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INTEGRATION OF THE FINANCIAL INFRASTRUCTURE OF THE EUROPEAN UNION: PAST AND FUTURE

Free movement of capital is a crucial element of European integration, which has to rely on the political will of countries on the one hand, and their respective infrastructure – on the other. Reasoning of the assessment methods to evaluate the progress on integration of securities market infrastructure is one of the most pressing issues facing the European Commission today. The paper puts forward a task to analyse the past and on this basis outline the future of integration of the financial infrastructure of the European Union.

2.1. INTRODUCTION

Yet in 2006 the European Commission anticipated that the consolidation of the stock infrastructure within EU would allow savings of 2 to 5 billion EUR, being spent on trading, clearing and payments. Transaction costs were also reduced due to stock exchanges mergers. These factors, in turn, would increase trading volumes [22]. As a result of active capital consolidation process only in European securities market infrastructure companies the total value of transactions in 2007-2008 ranged at 40 trillion EUR per year and slightly less in the following 2-3 years.

Why should we take a close look at financial infrastructure? The answer is simple and complex as well. In fact a great share of EU funds coming from its budget is spent on projects and directions that in general may be characterized as infrastructure – roads between countries, telecommunications and other IT and media, development of market infrastructure and sea ports etc. In many ways it leads to creation of common market as basement for next steps of integration of economies within EU. Well-developed infrastructure lets companies to have less transaction costs, better access to a cheaper capital and makes them more competitive within global economy and global markets.

2.2. ANALYSIS OF RECENT RESEARCH

Unfortunately at the moment there is no paper where one may find steps of evolution of financial markets infrastructure and we have made an effort to combine it in one document. In this paper we shall look at the consolidation of stock market infrastructure and its integration from the point of view of regulation, convergence of clearing and settlements, settlement systems integration.

However, one can find a range of publications concerning different aspects of financial markets infrastructure. Report on the Recovery of financial market infrastructures [6] provides guidance for financial market infrastructures regarding standards, recovery plans and tools. Another report, Principles for financial market infrastructures [7] contains new demanding international standards for payment, clearing and settlement systems. Presented principles might be applied to all systemically important payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories. It is believed that principles reflect the lessons learned from the recent financial crisis and the experience of more normal operation and assessments. T. Koeppl [19] presents a link between investment in financial market infrastructure and its governance structure as either a user-oriented or a for-profit organization. The paper discusses efficiency of a user-oriented infrastructure. It also interprets the consequences of both, user-oriented and for profit developments for efficiency in financial markets. Necessary and sufficient conditions for efficient level of such infrastructure are also provided. Research are also conducted on benefit of different financial framework application [20] discussing limited enforcement hinders the exchange of capital among people or, equivalently, investors. Governance structures and their consequences in investment are also often discussed [5]. However, empirical studies are focused mostly on the role of governance for operational efficiency such as transaction costs, but not on the investment side [21, 27].

There are also papers dealing with elements of financial markets' infrastructure and presenting cases chosen for analysis, such as ease services, business valuation and appraisal, unit investment trusts, banking [30]. Cases are studies in a separate industrial market using different types of such infrastructure elements.

There are also papers discussing financial markets infrastructure and capital under the current financial crisis conditions [28]. New regulatory regime and framework for gathering and disseminating financial market information are proposed and discussed. Also the overview of Principles for Financial Market Infrastructures is presented. It might regard such areas as general organization, credit and liquidity risk management, settlement, default management, general business and operational risk management, efficiency and transparency [26].

There is also extensive literature regarding market regulations and its consequences, like different forms of association between the public and private sectors [23, 4, 1, 2]. Those regulations and concepts are used worldwide to procure economic and social infrastructures [24].

2.3. STAGES OF CONSOLIDATION OF STOCK MARKET INFRASTRUCTURE

The official interpretation of the purpose of financial infrastructure integration in the EU is the following – access for all users to the same services under the same conditions, regardless of the location of the user or vendor [10]. However, its interpretation given by L.Bayelye [3] is wider: the market of financial instruments is considered fully integrated if all potential market participants with similar relevant characteristics: a) meet harmonized regulatory requirements governing the particular segment of the financial market; b) have equal access to financial services; c) share the same status if they are subjects of a particular segment of the financial market. Thus, an expanded definition of financial integration is based on three important principles:

- harmonized system of regulation;
- equality of market access opportunities for business;
- the same status of market participants, i.e. the absence of discrimination on the criterion of the country of origin or any other basis.

Given the above criteria in the development of EU market it may be divided into four stages of consolidation of stock market infrastructure [18]:

The first stage – horizontal consolidation within national markets. The first phase of the consolidation of the EU securities market infrastructure characterized by horizontal consolidation of national stock exchanges and clearing and settlement systems. The first steps in this phase are merging of stock exchanges with derivatives exchanges in all the Nordic countries and in some countries of continental Europe in the mid-1990s. Another trend in horizontal consolidation was the consolidation of settlement systems, specializing in operations with government debt securities, which were led by central banks, with similar systems, specializing in the corporate and private equity and debt instruments. The dominant principle was transfer of systems operated by central banks to stock exchanges, which managed private settlement and payment systems. These processes took place in France, Scandinavia and the UK. However, Spain introduced an alternative model that included the creation of a new independent body to manage the two aforementioned systems.

The second stage – vertical consolidation at the national level. This stage was based on the achievements of horizontal consolidation, resulting in creation monopoly organization to perform certain functions of infrastructure of on national markets. In some countries this stage manifested itself in a merger of stock exchanges, clearing and settlement, and payment systems for the obligations in securities. Thus, at this stage the complex national infrastructure operators for transactions in shares, debt instruments and derivatives formed. In Germany in the 1990s, for the first time all the functions to execution of transactions with securities were incorporated in a single company – Deutsche Burse, which became the dominant shareholder of the subsidiary companies to provide services, engaged in post-trading activity in the stock market. All market participants due to the technical features were automatically forced to use the services of this company when trading on stock exchanges. Later in 2000's similar transformations occurred in Italy (*Borsa Italiana*) and Spain (*Bolsas in Mercados Espanoles*).

The third stage was characterized by cross-border horizontal mergers, especially in the segment of stock exchanges. The most striking example is the creation of Euronext in 2000, which was the result of merger of the Paris, Brussels and Amsterdam stock exchanges, and later joined his assets the Lisbon Stock Exchange. The most significant cross-border mergers in the field of payment systems from securities exchanges have been combining *Euroclear Bank* – International CSDs– with Sicovam (France), Necigef (Netherlands), CrestCo (UK) and CIK (Belgium). Later Euroclear Bank absorbed CSD of Ireland. Another important step was the union Deutsche Burse Clearing (Germany) Cedel (Luxembourg) to create *Clearstream International*. In clearing segment most notable cross-border merger was an agreement between the London Clearing House and the company Clearnet (France) to form *LCH.Clearnet*, which now serves the markets of France, Britain, Belgium, the Netherlands and Portugal. A similar process took place in Germany and Switzerland, where the Eurex clearing company was formed.

The fourth phase of consolidation is connected with the creation of supranational markets that cover the full range of stages of securities transactions. Its classic examples may be the merger of Stockholm (OMX) and Helsinki (HIX) stock exchanges followed by absorption of Vilnius and Tallinn stock exchanges and clearing houses in Sweden and Finland, as well as payment systems for the obligations in securities of Finland, Estonia and Latvia. The most striking events in 2007 were merger of the New York Stock Exchange and the Stock Exchange Euronext, which formed *NYSE Euronext*, and NASDAQ acquisition of OMX, created *NASDAQ OMX Group*.

Thus the following stages of stock market infrastructure consolidation may be named:

1. Horizontal consolidation within national markets;
2. Vertical consolidation on national level;
3. Transnational mergers and acquisitions;
4. Emergence of supranational markets;

But what is to be next we may add, and in fact is already underway are:

5. Transatlantic consolidation.
6. Global consolidation.

The last two stages may be named due to real steps in this direction taken within previous period. We shall also consider that processes of globalization sooner or later will lead to emergence of global stock market infrastructure as well as real functioning of global capital markets operators, namely banks.

2.4. STOCK MARKET INFRASTRUCTURE CONSOLIDATION: STATE REGULATION

It is also important to look at development of stock market infrastructure (SMI) from the point of view of regulation. Analyzing the importance of regulation of infrastructure in the dynamics of U.S. foreign direct investment, which can be considered by far the largest global investor Globerman and Shapiro [16] found that well-developed regulation infrastructure is an important determinant in investment, but only on condition that the country has and develops free and transparent markets, has effective governments. So here, thanks to the works of Matskailova E. and Russkova E. [25], we may name the following three stages.

1. spontaneous overtaking development (XII century – 1957);
2. period of transition (1957-1989);
3. stimulated priority development (1989 till now).

In the **first period** SMI had spontaneous overtaking development as an element of the economy, which appeared as a result of the deepening social division of labour, and the feasibility of its development over time caused the market entities resistance. This SMI elements appear in some cities, even places, serving a very limited local capital market that is not wore massive. Slow infrastructure development constrained the development of the capital market. Over time, SMI elements began to outgrow the scale of individual cities and serve specific regions, and eventually the whole country. At this time the global monetary system (Paris in 1867 and Genoa in 1922.) stars its development, without which international trade with securities could not take place today. Development SMI relied solely on private capital without any government capital.

In the activity and development of exchanges and other SMI elements interfered several wars that often took place in Europe before the end of World War II. Sometimes there even were periods during which the individual exchanges did not work. The first phase was completed worsening problems from the beginning of World War II and the emergence of the first post-war international stock exchanges in London, Paris, New York, who occupied a secondary place in comparison with currency exchanges, as well as the introduction in 1944 the Bretton Woods monetary system.

Beginning of **period of transition** symbolized by the signing in 1957 in Rome Treaty establishing the European Economic Community. In the postwar period exchanges tried to establish an international securities trading, however, it was mainly limited to servicing foreign clients by local brokers. Since the early 1980s there was the rise of the international movement of capital (which is primarily due to the formation on the global arena of such powerful players as transnational corporations and banks), the needs of which went far beyond that of the currency exchange, but also needed to attract capital from the world in form of long-term investments and loans.

During this period various documents had been adopted that would facilitate the convergence and integration of capital markets, but their practical implementation blocked not only the lack of technical solutions, but also the processes taking place within the Union itself, which was growing primarily due to the adoption of the new EU members rather than by eliminating internal contradictions. In the intervening years it has become quite apparent the existence of barriers that have been through various SMI national models. These obstacles hindered the rapid development of internationalization and globalization of world capital markets in general and the EU in particular.

This situation has led to the emergence in 1989 of the report of the Group-of-30, work on which started long before [17]. The report pushed the world's major players to address pressing issues of mass stock market. Thus began the current stage of SMI development not only in the EU, but also globally. Since its beginning in the EU a number of key documents that regulate and stimulate its development were adopted. First of all, thanks to a breakthrough in the development and liberalization of telecommunications and computerization of SMI gained momentum to accelerate the bidding, turning them into massive real-time acceleration of clearance on securities and cash settlement and accounting. Solving technical issues made massive trade real, but putting on issues of information disclosure and regulation of SMI in the same real time.

The **stimulated priority development** can also be associated with a more clear definition of objectives in the founding documents of forming a single market for services components of EU SMI, which by this time was not vital. Maastricht Treaty in 1992 introduced a single market, which is freedom of movement of goods, **capital**, people and **services**. It then began active steps towards the integration of the EU financial services market, the implementation of which relies on SMI. In 1998-1999, the European Commission adopted an Action Plan for the formation of a single financial market, with main focus on SMI [8]. The key motive was the desire to minimize transaction costs in interstate movement of capital within SMI and reduce the cost of capital, which should enhance the competitiveness of companies and the economy of the EU (which was established by the Lisbon strategy for 2000-2010).

2.5. CONVERGENCE OF CLEARING AND SETTLEMENTS

In 2004, the EC has identified as the main priority the formation of environment of clearance and settlement of securities across the EU, which should be effective and safe [13]. Federation of European Securities Exchanges, the European Association of Central Counterparty clearing houses and the European Association of Central Securities Depositories in November 2006 to improve the efficiency and integration have adopted the Code of Conduct on clearing and settlement to be applied for post-trade services in trade of ordinary shares [15]. Although the EU Directive on markets in financial instruments [14] provides a right of access to post-trade space of regulated markets and investment firms in the EU, later in June 2007 the above-mentioned organizations issued a Directive on access and interoperability of systems [9], which does not contradict the first and complements MIFID. The main areas that are defined in the Code of Conduct on clearing and settlement, transparency of prices and services, access and mutual operability, unbundling of services and accounting separation. The main stages (while we are interested in determining the sequence of priority of rules in practice) in the implementation of the Code of Conduct on clearing and settlement were the following:

1. price transparency (till end of 2006);
2. access and interoperability (mid 2007);
3. separation of services and accounting (end 2008).

Therefore it is considered that the provisions of the Code of Conduct on clearing and settlement fully implemented in the EU.

2.6. SETTLEMENT SYSTEMS INTEGRATION

May be the last, but not the least is integration of settlement systems. It was rational to implement the settlement systems integration as it is being used by all sectors of economy, but not only securities or other financial actives trading.

Before the introduction of the euro there were a large number of settlement systems, while in each EU country they are usually managed by the central bank. Priority, that was identified at the base of the Eurosystem, was to ensure financial stability, followed by the formation of an integrated European stock market. To this end, the TARGET project was launched, the implementation of which was carried out in three stages [29]:

1. combination into a single network of systems for wholesale interbank payments real time for the Eurosystem TARGET (1999);
2. creation of a single common platform for cash payments within the Eurosystem (TARGET-2-CASH) (2007);
3. creation of a single common platform for trading in securities for the subjects of the European stock market (TARGET-2-SECURITIES) (2014).

The main factor behind rapid integration of financial markets in EU was development and reliable operation of large-scale money transfers in real time TARGET. In order to minimize the technical requirements it was created simply as a network of mutual exchange of financial information between the settlement and payment systems of the euro area on the basis of the harmonized protocol SWIFT. In November 2007 the payment system “TARGET 2”, which replaced the TARGET, was introduced in EU.

The next step in the evolution of the project was the creation of TARGET-2-CASH (T2C) – technological platform that allows participants of financial markets operate with only single virtual bank account that integrates all operations. Modern T2C new system holds the largest market share both in volume and number of remittances: 91% of the total in 2011 (89% in 2009) and 60% of total payments, going through all the large-scale payment system [11]. In 2011 the annual payments amounted to 612.9 trillion. euros, which is 3.3% lower than in the previous year. Pretty slow going recovery after falling 19% in 2009. In 2006 there was also a launch of the design f settlement system of trade of all stocks and bonds in Europe TARGET-2-SECURITIES, which should take effect in approximately 2014.

2.7. THE RESULTS OF FINANCIAL MARKET INFRASTRUCTURE INTEGRATION

Efforts takes for financial market infrastructure integration in the EU for the last 5-6 decades have brought about results that may be measured and analysed. One of the best ways to see it in a short paper like this one is to use the table that has been offered by European Central Bank experts for the in the euro area (Table 2.1). It also may give us the picture of the total results financial market integration in the EU at that moment.

Table 2.1 State of financial integration in the euro area: overview of the main financial segments in 2008 [12]

Market	State of integration	Related infrastructures
Money markets		
Unsecured money market	"Near perfect"	Uncollateralised money market: fully integrated
Collateralised money market	Advanced	Collateralised money market: cash leg fully integrated; collateral leg hampered by fragmentation
Bond markets		
Government bond markets	Very well advanced	Fragmented
Corporate bond markets	Fair	Fragmented
Equity markets	Low	Highly fragmented
Banking markets		
Wholesale activities	Well advanced	Fully integrated
Capital-market related activities	Advanced	Fragmented
Retail banking	Very low	Highly fragmented

Thus some financial markets are advanced or near perfect in integration and tend to have integrated infrastructures, but many are still low in integration with fragmented infrastructures. Unfortunately there is a lack for data for EU in total. Anyway the UK and other economies do stand in line with most global trends and in some cases may be the leaders. So the group of EU countries outside the euro area may bring some more fragmentation to the financial markets as transaction costs and the need for the infrastructure for these transactions is a bit more complicated.

In one of our next research papers we'll try to investigate the fragmentation of stock market operations on the basics of the following picture. This analysis may change the view on the state of integration of bond and equity markets.

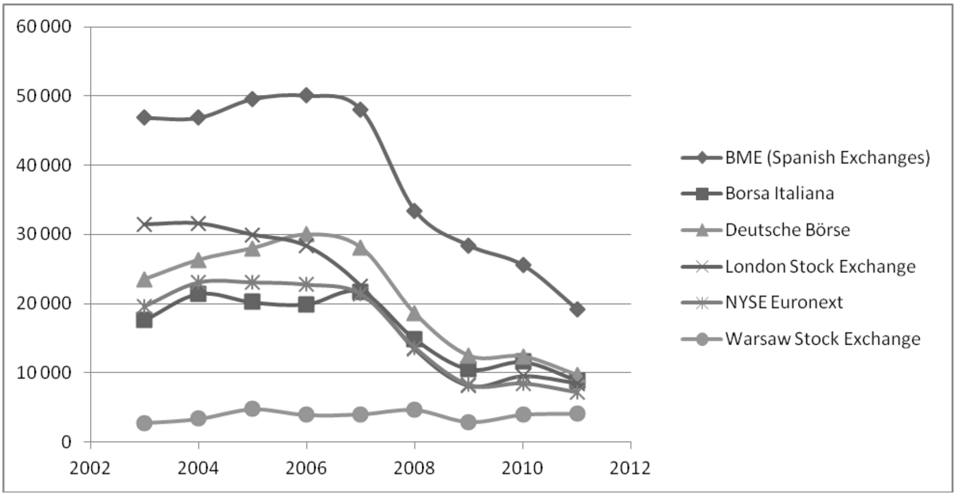

Fig. 2.1. The dynamics of the average transaction values since 2003 to 2011 on the largest EU stock exchanges, EUR

The picture gives us the view that there is some active processes within organized equity and bond markets. Different approaches to test the presence of convergence of stock exchanges by the average transaction size indicator shell be used for that research.

2.8. CONCLUSIONS

Finally we may name the following steps of stock market infrastructure consolidation: 1) horizontal consolidation within national markets; 2) vertical consolidation on national level; 3) transnational mergers and acquisitions; 4) emergence of supranational markets; 5) transatlantic consolidation; 5) global consolidation. Looking at stock market infrastructure consolidation from the point of view of state regulation we find the following 3 basic steps: 1) spontaneous overtaking development (XII century – 1957); 2) period of transition (1957-1989); 3). Stimulated priority development (1989 till now).

Clearing and settlement systems consolidation was really prompt but well-prepared in the steps: 1) price transparency (till end of 2006); 2) access and interoperability (mid 2007); 3) separation of services and accounting (end 2008). Settlement systems integration started from 1) combination into a single network of systems for wholesale interbank payments real time for the Eurosystem TARGET (1999); then deepened into 2) creation of a single common platform for cash payments within the Eurosystem (TARGET-2-CASH) (2007); and now expects 3) creation of a single common platform for trading in securities for the subjects of the European stock market (TARGET-2-SECURITIES) (2014).

At the moment infrastructures for unsecured money market, collateralised money market and wholesale banking markets activities are considered to have high level of integration. However, government and corporate bond markets, equity markets, capital-market related banking activities and retail banking still expect fragmented infrastructures to consolidate and integrate within EU.

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