The Contribution of Banks towards the Formation of Capital Market Liquidity: the Case of Moldova

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The problem of low liquidity in the capital market of Moldova is addressed in several policy documents at the state level, noting that the low liquidity of the stock market has hampered the proper functioning of the domestic capital market and access to financing its means. In their view, improving the liquidity of the domestic capital market can be achieved through the active involvement of banks into capital market activities. In this article the phrase "banks" are envisaged licensed banks, and there is no reference to the central bank

Keywords: capital market, capital market quality, capital market liquidity, assesment of capital market liquidity, bank, financial assets-held-for-sale, financial assets-hel-for-trading.

JEL code: G12, G21, G23, G24

1. Introduction

As stated in the National Development Strategy 2012-2020 of the Republic of Moldova, also known as the "Moldova-2020", "the securities market[125] in Moldova has the characteristics of an emerging market: a limited number of issuing entities, low liquidity, a lack of public investments, a small number of investors, and reduced integration into international financial markets"[24, p. 23]. Taking into account the fact that in Moldova, on the one hand, financing the economy goes more through the banking system acting as a lender in the form of loans, and on the other hand - "the share in GDP of bank loans to the private sector constitutes about 35 percent, while deposits constitute about 45 percent of GDP"[15, p. 3]. it can be mentioned that the banks could boost the supply of capital to improve liquidity in the domestic capital market. This aspect determined the purpose of the research in the present article, which results from the actuality of the problem of bank contributions to the improvement of the Republic of Moldova's capital market liquidity. The following research methods were applied: analysis and synthesis, induction and deduction, graphic methods, comparisons, etc.

2. Methodological issues regarding the capital market liquidity as dimension of its quality

The interest of the international scientific community is quite wide, in terms of capital market liquidity and its importance to the efficient functioning of capital markets. As noted by Boehmer Ekkehart, Chava Sudheer and Tookes Heather (2011) [3], capital market liquidity is one of the indicators for assessing the quality of a capital market,. Insufficient liquidity is often cited as the primary obstacle to capital market development. Supporters of this statement are Bortolotti et al (2004) [4] who state that liquidity is the fundamental aspect in the development of a securities market (stock market). Later, in 2010, Hearn and Piesse [10] reconfirmed this statement.

[125] The National Development Strategy of the Republic of Moldova, approved in 2012 mentions the approach "securities market". Currently, in the Republic of Moldova, the approach "securities market" is equivalent to "capital market", the latter, being introduced into circulation by the Law of the Republic of Moldova on the capital market approved later, on July 24, 2012.

Formulating the concept of capital market size, Keynes, still in 1930, launched the concept of market liquidity, stating that "capital market liquidity incorporates key elements of volume, time, and trading expenses". This definition, as was later found, does not include assessing capital market liquidity with all dimensions. Later, following several studies, the definition of capital market liquidity was stated as "the ability to trade an asset in the short term, at low cost and with little impact on its price" [14]. Therefore, capital market liquidity should be analyzed in terms of its impact on the trading price of securities. This approach aligns with Schmukler, Van Hören and Yeyati (2007) [12], who define a liquid capital market "as one in which market participants can execute large volume of transactions promptly, without a significant impact on prices." Thus, they mentioned the determinants of capital market quality - liquidity and trading volume, or, to determinants of capital market quality are assigned and the concentration and pricing [25].

3. Assesment of capital market liquidity

Based on the definitions and comments presented, it may be stated that capital market liquidity can be considered through three dimensions:

- ***depth*** *(profoundness)* ***of market***, namely, the impact of high volume trading on price movements. An illiquid capital market would have a negative impact on traded asset prices;
- ***extension*** *(magnitude)* ***of market***, which can be described by the proportion of the market that participating in upward or downward movement in the price indices. In other words, market magnitude refers to the degree of market concentration. Hasbrouck (2003) argues that this concentration indicates the cost associated with trading or the cost of speed. The spread of supply and demand is an indicator used for determining the extension of the market, and thus this spread should be low enough to prevent excessive price movements;
- ***resilience*** *(elasticity)* ***of the market***, or the time necessary to achieve market balance in case there are significant price fluctuations. Such fluctuations are usually caused by either news feeds (normally, news reports) or by high transaction volumes. A strong or resistant market is a solid market in which market prices of assets return after a short period of time to the average or fair value. While the size of the market's "depth" targets only the volume of supply and demand's best prices orders, elasticity takes into consideration the elasticity of supply and demand. Dong, Kempf and Yadav (2007) [6] argued that the measures of elasticity show how quickly modified prices, related to high volume transactions, will return to previous levels.

Later, in 2004, Von Wyss [18] proposed that in addition to these 3 dimensions, another useful dimension of a market's liquidity is ***the time*** at which transactions are absorbed by the market. In a liquid market, transactions are executed with a minimum time lag. Assesing capital market liquidity by the rate of trading is accepted and used by IOSCO [19]. PriceWaterHouseCoopers LLP [20], consider that there is no single definition of capital market liquidity, hence the difficulty in sizing. The institution proposes using a set of essential indicators for assesing capital market liquidity, as shown in Figure 1.

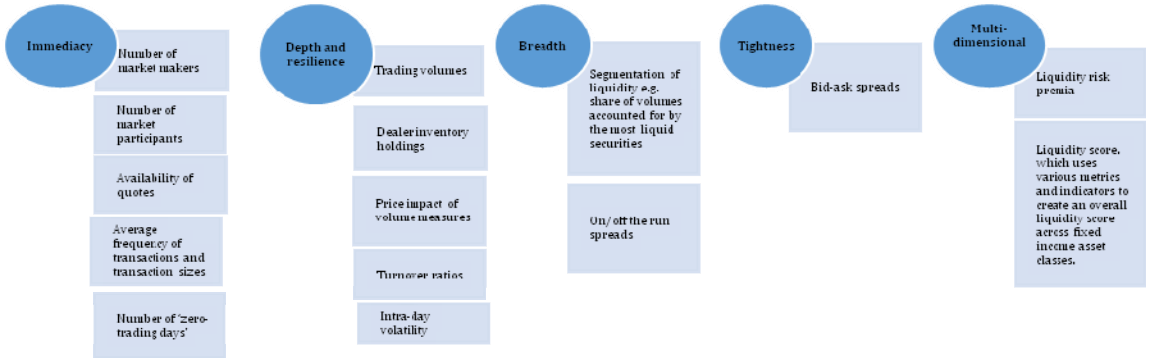

Figure 1. The dimensions of capital market liquidity and indicators which correspond with dimensions

Source: prepared by the authors based on source [19].

In Figure 1 it is shown that the capture and measurement of capital market liquidity is an extensive and complex task, as the spectrum of indicators is extremely vast.

It is clear from the aforementioned that the international scientific community is interested in the method of sizing the liquidity of capital markets. At the same time, we note that local researchers and institutions, are less trained in assessment, so and in researching capital market liquidity under different aspects of dimensions which usually reference to market capitalization [2] and [9]. This subject, namely methods to dimension the capital market liquidity, and possibilities for their increase, needs to become, according to authors' opinion, an important focus for local scientific researchers, as well as for institutions that form the policies for qualitative capital market development, and for the Republic of Moldova's economy as a whole.

4. Liquidity of the Capital Market of Moldova

Moldova's capital market liquidity is low. This observation is made in both the National Development Strategy "Moldova 2020", and in the research of Harcenco D. [9] and Biloocaia S. [2]. As noted above, capital market liquidity can be determined based on several indicators, however, because data on transactions (the parties involved and the price at which participants trade) are less transparent in Moldova, sizing capital market liquidity can be achieved only on the basis of several indicators. The most important indicator being the ration of transaction volume occurring on the capital market in GDP, or specialized sources state that this indicator is a preliminary step towards complete analysis of market liquidity. According to results obtained from analysis of indicator *the ratio of transactions in GDP*, it is observed that the liquidity of the Moldovan capital market is very low (see Figure 2).

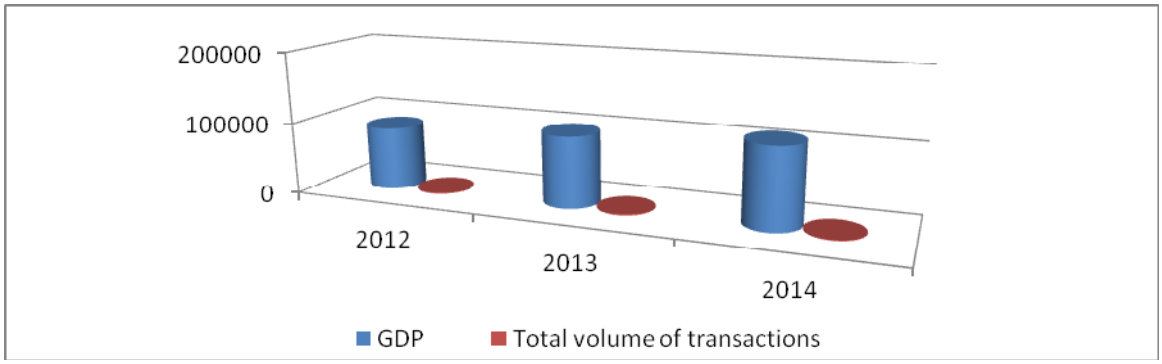

Figure 2. The volume of transactions made on the Republic of Moldova's capital market compared to GDP, 2012-2014, mil. MDL

Source: developed by authors based on sources [30] and [31].

From Figure 2, it is noted that in 2012 the volume of transactions on the capital market amounted to only 0.014% of GDP, increasing during 2012 to 0.017% of GDP, and decreasing to 0.011% of GDP in 2014.

Capital market liquidity increase, according to Strategy "Moldova 2020", and priorities on National Commission of Financial Market [30] can be achieved by increasing participation of institutional investors on capital market.

5. The contribution of banks to the formation of capital market liquidity in the Republic of Moldova

One of the factors with significant impact on capital market liquidity is the investment behavior of capital market participants. During the years 2012-2014, the period of reference in the given article, professional participants must be licensed dealers/brokers to perform transactions on the capital market[126]. Such a license was held by joint stock companies that carry out only professional activity on the capital market and banks that have a licensed dealer/broker. During the years 2012-2014, broker/dealer licenses were held by 22 professional participants on the capital market, of which 11, or 50%, were represented by banks[127] (see Table No. 2).

[126] Currently, under the current legal framework of the Republic of Moldova, the participants in transactions on the domestic capital market are represented by licenses holders of an "investment company".
[127] It should be noted that in the years 2012-2014, of the 14 banks in Moldova, only 11 had a broker-dealer.

Table No. 1.

The number of transactions performed by professional participants in the Republic of Moldova's capital market

No	Non-bank broker/dealer companies	Number of transactions			No	Banks as broker/dealer companies	Number of transactions		
		2012	2013	2014			2012	2013	2014
1.	Oldex JSC	238	150	152		CB"Victoriabank" JSC	140	161	134
2.	Fincom JSC	154	288	293		CB "Energbank" JSC	1	12	6
3.	S.V.M. Iuventus-DS JSC	160	33	38		CB "Eximbank Gruppo Veneto Banca" JSC	7	53	2
4.	DAAC-Invest JSC	524	140	706		CB "Banca de Finanțe și Comerț" JSC	84	30	3
5.	B.C. Proajioc JSC	503	297	278		CB "Banca de Economii"	79	24	18
6.	F.B. BrokWest JSC	118	103	149		CB "Moldindconbank" JSC	77	21	25
7.	Passim JSC	148	1	*		CB "Mobiasbanca Groupe Societe Genarale" JSC	27	10	8
8.	Broker M-D JSC	493	264	572		CB "Moldova Agroindbank" JSC	24	40	105
9.	Valinvest JSC	329	403	314		CB "Banca Socială" JSC	17	116	0
10.	Gest-Capital JSC	545	318	109		CB "Unibank" JSC	85	13	9
11.	Broker-Capital JSC	0	0	*		CB "Eurocreditbank" JSC	1	0	0
12.	Broking-VM JSC	*	39	19					
13.	Asito-Broker JSC	*	*	0					
Number of total transactions performed by non-bank broker/dealer companies		3.212	2.036	2.630	Number of total transactions performed by banks as broker/dealer companies		542	480	310
The ratio of number of transactions performed by non-bank broker/dealer companies in total number of transactions		85,6	80,9	89,5	The ratio of number of transactions performed by banks as broker/dealer companies in total number of transactions		14,4	19,1	10,5

Source: developed by authors based on source [29].

*Note: A company marked with * in the table do not held license in that year.*

According to data presented in Table 1 it may be noted that the number of transactions made by banks constituted about 17% of total transactions, representing as a share, a small percentage. Furthermore, the volume of transactions carried out by banks, or made through them (as broker/ dealers) in 2012 constituted 828,3 mil MDL (66,5% of total amount of transactions on the capital market), and in 2013 and 2014, the volume of transactions made by banks decreased to 733,3 mil. MDL (44,6%), and, respectively, to 558,25 mil. MDL (39,4% of total amount of transactions) (see Figure 3). Obviously, depending on the degree of commitment and the intensity of performed transactions contributed by banks (more or less) to the formation of liquidity in the domestic capital market.

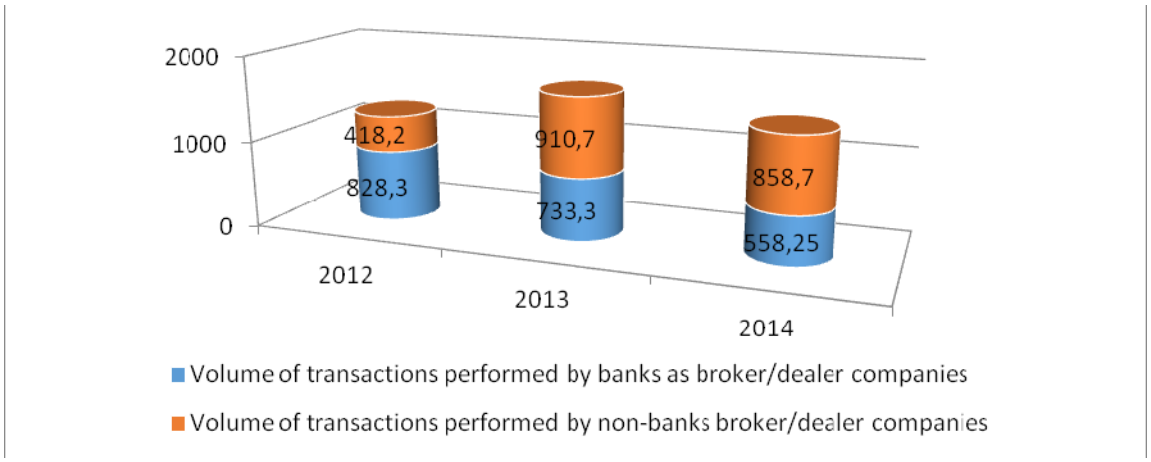

Figure 3. The volume of transactions performed by banks as broker/dealer companies and non-banks broker/dealer companies on the capital market of the Republic of Moldova during 2012-2014, mil. MDL

Source: developed by authors based on source [29].

Another way of determining the degree of bank involvement in the transactions can be carried out by applying the *Herfindahl-Hirschman Index* [13], which is usually used for sizing the degree of market concentration in order to establish the monopolistic or oligopolistic type of the market.

Thus, in result of the calculation of this index for 2014 (see Figure 4), it was observed that among the banks' professional participants in the Republic of Moldova's capital market, BC "Moldova-Agroindbank" (as a company broker/dealer) concentrated the largest volume of transactions. This was followed by 2 non-banking companies as broker/dealers, namely "Proajioc" JSC and "Broking" VM. In reference to the total transactions carried out by banks, from calculations performed by authors, it is observed that the Herfindahl-Hirschman Index is lower for companies of broker/dealer banks, which confirms previous statements referring to the low contribution of banks to the formation of liquidity on the capital market.

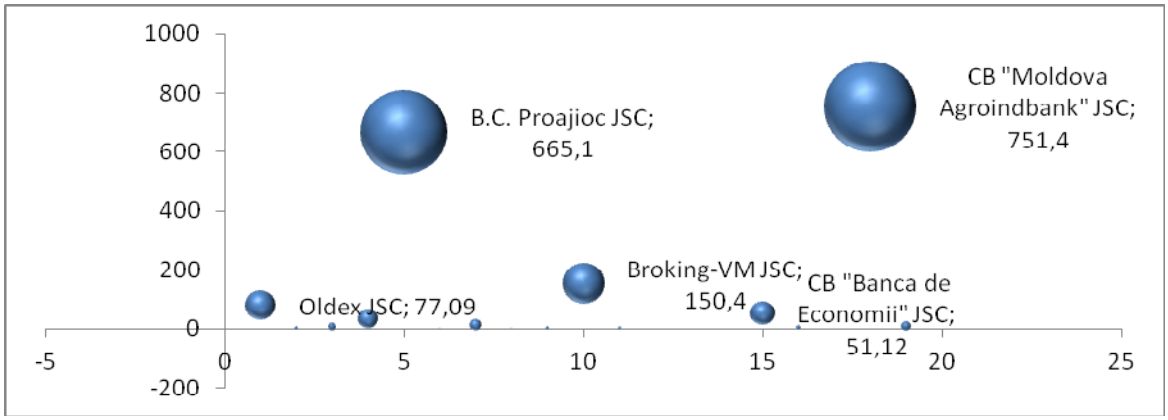

Figure 4. The degree of concentration of transactions volume performed on domestic capital market by banks and non-banks broker/dealer companies according to Herfindahl-Hirschman Index

Source: developed by authors based on source [29].

Analyzing the contribution of banks to liquidity formation on the capital market of the Republic of Moldova, in accordance with the indicator ratio in GDP of volume of transactions performed by banks, it is noted that this indicator is steadily decreasing: from 0.009% in 2012 to 0.007% in 2014 (see Figure 5).

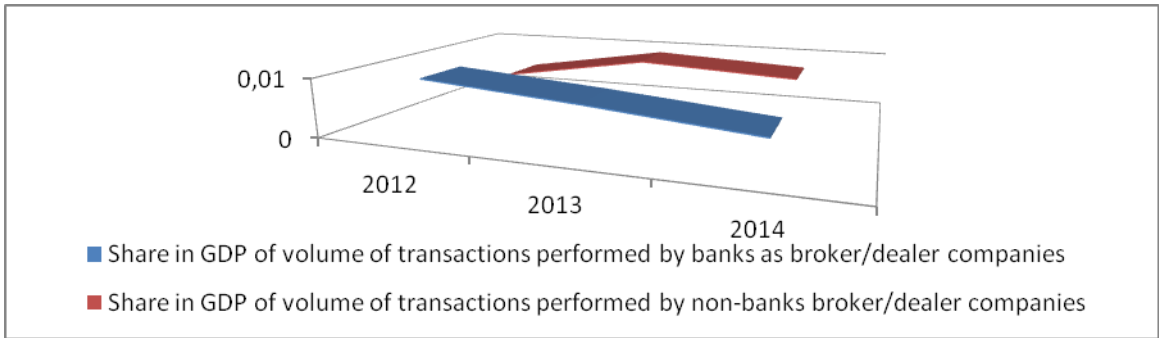

Figure 5. The share in GDP of volume of transactions performed by banks as broker/dealer companies and non-banks broker/dealer companies in the Republic of Moldova during 2012-2014, mil. MDL

Source: developed by authors based on sources [29] and [31].

Moldovan banks, according to international standards, hold financial assets for sale, financial assets for trading and investment held until maturity. It is noted that in the Republic of Moldova, as a results of studying the components of banks' balance sheets, the investments held to maturity are composed by state securities and, currently, are not subject of transactions performed on capital market. The state securities, compared to all securities that banks operating, recorded the largest share - about 5% of total assets (see Table No. 2).

Table No. 2.

The share of financial assets for trading, financial assets for sale and investments until maturity in the Republic of Moldova banking system' assets structure , 2012-2014

Indicator		2012		2013		2014	
		Absolute value, MDL	Share from assets, %	Absolute value, MDL	Share from assets, %	Absolute value, MDL	Share from assets, %
Financial assets for trading		185 243 073	0,318	173 454 635	0,2276	156 987 101	0,167
	Derivateives held for trading	0	0	2 556 483	0,00335	1 719 723	0,0018
	Equity instruments	0	0	0	0	0	0
	Debt instruments	185 243 073	0,318	170 898 152	0,2243	155 267 378	0,318
Financial assets for sale		340 869 622	0,586	495 271 568	0,65	451 502 793	0,48
	Equity instruments	315 928 789	0,543	468 712 008	0,615	417 161 986	0,44
	Debt instruments	24 940 833	0,0428	26 559 560	0,0348	34 340 807	0,036
Investments until maturity		3 406 656 563	5,86	3 815 548 512	5,007	3 988 635 574	4,25
	Debt instruments	3 406 656 563	5,86	3 815 548 512	5,007	3 988 635 574	4,25
Total Assets		58 168 487 331	100	76 190 117 616	100	93 909 150 222	100
Total Regulatory Capital				8 167 580 000		9 013 850 000	
Share of equity instruments held for sale in Total Regulatory Capital, %		No available data		5,74		4,62	

Source: developed by authors based on sources [27] and [28].

From Table 2 it is observed that financial assets which are held for trading consist of debt instruments and derivatives (since 2013). In the domestic banking system, the share of total assets in debt securities held for trading in 2014, was 0.318% and derivative securities - 0.0018%. The share in total assets of financial assets available for sale is higher, constituting 0.48% in 2014, and decreasing by 0.17 p.p. compared to 2013. Within the financial assets available for sale are included debt instruments, consisting of state securities and equity instruments. It is noted that the share of equity instrument (on domestic capital market exists only shares) in total assets in the domestic banking system is 0.44% in 2014 and is decreasing compared to previous years, by about 0,2%. Based on calculations by the authors (and shown in Table No. 2), it is indicated that the share of equity instruments, which is subject to capital market transactions, in total regulatory capital of the domestic banking system amounted to 4.62% in 2014 and to 5.74% in 2013. According to existing legislation [16], Moldovan banks may hold equities up to 50% of the total regulatory capital of the bank. Referring to the statement made by Sissoko (2014) [22] "institutions holding financial assets for trading by participating in trading, depending on the size and frequency of transactions, contribute to capital market liquidity." Thus, by analyzing the structure of assets which are held by banks in Moldova (see Table No. 2) it can be concluded that there are significant reserves of domestic banks to participate in the formation of capital market liquidity.

6. International practices on banks contribution to the formation of capital market liquidity

In order to determine the contribution of banks to the formation of capital market liquidity, as given in the article, a brief analysis was made of the investment and trading activity of banks in the EU capital market. EU banks are actively involved in trading activities on the capital market. This is seen by analyzing the assets of those banks' balance sheets. The share of financial assets held for trading, on average, in the EU banking system is typically below 10% (see Figure 6). Only in Germany and France were higher numbers observed, reflecting the market presence of large banks with significant financial investment and trading activities[6]. It is noted that in other countries, on the balance sheets of large banks, *the financial assets which are held for trading represent the biggest shares.*

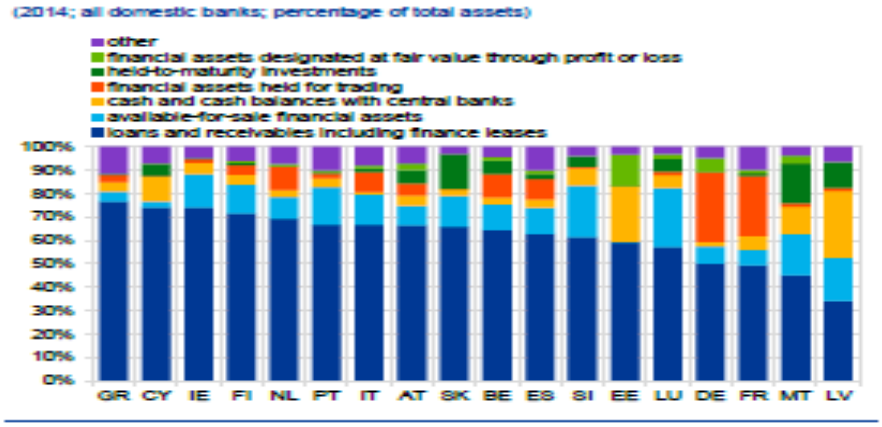

Figure 6. The structure of EU banks' assets in 2014
Source: [7, p. 29].

In response to reforms which separate banking activity, the banning of proprietary trading, etc., banks are likely to reduce their trading activities. In the post-crisis period, regulators have taken steps to protect financial markets by limiting the proportion of capital that can be invested by banks, which determined the decrease in the liquidity of the capital market. We note that, as a result of the crisis in 2007-2009, new rules were introduced on the holdings of financial assets for trading and, consequently, banks reduced their trading activities. In particular, stocks of financial instruments which were held to support market making activity, were reduced. Gross and net holdings in stocks of trading securities held by systemically important banks fell significantly during the global financial crisis in both the US and Europe (see figure 7).

Figure 7. Bank holdings of trading assets for a sample of 32 global banks during 2006-2012
Source: [20, p. 40].

From Figure 6 it is seen that the trading assets holdings by banks fell by more than 40% from 2008 to the present. The first crash in a post-crisis contraction of around 30% occurred in 2009, followed by a gradual reduction of 10% in the following years. This has been elucidated in a 2014 study by PwC, which showed that 90% of the universal banks have reduced or stopped proprietary trading [21]. While trading bans on banks should reduce the risk of suffering substantial losses, it will actually remove a source of forming liquidity on capital markets [20]. To confirm these given concerns, it was noted that trading volumes and transaction sizes have decreased, thus lowering the depth and immediacy of the capital market.

Easing the investment criteria, to some extent, for institutional investors, especially banks acting as financial intermediaries on the capital market (or broker-dealers), has been considered in order to help generate liquidity in the secondary capital market [20]. The argument for this is that banks hold inventories of bonds and/or shares they subscribe to and provide quotations on price.

7. Conclusions

Weak capital market liquidity is an important issue for the Republic of Moldova's capital market. Moldovan banks, having a universal character, have the right to carry on with their investing activities and trading on the capital market, but the extent of their activity is very low compared to the intensive trading and investment activity carried out by EU banks.

The low involvement of banks in trading activities on the capital market in the Republic of Moldova is conditioned not only by strict regulations which must be complied with, but also by the

reduced capacity of the domestic capital market to provide liquid financial and profitable instruments. We consider that banks from the Republic of Moldova, which accumulate considerable financial resources in the economy and redistribute capital, must reorient towards the capital market. A change in the structure of bank balance sheets in the Republic of Moldova, in order to increase the share of assets for trading, presents a challenge for local banks, though this would increase capital market liquidity in the Republic of Moldova, and subsequently improve its quality.

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