Impact Of Exogenous And Endogenous Risks On Systemic Risk In Indonesian Banking

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Abstract: Weaknesses of the Banking Pressure Index and Financial Stability Index as an early detection system were not to involve contagion and bank run. This study aimed at determining impacts of endogenous and exogenous risks on systemic risks. It was a descriptive verificatory study using monthly secondary data of 2011-2014 and multiple regressions. Utilizing credit risk, liquidity risk, market risk, capital adequacy risk, contagion, bank run, inflation, BI rate, exchange rate and systemic risk variables of the 2011-2014 period, it turned out that only endogenous risks of contagion and bank run variables impacted on systemic risk in Indonesian banking. The result showed that after the test of classical linear regression assumption, credit risk, capital adequacy risk, contagion, bank run and inflation variables simultaneously impacted on systemic risk and contributed to the movement of systemic risk. However, our findings suggested that only contagion (CONT), bank run (BR), and inflation (INF) variables significantly impacted on systemic risk in a positive direction.

Index Terms: bank run, contagion, multiple regressions, systemic risk.

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1. INTRODUCTION

Endogenous and exogenous risks typically used in financial instability. Multiple sources and invulnerabilities of endogenous risk originated in institution, market and infrastructure, and of exogenous risk consisted of macroeconomic disturbances and event risks (Schinasi, 2005). Sources of endogenous and exogenous risks had potentials to cover weaknesses of the Danareksa Research Institute's Banking Pressure Index (BPI) and the Bank Indonesia's Financial Stability Index (FSI), both of which pointed out similarity regarding Indonesian financial crisis of the 1997-2008 period in that they exceeded the specified thresholds, as Alfiana et al. (2016) investigated. As an early detection system of banking crisis, financial crisis or financial instability in a given country, weaknesses of those indices were not to involve contagion and bank run. The former was the core of systemic risk (Djikman, 2010) and the latter associated with systemic risk (Billio et al., 2012), a classic example of systemic risk (Schwarcz, 2008), and primary banking crises indicator (Bell, 2000), which preceded the crisis (Kaminsky, 1999). This study employed contagion and bank run variables in addition to the frequently used banking risk and macroeconomics variables. This study aimed at determining overview of systemic risk (CRERED), credit risk (CR), liquidity risk, (LR), market risk (MR), capital adequacy risk (CAR), contagion (CONT), bank run, (BR), inflation (INF), interest rate (INT) and exchange rate (ER) during study period. Besides, it also aimed at determining significant simultaneous and partial effects of credit risk (CR), liquidity risk (LR), market risk (MR), capital adequacy risk (CAR), contagion (CONT), bank run (BR), inflation (INF), interest rate (INT), and exchange rate (ER) on systemic risk (CRERED). In one hand, this study had theoretical usefulness of contributing to the development of management science, in particular, the study of banking and financial management. In another hand, this study had practical expected usefulness of becomin g (1) an input and evaluation materials for banking practitioners in order to avoid financial instability that banking performance brought about; (2) an input for the Bank Indonesia in making its policies and for Financial Services Authority as the financial controller; and (3) a comparative model for future study in the

related field in terms of framework, methodology and findings by either systemic risk researchers or observers

2. LITERATURE REVIEW

2.1 Endogenous Risk
The endogenous risk was a risk, which always got along the financial system. This risk depended on behaviours of financial system components. According to Hauben, Kakes and Schinasi (2004), Schinasi (2005), and the Bank Indonesia (2007), the endogenous risk was a financial instability source. Stability of the financial system was required to avoid systemic risk. Therefore, all possible sources of instability in the financial system were systemic risk sources. Hauben et al (2004) and Schinasi (2005) advocated that endogenous risk in a financial system consisted of 3 components — institution, market, and infrastructure. Endogenous risk of financial institution included credit, liquidity, market and capital adequacy risks. In the meanwhile, endogenous risk of the financial market and financial infrastructure included contagion and bank run, respectively.

2.2 Exogenous Risk
The exogenous risk was a risk emerging beyond financial system. Financial system components were not controlling their behaviours and the behaviours did not influence the components. Hauben, Kakes and Schinasi (2004), (Schinasi, 2005), and the Bank Indonesia (2007) explained that exogenous risk was a financial instability source. Stability of the financial system was required to avoid systemic risk. Therefore, all possible sources of instability in the financial system represented systemic risk sources. Hauben et al, (2004), Schinasi (2005) broke exogenous risk into macroeconomic disturbances and event risks. Technology innovation, oil price shock, oil price fluctuations, a sudden change of market sentiment, fiscal and monetary policy imbalance, and trade restriction introduction and its abrupt withdrawal were examples of economics disturbances. Hauben et al (2004) and Schinasi (2005)) also supported that framework for the maintenance of financial system stability used macroeconomic model, which could also run to monitor and analyse the systemic risk. Evans et al. (2000), employed macroprudential analysis with macroeconomic indicators of inflation (volatility in inflation), interest and exchange rates (volatility in interest and exchange rates). Event risks broke

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