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Does stock exchange consolidation improve market liquidity? A study of stock exchange acquisition in Russia

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ABSTRACT

The last couple of decades have witnessed significant institutional and structural changes in financial sector within a worldwide trend toward consolidation. In the segment of organized trading stock exchanges merge and develop into large and diversified publicly traded companies. These processes are rather complicated in case of a transition economy like Russia. In December 2011 MICEX, the first largest and state-controlled stock exchange acquired RTS, the second largest and privately owned stock exchange primarily designed for foreign investors. We empirically investigate whether the acquisition resulted in improved liquidity of the Russian stock market which was one of the declared acquisition objectives. We use the Kolmogorov–Smirnov and the Wilcoxon tests to compare market-wide liquidity in several discrete periods pre and post acquisition. A deep and thorough insight into liquidity performance is ensured by assessing liquidity from limit order book data of tick frequency along three dimensions (tightness, immediacy, and elasticity).

1. Introduction

For the last couple of decades the financial landscape in many developed and emerging countries has been reshaped dramatically. One of the most pronounced changes is consolidation within the financial industry through mergers and acquisitions (M&A) of financial entities. Financial entities are understood in a broad term and comprise commercial and investment banks, insurance, brokerage and asset management companies, and securities exchanges. M&A activity has been featured by growing intensification to reach both cross-segment (for example, a consolidation of bank and non-bank entities) and cross-border scale.

Although M&A activity is a driving force in itself, as the impact of individual mergers and acquisitions is not confined to the companies involved but spreads across the majority of the financial industry participants through competition, there are clear exogenous driving forces for consolidation. As documented in the Group of Ten "Report on Consolidation in the Financial Sector" of 2001 the motive for consolidation is a need for cost savings and revenue enhancements against ever falling

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margins. This could be achieved through improved efficiency based on economies of scale and scope. The Group of Ten's report also stipulates causes for consolidation. These are improvements in information technology, financial deregulation and liberalization, globalization of financial and real markets, and increased shareholder pressure for financial performance. Yet whether consolidation improves performance in a drastic manner remains an open question. First, there is no unambiguous consolidated empirical evidence that the scale of positive effects from economies of scale and scope and from improved managerial efficiency is well matched to the scale of consolidation. Positive effects are possibly not that large. Second, there are social costs of consolidation since large and complex financial institutions issue standardized and easily manageable financial services thus drifting further away from a customer-centric approach. Third, consolidation results in concentration and that raises concerns about potential abuses related to enjoying monopolistic market power and consequently adverse price changes.

Among M&A activity observed for the last couple of decades mergers and acquisitions of exchanges are a vivid example of consolidation within the financial industry. Exchange consolidation is viewed as a way to meet changing economic environment including an ever stiffening competition among organized trading venues and electronic communication networks (ECN). Through domestic and cross-border consolidation exchanges enhance the scope of geographical involvement. The following M&A activity could be mentioned in this respect: foundation of the Swiss Stock Exchange upon merging of stock exchanges of Geneva, Basel, and Zurich in 1995; foundation of the Columbian Stock Exchange upon merging of stock exchanges of Bogota, Medellin, and Cali in 2001; foundation of EURONEXT upon merging of the Belgian, French, Dutch and Portuguese stock exchanges in 2000–2001; foundation of OMX Exchanges upon merging of Baltic and Scandinavian exchanges in 2004–2006; acquisition of the Borsa Italiana by the London Stock Exchange in 2007; foundation of transatlantic alliances like NYSE-EURONEXT in 2006 and NASDAQ-OMX in 2008. Through cross-segment consolidation exchanges diversify a set of financial assets to offer for trading. Examples of M&A in this respect include the foundation of the Singapore Exchange upon merging of the Singapore Stock Exchange and the Singapore Currency and Futures Exchange in 1999; the merger of the Tokyo Stock Exchange (primarily a spot market) and the Osaka Securities Exchange (primarily a derivatives market) in 2013.

Commonly stated benefits of exchange consolidation are standardization of financial instruments specifications, harmonization of trading principles and mechanisms, reduction in trading costs, availability of 24-hour trading (e.g., alliances of American and Asian trading platforms). Yet exchange consolidation is associated with an open question mentioned above concerning the scale of improved performance, trade-off between social costs and enhanced efficiency and monopolistic market power. This has led to M&A failures recently. NASDAQ OMX Group in partnership with the Intercontinental Exchange has withdrawn its bid to acquire NYSE-EURONEXT after the US Department of Justice officially stated it would file an antitrust lawsuit to block the deal. The European Commission has vetoed the intention of the Deutsche Börse to acquire NYSE-EURONEXT. The London Stock Exchange has failed to acquire TMX Group after the Maple Group consortium offered a higher competing bid to prevent a foreign control over the Canadian organized trading.

Consolidation in the financial industry has entered emerging markets following the same trend in developed markets. However, there are differences. Consolidation in developed markets is a strategy of utilizing excess capacity alternative to the exit strategy while consolidation in emerging markets aims at strengthening the financial industry on the whole to face a period of instability. Consolidation in developed markets is driven by market forces while consolidation in emerging markets is guided, to a large extent, by the authorities. *This could be vividly illustrated with the case of the exchange consolidation in Russia*. The Moscow Exchange was founded in December 2011 following the outbreak of the financial crisis of 2008–2009. That could be considered one of the incentives since integration with the international financial market during crisis periods seems to be more pronounced as outlined in a study by Nikkinen et al. (2012). The Moscow Exchange was founded on the basis of the trading platform of the first largest and state-controlled securities exchange, MICEX. The foundation of the new institutional entity was an outcome of a complex, long-standing negotiation process which ended with an acquisition of the second largest and privately owned securities exchange, RTS. Done allegedly with a view to strengthening state control over the Russian financial market upon the ongoing financial crisis, the exchange consolidation nevertheless pursued a rational economic objective: to improve the quality of the Russian financial market performance within the activities of the State Project "Moscow – International Financial Center" initiated as far back as in 2009 by the Government Decree on the Action Plan on Formation of International Financial Center in the Russian Federation of 11 July 2009.

There are many ways to assess efficiency gains from M&A activity. As far as securities exchange is concerned we choose to assess the benefits of consolidation along one and utterly important projection – liquidity. A liquid market facilitates price discovery processes, provides fast counterparty match, enhances structural and informational symmetry of trading, and ensures optimal channeling of financial capital in compliance with the economic paradigm "risk – expected return". Liquidity is extremely fragile since it possesses both positive and negative network externalities. On one hand, a liquid market attracts more market participants which enhance liquidity. On the other hand, a decline in liquidity begets uncertainty and make market participants quit thus reinforcing the decline. Liquidity is predictable in the direction of a change but unpredictable in the scale of a change. Therefore liquidity is one of the key factors to consider when it comes to assessing performance of a securities exchange on the whole and the outcome of M&A activity for a securities exchange in particular.

To research into market-wide liquidity in the Russian organized trading we follow an approach similar to that of Bacidore (1997) and Barclay et al. (1999). We form market-wide samples in three discrete periods of time pre and post MICEX and RTS consolidation. To capture the multifaceted nature of liquidity we assess three liquidity dimensions (tightness, immediacy, and elasticity) through three liquidity proxies (bid-ask spread, trading volume, and variance ratio) computed from limit order book data of tick frequency. The Kolmogorov–Smirnov and Wilcoxon tests provide statistical inferences for the comparative study of liquidity pre and post MICEX and RTS consolidation.

The structure of the paper is as follows. Section 1 provides an overview of the market settings pre and post Moscow Exchange foundation. Section 2 considers implications for liquidity and lays out a hypothesis. Section 3 describes methodology. Section 4 describes data. Section 5 provides results and their interpretation. Section 6 concludes and gives suggestions on policy implications and avenues for future research.

2. Market settings pre and post foundation of the Moscow Exchange

The Moscow Exchange was founded in December 2011 on the basis of the trading platform of the first largest and state-controlled securities exchange, MICEX. The Moscow Exchange foundation was an outcome of a complex, long-standing negotiation process which ended with an acquisition of the second largest securities exchange, RTS. MICEX had 16 shareholders prior to the consolidation, the major ones being the Central Bank of Russia (28%), UNICREDIT Bank (12.7%), VNESHECONOMBANK (11.8%), VTB (7.6%), SBERBANK (7.5%). RTS had 20 shareholders who possessed an ownership stake in excess of 94.5% prior to the consolidation, the major ones being DA VINCI Capital (14.9%), TROIKA DIALOG (10%), KIT Finance (11%), ATON (9.8%), ALPHA-BANK (9.6%), and Renaissance Broker (9.2%). The formal consolidation procedure comprised the following actions: MICEX obtained controlling interest in RTS by purchasing shares of 5 private shareholders – Renaissance Capital, ATON, ALPHA-BANK, TROIKA DIALOG, and DA VINCI Capital. RTS shareholders' stakes were paid out partly by cash (35%) and partly in an exchange for shares of the merged exchange in 1 to 3 ratio.

We confine our research to stocks leaving out bonds and derivatives. Stock trading facilities were provided by both MICEX and RTS prior to the consolidation. The CLASSICA sector, founded as far back as in 1995 as a non-anonymous stock trading venue with full advance asset depositing and dollar quoting and settlement, is the oldest stock trading facility in Russia (founded in 1992, MICEX was exclusively a currency trading venue for a long period of time). Throughout years RTS modified the CLASSICA sector with a view to improving its trading efficiency and to making it more attractive for foreign investors. In particular, anonymous trading was introduced in 2007; full advance asset depositing was abandoned in 2008. In 2009 the Standard sector was introduced with anonymous trading, ruble quoting and settlement, and 20% advance asset depositing. This stock trading venue was designed for trading 30–35 most actively traded Russian stocks.

The Main Market on MICEX was an alternative stock trading venue. It was featured by full advance asset depositing and by ruble quoting and settlement. In contrast to the CLASSICA sector the Main Market was primarily an order-driven market with orders being placed and matched through an electronic system. Stock trades were settled on a delivery versus payment (DVP) basis in the T+0 settlement cycle.

Soft competition between MICEX and RTS can be explained by different focuses of their activities. Privately owned RTS focused on trading of small and middle caps and derivatives. It was seen by market participants as a customer-centric exchange which duly met demands of its customers. The CLASSICA sector dollar quoting and settlement suited foreign investors. MICEX, an entity with a state stake, focused on trading in currency and money instruments along with bonds and blue-chips. The Main Market was by far the most developed stock trading venue in Russia. However, the situation started to change slightly with the introduction of the Standard sector on RTS designed for trading blue-chips. The listed companies in the MICEX Main Market and the RTS Standard sector coincided and the latter could have taken some trading activity away from the former prior to the consolidation as evidenced from Fig. 1.

19 December 2011 was the first trading day on the Moscow exchange. The structural organization of stock trading venues did not change in a drastic manner. Today there are still three principal stock trading venues on the Moscow Exchange, the Main Market, the CLASSICA sector, and the Standard sector. Some features of the CLASSICA sector were abandoned upon the consolidation. The Main Market and the Standard sector passed into the Moscow Exchange "as is". The trading venue under

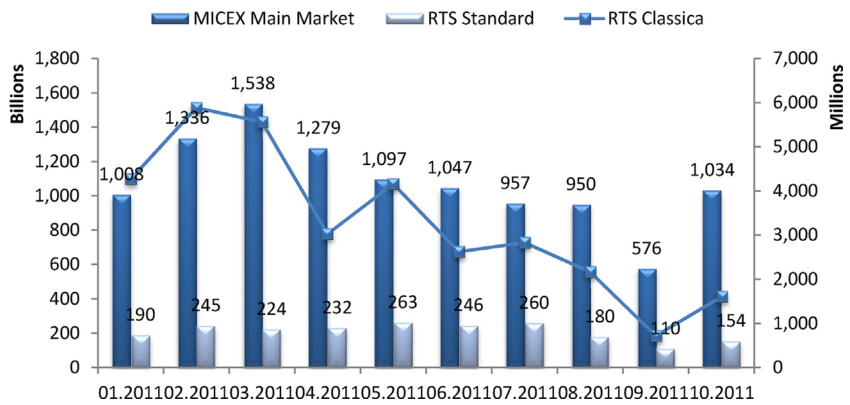

Fig. 1. MICEX Main market and RTS Standard sector monthly stock trading volume (RUR billion) and RTS CLASSICA sector monthly stock trading volume (RUR million) of domestic stocks in 2011 (*based on the Moscow Exchange statistics*).