution.

A fundamental element for target and limit setting are market conditions, where the lions share is played by central bank decisions on the financing lines as in a crisis situation. Consequently, a limit for the survival period could be the frequency of refinancing auctions, or a multiple.

Profit Variability

The shareholder point of view is represented by the cost of equity (CoE), i.e., the expected return on capital.

There are a few methods to assess CoE, but broadly speaking it is a function of interest rates, the institution credit spread and the level of risk, which could be proxied by the return volatility, i.e., EaR, for instance with an approach such as the capital asset pricing model. Therefore, a target for EaR could be obtained with the function regarding CoE. The same holds for limits.

Otherwise the target, as well as the limit, could be set according to a trend, that is to say, as a percentage reduction in comparison to the previous year or another time horizon.

Risk Measures

Reputational risks indicators are so single-institution specific that no general example could be provided. Broadly speaking, some institutions endorse a “zero tolerance” policy that could be best represented by variables such as negative press headlines or supervisory fines. Concerning those variables, e.g., the number of complaints that cannot have a zero value, targets and limits could be respectively a decrease in comparison to the previous year and the past level.

The other risk metric to be included addresses concentration risk, which is better measured by the capacity to face losses represented by the capital; therefore, it could be expressed as percentage of exposure to the main counterparties to equity, for instance, the top three or five exposures (C3 or C5) up to 20 percent. With this regard, there is a similar indicator under regulatory reporting.

3.3.1. Warning Levels

Limits represent the threshold not to be breached; therefore, for managerial purposes, it could be useful to complement them with warning levels, that is to say, critical values that should activate remedial actions. This is very important for low-frequency metrics, i.e., variables assessed on a quarterly basis such as those related to financial reporting.

The most accurate approach for defining warning levels would be assessing the statistical distribution of the risk appetite metrics to measure their variability between one assessment and the next, but, as previously stated, that could turn out to be too data demanding. Therefore, a proxy could be assessing, for instance, the maximum quarterly

variation in the last three or five years and then setting the warning levels at the limit plus such maximum variation.

Otherwise, a very pragmatic solution is setting the warning level at a fixed point in the range between the limit and the target, e.g., one-third.

Final Remark

The full risk appetite framework foresees that for each metric, a target, limit and warning level should be defined. Nevertheless, each institution could decide not to set some of the aforementioned thresholds, such as the target for a metric, should they not be meaningful or to grant business functions more degrees of freedom.

For instance, it could be deemed there is no optimal value for the leverage ratio but it makes sense only as a constraint to avoid an overstretched funding structure. That means setting only the limit coupled with the related warning level.

3.4. Embedding into Planning

The risk appetite framework risks being a mere exercise unless it is embedded in the bank processes, mainly the planning, because in this way it can effectively impact business decisions. In fact, the risk appetite makes up the boundary conditions to be met in the budget and therefore acts as a constraint for business optimization and the consequent achievable profit level. That means risk appetite represents a fundamental tool to ensure a sustainable development on the mid to long run as the lack of any risk boundary could lead to short-term profit maximization by assuming excessive risks that could put bank survival at peril.

The risk appetite should be set at the beginning of the budget, in terms of metrics, according to the governance outlined in section 3, as well as a first version of the proposed targets and limits. This framework should be endorsed by senior management and then communicated to the business functions as an input for the planning. That requires a thorough discussion between the CFO, CRO and business functions, to explain the metrics and how they are cascaded into operations, such as in limit setting (see section 2.5).

The proposed targets and limits should be reviewed at each step of planning to verify their consistency with the achievable profits. For example, the amount of capital over the next year is forecast and therefore capital adequacy ratios imply a maximum amount of risk that can be assumed. That means setting constraints to the profit that could be obtained. Should it be lower than the target, there are two options: either lowering return expectations or augmenting the risk tolerance, for instance by decreasing the capital ratios or increasing the leverage ratio.

3.5. Operational limit setting

The proposed framework envisages a few risk variables that set the tone for the other variables that should be derived from the former in order to have a set of operational limits consistent with the risk appetite.

A first example are the criteria for credit granting, where loan loss provisions rely also on the probability of default (PD) assessed according to the internal rating systems, that is, the basis for provisioning. The cost of the risk metric cascaded down to the portfolio level, forces relationships managers to cut off customers with an excessive risk. On the other

hand, this approach does not consider the related profitability. A more comprehensive approach is granting loans according to EVA because it takes in the risk level of a loan as well as the cost of equity, both metrics in the risk appetite framework.

Another example is setting market VaR limits for trading operations. The capital ratios set the amount of available capital, which is then allocated to each business line. The allocated capital is then broken down to each desk and transformed from a yearly time horizon to a daily one.

3.6. Monitoring and Escalation

An exhaustive ERM implies setting risk appetite that must be complemented by regular monitoring where the core element is comparing the current risk levels to the targets and limits. That means systems must be set up to identify the frequency of reporting, the level of detail and, above all, the kind of addressees, i.e., Chief Risk Officer (CRO), Chief Financial Officer (CFO) or some committees up to the board of directors, according to the corporate governance.

The triplets made by target, limit and warning signal introduce a kind of traffic light signaling:

- Red: Below the limit
- Amber: Between the limit and the warning levels
- Green: Above the warning level, even if it does mean the target will be achieved

The first two zones should be the actual levels, and the appropriate escalation process should be set up as described in the following section.

4. Governance

Building a risk appetite framework is a complex process that requires the proper organizational structure in terms of involved functions and the role of decision-making bodies as described in the following sections. It is to be emphasized that while setting up a process for risk appetite, reviewing the corporate governance currently in place should make the framework fully effective.

4.1. Functions Involved

To properly set the governance, the first step is to appoint the owner of setting and monitoring the risk appetite.

The proposed key feature of the risk appetite framework in the budget leads to the joint responsibility of the CRO and CFO. This kind of partnership is needed to fully embed risk appetite in the planning process.

Within the joint effort, it is appropriate to identify each officer's contribution, for instance, the ownership of each metric in terms of:

- Assessing the metric
- Setting the target
- Setting the limit
- Reporting
- Proposing remedial actions

Only in special cases could business functions be tasked to assess the metrics; however, that could undermine the reliability of the metric due to the potential conflict of interest which could temporarily arise prior to the CRO and CFO taking ownership of metric assessment.

Business functions have an active role in the risk appetite as they make decisions under a risk-reward basis. For instance, make a budget consistent with the risk appetite. Therefore, they must be actively involved in reviewing the metrics and challenging CFO and CRO proposals.

Remedial actions are proposed by the CFO and/or the CRO while in many cases the actions could be a joint initiative with business functions, because the functions are in charge of the first level of risk management.⁹ For instance, in case of a breach in the daily VaR, risk management must force the reduction of risk levels, but the traders decide whether to dispose of some positions or hedge them.

The role of other functions, for instance, the internal audit, should not be taken for granted to ensure the integrity of the processes.

⁹ According to the regulatory framework, there are three levels for risk management: 1) online control performed by the business functions themselves, 2) risk management functions that perform an independent review, and 3) internal audit that ensures the process integrity.

4.2. Governing bodies

4.2.1. Senior management

Neither the CRO and CFO nor business functions should decide on the risk appetite framework as none are able to settle the trade off between risk and return because each of them is related with only one side of the equation.

In fact, only the senior management¹⁰ is responsible for the overall company management and therefore has the power to take this kind of decision. For instance, if lowering capital ratios, the CFO should verify with the business functions how derisking could be achieved, such as by shrinking loan granting, and assess the potential impact on profitability and then propose senior management either reduce business volume or increase capital with issuing rights or hybrid debt. It is then senior management that is able to make this decision because, for instance, business functions could dislike deleveraging while the CFO would be skeptical about asking the markets for additional resources.

We would like to reinforce that senior management could adopt, among the other options, a temporary suspension of the risk appetite metrics, for instance, VaR limits, should the increase of risk be due to a spike in market volatility while the bank's position is stable over time. In this case, the suspension must have a predefined maturity, e.g., two weeks, and then reviewed. It would be appropriate to conduct an internal audit to avoid merely neutralizing the controlling mechanisms.

Another option is to change the targets and limits, but only within an overall budget review due to special market conditions. This procedure should be formalized as a part of a risk appetite framework.

Senior management represents the first level of escalation in case of a breach of the warning levels and limits. In a more detailed way, senior management must be promptly informed of the breach and immediately discuss the remedial actions proposed by CFO, CRO and business lines.

4.2.2. Board of Directors

Senior management acts on behalf of and within the powers delegated by the board of directors (BoD) that represents the company shareholders.

That means the risk appetite metrics, their limits and targets must be approved by the BoD as an integral part of the budget. It is of the utmost relevance shareholders have a say about the risks to be assumed to achieve the budget targets and also assess if they are consistent with the requirements or expectations of other stakeholders, for instance, supervisors. Consequently any change in the risk appetite metrics should again be approved by the BoD following a senior management proposal.

In case of a limit breach, it is necessary senior management informs the BoD and presents the remedial actions, asking for approval if needed, e.g., in case of asset disposal or right issuing. That does not apply to the warning signals as they are a managerial tool and then only related to the management board.

¹⁰ In this section, senior management means either the CEO or a collective body such as the management board, chaired by the CEO.

Lastly, the BoD must approve, or at least must receive for disclosure, communications to external counterparties concerning risk appetite, e.g., those to the markets, supervisors and rating agencies.

4.3. Extension to Subsidiaries and Business Lines

A key decision in the implementation of risk appetite is to decide to what level to cascade down the risk appetite.

That means, first of all, addressing the related trade off between the effectiveness of the risk appetite framework and the related effort.

As a matter of fact cascading the risk appetite to lower organizational level implies:

- Higher consistency of business decisions and risk appetite, with subsequent lower likelihood of boundary conditions being breached
- Higher required effort, e.g., in terms of organizational structures, training and support by CFO and CRO

As a matter of fact, cascading the risk appetite means training, IT investments, dedicated resources to manage it and more complex processes with a potential short-term decrease of profitability to strengthen medium- to long-term viability.

A pragmatic solution could be a step-by-step reduction of the metrics cascaded down, for instance:

- All metrics apply at the group level
- All but three apply at the country/global business line level
- From three to five apply at the business line level in a country
- One or two are used by operatives, for instance, cost of risk by credit officers and market VaR by traders

To facilitate cascading down risk appetite metrics, some of them could be transformed, for instance, capital adequacy metrics could be expressed in maximum amount of risk to be assumed, as represented by RWA or economic capital. Another example is representing the leverage ratio for commercial functions as the ratio loans to deposits.

Such reshaping simplifies the picture and also reflects the accountability principle as central functions, such as finance, are usually responsible for raising capital while front functions take on risks as consequences of business decisions.

The decision on the entities, both business lines and subsidiaries, to cascade risk appetite and to what extent, should be made by senior management and approved by the BoD as a key lever of the framework. Furthermore, if the risk appetite framework is cascaded to a subsidiary, its BoD also must approve the framework consistently within the parent company guidelines.

5. Banks' Regulatory Requirements

Risk appetite setting is above all a powerful managerial tool; nevertheless, banks have to comply with the rules set out in the regulatory regime.

In a more detailed fashion, the Basel regulatory framework firstly provides a set of compulsory metrics that enter de jure in the risk appetite statement, such as Tier 1 or total capital ratios. This role has been expanded under Basel III as it has introduced metrics also for liquidity, namely the liquidity coverage ratio and the net stable funding ratio.

A regulatory framework not only provides such metrics but also relevant thresholds that become, in most cases, natural limits as they could not be breached.

The aforementioned metrics are part of Pillar 1, which represents the minimum capital requirements, while banks are expected to operate at higher capital levels that should be set by the bank according to its own decision-making process and internal assessment, i.e., ICAAP.

Pillar 2 is then the relevant body of rules concerning risk appetite. ICAAP is more principle than rule based because it strongly depends on the bank culture and organization besides business models.

Further to the bank ICAAP, there is the Supervisory Review and Evaluation Process (SREP) where the supervisory authority reviews the soundness of the risk appetite in terms of metrics, process to set them and output, forcing the bank to take remedial actions if necessary.

In the aftermath of the financial crisis, regulators and supervisors are paying much more attention to how banks set risk appetite, enforce it through the organization and engage the BoD. For instance, the Senior Supervisors Group¹¹ released two papers about risk appetite practices.

¹¹ This is a working group made up, among others, of the U.S. Federal Reserve and U.K. Financial Services Authority, Japan's Financial Services Agency, and the banks of France and Italy.

6. Other Industries

Although in the previous sections the risk appetite framework was introduced with regard to banks, it has been presented in such general terms it could be implemented in other industries with the same structure.

In fact, the components of the risk appetite framework, the process to set it up as well as the governance are broadly the same, while the main differences with the banking industry are the lack of regulatory requirements as well as different metrics to represent different risk factors.

For the sake of completeness, two examples of risk appetite framework implementation in nonfinancial industries are introduced below.

6.1. Oil Company

The oil industry is the closest to banking as it enjoys the highest level of integration with financial markets because the oil price is set mainly on future markets.

Here a differential analysis is performed in comparison with the process as described in sections 2 and 3.

6.1.1. Risk Identification

The financial risks taken by an oil company are:

- Commodity
- Foreign currency, for instance, part of revenues in euro and U.S. dollars, while oil is fully paid in U.S. dollars
- Interest rates with regard to funding, including the key variable of company credit spread

Nevertheless, oil companies suffer not only from financial risks but also liquidity and reputational risks, as does any other company. In a more detailed fashion, reputational risks are related not to the final output, but on how it is obtained.

With this regard, a key issue is the market increase of awareness in the anti-bribing campaign, a phenomenon that affected the oil industry during the auctions to grant exploring and property rights.

As dramatically highlighted by the Deep Horizon collapse, oil companies suffer from operational risk, where the same definition as for banks could be applied because it is quite broad.¹²

¹² By the way, the Basel definition of operational risks fits other industries as the risks are due to system, process failures or human errors.

6.1.2. Choosing Metrics

As any other company, an oil firm must take care of the balance of equity and assets; therefore, leverage ratio could be kept to ensure a robust capital structure. Moreover, this metric is fundamental to reach higher rating classes needed to raise long-term funding at reasonable rates.

A liquidity survival period could be used as well as another metric as the average maturity of expiring debt for a look at the medium term. In fact, this is a simplified equivalent of the survival period on a longer time horizon.

The tolerance to such operational risks must be part of the risk appetite and could be set in terms of potential losses versus the cost for insurance or failure prevention, for instance, system redundancies or additional controls or maintenance. Therefore, the company should settle the trade off between the costs of higher security levels and the decrease in the probability of collapse and/or its severity. Nevertheless, in this case, the reputational impact should be considered.

With this regard, it is highly recommended the company actively engage Non Governmental Organizations (NGOs) such as environmentalist to prevent reputational damages.

For the earning variability, EaR is perfectly fine while it is appropriate to introduce a concentration metric, i.e., the percentage of revenues stemming from the largest oil producer field. That allows understanding of how much the profit could change should the concession be canceled.

Another metric is the amount of the proved reserves the company should have.

An example of the risk appetite framework for an oil company is represented in Table II.

6.1.3. Governance

A key element of the risk appetite framework is the governance, meant in a broader view.

Firstly, the BoD is expected to set the risk appetite and not to leave the management solely responsible. This is a step forward from the current practices.

Furthermore, the greatest challenge is to cascade down the risk appetite to all the subsidiaries, as oil companies are spread across many countries. This could turn out to be very difficult in case of joint ventures, where different corporate cultures meet.

6.2. Manufacturing Car Maker

Besides the oil industry, which is quite close to the financial markets, a more “traditional” industry is considered—the automotive.

Here a differential analysis is performed in comparison with the process as described in sections 2 and 3.

6.2.1. Risk Identification

The financial risks taken by an automotive company are:

- Interest rates with regard to funding
- Foreign currency, mainly due to the revenues as sales are spread around the world

Naturally, also an automotive company is exposed to liquidity, operational and reputational risks.

The latter is mainly due not to the production process, but to the quality of the output, slightly different from an oil company's issues.

Operational risks are wider than an oil company's as the production and distribution process is more complex.

6.2.2. Choosing Metrics

What was discussed for the oil company applies to the automotive company, with a few slight differences.

Firstly, the variability of revenues is due to the largest markets or the most successful model; a high value of this variable underlines a weaker profitability structure.

Then customer satisfaction, for instance, represented by the number of complaints, is a critical element, and, lastly, industrial companies could have quite a high number of litigations due to working conditions.

In this case, the company could set a limit and the excess would be covered with special insurance instead of investing in prevention.

TABLE II
Paradigms of Risk Appetite Framework for Different Industries

	Oil	Car Maker
Risks	Commodity	–
	Foreign currency	Foreign currency
	Interest rate	Interest rate
	Reputational	Reputational
	Operational	Operational
Risk Appetite Metrics		
Cap adequacy	Leverage ratio	Leverage ratio
Earning Variability	Earning at risk	Earning at risk
	Revenues from the largest field(s)	Revenues from the bestseller model(s) or largest market(s)
Liquidity	Survival period	Survival period
	Average debt maturity	Average debt maturity
Reputational risk	Anti-bribery campaign	Customer satisfaction
	News coverage	News coverage
	Environmentalists complaints	Number of complaints
Business specific	Security levels	Litigation

7. Final Word

Given the fundamental role that the risk appetite could play in the company management, its implementation should be carefully performed and special attention should be paid on how to avoid some pitfalls that could undermine its full effectiveness.

In fact, risk appetite should be:

- Clearly stated and its interactions with business activities specified
- Strongly endorsed, which requires:
 - Involvement of senior management
 - Approval by the board of directors
- Shared and understood, that means avoiding:
 - Any “black box” or “guru on the mountain” approach that prevents any effective engagement from the business side
 - Lack of iterative dialogue with the businesses, for instance, in the different steps of the planning process
- Made by metrics with good process and governance
 - Identifying responsibilities and roles
 - Setting up a monitoring process

Nevertheless, the biggest trap is to set a kind of “paper process” that does not impact effective business steering.