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Stock market efficiency and liquidity: The Indonesia Stock Exchange merger



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ABSTRACT

This study investigates the market liquidity and efficiency of the merger between the Surabaya Stock Exchange and the Jakarta Stock Exchange into the Indonesia Stock Exchange (IDX). Efficiency theory and scale economies are applied to identify the liquidity and efficiency levels of firms. Results indicate that large market capitalization companies and the non-financial sector achieved greater market efficiency than their counterparts. Despite foreign ownership reduces market efficiency for large market capitalization firms, small market capitalization firms increase market efficiency via merger. The IDX composite index demonstrated weak-form efficiency, with LQ45 index returns explaining up to 29.3% of the price movements and up to 8.5% of the IDX returns.

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1. Introduction

Global competition has influenced decisions on engaging in the merger and acquisition of stock exchanges to increase market efficiency and performances (Slimane, 2012; Nielsson, 2009; Khan and Vieito, 2012). Consequently, stock exchanges compete through integration for cross-trading and cross-listing between markets to benefit from long-term and short-term efficiencies (Kokkoris and Olivares-Caminal, 2008; Di Noia, 2001; Werner and Kleidon, 1996; Chan et al., 1997). Therefore, mergers and integrations of stock markets not only influence the overall economic development, but also enhance financial market development (Dorodnykh, 2014; Bracker et al., 1999; Dickinson, 2000; Shamsuddin and Kim, 2003). Cooperation between stock exchanges also improves market liquidity and efficiency through increased economies of scale with subsequent market liberalization (Slimane, 2012; Santos and Scheinkman, 2001; McAndrews and Stefanadis, 2002). Stock exchange mergers likewise assist in increasing trading volume, market share, and stock prices, as well as in reducing the bid-ask spread for better operational performance (Slimane, 2012; Dorodnykh, 2014; Arnold et al., 1999). Thus, although stock exchange mergers and integrations could induce inefficiency in the short run, they could achieve efficiency in the long term (Srinivasan, 2011).

Literature on stock exchange mergers primarily focuses on regional or international stock exchange mergers in the U.S. context, particularly mergers in the Philadelphia, Baltimore, Midwest, San Francisco, and Los Angeles regional exchanges, the New York Stock Exchange merger with Euronext, and the OMX group¹ merger with the Helsinki Stock Exchange (Arnold et al.,

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¹ The OMX group initiated the 1997 stock exchange merger between Copenhagen and Stockholm as “Norex.” The OMX group further expanded through mergers with stock exchanges in Oslo, Iceland, Riga, Tallinn, Helsinki, and Vilnius. See Slimane (2012).

1999; Nielsson, 2009; Mačiulis et al., 2007; Khan and Vieito, 2012). By contrast, stock exchange mergers in Asia lack extensive discussion. The majority of the discussions on emerging stock exchanges focus on identifying efficiency levels by applying runs test, variance–ratios test, and spectral analysis. These tests assume that past stock market information cannot predict future price, inducing weaker-form market efficiency that corresponds to random walk hypothesis (Alexakis et al., 2010; Borges, 2010; Loc et al., 2010; Barnes, 1986; Dicle et al., 2010; Kim and Shamsuddin, 2008). An efficient market is characterized by random price changes without referring to past prices (Hasanhodzic et al., 2011). Furthermore, an efficient market may consist of heterogeneous expectations of participants, in which information is highly valued for reduced transaction costs (Dacorogna et al., 2001). Listed companies with larger market capitalizations could also improve market efficiency (Zhao, 2012; Himmelmann et al., 2012). Therefore, the present study aims to analyze the stock market merger of the Jakarta Stock Exchange (JSX) and the Surabaya Stock Exchange (SSX) into the Indonesia Stock Exchange (IDX) in November 2007.

We investigate the effect of the merger on the performance of IDX by applying the ordinary least squares (OLS) method and by identifying market liquidity and efficiency levels. Market liquidity is based on the cumulative merger announcement for various companies and industrial sectors, whereas market efficiency is identified pre- and post-merger across all listed companies, industrial sectors, as well as large and small market capitalization stocks according to the Indonesia composite index and the LQ45 index. This study analyzes the stock market liquidity and efficiency of emerging Asian markets through efficiency theory to extend existing literature on industrialized stock market mergers in the United States or Europe.

This study identifies the effect of merger activity on stock exchange liquidity as well as the positive and negative influences of stock exchange efficiency. Cumulative merger activities increase liquidity for financial sectors with large capitalization but decrease liquidity for non-financial sectors with small capitalization. Nonetheless, mergers increase trading volume and enterprise value for most firms and sectors. We also demonstrate that overall market efficiency is generally greater post- than pre-merger, except for select industries. We also compare the IDX composite index and the LQ45 index market efficiency levels according to market capitalization, industry sector, and indices. We determine that LQ45 index companies achieve higher market efficiency than the Indonesia composite index companies. Large market capitalization companies generate greater market efficiencies than small market capitalization companies, whereas non-financial companies generate greater market efficiencies than financial companies. The increase in the number of companies post-merger also contributes to the improvement of market efficiency. Among the various sectors, the agricultural sector achieved the greatest improvement, whereas the infrastructure sector had the largest decline. This study also proposes appropriate managerial strategies for improving the market efficiency of stock exchanges. It suggests additional deregulation and increased interactions with foreign-listed companies, particularly in the financial, infrastructure, and transportation sectors. The results provide important implications that could aid in developing strategies to improve the efficiency of stock exchanges. To the best of our knowledge, stock exchange mergers in Indonesia, an emerging Asian country, have not been examined in previous empirical research.

The remainder of the paper is organized as follows. Section 2 discusses the literature on stock exchange mergers as well as the hypothesis, theories, and background of the IDX merger. Section 3 discusses the data collection method. Section 4 presents the results. Section 5 provides the conclusions.

2. Literature review

2.1. Theoretical literature

The primary motives for stock market mergers and integrations are economies of scale and of scope, both of which aim to reduce costs to obtain greater market efficiency and liquidity (Arnold et al., 1999; McAndrews and Stefanadis, 2002; Di Noia, 2001; Khan and Vieito, 2012). Stock market mergers and integrations contribute to the reduction of transaction costs through the economies of scale that attract new investors to participate in newly formed stock exchange platforms with greater trading volume and better liquidity (McAndrews and Stefanadis, 2002). Stock exchange mergers also improve liquidity by increasing trading volume while reducing transaction costs (Nielsson, 2009).

Dual-listed companies may benefit from mergers because of improved price efficiency when new private information becomes more accessible (Werner and Kleidon, 1996). Technological advancements aid stock exchanges in reducing information costs that allow them to gain better economies of scale; these advancements further facilitate stock market mergers and integrations to enable the competition of stock exchanges for order flow as measured by trading volume and market share (Arnold et al., 1999). Stock exchanges also compete in terms of providing financial intermediary services and products, and an increase in stock exchange members through integration could reduce the cost of stock exchange operation to obtain greater liquidity and trading volume (Santos and Scheinkman, 2001).

Fama (1965) first proposed the random walk hypothesis to identify stock price changes and distributions. Stock price changes are independent of previous information, and distributions of successive price changes are unrelated to any patterns. Fama (1970) identified various levels of market efficiency based on the influence of information on stock price changes through efficient market hypothesis (EMH). These levels include weak-form efficiency, semi-strong form efficiency, and strong-form efficiency. As a basis for testing the random walk hypothesis, weak-form efficiency states that stock prices fully reflect historical prices; semi-strong form efficiency denotes that stock prices reflect public information; whereas strong-form efficiency emphasizes the reflection of all private and public information on stock prices (Dimson and Mussavian, 1998). The validity of the random walk hypothesis and EMH has been widely tested to identify the degree of the influence of information on stock prices (Copper, 1982; Borges, 2010). The abovementioned hypotheses have recently been applied

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