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Clearing Systems of Central and Eastern Europe, waiting for the TARGET2 Securities

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Clearing Systems of Central and Eastern Europe, waiting for the TARGET2 Securities

Abstract: I investigate the clearing systems in Europe, and try to assess the condition of clearing houses before the launch of TARGET2 Securities. I examine the levels of development in the different regions, looking at how we can interpret the core-periphery relationship. I give an overview of the ancillary systems and I examine which of these could provide a basis for the operation of TARGET2 Securities. I also reflect on the kinds of clearing practices prevalent today in areas outside the EU.

I try to summarize the significance of the first connection wave, why and how the countries follow each other. How is it possible that Euroclear, the most famous clearing house only step is only planning to enter the system in a second wave, although it plays a central role in the European settlement processes?

I assess whether the countries left out have to face a lag or real separation, or it is a simple ancillary way to join to the whole European system. Another very interesting question is whether joining the T2S is a real choice, or growing up to the European financial system is a necessary process.

I make a detour in the direction of the characteristics of the Polish, Czech and Hungarian clearing systems, I show the settlement activity of Bulgaria and Albania. I will discuss desires, hopes and visions, the possible advantages of the new settlement platform, the factors and ideas that have promoted the process of joining T2S. I examine adaptive strategies that were created to offset the impact of the crisis. I shed light on whether globalization exerts pressure in the direction of clearing houses becoming universal, or specialization and fighting for a market gap will continue.

Which fields are unexploited? How can we find growth potential? Can the cheap labor force and Internet-based communication abolish the geographic differences? Is it all the same where we operate a clearing house? By any chance can we see an Americanization process in the clearing sector? (SWIFT-roots, English correspondence standards, common language for work, first of all English)

To answer these questions, first of all I use the clearing house announcements and operating documents and I accomplish secondary statistical analysis using historical databases.

Keywords: TARGET2 Securities, clearing houses, financial standards

Finance Centers Today

The world's financial centers are characterized by migration and a continuous alteration of decline and prosperity, the 'financial map' of the Earth is in constant motion. While Babylon, Rome and Athens were the financial centers of ancient times, Venice became the center of trading in securities by the 1300s. With the upswing of commerce, financial development was unstoppable throughout Europe, and as a result, financial infrastructure also began to develop. In Europe, the first stock exchange was established in Belgium (Antwerp) around 1531¹, and the biggest clearing house was founded by the Exchange Bank of Amsterdam in 1609², making the city a financial center. The first modern banking clearing house was created in London in 1773, followed shortly afterwards by the first clearing house of the US in New York in 1853.³

The world wars were also important watersheds, resulting in a significant reordering of capital and financial markets almost worldwide. A new phase of development is around the 1960s and 80s, but even more significant is the rapid development of the 2000s.⁴

Constant competition for capital keeps the financial markets of the world in motion, as the flow in and out of FDI (foreign direct investment) can significantly increase economic growth, and help international trade. An adequate tool for the comparison of financial markets is the Global Financial Centres Index, which is very popular today and takes into account the following factors: population, business environment, reputation, access to market, infrastructure and competitiveness. In this ranking, a maximum of 1000 points can be achieved, which is naturally just a theoretical level, and even the most developed financial centers achieve lower.

According to the above aspects, the financial world is ruled by the leading four of London, Hong Kong, New York and Singapore, while Europe is coming up thanks to Paris, Frankfurt, Vienna and Milan. Unfortunately, while the developed European region is strengthening its position, Budapest and Athens are declining in the financial respect.

¹ <http://www.investopedia.com/articles/07/stock-exchange-history.asp>

² <http://www.answers.com/topic/clearing-house>

³ <https://www.mint.com/blog/investing/the-history-of-the-stock-market/>

⁴ http://unipub.lib.uni-corvinus.hu/1098/1/kg_2012n4p81.pdf

Tóth Éva Alíz: A globális pénzügyi központos világgazdasági szerepének változásai (*The Changing Roles of Global Financial Centers in the Global Economy*)

In the ranking list, Prague takes place 61 (611 points), Warsaw is 63rd (608 points), Budapest is 78th (541 points), Tallin is 71st (589 points), St. Petersburg is 74th (585 points), Moscow is 65th (606 points).⁵ Based on the forecasts, Turkey, Qatar, China and South Korea are expected to move forward and strengthen their financial positions.

Regarding their stock exchange and financial role, Prague, Warsaw, Tallin and Budapest have a local scope, they are local specialists. Warsaw is a Local/Established player, while Moscow is a global emerging market.

The operation of clearing houses and depositories – as well as stock exchanges – is always connected to the capital cities of the countries in question (Budapest, Tirana, Prague, Warsaw, Sofia, etc.) In most cases, this is where the first financial centers will form, too, and there were no major migrations during the course of history in terms of the clearing houses. The role of geography is decreasing in setting up clearing houses, but it is important to note that the financial centers established by this day still have a leading role, and large scale migration in hope of cheap workforce is not expected. While multinational banks show a tendency to outsource their activities, the back office departments to a region with cheap workforce, this is not typical of clearing houses. Clearing houses require a relatively stable set of employees in the long term, with the exception of a few major development phases. The present transition to T2S can also be seen as an expansion period. Apart from this, however, as far as their activities are limited to a national scope, it does not require a foreign branch office or division.

Waves of joining the TARGET2 Securities

1st wave (June 2015): Switzerland, Romania, Malta, Italy, Greece (Romania and Malta may sound surprising, but as they are small markets, with a relatively small number of trading partners, migration and joining are easier to implement) approximately 16%⁶ of the whole market is expected to adopt T2S.

It will be the small markets that join in the first round, which will provide a good testing opportunity, and any early problems with the system can be amended. Clearing partners in these countries are likely to be able to adapt to the new infrastructure and the developments.

⁵ The Global Financial Centres Index 13 2013 March

⁶ http://www.keler.hu/keler/keler_files/File/TARGET2-Securities/2012_12_13_Tfax_hirlevel_csatolmany/2012_12_13_ugyfeltajek_t2s_nug_hirlevel_v2.pdf

2nd wave (March 2016): Portugal, the Netherlands, France, Belgium with two clearing systems, which means around 37% of the market.

No major amendments are expected in this phase, the expansion is relatively large scale, and suitable for testing the capacities of the system as well. Those who join in this phase do not expect major surprises.

3rd wave (September 2016): Austria, Denmark, Germany (Clearstream Banking), Hungary and Luxemburg with two clearing houses.

The situation of Hungary is not easy: in addition to creating the conditions of joining, the Central Clearing House and Depository has also set the aim of changing its whole system of accounts, which is a huge task regarding the many applications by different developers being in operation now.

4th wave (February 2017): Spain, Slovenia, Slovakia, Lithuania, Latvia, Finland, Estonia, Belgium Bank of New York Mellon.

The third and fourth waves comprise the remaining 47% of the market, and hold the accession of such definitive actors as the most established clearing partner in the domestic market, Clearstream and Euroclear.

One might ask why the decisive market actor, Euroclear is not among the first to introduce T2S-t. Euroclear aims at the rationalization of its activities and their reorganization according to the new framework. Its goal is to support the institutions that intend to join both in case of direct and indirect accession. It is important that it decreases and manages uncertainty for its partners, thereby increasing the trust of its clients.

Based on its extensive network and partnerships, Euroclear opted for gradual accession, so that it can accommodate smoothly to the changes. Therefore Finland is only joining in the 4th wave. Helping and preserving partners, offering professional support is a priority, as Euroclear provides access to 44 markets through its infrastructure⁷, and is an active member of a number of working groups. It is worth mentioning that by way of its pseudo monopoly, Euroclear can set the prices in the field of international clearing. An interesting question is how this will affect the T2S pricing. The introduction of the new system creates a new context for the principles laid down in the MiFID, e.g.: best place, best price, best execution, etc.

⁷ <https://www.euroclear.com/dam/PDFs/Corporate/MA2859-making-T2S-easy.pdf>

The clearing systems of Central Europe

	Poland	Czech	Slovakia	Rumania	Albania	Bulgaria	Hungary
first stock exchange	Warsaw Mercantile Exchange 1817.	Prague Commodities and Stock Exchange founded in 1871.	1991. Bratislava Stock Exchange	Bucharest Stock Exchange 1882.	Tirana Stock Exchange 1996.	1907. first provisional stock exchange	1864. Budapest Commodity and Stock Exchange
present stock exchange	Warsaw Stock Exchange 1989.	Prague Stock Exchange 1990.	1991. Bratislava Stock Exchange	1995.	Tirana Stock Exchange 2002.	Bulgarian Stock Exchange 1997.	Budapest Stock Exchange 1990.
central depository	National Depository for Securities (KDPW) 1991./from 1994 independent	Central Securities Depository Prague 2010 . (earlier 1993. Register)	Central Securities Depository of the Slovak Republic 1992.	2007. Central Depository	no central depository	Government Securities Depository (GSD) 1992, Central Depository AD 1996.	1993. KELER
electronic payment system	KIR SA 1991./ 2004 ELIXIR	1992/1993. CERTIS	1993.SIPS	2005. TransFonD/SENT	2005.AECH	1992. BISERA	1989. GIRO
RTGS	1993. SORBNET (own developed, no SWIFT-based)	Czech Express Real Time Interbank Gross Settlement system 1993.	2003. BIPS	2005.REGIS	Albanian Interbank Payment System 2005.	2003. RINGS	1999. VIBER
STEP1	X	X	X	X	X	X	-
EURO1	X	X	X	X	X	X	-
TARGET (1999.)	X	X	X	X	X	X	X
TARGET2 (2007.)	2008.	-	2009.	2011.	-	2010.	-
TARGET2 Securities	-	-	February 2017.	22. June 2015.	-	-	28. November 2016.
domestic payments	10:30-16:00	-	7:00-17:00	8:25-15:40	8:30-15:00	8:30-16:00	8:30-16:30
RTGS payments	7:30-16:00	-	0:00-16:00	8:00-16:00	8:30-16:15	8:00-17:30	8:00-16:30
securities settlement	5:30-18:00	-	8:30-15:00	8:30-17:45	no central depository	8:00-18:00	8:00-18:00
equity settlement	T+3 (T+2 from October)	T+3	T+3	T+3	T+3	T+2	T+3 (T+2 from October)

Table 1. Summary

Source: table prepared by the author

⁸ http://www.bankofalbania.org/web/Aotomated_Electronic_Clearing_House_System_AECH_2497_2.php; Bank of Albania AECH, download: 09.25.2013.
<http://www.investbulgaria.eu/a/about-bulgaria/economy/financial-system.html>; Bulgarian FinancialSystem, download: 15.02.2014.
<https://www.ecb.europa.eu/pub/pdf/other/ecbbbluebooknea200708en.pdf>; Blue Book 2007. August ECB, download: 11.15.2013.
http://www.nbp.pl/badania/konferencje/2011/egov2011/download/egov2011.pl_kir_presentation.pdf; Krajowa Izba Rozliczeniowa S.A. (the KIR), download: 15.02.2014.

The above table is a good overview of the clearing systems in operation today, prior to the introduction of the T2S, and of the time spans between the introduction of the different RTGS systems. Of course the table does not say much in itself, as the separation of Slovakia and the Czech Republic and accession to the EU obviously resulted in a number of changes in the clearing structure of Europe.

Despite the fact that Romania was relatively late in introducing an RTGS system, it enjoys the benefits of introducing a developed system that had been tried and tested in the market. On the other hand, the Polish clearing house started off with a disadvantage in EU harmonization, as they had to transform the system developed by themselves in order to join the TARGET.

Albania is in a very different situation from the rest of Europe with its transitional, and as yet immature system. Its National Bank has offered clearing services since 1997, but its electronic clearing system has been in place since 2005 only. It has no central depository, the banks fulfill the functions of deposit management and depository. Today, its banking system comprises 16 commercial banks in addition to the central bank. These are overwhelmingly foreign banks, 14 of the 16 being ancillary banks of some large international bank, e.g. Raiffeisen, Credit Agricole, etc.

In Bulgaria, the entry of foreign banks to the market was limited until 1996, this is part of the reason for the financial underdevelopment. A unique characteristic is that there are two securities clearing systems in Bulgaria, the Government Securities Depository (GSD), which started its operation in 1992, and the Central Depository AD (CDAD), which launched in 1996. RTGS⁹ based clearing (RINGS) has been in operation since 2003, securing the final clearing of payments in the whole country. Its specialty is that the system calculates net amounts while in operation. VIBER transactions are realized within an hour, the system uses a SWIFT based standard in line with international norms. Bulgaria uses correspondence banks for cross-border payments, and it operates a SWIFT system. These transactions are usually realized within 3 days, this clearing period is relatively long.

Surprisingly though, other international money transfer systems are also successfully gaining ground in Bulgaria, we can find the services of Western Union, Moneygram, Xpress Money, Exact Transfer and Travelex in the market.

⁹ Real Time Gross Settlement

These are the general characteristics common to the countries of Central and Eastern Europe (naturally, we find exceptions everywhere): centralized financial infrastructure with a central depository, a stock exchange, an RTGS system and a retail clearing system in operation. Their stock exchanges are local, they trade in local instruments, and the volume of trading is not really significant on an international scale. It is also a result of the late launch of development that they use 'imported' clearing systems.

Stock exchange turnover tendencies (not a complete overview)

The securities markets of the Central and Eastern European region are essentially underdeveloped, in many respects falling behind the west. The reasons for this are in part the transitional state of the financial infrastructure on one hand, and the lack of knowledge and shortage of capital on the other hand. The disadvantages of the late financial development cannot be compensated overnight. As the capital markets of these countries are small, the events of the world market have a significant influence, and changes in one region have quick reverberations in others.

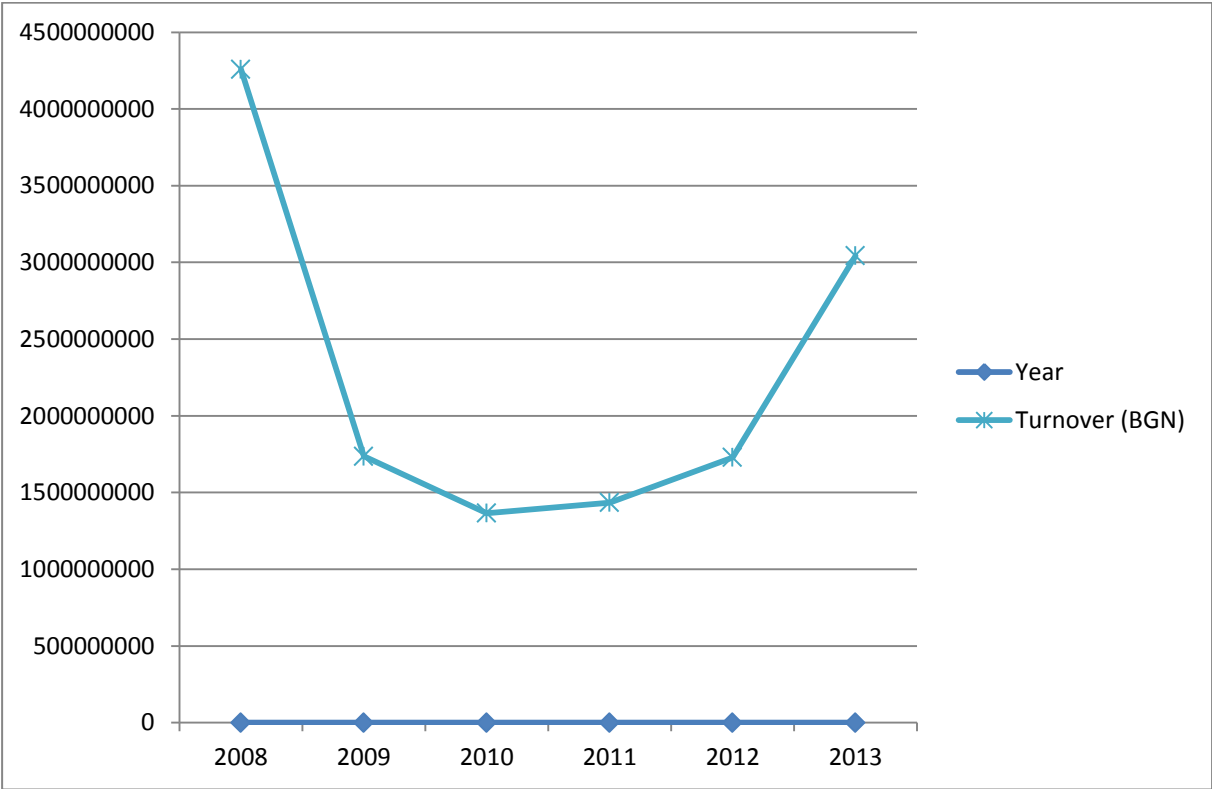


Table 2. Tendencies in stock exchange turnovers between 2008-2013m based on the data of the BSE

Diagram prepared by the author
 source: <http://www.bse-sofia.bg/?page=AnnualStatistics>

The diagram demonstrates that the stock exchange turnover fell to one third as a result of the financial crisis, and although the volume of trading has been increasing dynamically since then, it still has not reached the level before the crisis.

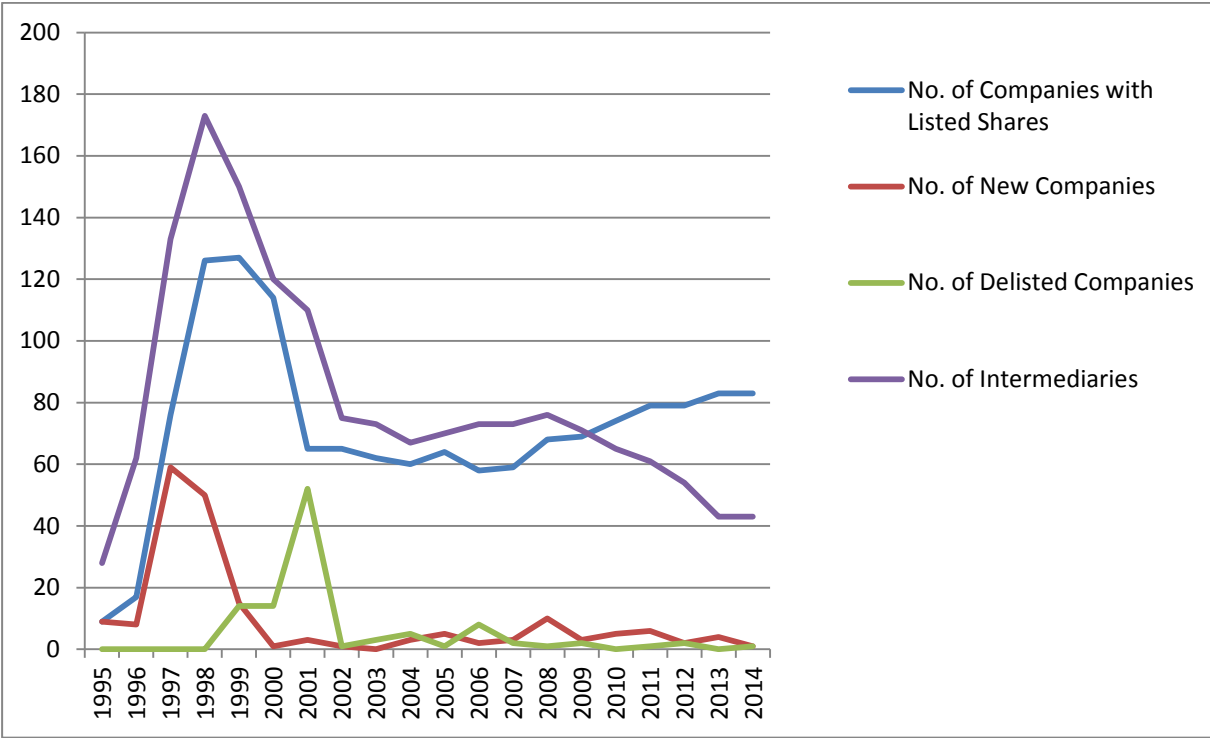


Table 3. Number of stock exchange traders in Romania between 1995-2014

Diagram prepared by the author

source: <http://www.bvb.ro/TradingAndStatistics/GeneralStatistics.aspx>

The above figure demonstrates the principle that the market is clearing as a result of the crisis, a number of companies terminate their operation. It also shows the shallowness of the securities market, with a small number of service providers covering the local market. The significant decrease of the volume of trading and the drastic decline of the number of intermediaries may render accession to the T2S unnecessary, but it may also take the place of local clearing systems, making domestic depository systems unnecessary. If the turnover is low, mutually replaceable systems will not be operating side by side for long.

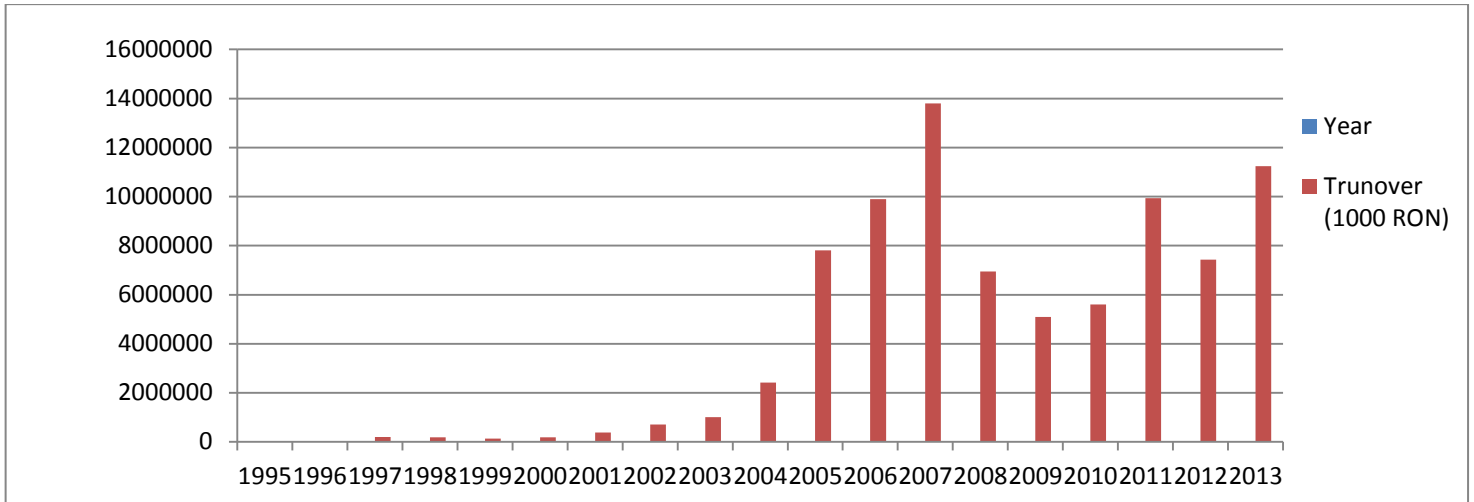


Table 4. Tendencies of stock exchange turnover in Romania between 1995-2013

Diagram prepared by the author

Source: <http://www.bvb.ro/TradingAndStatistics/GeneralStatistics.aspx>

Stock exchange turnover in Romania is almost exactly the same as that in Bulgaria, a significant decline, and today's turnover does not reach the volume before the crisis.

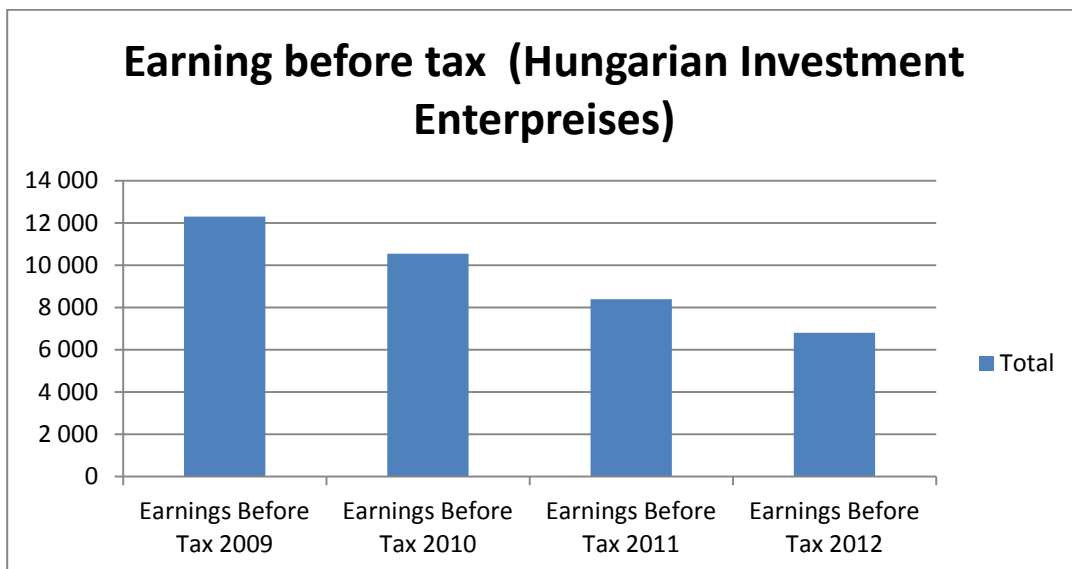


Table 5. Earnings before taxes of Hungarian enterprises between 2009-2012

Figure prepared by the author

(based on the data of the *PSZÁF Aranykönyv*¹⁰ 2009, 2010, 2011, 2012)

¹⁰ comprehensive data issued yearly by the Hungarian Financial Supervisory Authority

In the case of Hungary, the previous years also brought a significant decline in the lives of investment enterprises. In the above period, only 17 companies were operating continuously, and the earnings of these decreased almost without exception.

Stock exchange turnover in Slovakia shows a slightly different picture, but basically it is also the case here that the turnover of the past years has not reached the level of 2009.

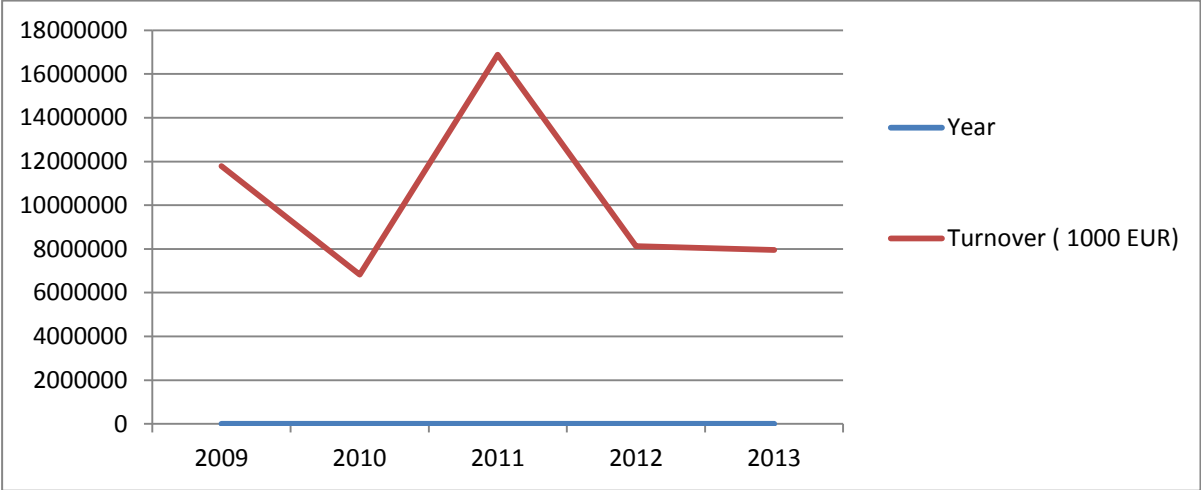


Table 6. Turnover of the Slovak stock exchange between 2009-2013

Figure prepared by the author

Source: <http://www.bsse.sk/bcpben/Statistics/Monthly/Year2013/tabid/1249/language/en-US/Default.aspx>

Problems, areas to develop

Countries of Central and Eastern Europe are dominated by universal foreign banks, the securities market is shallow, financial culture awaits development. The dominance of commercial banks leaves little room for intermediaries, and retail investments only comprise a small part of stock exchange turnover. The loosely structured clearing systems do not favor the spread of international share and securities transactions, due to the current high transaction costs. If the T2S meets the expectations, it may bring a positive change to small countries in this respect. Without an upswing in the securities market, further companies are expected to be closed down, and the number of investment enterprises will decrease further.

As a result of the crisis, demand for structured products has increased in Hungary. Service providers aim to make their investment services attractive by customized products. Fund management providers are trying to acquire more clients by launching specialized funds, as investment funds are increasingly popular among small investors. Meanwhile, financial service providers aim at exploiting their existing resources and capabilities, as the funds

available for development are scarce. In order to increase efficiency, several employers put an emphasis on the training of employees. We find examples for language education in the workplace, trainings, continuing education or rotation within the organization almost everywhere.

The Central Clearing House and Depository of Hungary (KELER) has clearly voted for investment, it tries to keep pace with more developed financial regions, but the outcome of the enterprise is still a question. The direction is good, but the development of the infrastructure is insufficient in itself, the liberalized clearing house market also requires a changed attitude, and success may lie in flexible, highly qualified workforce and open-mindedness.

Expectable changes related to T2S

The T2S brings a number of new features to the lives of clearing houses, I will just highlight a few of these here. Clearing partners may see it as an advantage that clearing times will be longer: instead of the present 5 PM, the deadline of daytime DVP clearing will be 7 PM in the harmonized T2S. As a result of the harmonization, data exchange and clearing between partners will be more simple. Government paper and shares transactions were filed in different systems in many countries, this will be unified from now on. Cross-border payments will be accessible via T2S, and dedicated money accounts will support the management of liquidities.

The current, often loosely structured systems and combinations of subsystems will be replaced by a unified platform for managing deposits, securing liquidity and securities loans.

The development of the Collateral Highway might be the biggest advantage of the system, as securing monetary securities, deposits is one of the most critical processes for clearings today. The centralized management of securities and the realization of cross-border transactions may significantly accelerate processes for partners. The decrease of cut-off time issues resulting from time zones will probably lead to increased customer satisfaction.

The layered account model is also an improved service compared to former solutions, as it enables the separate management of underlying client accounts, and different accounts can be assigned to different service levels. All these together with the centralized management of company events may be a good reason for joining the system.

Accession to the TARGET2 Securities is voluntary, clearings can also be completed through the existing RTGS systems and correspondence banking connections, we still find countries in Europe which are not planning to enter the system. This is not necessarily a disadvantage in the short term, but it is still worth considering the possibility of joining in the long term, because if the EU is progressing towards a banking union, the use of the unified common platform may bring a number of facilities.

Clearing houses with universal or specialized activities – which is the future?

Although the technical terminology does not currently differentiate between universal and specialized clearing houses, I will make an attempt at highlighting distinctions within the present structure.

The universal activities of the clearing houses include: securities deposit management, DvP, DvD, PvP, RvP, FoP based clearing, clearing of OTC transactions, prompt, forward transactions for both stock and commodity exchanges, gas and energy market clearings, CO₂ clearing, originating and terminating securities issue of ISIN for securities issued domestically, dematerialization, account management, collateral management, management of company events, bookkeeping for share trading, freezing securities and money.

Specialized or other special services, which can be a source of competitive advantage: operating clearing subsystems for investment units, counseling (not present in Hungary yet), customized conditions, tax support, risk management support, central data utility service (authentic data from a reliable source), training, e-learning, (not present in Hungary in the banking and clearing house segment), cash correspondent database, central depository database.

Convenience functions: „billing portal”¹¹ online account history, controlling and monitoring accounts, which is still not widespread in Central and Eastern Europe as yet. Special supplementary services can usually be found in international clearing houses, no wonder they are always a step ahead of the competitors.

The development of clearing houses bears several signs of globalization, e.g. SWIFT based message standard and the use of the English language. International clearing houses

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http://www.clearstream.com/ci/dispatch/en/listcontent/ci_nav/6_customers/050_resources/010_billing/page0_pr_o_billing.htm

increasingly step to a transnational level, and embrace whole regions and groups of countries with their services. They not only aim to harmonize clearing, but also seek to coordinate tax regulations. By developing a standardized fee structure, they secure freedom from discrimination, and by free entry they promote competition.

In the meantime, a certain degree of regionalization is also found: EU-centered financial regulations, the spread of the XETRA, the incorporation of EU principles and regulations into domestic systems. Member states redesign not only their international systems, but also their domestic clearing platforms according to international guidelines. The framework of domestic financial life is subordinated to EU regulations to a large extent.

Germany has no domestic electronic clearing system,¹² the emergence of transnational clearing houses may be a new level: whether they voice this concern or not, the small national clearing houses feel endangered, they may become unnecessary once the clearing partners use an international clearing house. They usually try to defend themselves against this by development, the launch of new systems, new platforms, the development of human resources, the provision of more tailored services, the design of customized conditions. An indispensable condition for this is a smoothly operating account and partner management system, which is also suitable for filing and managing individually tailored, customized conditions.

Staying outside the T2S is by no means isolation, this is not possible in today's divergent clearing structure, where almost every country has its own RTSG system operating by SWIFT standards, which means that the possibility of accession is given for all regions.

Unexploited areas: in the case of small countries, cross-border transactions are clearly the sources of development, given that while the former structure met the domestic needs, a concomitant of development is that wealthier clients today tend to turn towards foreign products and stock exchanges. The T2S may create an opportunity for strengthening the product range and the simplification of clearings, which would open up growth potential for smaller financial intermediary companies in international securities trading, which has been costly up till now.

Of course, an indispensable condition for this is the development of financial culture, the spread of online trading systems. Those who would also like to trade themselves need fresh,

¹² https://www.bis.org/publ/cpss105_de.pdf

up to date information, real time rates 24 hours a day. Investment enterprises with small staffs have no resources for this, but this is something that should also be given some thought. The enterprises that are competitive today in Hungary are those that have some specialized range of products or can reach a wide range of products on international markets through their partners.

Harmonization of supervisory data provision is still ahead of us, although the system is in continuous formation. A good indicator of the change is the introduction of BASEL III¹³, and EMIR¹⁴ in 2014, the appearance of the MAD¹⁵ and the MIFiDII¹⁶, and the data content of the supervisory reporting tables that change year after year.

There have been no significant changes in the field of cross-border clearings, separate statistics will probably to be made of clearings performed through the T2S, but for now, what we have is national level statistical data provision towards financial authorities. The current data provision infrastructure and regulations is not mature enough to be managed at the EU level, but all the recent guidelines are oriented in this direction. A number of changes were made in Hungary, too, in the past few years, data provision is increasingly focused on the EU level and outside the EU.

The main objective in the field of data provision is the filtering of duplications, the introduction of unified reporting standards, also at a technical level today. Unified regulation and harmonization induces debates in many areas, including the issue of High-frequency trading (HFT), Position limits and trading restrictions for commodity derivatives, Organized trading facilities (OTF).

In sum, we can say that there are some exciting yeas ahead of Central and East European countries as regards the capital and clearing house market. Clearing houses and financial enterprises invest time, money and energy trying to keep pace with western competitors. However, their situation is not easy, they have a disadvantage not only with regard to the availability of capital, but also with respect to financial culture and infrastructure.

¹³ BASEL III Capital rules

¹⁴ The Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties (CCPs) and trade repositories (TRs) (EMIR)

¹⁵ Market Abuse Directive (MAD)

¹⁶ Markets in Financial Instruments Directives

Supplement 1.

Tendencies in stock exchange turnovers between 2008-2013m based on the data of the BSE

Year	Turnover (BGN)	Transactions
2008	4258253765	779 178
2009	1735997348	398514
2010	1365883162	219476
2011	1434046879	218520
2012	1728076853	137710
2013	3043543513	174138

Supplement 2.

Number of stock exchange traders in Romania between 1995-2014

Year	No. of Companies with Listed Shares	No. of New Companies	No. of Delisted Companies	No. of Intermediaries
1995	9	9	0	28
1996	17	8	0	62
1997	76	59	0	133
1998	126	50	0	173
1999	127	15	14	150
2000	114	1	14	120
2001	65	3	52	110
2002	65	1	1	75
2003	62	0	3	73
2004	60	3	5	67
2005	64	5	1	70
2006	58	2	8	73
2007	59	3	2	73
2008	68	10	1	76
2009	69	3	2	71
2010	74	5	0	65
2011	79	6	1	61
2012	79	2	2	54
2013	83	4	0	43
2014	83	1	1	43

Supplement 3.

Turnover of the Slovak stock exchange between 2009-2013

2013		2012		2011	
Month	Turnover (EUR)	Month	Turnover (EUR)	Month	Turnover (EUR)
12	667 387 096	12	436 254 455	12	923 101 083
11	667 387 096	11	611 889 591	11	1 365 929 481
10	470 234 333	10	493 498 499	10	1 239 202 523
9	472 775 543	9	466 325 370	9	594 010 071
8	354 099 145	8	358 817 268	8	594 010 071
7	452 395 190	7	500 229 453	7	1 584 137 002
6	1 421 254 996	6	951 044 570	6	1 584 137 002
5	812 817 269	5	358 817 268	5	2 112 702 920
4	732 156 329	4	900 959 934	4	1 779 103 427
3	576 063 203	3	1 095 334 735	3	1 850 164 089
2	655 472 398	2	1 060 741 949	2	2 015 099 007
1	673 019 651	1	893 387 613	1	1 241 451 597
	7 955 062 249		8 127 300 705		16 883 048 273

2010		2009	
Month	Turnover (EUR)	Month	Turnover (EUR)
12	527 770 014	12	1 360 247 802
11	352 267 029	11	845 143 975
10	677 074 927	10	1 091 366 739
9	594 236 800	9	1 559 389 007
8	327 990 896	8	851 949 702
7	466 394 454	7	319 931 276
6	499 236 799	6	663 595 487
5	646 178 539	5	883 617 110
4	329 997 865	4	542 739 626
3	309 652 524	3	491 533 978
2	1 044 640 014	2	1 353 953 674
1	1 044 640 014	1	1 831 148 521
	6 820 079 875		11 794 616 897

Supplement 4.

Earnings before taxes of Hungarian enterprises between 2009-2012

Investment Enterprise¹⁸	Earnings Before Tax 2009	Earnings Before Tax2010	Earnings Before Tax2011	Earnings Before Tax2012
AEGON Magyarország Zrt.	3	33	32	10
BUDA-CASH Brókerház Zrt.	616	343	746	124
CODEX Tőzsdeügynökség és Értéktár Zrt.	4	-8	45	26
CONCORDE Értékpapír Zártkörűen Működő Rt.	1 084	1 351	952	216
EQUILOR Befektetési Zártkörűen Működő Rt.	196	131	185	146
Erste Befektetési Zrt.	4 762	4 234	3 107	2 928
HUNGÁRIA ÉRTÉKPAPÍR Zrt.	83	47	53	16
HUNGAROGRAIN Tőzsdeügynöki Zrt.	15	20	-9	-15
iFOREX Befektetési Szolgáltató Zrt.	42	-10	-106	38
PLANINVEST Bróker Zrt.	56	40	43	47
QUAESTOR Értékpapírker. és Befektetési Nyrt.	137	100	10	184
QUOTE MTF Zrt.	-40	-146	-23	-118
Random Capital Broker Zrt.	36	-42	3	104
REÁLSZISZTÉMA Értékpapír-forgalmazó és Bef. Zrt.	10	0	-9	2
Solar Capital Markets Értékpapír Ker. Zrt.	-21	10	25	-115
SPB Befektetési Zrt.	-1	5	-26	15
STRATEGON Értékpapír Zrt.	20	23	57	-18
Total	7 002	6 131	5 085	3 590

¹⁸ Data of the investment enterprises entering the market and being terminated during this period, based on the data of the *PSZÁF Aranykönyv* ('Golden Book', comprehensive data issued yearly by the Hungarian Financial Supervisory Authority)