

Development Prospects of Banking Sector in Central and Eastern European Countries in Terms of Financial Integration

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ABSTRACT

This study examines banking transformations in Central and Eastern Europe (CEE) under conditions of economic liberalization, dependence between economic development of countries and efficiency of their banking systems. The comparative method and methods of economic-mathematical modeling were applied. Considering the positive correlation between financial structure and economic growth, confirmed by literature findings, the development of the financial sector can become a crucial factor in convergence for the new EU members. Analysis revealed lower depth of financial sector in Central and Eastern European countries region in comparison to the Eurozone, but higher efficiency and growth rates. Regression models confirmed the significant causality between financial sector expansion and economic growth of CEE countries, but extremely high foreign market shares in the banking sector of region create prerequisites for financial shocks transmission through contagion channel in case of economic instability in the countries of banks' origin.

Keywords: CEE banking sector, Efficiency, Financial integration, Foreign bank ownership, Contagion risk.

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Perspectivas de desarrollo del sector bancario en los países de Europa Central y Oriental en términos de integración financiera

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RESUMEN

Este estudio examina las transformaciones bancarias en Europa Central y Oriental (ECE) en condiciones de liberalización económica, la dependencia entre el desarrollo económico de los países y la eficiencia de sus sistemas bancarios. Se aplicó el método comparativo y los métodos de modelización económico-matemática. Teniendo en cuenta la correlación positiva entre la estructura financiera y el crecimiento económico, confirmada por los resultados de la literatura, el desarrollo del sector financiero puede convertirse en un factor crucial de convergencia para los nuevos miembros de la UE. El análisis reveló una menor profundidad del sector financiero en la región de los países de Europa Central y Oriental en comparación con la Eurozona, pero una mayor eficiencia y tasas de crecimiento. Los modelos de regresión confirmaron la existencia de una causalidad significativa entre la expansión del sector financiero y el crecimiento económico de los países de Europa Central y Oriental, pero las elevadas cuotas de mercado extranjeras en el sector bancario de la región crean las condiciones necesarias para la transmisión de los choques financieros a través del canal de contagio en caso de inestabilidad económica en los países de origen de los bancos.

Palabras claves: Sector bancario de la CEE, Eficiencia, Integración financiera, Propiedad de bancos extranjeros, Riesgo de contagio.

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1. Introduction

One of the most noticeable trends of global development is the steady growth of the depth of financial globalization and its impact on national economies development. In terms of scale and pace, financial globalization is much ahead of globalization processes happened in the real sectors of national economies. The disparity of world financial and economic development in XXI century becomes more noticeable due to the emergence of new centers of international financial capital accumulation in different types of countries, including emerging markets economies. One of the key features of financial globalization in 1990 was the significant inflow of foreign capital, first of all FDI, in banking sector of emerging markets economies.

Impressive was the transformation of many banking systems in Central and Eastern Europe (CEE), which have undergone major transformations over the past two decades firstly, as a consequence of the transition from a centrally planned economy to a market economy and, secondly, due to their European integration, characterized by the harmonization of regulation with EU standards, and by the access to European capital market (Gallizo et al., 2019). Financial integration and structural transformation of the banking system of CEEs countries has led to the expansion of Western European banking groups' presence in the region.

Today, there is a strong consensus that a well-functioning financial sector is a prerequisite for efficient resource allocation and full use of economic growth potential. Although there is still debate about the exact relationships between financial and economic sectors, and, in particular, its quantitative relationship, a large body of empirical literature has found a causal link between financial integration and economic growth. Financial integration helped to improve the financial stability in national economies by providing funds, establishing high quality risk management and technology in financial markets, capital inflows boosted competition on local markets (Fischer, 2008). On the other side, the development of financial globalization has led to the increasing impact of external factors, especially related to the outflow and inflow of short-term foreign capital, on national economies. Moreover, economic problems in some countries began to spread through the "contagion channel" to other regions. As a result, due to the influence of international investment flows the problem of strengthening domestic financial cycles arose. The "boom" in the national financial systems is enhanced by the influx of foreign capital, and a subsequent fall in asset prices leads to an outflow of foreign investments.

2. Literature review

Baele et al. (2004) define the financial integration using a single set of rules for financial instruments, equal treatment in the national market and free access to financial services). In Kutasi (2014) the dimensions of financial integration by the regulator and by the community of the industry were differentiated. The market dimension indicates cross-border comparability and competition of yields, loans and assets. The regulatory dimension defines the single rules and single licenses. The community dimension is about the industrial level harmonization in technology and standards in a united market. Bekaert et al. considers the primary role of institutions and financial markets is to allocate capital efficiently, that is, to allocate funds to the investment projects with the highest marginal product of capital (Bekaert et al., 1998). The level of financial integration depends on country-owned factors, such as economic performance, the differences in the industrial structure between the global and the national markets, and on the level of financial convergence with other economies (Babenko et al. (2020), Ramazanov et al. (2019)).

The level of financial integration in the banking sectors of CEE countries is extremely high (Fischer et al., 2008). As socialist system collapsed in Eastern Europe in 1989, the countries of the region began the unprecedented transition from their highly centralized economies to market-dominated economies (Podgorna et al., 2020). Following the political, social, economic changes, and several banking crises, the post socialist countries opened up their banking market to foreign owners and their state-owned banks were privatized by foreign investors. Financial institutions from nearby Germany,

Austria, Hungary, and Italy expanded their activities significantly. Due to this development, countries in CEE have become a region where the financial environment is ahead of the trend with an abundance of cross-border provisioning of financial services and cross-border ownership of banks (Horvatova, 2018). Building a sound banking system, “a process that took hundreds of years in Western Europe and decades in Japan is being telescoped into a few years in Central and Eastern Europe and the Former Soviet Union” (Rostowski, 1995). The gradual liberalization and privatization of the banking sector enabled foreign investors to buy into national banks at different times and in various ways, often as controlling shareholders. Such large-scale foreign bank ownership in ECE stemmed from a combination of post-communist banking crises, EU enlargement, and international institutional pressure (Epstein et al. (2017), Yakubovskiy (2020)).

As Jokipii et al. (2020) wrote, in the 2000s CEE countries encountered similar structural problems during the development of their banking systems, they generally lacked capital and banking skills, and political intervention in the activities of state-owned banks was persistent. As a result of the widespread privatization and restructuring, the structure of the financial sector has changed significantly. The first phase in the transition was an increase in the number of private banks, as the government-owned banks transferred their commercial activities to newly created commercial banks. The second phase consisted of a period of major restructuring, asset clean-up and large-scale recapitalization that foreran the privatization programs (Felice et al., 2006).

The impact of foreign banks on host economies has been discussed for a long time. On the one hand, foreign banks that operate in host economies under global networks of international banking (affiliates or branches) have contributed to enhancing the efficiency, competitiveness, and stability of the financial systems in host economies (Jeon et al., 2013). The overall trend towards international banking in part reflects the effects of growing portfolio shares in the emerging market economies, rather than universal changes in business models (McCauley et al., 2010). At the same time, there is evidence that during the Asian and the 2008-2009 financial crises foreign financial structures have become an important transmission channel of risk from one region to another (Caporale et al. (2016), Rodionova et al. (2019), Yakubovskiy et al. (2019)). Internationalization of banking activities is related to the magnitude of credit cycles and that foreign banks export shocks in their home countries to their host markets (Giannetti et al., 2012). Given the size and penetration of western European banks in Central and Eastern Europe, the supply of credit to firms and consumers may be sensitive to shocks that these borrowers would otherwise be spatially insulated from Popov et al. (2012). So countries of CEE can be highly exposed to risks and shocks transmission due to the ownership structure of their banking sector in case of crisis events (shah and shaikh 2011).

3. Data and methodology

Countries of Central and Eastern Europe are currently on the similar stage of macroeconomic reforms, banking sector depth and institutional development. CEE countries possess well-established EU-regulations, relatively low wages and high rate of growth. These transformations have led to a narrowing gap between countries of EU and CEE. In financial structure of countries banking sector is predominant, meanwhile non-banking intermediation and capital markets play insignificant role.

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In 2018 the M2/GDP ratio, used to measure savings mobilization capacity, stood at 66% on average, against 90% in the Euro area, which is the evidence of CEE financial sector low depth (World Bank, 2020). Even bigger is the difference between the size of intermediation markets. Stock market capitalization is on the low level. Ratio of Market Cap/ GDP is 27 % in CEE on average, in two times lower than in Euro area, equity markets remain illiquid and faces rough competition from their European counterparts. In Slovenia, Slovak Rep. and Czech Republic, opening of stock exchange

coincided with process of privatization, that led to high amount of delistings, as companies demonstrated low performance and necessary government regulations and standards were not implemented. But Poland, Croatia and Hungary created financial infrastructure and legal basis before the launch of trading, as a result their stock exchanges are currently on higher level of development.

Table 1: Macroeconomic and banking key figures

Country	M2/ GDP (%)	Domestic credit/ GDP (%)	Bank assets/ GDP (%)	Market Cap/ GDP (%)
Czech Republic	84.3	52.1	61.2	17.3
Poland	68.3	52.6	70.1	27.4
Hungary	60.0	32.9	54.3	18.3
Slovak Republic	65.4	61.8	68.4	4.8
Slovenia	58.6	43.2	59.0	13.4
Bulgaria	86.4	51.2	60.8	14.3
Croatia	73.8	55.7	82.7	33.6
Romania	40.3	25.9	36.6	7.6
Euro area	90	86.9	n.a.	54.7

Source: calculated using World Bank (2020)

The structure of CEECs financial sector is based on banks, like in many western European countries, that is confirmed by the fact that nearly 80 % of total financial assets are bank assets. Despite banks playing central role, their performance is on low level: on average, the ratio of domestic credit/GDP in CEEC countries comprise about half of Euro area indicator. Bank assets/GDP ratio fluctuate from 36 % in Romania to 82 % in Croatia, but demonstrates growth trends.

Table 2: Banks and other financial intermediaries' figures (in %)

Country	Debt/ GDP	Mutual fund assets/ GDP	Bank deposits/ GDP	Pension funds' assets/GDP
Czech Republic	32.7	8.08	69.5	8.83
Poland	48.9	7.9	55.7	9.06
Hungary	70.8	17.25	45.5	4.29
Slovak Republic	50.9	7.79	53.1	11.7
Slovenia	70.4	6.2	55.1	6.96
Bulgaria	18.6	1.38	67.7	12.5
Croatia	74.1	5.62	63.3	26.4
Romania	35.1	2.78	31.6	4.84
Euro area	87.9	n.a.	81.2	10.9

Source: calculated using World Bank (2020)

At the beginning of new century, institutional investors started the expansion across the region, pension funds and insurance sector laid the foundations for their further development and achieved high growth rate almost having the same performance, as Euro area.

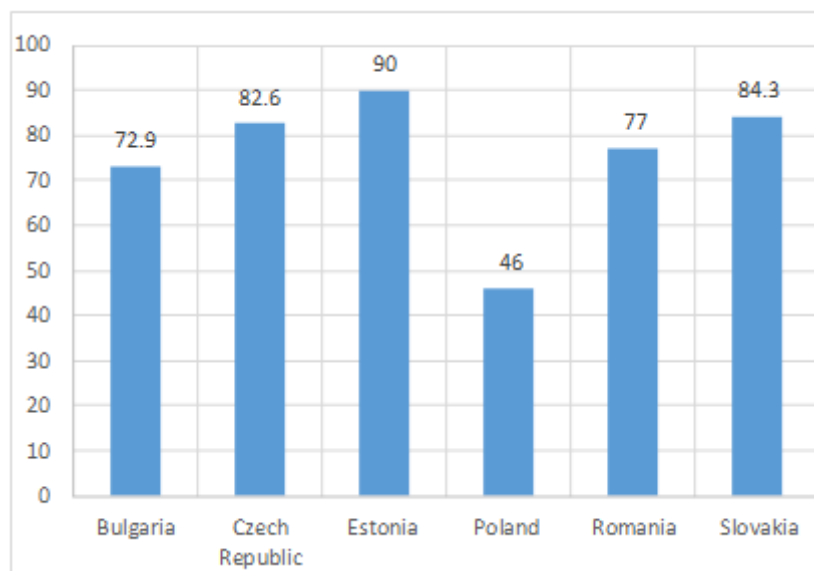
Analysing debt/GDP and bank deposits/GDP (table 2), high ranges from 31% in Romania to 69% in Czech Republic, in comparison with 81% in the euro area can be noted. Gap in indicators is one more confirmation of discrepancy of banking development, although values go up considerably.

4. Results

The biggest part of credit institutions providing activities in CEECs region are originated from the EU countries. The prevailing form of all cross-border operations in CEE countries has subsidiary character. Today a new form of activities has developed within a region- it's called "branch office". Their balance sheet totals usually have smaller share and their key role is providing services for main customers or a certain target segment.

The share of banks' assets under foreign control (generally the largest banks in a country) as a proportion of total banking assets shot up in nearly all the countries (European banking federation (2019)). The Estonian banking sector is controlled by Scandinavian banking groups for 90%. About 77% of the Romanian banking sector assets were held by foreign institutions in 2017, a decline in comparison to the 91.3% in 2016. The only exception is Slovenia, the share of foreign investors assets was only 36%, as the liberalization measures aimed at the entrance of foreign banks to the Slovenian bank market were launched later in 1999.

Figure 1 Market share of foreign subsidiaries and branch offices in the banking sectors of CEE countries, % (built using European banking federation (2020))



Looking at the banking sector in the CEEC, one feature that is common for all of them is the high degree of concentration. Although this trend has decreased since 1995 for both deposits and loans, in the Czech Republic, Slovakia and Slovenia, over 50% of total banking assets belong to the three largest banks. In the more developed markets of Hungary and Poland, the same percentage is held by the five biggest banks. The most concentrated market is Croatia, where the top two banks own 43% of bank assets. This high degree of banking market concentration is caused by the small size of the countries and original monopolistic structure of their credit industries. This trend towards consolidation is expected to develop further through M&A activity, some countries' largest banks are already involved in takeovers not only on the domestic markets but also in neighboring countries.

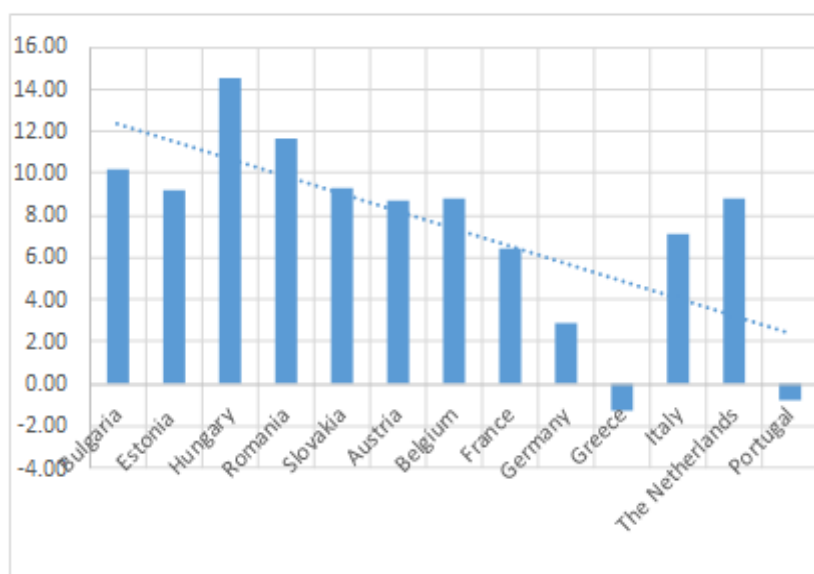
Difficulties in achieving growth on the rather highly-consolidated domestic banking markets, and obstacles to expansion on other EU markets drove many medium-sized and large banking groups towards the new eastern European markets. Privatizations offered EU banks a profitable opportunity to enter markets with high growth potential and they could easily develop a widespread presence in a short period of time. Therefore, it can be concluded that the financial sector has enormous growth potential connected to both economic convergence and a degree of financial services. Evidence indicates that political and economic stability, existing trade links, features of the host banking sector, and host country's attitude towards foreign institutions play an important role in directing FDI towards countries in transition (Papi (2020)). The high rate of profitability is demonstrated by return on equity

performance of CEE countries (Bulgaria, Estonia, Hungary, Romania), which surpasses ROE in the home markets of parent companies (Germany, Greece, Italy France).

In the recent years, financial integration through banking markets has started within the region as well. Certain CEE countries have some major domestic banks which are not owned by a foreign parent company. Among them are PKO BP in Poland, which is the outstanding example of strong credit provision, including the times of the global financial crisis.

The bank has also contributed to Poland's financial stability over the last decade (Horvatova (2018)). Hungary's OTP Bank comes closest to Poland's PKO in terms of credit and sustainability. But domestic banks in Latvia, Bulgaria, and Slovenia, as counter-examples, performed considerably worse for their national economies, having taken on too much risk, either before, during or after the US and Eurozone crises.

Figure. 2: Return on equity (%) by country in 2018, % (built using European banking federation (2020))



Liquidity management of subsidiaries is controlled by their parent banks. If we take a closer look at the liability structure of CEE countries, we can notice, that their share of foreign borrowings is quite high- 10-30 per cent of external liabilities. Parent bank loans constitute a large part of foreign loans. Centralization of borrowings is a common feature of banking groups, as parent banks have a better access to financial resources.

For measurement of bank stability and safety indicator Z-score is widely used. A higher score of this indicator implies a lower probability of insolvency and default risk, providing a direct measurement of bank soundness. The ratio is calculated as return on assets (ROA) plus capital asset ratio (CAR) for a given year divided by the standard deviation of the ROA (1).

$$Z\text{-score} = \frac{CAR + ROA}{\sigma(ROA)} \quad (1)$$

Countries with high bank capitalization and profitability, like Czech Republic and Slovak Rep. demonstrate higher Z-score indicator and prove the recovery of their banking system from 2008 crisis.

Despite rising performance, Poland possesses high volatility of ROA, so its Z-score is on the level of Bulgaria. In overall, all CEE countries have stable Z-score performance, creating attractiveness of banking sector for foreign investors.

International financial integration is commonly seen as an increasing economic efficiency and growth, but it may increase the probability of suffering from a systemic banking crisis by transmitting international shocks via bank balance sheets (OECD (2012)). The interbank market of the banking system has been regarded as the major channel for propagation of contagion risk (Keregero (2019)). Kalemli-Ozcan et al. (2019) find evidence consistent with the transmission of the recent crisis from

the U.S. to other industrial countries through cross-border banking linkages and a similar association between banking linkages and output synchronization during previous large financial crisis episodes in advanced economies, such as the banking crisis in Scandinavian states in the early 1990s. Boyd, De Nicolo and Rodionova (2019) assess the impact of safety net guarantees on the probability of a systemic bank shock.

Table 3: Z-score for CEE countries

Country	2013	2014	2015	2016	2017
Czech Republic	14.2	14.9	14.8	14.1	12.5
Poland	8.7	8.8	8.7	8.6	9
Hungary	5.9	4.6	6.6	8.1	7
Slovak Republic	18.6	18.6	17.8	17.7	17.5
Slovenia	3.4	3.4	3.9	4.1	4.1
Bulgaria	7.8	8.1	8.1	8.5	8.6
Croatia	5	5.1	4.5	5.4	5.2
Romania	5.7	4.2	6.6	6.6	6.7

Source: World Bank (2020)

Contagion risk (or systemic risk) – is the risk that financial troubles at one or more banks spread to a big number of other financial institutions or the whole financial system. Interconnectedness has been the main factor in acceleration of the crisis as difficulties of one financial institution quickly expanded to other entities. In the last months of 2008 a lot of markets remained dysfunctional for months as investors were kept away by uncertainty over the actual structure of risks (Palubnikos (1999)). Because of high level of financial integration in Central and East European countries, the financial contagion risk is high, as the turbulence in the economy of a parent bank directly affects its subsidiaries in the region and in the same way, a subsidiary facing problems can easily transmit problems to its home country. The likelihood and austerity of contagion risks are dependent on their relative level- whether it is idiosyncratic, country-specific, regional level or a global shock.

As foreign financial institutions are widely presented across CEE region especially in banking sector, their actions can have great impact on host countries. The dependency of CEE countries' economic growth on their banking system can be assessed using regression model. Constructing the regression model, the following indicators were selected: Bank assets to GDP ratio (BA), Return on Assets (ROA), Return on equity (ROE), Bank credit to GDP ratio (BC). The annual GDP of countries was used as a dependent variable. The following hypothetical model was formulated (2):

$$GDP = \beta_1 * BA + \beta_2 * ROE + \beta_3 * ROA + \beta_4 * BC \quad (2)$$

Table 4: Regression models for CEE countries

Country	Dependent variable: GDP
Czech Republic	0.391BA - 0.671ROE*+ 1.39ROA***+ 0.136BC
Poland	0.603BA** -0.150ROE+ 0.209ROA***+0.364BC
Hungary	1.636BA*** -0.826ROE*+ 0.780ROA*-0.907BC**
Slovenia	0.670*BA -3.843*ROE+ 3.995*ROA+0.324*BC
Bulgaria	0.994BA*** -0.357ROE***+ 0.509ROA-0.157BC
Croatia	-0.418BA -0.505ROE*+ 0.421ROA+1.272BC***
Romania	0.575BA*** +0.680ROE+ 0.154ROA**+0.477BC

***, **, *-1%,5%,10% significance levels correspondingly. Standardized beta-coefficients are presented.
Source: calculated using World Bank (2020)

After regression analysis it can be concluded that multiple correlations of model are high and the explained variable has a strong dependence on the selected set of predictors.

Table 5: Regression analysis for CEE countries

Country	Multiple correlation	R ²	F
Czech Republic	0.862	0.743	13.042
Poland	0.962	0.926	74.714
Hungary	0.946	0.894	38.065
Slovenia	0.897	0.805	18.525
Bulgaria	0.963	0.928	57.866
Croatia	0.947	0.896	38.921
Romania	0.908	0.824	62.748

Source: calculated using World Bank (2020)

The range of R-square is 0.74-0.92, which means that selected factors explain variable for 74-92% and F-criteria for all models is higher than the critical value, which confirms their significance.

Almost for all analyzed countries, relationships between GDP and the value of Bank Assets to GDP ratio, ROA and Bank credit to GDP ratio per country are positive, so with the rise of these factors by 1 st. deviation, GDP will grow by corresponding amount.

5. Discussion

Economic growth of countries depends on their banking sector, therefore the whole economic system of CEE region is relying on foreign banks and investors, as their market share prevails market share of domestic banks. This probability of high contagion direction-parent bank is explained by the fact of existence of a number of banking groups (e.g. Erste, Unicredit), with market shares of subsidiaries in CEE countries higher than 10 per cent. Hence, even an idiosyncratic problem at the parent bank can become a reason of problems in financial sector of subsidiaries' countries, therefore a general shock in a country of the bank origin brings even more severe consequences for CEE region.

At the same time, positive factor for the stability of banking sectors in the region is that financial investors in each country are representatives of several countries, so one-way causality is not inherent to any of these countries. Such diversification improves the level of stability and decreases the risks of infection for financial system. Also cross-border shocks become less possible, than it would be in the case of all investors originated from one country.

At the beginning of the 1990s, banking sectors in transition countries of Central and Eastern Europe had been in a relatively poor shape and significantly less efficient than their western counterparts. However, over the past decades, banks in Central and Eastern Europe have significantly improved their performance. At the same time, such a basic indicator as the ratio of money supply to GDP, which shows the financial depth of economies, for the CEE countries almost 27% lower than the average Euro area indicator. The same lag behind the average Euro zone indicators is inherent in the countries of the region in the ratio of domestic credit to GDP and market capitalization to GDP.

On the other hand, the ratio of debt to GDP in CEE countries is lower than the Euro zone indicator, which indicates greater financial stability of national banking systems in relation to internal shocks. For all of the CEE countries, the rate of return on equity is also high, which makes these countries still attractive for foreign investment.

Research results show the high degree of concentration in the banking systems of the CEE countries. In particular, in the Czech Republic, Slovakia and Slovenia, over 50% of total banking assets belong to the three largest banks. In Hungary and Poland, the same percentage is held by the five biggest banks. The most concentrated banking sector is Croatia, where the top two banks own 43% of assets of whole banking system. This high degree of banking market concentration is caused from one hand by the small size of the countries, from another by the origin of privatization process that was

based on the attraction of foreign investors. While specific approaches to the privatization varied from country to country, the resources and expertise required for consolidation were mostly provided by large Western European banks, in exchange for entry into these fast growing markets. As the total number of banks in those markets fell, reflecting the consolidation process, the share of assets owned by foreign banks increased significantly.

6. Conclusion

In terms of potential contagion risks, appropriate capital and liquidity allocation becomes increasingly important for the proper functioning of the whole banking groups' performance. Safety and regulation of bank operations should be provided for all participants within the group. Ensuring such conditions becomes more and more difficult, as the financial instability tends to grow and shocks across the international banking markets happen more frequently. In addition, it poses challenges for policy-makers in countries, whose aim is the achievement of stability in a sector, but often their actions constrain the functioning of banking groups and complicate the cross-border flows of funds.

Central banks should provide an equal access to bank liquidity for members of banking groups in different countries and establish terms and conditions for liquidity provision. Also, another problem arises, as examined countries of CEE region are not in the euro zone, so to finance foreign currency denominated loans, they need euro currency. Subsidiaries are usually provided with these funds by their parent banks, so their dependency on the home country resources is quite high.

Parent banks and subsidiaries are regulated by different supervisory authorities, so their alliance for work with financial risks and instabilities is quite difficult task and requires a lot of effort from both sides. Additionally, in order to assess the exposures of a subsidiary, the supervisor needs an access to the information of the whole banking group. Subsequently, the establishment of two directions - information exchange and improving the transparency between supervisors - should be achieved. The solution for this could be the creation of supervision authority body on the EU-level, responsibilities of which would be the control and assessment of cross-border activities of large banking groups. At the same time, the launch of such supervisory body should not constrain the financial authorities of different countries in their access to information.

Ministries of Finance of both parent and subsidiary countries encounter with the challenges of financial integration. There are not enough EU-level supranational funds and therefore allocation of a government bailout among banking groups with great share of cross-border activities is quite difficult task and presents a big burden for one country alone to finance. At the same time great governance influence within the banking sector create distortions and prevent the provision of equal conditions for all banking groups members' functioning. In order to avoid the situation with absolutely independent country-level solutions about banks regulation, the EU-level intervention authorities, whose decisions will take into account interests of all member states, should be developed and coordinated in the nearest future.

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