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THE CONCEPTUAL FRAMEWORK FOR THE OPERATION OF FINANCIAL SYSTEMS IN THE CONTEXT OF GLOBAL STRUCTURAL TRANSFORMATIONS OF BUSINESS MODELS OF BANKING

Tetyana Melnyk[1], Svitlana Melnychenko[2], Natalya Reznikova[3]

Abstract. The authors reveal fundamental tendencies of banks financial intermediation especially in the sphere of shadow banking and off-balance writes-off. Substantial transformations of financial system structure caused by liberalization of financial legislation, invention of brand new financial instruments and special risk-transferring schemes (special purpose entities via special investment vehicles) and the gradual process of banking universalization specifically the approximation of business models conducted by traditional commercial and investment banks created grounds for the review of current approaches to financial systems classification. *The objective of the study* is to identify operative patterns and specifics of financial systems in the context of global structural transformations of business models in the bank sector. *Methodology*. The methodological basis of the study is formed by theoretical works of foreign and domestic experts on issues related with financial systems worldwide, and the statistical data on the operation of banks in various countries, normative documents of prominent international economic institutions. The general scientific methods of analysis and synthesis, abstraction, quantitative and qualitative comparisons, descriptive analysis, analysis of the current performance of the financial system are used in elaborating theoretical and methodological framework for the typology of national financial systems by position and role played by banks in the financial system. *Results*. The central objective of the financial system is to transfer temporarily free financial resources from its actors that have their surplus to the ones that feel the deficit of funds. National financial systems can, therefore, be classified by the way domestic companies raise funds they need.

Key words: financial system, market-based financial system, bank-based financial system, liquidity risk, repo agreement, overnight credits, bank balance sheet, currency swap.

JEL Classification: G32, G21, H12

1. Introduction

Economic globalization processes have become a powerful catalyst aggravating financial and overall economic contradictions at the national and global level. Liberalization of the financial law in the leading countries of the world has enhanced interlinks and interdependences of financial capitals, thus triggering deep transformations in the financial transaction practices, resulting in the emergence of new financial instruments. "Financial revolution" of the last decade considerably strengthened the links between national economies and increased financial flows of short-term speculative resources, thus turning finance of our time into an unstable segment of the contemporary global economy. The volatility and speculative nature of cross-border financial flows make national governments exposed to international and external shocks. Given global structural transformations, financial intermediaries (banks in the first place) are forced to change conventional business models by use of innovative financial instruments, which opens doors to revisions of their functions in the economy. The need of companies in the financial sector to diversify risks resulting from the dissemination of financial innovations is closely linked with the financial system's capacity to adapt to structural transformations and face external and internal shocks. Therefore, the need to determine the impact of the financial system's structure on the dynamics of economic recovering is becoming even more significant, especially given the diversity of

Corresponding author:
[1] Kyiv National University of Trade and Economics, Ukraine.
E-mail: melnikknteu998@gmail.com
[2] Kyiv National University of Trade and Economics, Ukraine.
E-mail: melnichenko@knteu.kiev.ua
[3] Institute of International Relations of Taras Shevchenko National University of Kyiv, Ukraine.
E-mail: reznikovanataliia@gmail.com

approaches to analysis and understanding of the essence of the financial system.

2. Literature review

According to Ph. Callier, a financial system in a broader sense refers to the practical implementation of methods and mechanisms for financial intermediation within the economic model existing in a country (Callier, 1991). Specifics of various economic models by a group of countries (Anglo-Saxon, European, Scandinavian, and Islamic model) are associated with strong cultural and religious differences reflected in causal links between structural components of financial systems. It follows that a universal interpretation of the financial system has to account for a multiplicity of funds that can be used in various ways depending on economic models of countries and operative specifics of structural components of financial systems.

In works of B. Karpinskiy, V. Kolomoitsev, V. Senchagov, A. Gryaznova, finance is addressed mostly from the perspective of distribution and redistribution of the domestic GDP (Karpinskiy, Gerasimenko, 2003; Kolomoytsev, 2000; Senchagova, Archipova, 1999; Gryaznovoi, Markinoy, 2004). In works of Ukrainian authors, this approach is used to classify the models for the organization of financial relations by comparing the level of GDP centralization in countries with the market economy (Kravchuk, Gorin, Yasenovska, 2008; Oparin, 2004):

– American model: inconsiderable level of budget centralization of GDP (25–30%);
– Western European model: budget centralization of GDP makes 35–45%;
– Scandinavian model: high level of budget centralization of GDP (50–60%).

A controversial one still remains the issue of determining the components and the correlation of "building" and "structure" of the financial system. We can agree with Ukrainian authors N. Kravchuk, O. Mozgovoi, and V. Oparin (Kravchuk, Gorin, Yasenovska, 2008; Oparin, 2004; Mozgoviy, 2001) who identifies structural components with the internal building of the financial system according to the level, at which economic or financial relations occur.

It follows that the structure of financial system should not be identified with its building, as the financial structure is determined, first and foremost, as the model for the organization of the financial system, reflecting the structural hierarchy of its components. The above-given vision of the structure of the financial system conforms to the Western interpretation, by which the financial structure is the mechanism to administer various segments of financial activities, which, therefore, has the internal hierarchy.

In works of Ph. Callier, B. Bossone, and R. Schmidt, the financial system is addressed from the perspective of *the theory of modern institutionalism* (Bodie, Merton, 2000; Bossone, 1998; Schmidt, Hackethal, Tyrell, 2001; Schmidt, Hryckiewicz, 2006). It is argued that the financial system is a set of institutions, organizational structures, and bodies charged with the administration of financial relations in the economy. Finance is treated as a social institute, which principal purpose is to minimize transaction costs in exchanging obligations for real resources over time.

G. Schinasi and R. Schmidt emphasize that each chain of the financial system is its independent component but this independence is relative inside the integrated whole (Schmidt, Hryckiewicz, 2006; Schinasi, 2004). As a result, the financial system is defined as a set of diverse types of financial resources concentrated at the disposal of the government, non-financial sector of the economy (business entities), deposit institutions, financial markets, insurance and pension companies, stock exchanges, payment and clearing systems and population (households), to fulfil their conventional functions and satisfy economic and social needs.

The above definition of the financial system is quite common in economic literature but the absence of a single general concept and the diversity of theoretical approaches to the interpretation of finance and financial relations is a vital problem of modern economics.

The outlining of core operative specifics of the financial system enables for detailed analysis of its components but its integrative and universal definition has not been given by now (Bain, 1996; Buckle, Thompson, 1998; Newman, 1992), as it was apparently difficult to find out economic backgrounds, components, and boundaries (Schmidt, Hryckiewicz, 2006; Aleksandrova, Maslova, 2002) in which financial relations take place.

Besides that, the issue of determining the structure of the financial system of its components needs to be put in focus. As mentioned above, the varying weights of structural components of financial systems give grounds for classifying them in different ways. Discussions about the principles for the typology of financial systems by mechanisms of their structural components' interactions have been on in economic literature for nearly 50 years now (Goldsmith, 1969). In a broader sense, the financial system refers to cohered interactions of the financial instruments, markets, and institutes operating by use of financial technologies and rules of the game adopted at a given moment of time (Fase, Abma, 2003; Levine, 1997; Levine, 2001). It should be noted that types of financial structures are usually determined by assessing the dependence of enterprises in the real sector on joint-stock or credit sources of financing.

Today, there are three main approaches to determining the type of financial entities:

– mechanisms for raising external funds by enterprises;
– mechanisms by which the decision-making at enterprises is influenced;
– information disclosure by enterprises.

An analysis of the financial structure by each of these approaches involves the problem of determining quantitative parameters that would lay the basis for the classification of a financial system. We believe that the most effective approach among the above-given ones is a comparison of the raised funds.

Companies raise funds for investment purposes, which potential sources are:
– distributed profit of a firm;
– additional emission of shares;
– emission of bonds;
– borrowing from financial intermediaries (banks).

The dependence of domestic companies on one of the abovementioned sources of financing is conventionally believed to lay theoretical and methodological grounds for classifying the domestic financial system as bank-oriented or market-oriented one. When the share of funds raised by the emission of shares and bonds in the domestic GDP is higher than the loans, the financial system can be referred to as market-oriented; in the vice-versa case, it is bank-oriented. The financial systems of the U.S. and U.K. are believed to be classical (reference) cases of the market-oriented system, whereas Japanese and German systems are reference ones for bank-oriented financial systems. Therefore, in identifying key parameters of a certain type of financial system, we will pay special attention to retrospective practices of the financial system's operation in these countries. The characteristics found in various types of financial systems are shown in Table 1.

We believe that the problem of classifying national financial systems with consideration to the change in fundraising practices in the real and financial sector of the economy is worth attention. We have found that given the current financial and economic instability, the conventional approach of dividing financial systems into market-oriented and bank-oriented ones by comparing the funds raised by stock markets and borrowing of money does not consider for the specifics of international banking.

The indicator of the domestic stock market capitalization, given considerably overvalued investment attractiveness of issuers and market prices for shares, cannot be considered as a sufficient criterion of the dependence of corporate sector on the market financing. The loans attracted by companies do not include the loans resold by banks and securitization.

We believe that inadequate theoretical justification of the position and functions of banks (commercial and investment ones, first and foremost) in the structure of global finance in our days, limited statistical data on main intermediate transactions and the financial stability of the largest global banks, insufficient interventions of supranational and government bodies of monetary regulation were factors provoking the global financial crisis. Banks, including ones operating in market-oriented bank systems, put much more reliance on raising market funds and performing the so-called off-balance transactions, which, we believe, is the main factor of change in the conditions of bank lending. The link of lending conditions to sources of

Table 1
Comparative description of the types of financial systems

Characteristics	Market-oriented model		Bank-oriented model	
	U.S.	U.K.	Germany	Japan
Bank system	Commercial/investment/saving banks (legal separation before 1999, renewed in 2010, The Dodd-Frank Act, "The Volcker Rule")	Commercial/investment banks, traditional separation	Universal banks	Commercial/Investment banks (legal separation since 1978)
Fund raising mechanisms	Shares/bonds of enterprises	Shares/bonds of enterprises	Bank loans	Bank loans
Making business decisions	Investors	Investors	Lenders	Lenders
Structure of shareholding	Investors predominantly	Investors predominantly	Lenders predominantly	Lenders predominantly
Information disclosure	Limited	Limited	Maximal	Maximal
Household assets	Bonds	Bonds	Bank deposits	Bank deposits
Sources of fund raising by banks	Market (investment banks), client deposits (commercial banks)	Market predominantly	Client deposits predominantly	Client deposits predominantly
Sales of loans by banks	Market predominantly (financial companies)	Market predominantly (financial companies)	Borrowers predominantly (enterprises in real sector/ households)	Borrowers predominantly (enterprises in real sector/ households)
Securitization of assets by banks	High	High	Medium	Medium

Source: constructed by the authors

market financing has a substantial impact on domestic economies, especially given the increasing role of banks (Table 2).

Table 2
Overall assets of the largest banks in European countries, % of domestic GDP, 2017

Bank	Country	GDP
UBS	Switzerland	332
Credit Suisse	Switzerland	268
Danske Bank	Denmark	232
ING	The Netherlands	212
Nordea	Sweden	178
Bank of Ireland	Ireland	117
Santander	Spain	114
Rabobank	The Netherlands	111
BNP Paribas	France	106

Source: constructed by the authors by data in (The Economist)

The reasons for the increased assets in the leading European banks are as follows: the increased investment in bonds, the increased interbank deposits, and increased lending. In overall, the period prior to the crisis of 2008–2009 was marked by the boosting financial markets in the bank-oriented financial systems in European countries, especially the stock ones (markets of shares, bonds and promissory notes). However, in the U.K. considered as a classic case of Anglo-Saxon market-oriented financial system, the unprecedented growth in bank lending to the real sector was recorded both in absolute figures and in relation to the rates of growth in stock markets.

Non-deposit sources of financing are becoming the main source of bank liabilities, whereas off-balance transactions and securitization of default loans are predominantly used by banks to ensure the profitability of own assets. The business model used by banks calls for constant market reselling of granted loans, which help banks decrease the active part of the balance, i.e. to grant new loans with regulatory standards observed, on the one hand, and provides a supplementary source of bank earnings, on the other hand.

So, a commercial bank can achieve sufficient capital and liquidity that will be redirected to a borrower be selling granted mortgage loans. Basically, revenues/losses from lending are added to/deducted from the real amount of capital by the banks, decreasing/increasing in this way their lending capacity. Deposits, being a source for the liquidity compensation, are used for lending, thus ensuring "liquidity buffer" for the banks, to cover rapidly growing withdrawals of liquidity. Because massive withdrawals of deposits by depositors are not a very common phenomenon, and the prevailing part of banks' credit transactions are effective, it can be argued that the system of commercial banks is stable in overall. As a result, neither bank assets nor deposits are linked to the market, i.e. they are not conditional on the availability and accessibility of market financing.

Bank lending conditions can be changed by commercial banks once the list of shareholders is revised, which can be done through the mechanism for additional emission of bonds in the case of the increased number of minority portfolio investors focused on short-term earnings, or through revisions of monetary policy by the national central bank. When the central bank, with intention to regulate the interbank interest rate, purchases or sells public bonds in an open market, changing in this way the profitability of public bonds, the interbank interest rate will change accordingly, as it totally depends on the monetary supply either withdrawn or additionally emitted in the economy by the central bank. If a country has low inflation, high interest rates will be gradually reduced by the central bank to the minimally possible level, which, however, will not help recover lending for the banks with balances overloaded by default loans.

Although the central banks in the leading countries of the world were keeping discount rates and interbank lending and deposit rates at maximally low levels, commercial banks, hit by the financial and economic crisis, used to change interest rates in a sudden manner, sometimes several times a week. This controversy can be explained by the increasing bank transactions related to the market, i.e. the situation when the real sector of the economy gets funds raised by banks from non-deposit (market or off-balance) sources.

The term "market banking" used to denote the so-called "shadow" bank activities. "Shadow" bank sector, therefore, used to be a component of the financial system, incorporating non-bank financial institutions (hedge funds, funds of the monetary market, and off-balance financial companies). The financial and economic crisis revealed that a large part of the transactions of classical commercial and all-purpose banks was closely linked with the market conjuncture and realized by means of "shadow" (market) mechanisms.

Given the global economic instability, banks were forced to sell default loans through the *market* (sales of loans) or *off-balance* (special investment vehicle, SIV) mechanisms. In the case of SIV, funds are raised by the emission of commercial bonds, including ones backed by public mortgages with high credit rating. It means that the operation of "shadow" bank system is enabled by a set of respective institutional mechanisms for market and off-balance clearance of the active part of bank balances, on the one hand, and by the existing of special (special purpose entity, SPE and SPV) and specialized (investment banks) financial companies, on the other. Therefore, we propose to define "shadow" bank system as a component of the financial system, which includes investment, all-purpose, commercial, saving and mortgage banks that perform market off-balance transactions directly or indirectly through respective non-bank institutions that are not subject to financial control by monetary regulatory bodies.

By analysing and investigating the mechanisms for off-balance financing and securitization of assets by investment, saving, mortgage, and commercial banks, we can extend the conventional treatment of the bank margin considering the newly emerged sources for generating bank revenues. By securitizing bank assets, banks are able to not only recover the lending but to secure a stable supply of financial resources that will be re-directed to borrowers whenever the deposits are in deficit. By emitting SPE and SPV debt obligations backed by granted loans (ABCP) and transferring interest payments (CDO) according to the riskiness of a portfolio backing the emitted bond, banks were able to redistribute interest revenues in a way allowing them to insure additionally the portfolio itself through purchasing credit and default swap.

The business model used by banks in the conditions of financial and economic instability calls for a comparison of traditional banking and banking oriented on market resources (Table 3).

Traditional banks operate by granting previously attracted deposits to bank borrowers in the form of loans, and risks related with their non-payment are, in fact, not hedged. Whenever deposits are massively withdrawn from the bank system, banks will have sufficient financial capacities for the lending of the economy. Lending decisions are usually taken in view of the lending reasonability, determined by a bank itself for each lending transaction, and the credit history of an enterprise that is going to be lent.

Once a lending decision is taken, its successfulness will be conditional on payment of interests by a borrower and by repayment of the loan. In this way, commercial banks fulfil the fundamentally important function: redistribution of temporarily free resources of economic actors.

The banking business that is related to financial markets changes the principle for the formation of the price (interest rate) for credit resources. A lending decision here will depend on the market prices for capital, and the success of a credit transaction will depend on whether or not the raised credit resources are cheaper than the ones sold to a borrower. It follows that the conditions of loans to be sold either in capital markets (the market of bank loans) or in interbank markets or through securitization mechanisms are determined by the level of market prices. If this market price involves an interest rate, then it, and not the price fixed on the basis of the respective (including discount) rate of the central bank, will be determined as an interest to be paid by a borrower.

If a lender makes a decision to grant a loan but decides to hedge own risks by use of credit and default swap, the price for hedging these risks will determine the lending conditions. In case of the market-oriented bank system, a lender may not be a traditional financial institution: loans are granted by investment banks as well, which may rely on the domestic central bank as the lender of the last instance. If the loans raised by a bank remain on its balance (traditional banking) and not resold in the market, they will need to be serviced, mainly through additionally raised funds. In the traditional banking, the funds are raised through the depositary mechanism that is defined by IMF as "related" (International Monetary Fund), because the lender's (bank's) capacity to borrow financial resources for full-scale lending is not questioned. In the market-oriented financial system, these resources are not supplied by deposits; they come from the market, i.e. from other banks or investors. As financial markets determine the feasibility of financing and the price of money, they determine the bank's capacity for lending by the market price. The capital received in this way is "non-related" or "skittish" rather than "related" or highly reliable because as soon as any kind of negative economic outlooks occurs, loans will become far less accessible in the market and the threat of a loan crisis will occur. The above said allows for the conclusion that market prices for capital are a pro-cyclic factor for financial instability.

Table 3
Comparative description of traditional banking (TB) and market-oriented banking (MB)

	Institutions	Loans	Obligations backing granted loans	Risks on granted loans	Balance recording of raised loans	Support of regulatory bodies in times of crisis
TB	Commercial banks	Reported in the balance	Client deposits	Not hedged	By selling prices	Central bank as the lender of the last instance
MB	Commercial banks	Sold at credit markets, securitized, sold to shadow banks (commercial bonds backed by assets), model "generate and distribute"	International financial markets (interbank monetary market and capital market (bond market))	Hedged by credit and default swaps	Market price of fundraising	-//-
	Investment banks	Sold in credit markets, securitized, sold to their shadow banks (commercial bonds backed by assets), model "generate and distribute"	International financial markets (obligations, REPO)	Hedged by credit and default swaps	Market price of fundraising	None

Source: constructed by the authors

Results of the comparative description of the types of banking allow us to distinguish between three main directions of banking business:
– bank obligations not related to the market conjuncture (deposits), which can be used to open short positions in the bank credit market or deposits in other banks, i.e. *non-market liabilities finance market assets*;
– when the amount of granted loans exceed the amount of attracted deposits, it can be said that the attracted market obligations are used to finance non-market assets (loans to the real sector), i.e. *market liabilities finance non-market assets*. At well-established markets, the increasing lending results from large scopes of attracted market resources but, in emerging markets, banks have to counteract the risks of rapidly decreasing accessible loans that are offered through the market mechanism by other banks that are more sensitive to crisis phenomena in the economy than depositors.
– backing *market assets by market liabilities*, based on the assumption that banks can finance long-term assets (granted loans) through raising funds in international monetary markets and investing in short-term instruments of the monetary market, which can be sold in the market when necessary. We think that the fallacy of this assumption proved to be an essential factor for the financial crisis of 2008–2009.

The above given comparative description of traditional and market-oriented banking, along with the analysis of main market mechanisms, enables for the theoretical elaboration of the distinctions between bank transactions practices in traditional commercial banks and investment banks in our days. Practically, commercial banks are often engaged in market intermediation and traditional intermediation. They have increased the activity in investment banking, especially in trade in bonds. Investment banks, apart from consulting on investment in certain categories of shares and intermediation in mergers and acquisitions, have increased considerably the active part of the balance by way of lending. This has resulted in the creation of all-purpose banks offering a wide range of financial services to clients.

3. Discussion

The main criterion for distinguishing between traditional banking and market-oriented bank-oriented financial system should be the reliance of banks on the availability and accessibility of credit resources. To assess the dependence of banks on market resources for financing, T. Adrian, H. S. Shin (Adrian, Shin, 2010) propose to pay due attention to the analysis of assets and liabilities in balance reports of commercial banks, with consideration to the specifics of "shadow" banking, namely:
– bank assets are assessed by market prices (in current market prices) that determine the profitability of lending decisions. Their increase/decrease increases/decreases the profitability, thus increasing/decreasing the capabilities for using the revenues to increase the bank capital and increasing/decreasing the capability to raise new capital through the impact of profitable transactions on the prices of shares;
– bank assets are sold by the use of diverse financial mechanisms – asset-backed securities and special investment vehicle, designed to raise funds in the markets. As a result of this practice, banks are required to keep the small amount of capital, which enables to increase lending, but this practice can be used only if the financial market resources are accessible. The occurrence of "market shocks" makes all the assets return to the bank balance, resulting in limited lending capacities;
– loans recorded at the bank balance (bank liabilities) are financed to the increasingly higher extent by market sources rather than client deposits;
– the increasing share of bank loans is not recorded at the bank balance; they are either sold in the market by market prices or securitized by use of the bank model of "generate and distribute".

4. Conclusions

Our study of a theoretical and methodological framework for the classification of financial systems with the account to the nature, scopes, and significance of market transactions performed by banks allow us to modify their existing typology according to our approach. The financial systems in U.S., U.K., Belgium, and the Netherlands can be considered as market-oriented bank systems, and the systems in Japan, Greece, Italy, Spain, and France – as traditional ones. The bank system in Germany has an intermediate position, remaining in the group of traditional bank systems but having the highest rates of engagement in financial markets in its group.

Our analysis allows for the conclusion that financial systems should be divided by the scope of bank market transactions and off-balance transactions by traditional systems and market-based financial systems. It can also be argued that further studies of financial systems in various countries of the world can lay the grounds for extending the proposed typology in view of the following considerations:

First, the classification of financial systems by comparing the funds raised by companies in non-financial sector is outdated theoretically, whereas the role of banks as key actors in financial markets is not sufficiently elaborated, mainly due to the existing contradictions between theoretical approaches to the classification of bank system models and the real practice of financial intermediation in market-oriented and bank-oriented financial systems.
Second, the need for elaborating new conceptual approaches to the identification of financial systems by bank sector engagement in financial intermediation in international financial markets is confirmed by the existing specifics of various types of national financial systems. As radically changed conditions of bank

lending seem to be the most important feature of global structural transformations caused by universalization of banking, applications of innovative financial instruments and liberalization of financial and bank regulation, we propose that financial systems should be differentiated as *specialized market-oriented systems, market-oriented systems, and traditional bank systems*.

Third, the conventional interpretation of the bank margin can be considerably extended on account of the newly emerged sources for generating bank revenues; the definition of specialized and "shadow" bank systems can be revised considering the specifics of transactions performed by classic commercial banks that proved to be reliant on the market conjuncture in the conditions of financial crisis.

Fourth, the analysis of tendencies in the operation of investment and commercial banks confirms that securitization of assets and raising of off-balance funds are important components of bank balances, especially in market-oriented bank systems, which can be used for quantitative assessment of their dependence on financial markets.

Fifth, the reliance of bank systems in leading countries on financial markets and the use of bank model "generate and distribute" have a direct impact on the character of bank decisions on lending. The overall tendency to re-orientation of the leading banks of the world from deposit to market sources of financing causes the dependence of interest rates on the market conjuncture and the demand in international credit markets, i.e. the prices for loans, depending on the market situation, are a pro-cyclic factor of economic instability.

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