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Do capital controls affect stock market efficiency? Lessons from Iceland

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ABSTRACT

This paper presents analysis of market efficiency on stock index returns of five countries; Iceland, Denmark, Finland, Norway and Sweden over different periods of market liberalization and capital controls in Iceland. Although financial liberalization is often related to increased stock market efficiency, the results of this study suggest that the Icelandic stock market was relatively more efficient during periods of capital controls relative to periods of free capital flows. This evidence suggests that financial market liberalization does not necessarily lead to a more efficient stock market, at least in a small country. Comparing the efficiency of the Icelandic stock market to four other Nordic markets (Denmark, Finland, Norway, Sweden), our results show the Icelandic and Finnish stock markets to be the least weak-form efficient.

1. Introduction

An article in the December 13th–19th edition of The Economist brings to the fore the issue of capital controls as an effective economic policy. As noted in the article, orthodox economics frown upon capital controls because they breed inefficiency as those with excess money cannot channel those funds to those who can best put it to use. This economic thought has motivated a thread of empirical research that has examined the impact of the relaxation of restriction on cross-border financial transactions (financial market deregulation) on stock market efficiency in the last decades. This literature, stemming from the wave of financial market deregulations starting from the 1980s, generally shows that deregulations enhance stock market efficiency (see e.g., Kim & Singal, 2002; Ataullah, Cockerill, & Le, 2004; Cajueiro, Gogas, & Tabak, 2009; Bae, Ozoguz, Tan, & Wirjanto, 2012; Hooy & Lim, 2013). However, empirical evidence on the on–off imposition of capital controls on stock market efficiency is less apparent in this literature.

Developments in the Icelandic stock market raise interesting questions in relation to the literature on financial market deregulations and stock market efficiency. The Icelandic economy has undergone significant structural changes reflecting contrasting periods of financial market deregulations and imposition of cross-border capital controls. The country deregulated capital flows in 1995 in accordance with the EU agreement and allowed the Icelandic national currency, the Iceland krona, to freely float in 2001. The fallout from the recent global financial crisis of 2008, however, compelled the Icelandic authorities to impose capital controls, including currency restrictions, in an attempt to contain the pervasive impact of the crisis on its economy. The re-imposition of capital restrictions generally makes cross-border investments difficult and has important implications for stock market efficiency as the putative conditions for market efficiency are less favourable. Kim and Wei (2002) show that foreign investors engage in positive feedback trading strategy, with the general implication being that the trading behaviour of foreign investors may generate positive serial correlation. An interesting question that naturally arises is the effect of these on–off and contrasting regulatory periods on stock market efficiency in Iceland. This question emanates given the documented evidence of stock market manipulation during the period of financial deregulation in Iceland.

Magnússon (2012) presents evidence that imply the possibility of market manipulation in the Icelandic stock market during the period 2000–2008. The paper shows considerable increases in stock prices on the last trading day of the month and year, respectively. Benediktsdóttir, Gunnarsson, and Hreinsson (2010) also document evidence of large scale buying of own stock by Icelandic banks with an implicit goal of increasing their own stock prices. Additionally they find evidence that the banks manipulated the stock prices of companies in which they had ownership stakes. The evidence presented suggests the use of non-public information to manipulate stock prices is a possibility, at least in small markets, during periods of financial deregulation which can undermine stock market efficiency. Therefore a closer look at market efficiency during the contrasting period of financial deregulation and capital controls in Iceland has significant empirical merits. Although much has been written on the impact of the global financial crisis in 2008, an important question of stock market efficiency in the contrasting periods of relative

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openness in Iceland has received scant attention. Given that an efficient stock market enables the allocation of resources to the most productive sectors of the economy, any evidence of inefficiency provides an economic rationale for a public policy intervention in the stock market that enhances market efficiency as it could affect long term growth of the country (Fortune, 1991; Kavussanos & Dockery, 2001; Lim, Brooks, & Kim, 2008).

This paper tests the weak-form version of the efficient market efficiency (EMH) in Iceland during the contrasting period of financial market deregulation and the imposition of capital controls. The weak form market efficiency posits that successive returns generated by an efficient market will be independent or resemble a *random walk*. This has been extensively tested across many national stock markets and show different outcomes.[2] Kim and Shamsuddin (2008) argue that country difference in market efficiency may be a result of the development of the financial market in each country. Evidence in the empirical literature also suggests that increased liquidity enhances market efficiency (see e.g., Chorida, Roll, & Subrahmanyam, 2008). Additionally the EMH suggests that deregulated equity markets would reflect increased availability of information and be more efficiently priced. Based on this evidence, it can be expected that the imposition of capital controls, with its attendant reduction in cross-border capital flows, would make the Icelandic stock market relatively less efficient relative to the period of relaxation capital restrictions.

We contribute to the literature in two main ways. In an interesting paper, Smith (2012) examines the changing and relative weak-form efficiency of 15 European markets and documents two important results. First, stock market efficiency is time-varying. We link this finding to the evidence of time-varying stock market integration into global stock markets (see Bekaert & Harvey, 1995) and contribute to the literature by accessing the implication of time-varying stock market integration on weak-form stock market efficiency. We do not measure the degree of effective equity market segmentation or integration into global markets (see Bekeart, Harvey, Lundblad, & Siegel, 2011) but rather infer it from the policy of capital controls. Therefore the period of the imposition of capital controls proxy for periods of relative market segmentation from global markets. In particular, this paper examines the contrasting policy of capital controls and the relaxations of the controls in Iceland and investigates weak-form stock market efficiency during these periods. Thus we identify an event and investigate stock market efficiency around it instead of examining market efficiency and looking for coincidences that go with the evidence. This examination may also help shed some light on the differences in results presented in the extant literature on market efficiency studies as we investigate market efficiency in periods of relative economic policy.

Secondly, Smith (2012) presents results documenting departures from weak-form efficiency in a number of European markets, with the period coinciding with the recent global financial crisis. This observation, however, is not linked to any policy which we do in our study. Hitherto the literature has mainly examined stock market efficiency following deregulations of financial markets, especially in emerging economies. Iceland, given its history of contracting structural periods of financial deregulation and capital restrictions in the last past decades, presents a unique set of circumstances to present evidence on the opposite effect.

The examination of the efficiency of the Icelandic stock market might, however, give an incomplete picture if there is no criterion to compare those results to. For that reason, we examine the weak-form stock market efficiency of the Icelandic stock market in conjunction with the four (4) other Nordic stock markets: Denmark, Finland, Norway, and Sweden. As noted in the stock market efficiency literature, relative efficiency is more relevant and useful to both local investors and international investment funds, and the use of a sample of Nordic markets in relative analysis is well-motivated in the literature. For example Booth, Martikainen, and Tse (1997) argue that the Nordic markets can jointly provide an environment where relevant cross-country differences with respect to their regulatory harmony and economic integration are small. Analogous to the Icelandic stock market, these are also relatively small markets and these countries, generally, share similar cultural and historical background with Iceland.

Using a sample from the 5 Nordic stock markets between January 1993 and December 2013, we find that the Icelandic stock market has been relatively weak-form efficient during periods of currency restrictions. This implies that market liberalization and capital market integration do not necessarily lead to an improvement in market efficiency. Although the ranking of the Nordic markets appears change over time, our results also suggest that the Icelandic and Finnish stock markets are the least weak-form efficient of the Nordic markets.

The remainder of this study is structured as follows: Section 2 and Section 3 discuss the data and methodology utilized in the study, respectively. Section 4 presents the empirical results and Section 5 concludes.

2. Data

We examine stock price indexes for Iceland (OMXI15 and OMXI6[3]) and 4 other Nordic stock markets; Denmark (OMXC20), Finland (OMXH25), Norway (OBX), and Sweden (OMXS30). These value-weighted price indexes, by definition, constitute the most liquid stocks listed on each stock exchange. Maximum weights can apply to some of the indexes as the maximum weight of an index constituent of the OMXH25 index is 10%. This is an important incentive of use the particular indexes as the weight of Nokia in the OMXH All-Share index exceeds 50% in some time periods. The choice of these liquid indexes is also supported by the literature that shows that increased liquidity enhances market efficiency (see e.g., Chorida et al., 2008). We use weekly returns, defined as the first log difference of weekly stock price indexes, in this study. Generally weekly data alleviates biases that arise from non-trading periods and short term correlations due to noise. All stock index data employed in this paper, between January 1993 and December 2013, is accessed from DataStream. The indexes are denominated in the local currency.

The Icelandic stock market, established in 1985, is a relatively young exchange especially compared to the other Nordic stock exchanges.[4] Prior to this date, several attempts were made to establish the stock exchange on the island. Several institutional and regulatory changes during the 1980s aided the establishment of the stock exchange. These included large scale privatization, the introduction of index-linked loans, and the adjustment of tax laws. Originally named Verðbréfaþing Íslands, the stock exchanged was re-named Kauphöll Íslands in 2002. In 2006, OMX bought the Icelandic stock exchange and the name was changed to OMX Nordic Exchange Iceland, but the name Kauphöll Íslands is still commonly used in Iceland.

Fig. 1 depicts the behaviour of the Icelandic market index between the stated data period. We detect a slow and upwards trend until 2003, with a minor dip around the dotcom crash in the year 2000. There was a considerable amount of capital inflow to Iceland between 2005 and 2007 which coincides with the steep spike in the index. The index dropped from its highest point of 9016.48 on July 18th 2007 to

[2] Kim and Shamsuddin (2008) and Smith (2012) provide an excellent review of past studies on stock market efficiency. Also see, for example, Lo and Mackinlay (1988) and Chow and Denning (1993) for the US market; Alexeev and Tapon (2011) for the Canadian market; Worthington and Higgs, 2004 for the developed and emerging markets; and Smith (2012) for the European market.

[3] The 2008 Icelandic financial crisis was so severe that the index was replaced by OMXI6 after many index constituents of the OMXI15 index lost their all market value.

[4] The Danish, Norwegian, Swedish, and Finnish stock exchanges were established on 1625, 1819, 1863, and 1912, respectively.