

THE INTERDEPENDENCE OF STOCK QUOTATIONS ON THE BIGGEST EUROPEAN MTFs AND REGULATED MARKETS

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Abstract:

This article will present a broad analysis of statistic data of share quotations and turnover volumes on the greatest European markets, Alternative Trading System (ATS) and equivalent regulated markets which are their organizers. They are supposed to serve the realization of the aim of the article, namely defining the significance of MTF for its organizers, interdependence and differences in quotations on these markets and ATS's relative strength in relation to regulated markets. As increased risk markets, MTFs are seen as significantly worse than main markets, which is visible in all examined markets through the relative weakness of quotations of alternative markets. The First North market is viewed particularly negatively by investors. In the studied group of markets significant differences were observed in quotation correlation between MTFs and regulated markets. Among MTF markets, the highest quotation correlation occurs between Entry Standard and AIM as well as Alternext with Entry Standard and First North markets. The least correlated with other alternative markets is the Polish NewConnect. European MTFs are a minor supplement for regulated markets. Taking into account the short period of these markets' existence and the simplified procedure of introduction of companies' quotations on the stock, it might be assumed that their significance may in some cases increase.

Keywords: multilateral trading facilities, regulated markets, interdependence of stock quotations, correlation, relative strength, capital market

1. INTRODUCTION

Multilateral Trading Facilities (MTF), defined by Directive 2004/39/WE of European Parliament and Council from 21 April 2004 on Markets in Financial Instruments Directive – MiFID (European Union, 2004), are ones of the most dynamically developing segments of stock trading in securities. They are created with the idea of newly established or already functioning enterprises working in innovative, fast developing branches, are completion of Regulated Markets. They enable companies which do not fulfil the requirements of the main market to acquire financial resources from the capital markets for investment and development.

The article presents a broad analysis of statistic data of share quotations and volumes of turnover on the greatest European markets, Alternative Trading System (ATS) and equivalent regulated markets which are their organizers. They are supposed to serve the realization of the aim of the article, namely defining the significance of MTF for its organizers, interdependence and differences in quotations on these markets and ATS's relative strength in relation to regulated markets. This paper is part of a wider study on the functioning of alternative trading systems in Europe, and also the beginning of analysis on the occurrence of interdependence of quotations between these markets and regulated markets.

2. STUDIES OF INTERDEPENDENCE BETWEEN MARKETS WORLDWIDE

Studies of inter-market interdependencies of quotations, correlations, variances and return rates were conducted numerous times around the world. The vast majority of these analyses were conducted between the main stock markets of the world or in relation to the main stock markets of the world. Often these studies were conducted in the context of globalisation, following increased economical integration between countries and financial markets.

Early analyses of the occurring connections of market tendencies, conducted in the first half of the 20th century, have shown small dependencies of quotations due to the national character of the world's stock markets. Studies of market interdependencies have become an area of intensive scientific research in the 1960s. Analysing the data regarding the main stock markets, i.a. Agmon (1972), Ripley (1973) and Hilliard (1979) have shown the existence of dependencies, however still of a somewhat limited significance. Later studies have confirmed the occurrence of inter-market connections, growing with the ongoing globalisation of markets (e.g. Hamao, Masulis, Ng, 1990; Engle, Sumsel, 1993; Longin, Solnik, 1995, Kearney, 2000; Kearney, Lucey, 2004; Bailey, Choi 2005; Baur, Jung, 2006; Dimpfl, Jung, 2012). Multi-faceted studies, with results tying into global dependencies, were also conducted in relation to European markets (Koutmos, 1996; Booth, Martikainen, Tse, 1997; Serwa, Bohl, 2005, Witkowska, Kompa, Matuszewska-Janica, 2012).

The undertaken studies were frequently performed in relation to key market or economical events, like stock market crashes or financial crises. Arshanapalli and Doukas (1993) fit this trend in research perfectly, studying the connections between American and Asian stock markets before and after the crash of 1987. Tamakoshi, Toyoshima and Hamori (2012) analysed the impact of the debt crisis on the correlation of European stock market quotations. Jung and Maderitsch (2014) focused on the sudden increase of market synchronisation during a financial crisis. Many studies emphasised the dominating role of American markets in the forming of global stock market dependencies (Eun, Shin 1989; Hassan, Naka, 1996; Tserkezos, Mylonakis, 2006).

Studies of interdependencies between European stock market quotations in relation to their alternative markets have not yet been conducted. The author, despite great efforts, has not found any elaborations of this type.

3. CHARACTERISTICS OF ALTERNATIVE TRADING SYSTEMS IN EUROPE

The first alternative trading system in Europe was created in 1995, when the London Stock Exchange launched the Alternative Investment Market. AIM is meant for small and new companies which do not meet the requirements of the LSE regulated market. Solutions applied at the London AIM became in later years the basis and standard for the creation of new ASO markets in Europe. Most of them were created in the years 2005–2007.¹

Every stock market in deciding establishing its regulatory provisions is guided by the goal of its functioning. Despite the generally similar operational essence of ASO, organisers have the freedom of shaping the provisions, which causes a diversity of regulations. The vast majority of markets function as MTFs, although ASO have a regulated market status in three countries.² Moreover, the Federation of European Securities Exchanges (FESE) in some countries isolates certain segments of the capital market, describing them as special markets.

The London AIM is the unquestioned leader of alternative systems in Europe. Over a thousand quoted companies translate into more than 60% of capitalisation and turnover of European MTF markets (table 1).³ In terms of the number of companies, capitalisations and turnover in the table, four other markets should be distinguished: Entry Standard, Alternext, First North and NewConnect. Together with AIM these markets will form the basis of the analyses described further in the article.

Table 1: Statistical data of alternative markets in Europe (at the end of December 2014)

MTF Market / Stock exchange leading the MTF Market	RM/ MTF	Number of companies	Market capitalization (in millions of €)	Volume size (I-XII 2014)	
				Number of transactions	Turnover (in millions of €)
Entry Standard	MTF	169	32 015.4	567 164	2 367.5
Deutsche Borse	RM	670	1 436 728.7	110 129 216	1 113 604.9
			2.23%		0.21%
Alternext	MTF	191	8 506.0	2 400 072	5 275.0
Euronext	RM	1055	2 742 873.0	184 828 352	1 479 701.0
			0.31%		0.36%
AIM	MTF	1103	91 968.4	4 472 959	19 631.1
LSE	RM	2446	2 858 243.4	188 154 069	1 500 356.9
			3.22%		1.31%
First North	MTF	161	4 904.0	1 518 178	3 399.8
OMX	RM	787	988 973.9	82 224 984	547 128.8
			0.50%		0.62%
NewConnect	MTF	431	2 028.9	792 842	286.3
WSE	RM	902	139 069.3	14 688 869	49 349.1
			1.46%		0.58%

MTF Market / Stock exchange leading the MTF Market	RM/ MTF	Number of companies	Market capitalization (in millions of €)	Volume size (I-XII 2014 r.)	
				Number of transactions	Turnover (in millions of €)
Alternative Market (EN.A)	MTF	14	142.0	765	1.0
Athens Exchange	RM	244	45 579.5	6 882 818	27 777.7
			0.31%		0.00%
MAB Expansion	MTF	26	1 800.0	n/d	n/d
BME (Spanish Exchanges)	RM	3 452	820 543.8	70 702 448	834 440.6
			0.22%		x
Bratislava Stock Exchange	MTF	64	660.1	n/d	n/d
Bratislava Stock Exchange	RM	125	4 443.5	5 804	8.5
			14.86%		x
Dritter Markt	MTF	21	2 076.3	6 775	16.7
CEESEG - Vienna	RM	99	79 987.5	4 642 623	23 902.2
			2.60%		0.07%
Emerging Comp. Cyprus	MTF	21	665.2	n/d	n/d
Cyprus Stock Exchange	RM	94	3 331.2	34 864	46.8
			19.97%		x
Euro MTF	MTF	166	663.8	885	11.7
Luxembourg Stock Exch.	RM	220	52 201.6	12 926	106.7
			1.27%		10.97%

Source: Own elaborations based on websites of stock exchanges and statistical data of the European Federation of Exchanges and the London Stock Exchange:
<http://www.fese.eu/en/?inc=art&id=4>; <http://www.londonstockexchange.com/statistics/markets/aim/aim.htm>;
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Evaluating the significance of MTF markets for their organisers, the value of capitalisation and turnover was compared. In terms of the capitalisation rate of MTF markets in relation to regulated markets, Slovakian and Cyprus ASOs should be distinguished. Both of the markets, however, are insignificant stock markets in Europe, which do not even isolate even the volume of their turnover for statistical purposes of FESE. The Luxembourg market is similarly insignificant, however outstanding in terms of volume rate. Among significant European MTFs, the greatest importance for the organiser is the British AIM, which constitutes over 3% of capitalisation and generates more than 1% of LSE turnover value. The statistics of other markets appear to be much worse. None of them generates turnover in excess of 1% of the volume of regulated markets, and capitalisation of only three of them (Entry Standard, NewConnect and Dritter Markt) exceeds 1%.

4. METHODOLOGY

For the purpose of the analysis, the key European alternative markets have been chosen on the basis of companies' capitalization and turnover volumes functioning as MTF, with the minimum number of one hundred quoted companies. Five markets have fulfilled the criteria: British AIM, Scandinavian First North, German Entry Standard, French Alternext and Polish NewConnect. Eight years (2007-2014) of quotations on these markets and their equivalent regulated markets being their organizers (LSE, DB, NASDAQ OMX, Euronext, WSE) were examined. The analysis was made with the reference to the stock quotations of the markets mentioned above.

The starting point for the analysis was the 30th August 2007, that is the day when the last of the examined markets, the Polish NewConnect, started up. Studies were conducted on the basis of daily quotations. Due to established days off work in every country which preclude the functioning of markets, solutions were developed to enable the conducting of the planned studies. First of all, the 24th and 31st December were excluded from the analysis, as most global financial markets are closed then. Sessions on these days do however take place in certain European markets (e.g. in Great Britain and in France). Because trade on these days, as well as variation of quotations, is significantly limited, it was recognized as unfounded to include them in the studies, thus the sessions were omitted. Apart from typical holidays (Christmas, Easter, New Year etc.), often described as "bank holidays", days without trading occur sporadically on most of the examined markets. Poland is an exception, where financial markets are closed on 7 additional days (aside from *bank holidays* sessions are off on 6th January, 1st and 3rd May, 15th August, 1st and 11th November and on the movable feast of Corpus Christi). In cases when there was no trading on one of the studied markets on a given day, it was assumed that no changes took place on the mentioned market, and the values of indices remained unchanged compared to the previous session day. This only slightly increased the correlation between Polish markets, but did not darken the relations of index value change on other markets. However, whenever on a given day there was no turnover on at least two markets (e.g. sessions were off on 2nd January 2012 in England and Germany, or 6th January 2012 in Poland and Sweden), it was assumed that sessions on other markets also did not take place.

5. RESULTS

MTF markets show a high variation in imitating quotation trends prevalent on regulated markets. Quotations on French markets (indexes: Alternext – CAC 40) are unusually strongly related. A very high correlation coefficient (0.94) is accompanied by the lowest standard deviation of return rates of indices (12.5%). British and Polish markets have a similar correlation coefficient at around 0.7 and German markets at 0.59. All markets have a very similar measure of standard deviation of return rates (approx. 20%). Among index quotations of the Scandinavian market correlation is nonexistent. What is more, the standard deviation of return rates of stock market indices on this market is the highest by a significant margin among all studied markets and is almost 26%.

