

# Visualization of Risk Appetite Framework

## Development process

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**Abstract.** After the 2008 financial crisis, both supervisors and financial institutions recognize that the risk appetite framework (RAF) is an important component of risk governance. RAF is a common framework for dialogue and understanding and evaluate the level of risk that management is willing to accept. Since 2008, guidance on RAF has been forthcoming from international multiple institutions. The RAF came into the limelight as means to reinforce a weak point of the risk management of the financial institution which became clear by a global financial crisis. In this paper authors analyze the structure of RAF through the Financial Stability Board (FSB) Principles on RAF from the perspective of standards and criteria. This paper focuses upon the problems of RAF structure and clarify challenges and solutions in constructing a framework for financial institutions.

**Keywords:** risk appetite framework, risk management, risk culture, risk capacity, risk management

## 1. INTRODUCTION

After the 2008 financial crisis, several financial institutions embarked on strengthening the risk appetite framework (RAF). Both supervisors and financial institutions recognize that the RAF is an important component of risk governance.

Since 2008, guidance on RAF has been forthcoming from international multiple sources, including the Institute of International Finance (IIF), the Senior Supervisors Group (SSG), the Financial Stability Board (FSB), etc. The RAF came into the limelight as means to reinforce a weak point of the risk management of the financial institution which became clear by a global financial crisis.

RAF is a management framework to decide and control risk appetite. Risk appetite means risk to take daringly because an organization obtains a certain objective. After the 2008 financial crisis, The European and American financial institution introduced RAF positively in order to manage and control risk and return (Figure 1).

## 2. ANALYSIS OF RAF

According to the Financial Stability Board (FSB)(2013),the definition of Risk Appetite Framework(RAF) is as follows;

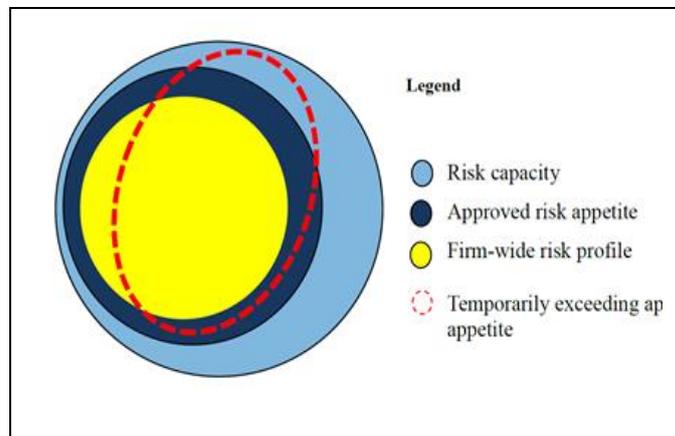


Figure 1: Risk Appetite

Financial Stability Board 2013a

<definitions>

\*Risk appetite: The aggregate level and types of risk a firm is willing to assume in its exposures and business activities in order to achieve its business objectives.

\*Risk capacity: The maximum level of risk the firm can assume before it breaches regulatory constraints (e.g., capital, liquidity) or other stakeholders' constraints (e.g., dividend pay-out).

\*Risk profile: A point in time assessment of the firm's risk exposures.

The overall approach, including policies, processes, controls, and systems through which risk appetite is established, communicated, and monitored. It includes a risk appetite statement (RAS), risk limits, and an outline of the roles and responsibilities of those overseeing the implementation and monitoring of the RAF. Risk limits are the allocation of the firm's risk appetite statement to specific risk categories (e.g., credit, market, liquidity, operational), the business unit or platform level (e.g. retail, capital markets), lines of business or product level (e.g., concentration limits, value-at-risk, or VaR, limits) and other levels, as appropriate.

The RAF should consider material risks to the financial institution, as well as to the institution's reputation vis-à-vis policyholders, depositors, investors and customers. The RAF aligns with the institution's strategy.

RAF is the structure which shares understanding to be concerned with a risk take among managers with the board of directors to be effective by the control by the board of directors for the risk take of the manager. The board of directors approves risk appetite of the financial institution, and the manager runs it within the approved risk appetite. And the board of directors monitor it whether the consequent real risk profile does not become the thing which became estranged from risk appetite.

The risk appetite must be expressed in the form of the document definitely. This documents called risk appetite statements (RAS). A reputation risk and a conduct risk that they are difficult to measure must be included in Raster risk appetite becomes easy to be shared with the member of a member interval and the organization of the organization among outside stakeholders in what is documented as RAS.

In addition, it is necessary for the risk appetite to list it as a risk limit by a concrete numerical standard in every field of each financial business. Structure to start from such risk appetite, and to move conformably whole organization is called RAF. Financial institutions must establish and develop effective RAF. Each sections (the board of directors, CEO, the CFO, CRO, domestic inspection section, etc.) must make their role and responsibility in RAF.

The board of directors takes responsibility for establishing RAF. Furthermore, the board of directors monitors business plans and reward systems which are conformal with risk appetite. CEO, CFO, CRO work to achieve the aim of the organization within the risk appetite. CEO take responsibility to explain for the board of directors. In addition, the domestic inspection section evaluates RAF and reports it to the board of directors (.Figure 2)

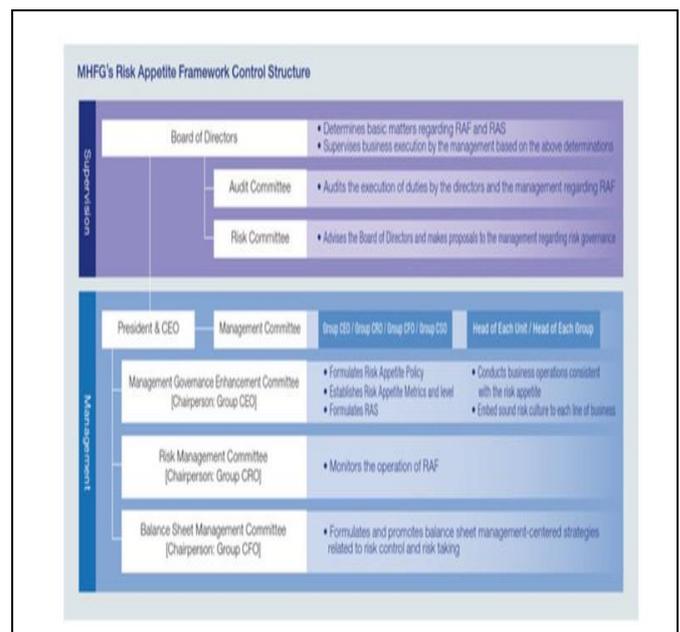


Figure 2: Risk Appetite Framework of Mizuho Financial Group

Even if there is intention to monitor the risk take by the manager in the board of directors, it is extremely difficult problems that monitor effectively. RAF becomes the appropriate tool to solve such difficult problems.

The Along with establishment of RAF, risk culture is emphasized to remove an excessive risk take. It is considered that corporate culture is an important factor to control the member s' action in the company.

In Japan, correspondence to a risk appetite framework is as follows. Financial Services Agency's Report(Basic policy of Finance monitoring )says "G-SIBs in particular, build a risk appetite framework, and utilize it for decision such as development or the profit management of management policies " In this way, major institutions including G-SIBs are introducing RAF, but the introduction of the risk appetite framework does not advance in Japan. According to the survey of the Bank of Japan in March 2016, only. It 9% in 116 banks to have replied "a risk appetite framework had been introduced". In addition, it was 19% to have replied "examine the introduction of the risk appetite framework "next level of heading is boldface with upper and lower case letters. The heading is flushed left with the left margin.

### 3. BACKGROUND OF RAF EXPANSION

It is necessary to measure the risk to gain in maximum permissible level. An index utilized as measurement procedure of the risks includes VaR (value at risk). VaR is defined as: for a given portfolio, time horizon, and probability, and VaR is an estimate of the amount of greatest loss of the portfolio which may occur with fixed probability in a fixed period. It has been used for a measurement of the quantity of risk of the market risk, but also used for the operational risk and credit risk. This measurement technique is said to be backward because it that relatively paid its attention to only the past data.

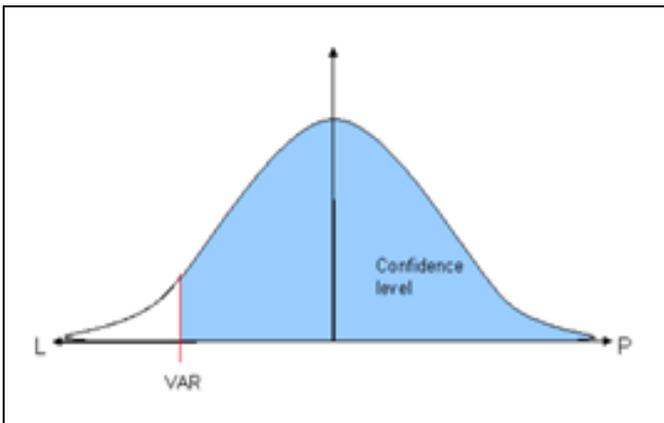


Figure 3: VaR (value at risk)

However, it becomes that the frequency of the expression of today's various risks overturns a conventional theoretical premise. An economic crisis occurred at Lehman shock in 2008, EU crisis in 2011 and high frequency in Black Monday of 1987, currency crisis of Asia in 1997, Russian liquidity crisis of 1998, IT bubble burst in 2001, etc. The world economy came under a serious influence, and the financial institution suffered big damage each time.

FSB discussed about the framework of risk management of the G-SIFIs (Global Systemically Important Financial Institutions) and recognized improvement was more necessary.

### 4. DISCUSSION

In the post-bubble era, Japanese financial institutions suffered from a bad-loan problem and have been striving to dispose of non-performing loans for over 10 years. During this time, the American and European major financial institutions promoted advanced investment bank business and financial systems construction positively as well as the reinforcement of traditional banking business.

The bad-loan problem ended by the mid-2000s. Afterwards while domestic economy was restored gradually, the business results of the Japanese financial institution went to the improvement temporarily.

In the late 2000s, the global financial crisis, the subprime mortgage problem and the failure of Lehman Brothers, have given a negative impact on Japanese financial institution.

From the viewpoint of ensuring financial stability, the following points can be raised as key management challenges for Japanese financial institutions.

The main challenge is the enhancement of the financial intermediation function and the strengthening of risk management. RAF is important tool for strengthening of risk management.

But, risk management based on the RAF have not been adopted by all the banking system of Japan. The FSB principals provides schemes of the processes related to the definition, identification, assessment, management, risk control and their registration. Obviously, an integrated approach is the best solution to the problem of risk management in the not-adopted banks, e.g., local banks, Shinkin banks. This would ensure their compliance with international standards and regulatory requirements of financial supervision. This approach should be based on best practices of organization management, meet the standards of corporate management, as well as it should comply with the requirements of FSB principals. The FSB principals describes the general approach, provides principles and guidelines for the RAF.

To achieve the research objectives based on the structural and logical modeling the blocks of interrelated sequential processes have been formed in accordance with IDEF0 methodology for implementing an effective RAF in the not-adopted banks in Japan. IDEF (Integrated Computer-Aided Manufacturing (ICAM) Definitions) is a method used to perform modeling in support of enterprise integration. It was originally developed by the US Air Force Program for Integrated Computer Aided Manufacturing (ICAM). IDEF0 is a method designed to model the decisions, actions, and activities of an organization or system.

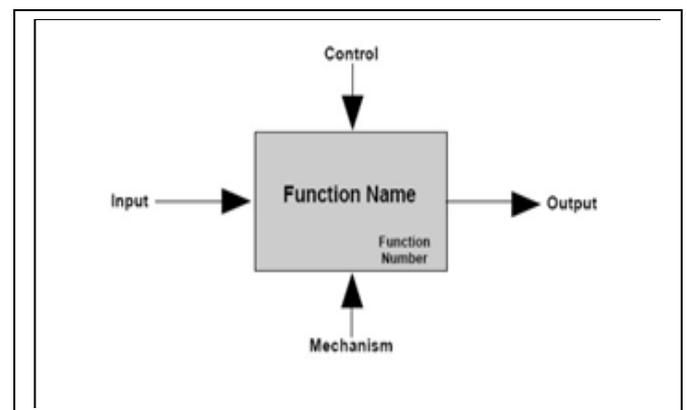


Figure 4, IDEF0

The "box and arrow" graphics of an IDEF0 diagram show

the function as a box and the interfaces to or from the function as arrows entering or leaving the box. To express functions, boxes operate simultaneously with other boxes, with the interface arrows constraining when and how operations are triggered and controlled. Four types of information lines are drawn into or out of the function symbols. These are called ICOM arrows -- Input, Control, Output, and Mechanism. Input arrows are always drawn into the left side of a function box, control arrows are always drawn into the top of the function box, output lines are always drawn out of the right side of the function box, and mechanism arrows are always drawn into the bottom of the function box.

The structure of the whole RAF is as follows. To develop effective RAF; under the risk capacity of the financial institution, governance by the management layer is important (Figure 5)

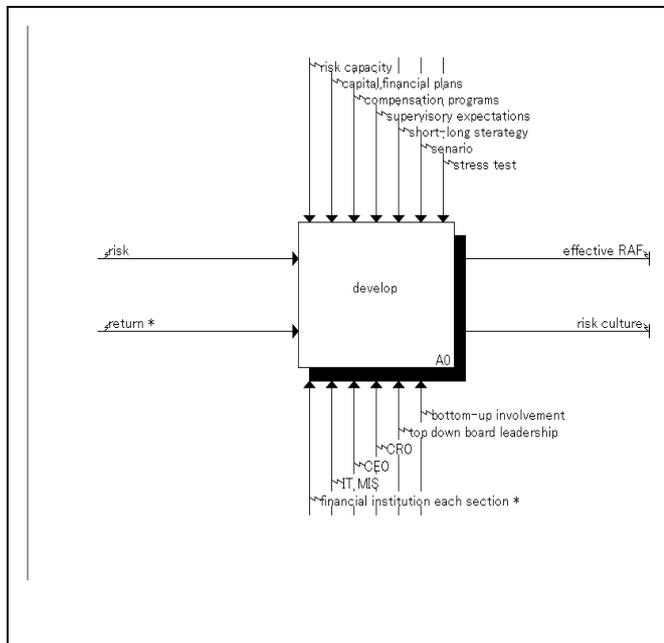


Figure 5 IDEF0 RAF1

Watching this process of RAF development by Principals, there are 3 process of RAF, establish, communicate and monitor.

Each IDEF0 block represents a process stage of integration of the risk management system (Figure 6)

## 5. CONCLUSIONS

The adaptive model of RAF in to the overall risk appetite management system represents a qualitatively new instrument for non-adopted banks in Japan, especially for local banks and Shinkin Banks.

The adaptive model, is its comprehensiveness, with room for continuous improvement, usability and detailed description of the successive stages of implementation of RAF, according to the risk appetite management requirements of FSB.

The model aimed at promoting the integrated system of risk management can lay the basis for improving competitiveness and enhancing the security of banks

The following model promotes better structure and consistency in making decisions concerning the risk management in the banks. It enables to coordinate the direction of risk appetite management with the overall strategy of the development and operation of the banks.

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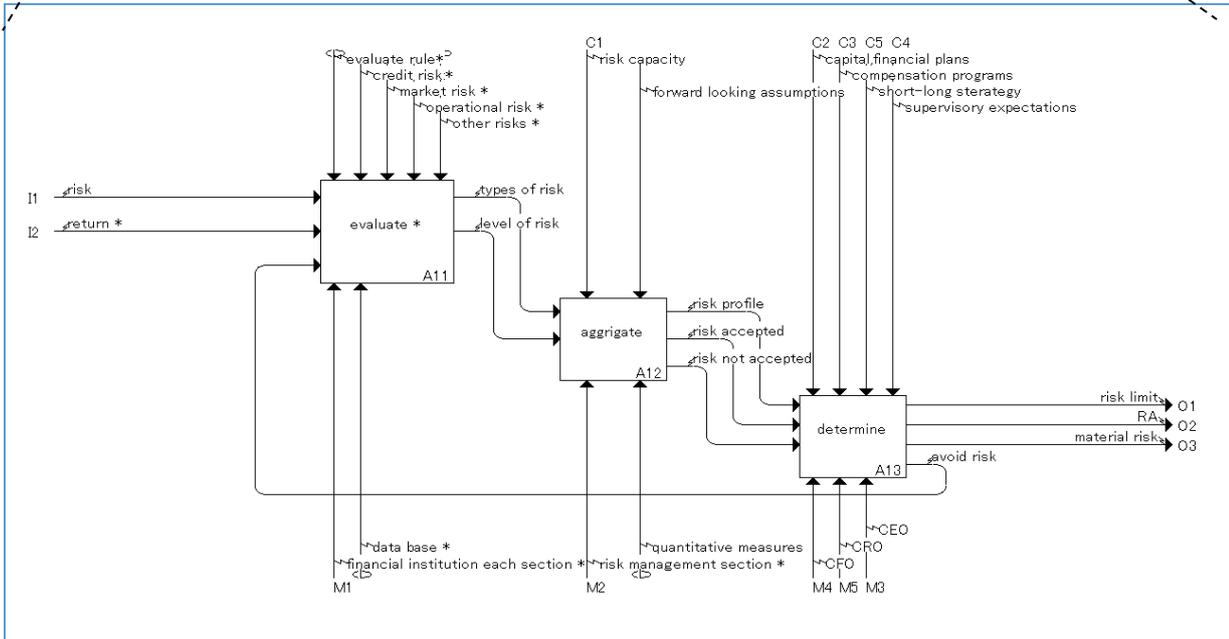
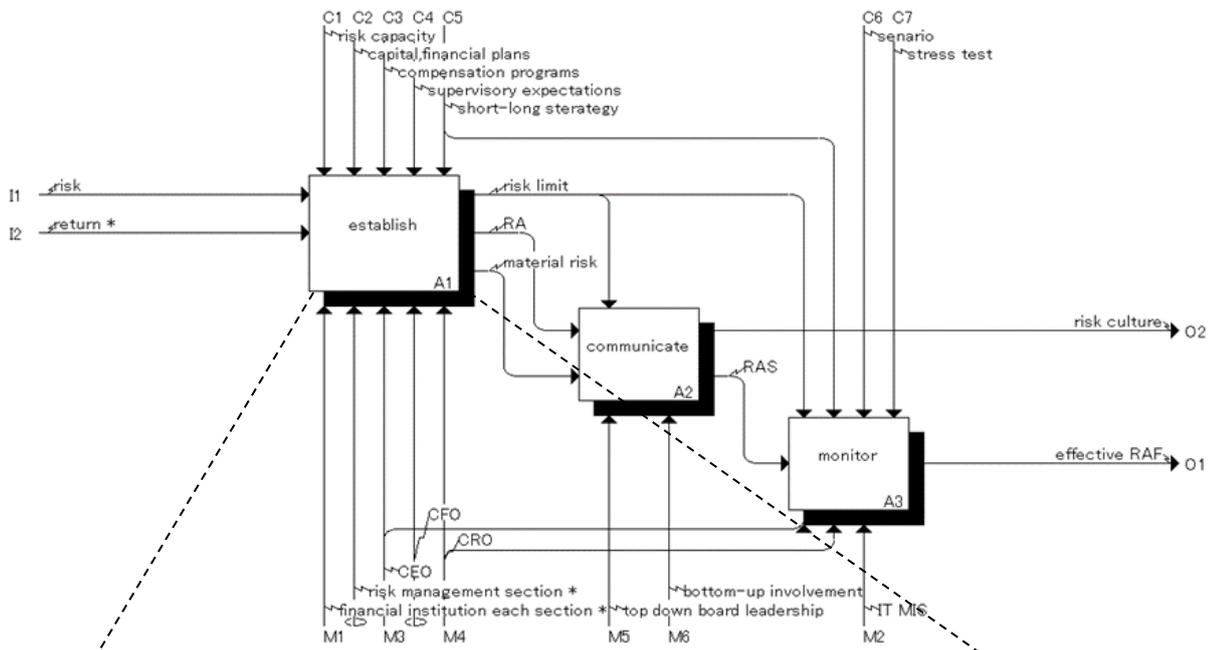


Figure 6 DEF0 RAF2