Analytic Hierarchy Process for Determining Relative Weights of Risk Factors in Banking Crisis

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Abstract

Banking crisis is a situation in which most of the banking sector is affected by the financial distress. However, risk factors that usually stand behind banking crisis are very much inconclusive. Although many financial researches unveiled several risk factors may contribute to a banking crisis but magnitude of the contribution or weight for each risk factor remains unknown. This paper aims to determine relative weights for risk factors contributed to banking crisis using a decision making approach. The pair-wise comparison method, analytic hierarchy process (AHP) model was employed in computing weights for the risk factors. Nine commercial banks operating in Malaysia were selected as attributes and eight risk factors in banking crisis were identified as alternatives in the framework of AHP. This method utilizes a nine-point intensity scale to enhance evaluation in decision-making environment. The relative weights of the risk factors were ranged between 0. 0242 to 0. 3084. The relative weights show that credit risk was the highest risk factor followed by liquidity risk. The lowest risk factor in banking crisis was equity risk. It is good to conclude that prudent credit management plays an important part in sustainability of banking industry.

Keywords: *Analytic Hierarchy Process, Decision Making, Banking Crisis*

1. Introduction

Financial crises become an integrate part of economic performances due to critical impact of the crises to economic stability. It is presumed that financial crises would bring instability in whole financial networks thereby perpetuate another sequence of financial failures. The ripple effects of financial crises can be more clearly seen in the typical definition prescribed by Eichengreen and Portes [1]. They defined financial crisis as a disturbance to financial markets, associated typically with falling assets prices and insolvency among debtors and intermediaries, which spread through the financial system, disrupting the market's capacity to allocate capital. This definition seems consistent with four stages of the Organisation for Economic Cooperation and Development (OECD) definition where the crises are viewed as systemic crises. The systemic means that the crises are characterized by a series of linkages. They analyzed the essential anatomy of financial crises into a situation where debt defaults lead to bank failure. Consequently, bank failure may lead to further debt defaults through reduction of credit. Debts defaults and exchange market disturbances interact and finally exchange market disturbances cause further bank failure, which in turn cause further exchange market disturbances [2]. There are various types of financial crises. Currency crises, banking crises and market crashes are among the popular terms used to describe financial crises. Of the three types of financial crises, banking crises are among the much feared crises where it will affect the whole financial transactions. The impacts would be great enough to jeopardize the economic stability of a country.

Incidences of banking crises may occur when there is a sudden increase in withdrawal of deposits from banks in a country banking system. These withdrawals may lead to bank closure as their cash severely depreciated. A banking crisis normally refers to a situation in which actual or potential bank runs or failures induce banks to suspend the internal convertibility of their liabilities or which compels the government to intervene to prevent this by extending assistance on a large scale. Banking crisis happens when an economy faces large scale financial distress within a short period [3]. Gupta [4] described this situation as a banking panics where bank debt holders at all or many banks in the banking system suddenly demand that banks convert their debt claims into cash to such an extent that the banks suspend convertibility of their debt into cash.