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The Influence of Internal Contradictions in the US Economy on Global Financialization and the Expansion of Fictitious Capital

D.A. Dinets[a] ✉, **R.A. Kamaev**[b]
[a] Irkutsk State Transport University, Irkutsk, Russia; [b] Moscow University of Finance and Law, Moscow, Russia
[a] http://orcid.org/0000-0001-8734-8998; [b] http://orcid.org/0000-0003-3131-5649
✉ Corresponding author

ABSTRACT

The financialization genesis of the global economy centered in the United States is on the bifurcation point now – a fictive capital' expansion is damaging with the social capital regeneration mechanism disaster. The method of identifying and estimating the fictive capital' extension is absent for now. The fictive capital exists as a metaphor on the science papers but not as an institutional basis of the capital flows directions. The paper **aims** to update the configuration of the global financial system, its dependence on the performance of US corporations and banks; to identify the sources of vulnerability of world finance and global liquidity from the fictitious capital of American financial markets. The **methodology** is theoretical pattern' of financial capital movements and its real statistical market indicators comparison. The empirical base is statistical data about the financial flows and financial results especially about the US as a global financial center. Based on the **results** the authors have revealed an origin of fictive capital on the US bank sector by the justification for the conclusion of liquidity above the profitable as the purpose of financial operations. This conclusion is confirmed with the scale of off-balance sheet transactions of banks. Besides the regression between the prices of derivative' basis assets and stock indexes has been shown. Also, the market capitalization of American companies is not sensitive to change in market liquidity indicators. The authors **concluded** that global financialization is supported by significant internal contradictions in the US economy. The source of contradictions is the financial mechanism for withdrawing liquidity from the sphere of production and circulation into the sphere of financial markets. Capital investment using instruments of the US financial market entails the threat of losing their liquidity. Forecasting the dynamics of the global economy without taking into account the role of fictitious capital, which is emerging in the American financial markets, leads to global vulnerability and may cause the next financial crisis.

Keywords: financialization; fictitious capital; Federal Reserve System; off-balance sheet bank transactions; derivatives; capitalization; liquidity

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INTRODUCTION

The financialization of the world economy is recognized these days even by liberal-minded scientists as an institution of the destruction of the fundamental foundations of the reproduction model and sustainable economic growth. The declaration on the post-industrial phase of the development of capitalism is being replaced by an assessment of economic losses from the destruction of the material and production base of the world economy. Technological stagnation and lack of breakthrough technologies of the XXI century indicate a violation of the usual change of business cycles. It seems that all of the above is a consequence of financial expansion through the growth of fictitious capital.

The processes of inflation and the collapse of financial bubbles, the deliberate arrangement of financial pyramids, financial fraud, and manipulation are known in history and have been sufficiently studied in the literature (C. Kindleberger [1], J. Galbraith [2], G. Epstein [3], C. Perez [4], J. Stiglitz [5], C. Calomiris [6], M. Wolf [7], M. Lewis [8], R. Shiller [9], R. Batra [10], R. Brenner [11], D. Tobin [12], B. Eichengreen [13], J. Field [14], V.A. Mau [15], S.K. Dubinin [16] etc.). However, in the current state of the global financial system, there is a fundamentally new scale of misconceptions and the inequality they generate. The latter sees a rollback to the feudal formation with the only difference that this system had more prospects.

We believe that the lease models of enrichment characteristic of feudalism are now being replaced by battles over liquidity, which, if possible, should be removed from regulation. The essential difference is that the search for rent presupposes the presence of some rare resource, and the struggle for liquidity is based on fictitious capital.

The latter is quite often found in the writings of progressive economists and financiers, but more often as a metaphor or a speculative institution that unambiguously exists, but is elusive in the official statistics and is not determined by models of behavior and reactions to external factors.

Thus, the aim of this study is to update the configuration of the global financial system, its dependence on the performance of US corporations and banks, to identify the sources of vulnerability of world finance and global liquidity from the fictitious capital of US financial markets.

The theoretical significance of this study consists in updating the essential characteristics and patterns of the process of financialization of the world economy, as well as in identifying causal relationships leading to the formation and increase of fictitious capital in financial turnover, and indicators that allow directly or indirectly assessing such trends.

The practical significance of the work lies in identifying and quantifying indicators that indicate the expansion of fictitious capital moving into world finance through the activities of corporations and banks in the United States, which makes it possible to move away from the abstract idea of the presence of fictitious capital and financial bubbles of global liquidity to the formation of a methodology for its quantitative assessments when carrying out financial and economic calculations and justifying financial decisions at various levels.

MATERIALS AND METHODS

The research methodology is at the intersection of normative and positive methods of economic analysis, the main purpose of using statistical data on bank balances, volumes of government bonds, data on the financial performance of corporations and their market positions in identifying relationships that should not arise during the normal process of reproduction. However, in fact, they are present, and vice versa, in the rupture of the relationship between those indicators that should be linked by the logic of the normal reproductive process.

RESULTS AND DISCUSSION

Since financialization, as a rule, begins with the unwinding of the mechanism of financial leverage [17], banks should be the first object

Table 1

Share of government liabilities in central bank assets

Share of government liabilities in central bank assets, %	2014	2015	2016	2017	2018	2019
FRS	57.72	57.54	57.65	57.21	56.74	57.54
ECB	1.21	0.90	0.72	0.56	0.51	0.50
CB of Japan	83.41	84.83	86.15	84.52	86.32	83.98
CB of China	4.52	4.81	4.44	4.21	4.09	4.31

Source: Banks' Balance Sheets Data. URL: https://bankinglibrary.com/data/banks-balance-sheets-data/ (accessed on 14.11.2020).

of analysis. The way banks are issued generally depends on the asset structure of central banks. We summarize the available statistics.

To assess the role of governments in forming the basis for increasing fictitious capital, we consider the balance sheets of central banks (CB) and the share of government liabilities in their assets (*Table 1*).

Evaluation of emission channels through analysis of central bank balance sheets showed that China uses mainly international assets, the Federal Reserve System (FRS) uses approximately equal shares of Treasury bonds and buybacks of distressed assets from financial institutions, the European Central Bank (ECB) invests in financial bonds and non-financial institutions, mainly in euros, and the Central Bank of Japan, as the table shows, prefers emission to government liabilities. To update the results obtained, we will consider government borrowing from the other side — the balance sheets of central banks (*Table 2*).

Comparison of the tables reveals a contradiction: in the assets of the FRS and the Central Bank of Japan, the liabilities of the respective countries have a high share, however, among the holders of such bonds, central banks occupy a much more modest position. This means that the financial institutions of the United States and Japan are concentrating liquidity created in the financial markets by other players. And if the investments of the ECB and the People's Bank of China are aimed at financing the purchase of various assets, i.e. we can talk about the market (exchange) method of emission, then the specificity of the United States and Japan in creating such a market at the expense of their own obligations in order to attract liquidity.

We found that the balance sheet assets of the central banks of Japan and the United States are almost entirely composed of instruments that are likely to be refinanced in the future to prevent the financial collapse of the respective banking systems [6]. At the same time, the share of the dollar in international reserves is stable (*Table 3*).

The emission of the dollar, the main reserve currency, is carried out at the expense of:

a) state liabilities;

b) international reserves;

c) distressed assets purchased from financial institutions that are "too large to go bankrupt" [5].

When the Federal Reserve System was created, it was established that the dollar should be backed by government guarantees, gold backing, and the needs of trade. In this situation, as can be seen from the tables above, none of the listed conditions is met.

Table 2

Government liabilities deposited with central banks

Government liabilities deposited with central banks	2014	2015	2016	2017	2018	2019
FRS	14.30	13.40	12.94	12.07	10.45	10.34
ECB	0.22	0.20	0.21	0.20	0.19	0.18
CB of Japan	24.31	31.01	38.31	40.59	43.31	43.33
CB of China	0.01	0.01	0.01	0.01	0.00	0.00

Source: Banks' Balance Sheets Data. URL: https://bankinglibrary.com/data/banks-balance-sheets-data/ (accessed on 14.11.2020).

Table 3

Currency composition of global foreign exchange reserves

Year	U.S. dollar	Euro	Pound sterling	Japanese Yen	Swiss franc	Other currencies
2009	62.05	27.65	4.25	2.9	0.12	3.04
2010	62.14	25.71	3.93	3.66	0.13	4.43
2011	62.59	24.4	3.83	3.61	0.08	5.49
2012	61.47	24.05	4.04	4.09	0.21	3.26
2013	61.24	24.19	3.98	3.82	0.27	2.84
2014	63.34	21.9	3.79	3.79	0.27	3.14
2015	64.16	19.73	4.86	4.86	0.29	3.13
2016	63.96	19.74	4.42	4.42	0.17	3.41
2017	62.72	20.15	4.54	4.89	0.18	3.67
2018	61.69	20.68	4.43	5.2	0.15	4.37
2019	60.89	20.54	4.62	5.7	0.15	2.56

Source: Distribution of global currency reserves. URL: https://www.statista.com/statistics/233674/distribution-of-global-currency-reserves/#:~:text=The%20U.S.%20dollar%20was%20the,of%20global%20reserves%20that%20year (accessed on 14.11.2020).

In addition, we believe that the high share of dollar-denominated assets in the structure of international reserves actually means that US Treasury liabilities are not actually used by American banks to form risk-free assets. In support of this, the Treasury website contains data on foreign holders of US government debt: of the $ 24 trillion in government debt, the Fed has $ 2.4 trillion, in the hands of foreign private investors — $ 15 trillion in official

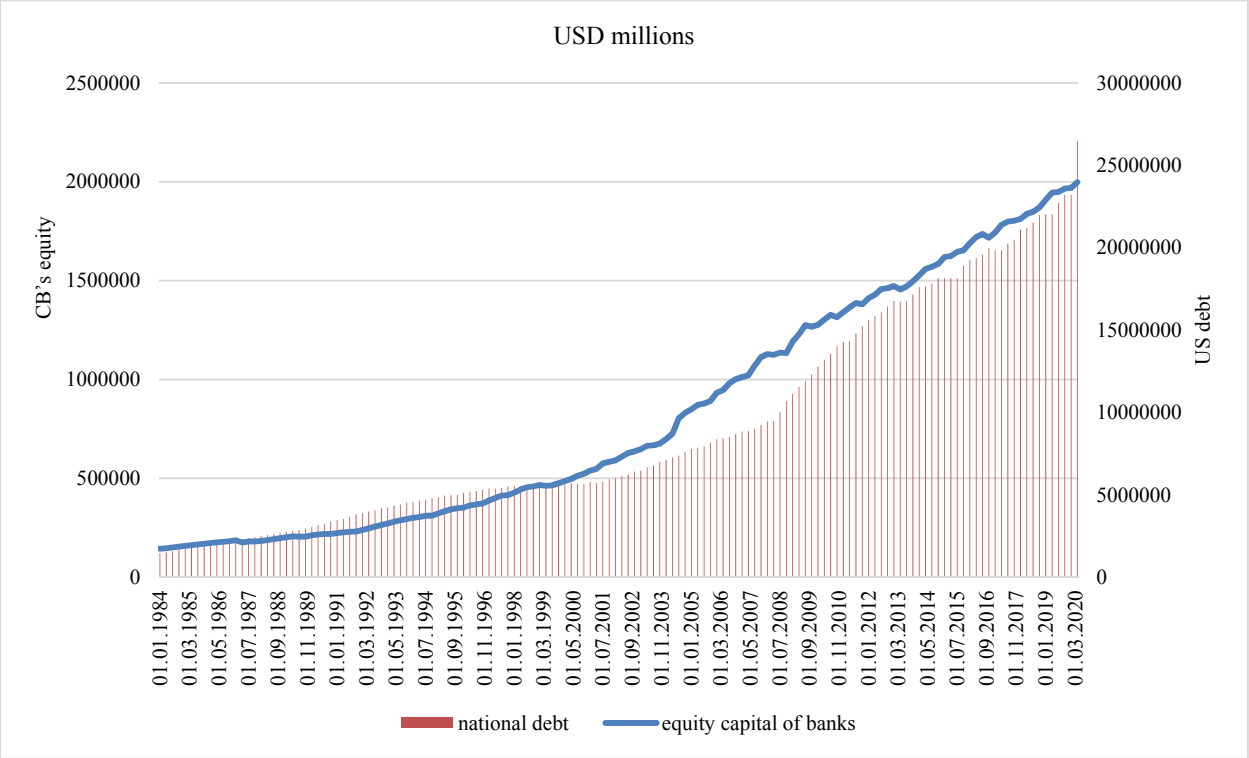

Fig. 1. **Dynamics of the US national debt and equity capital of banks**

Source: FRED Statistical data. URL: https://fred.stlouisfed.org (accessed on 14.11.2020).

reserves — about $ 6 trillion.[1] Thus, the national banking system practically does not contain the liabilities of its own government on the balance sheets, and this, in turn, means that in order to fill the lack of risk-free assets under the Basel III package, US commercial banks are forced to either increase Tier 1 capital or use synthetic assets with a high credit rating, notorious for being responsible for the 2007–2008 global financial crisis.

The preliminary conclusion is rather trivial. The emission of the dollar, to a greater extent than other reserve currencies, affects the formation of fictitious capital, since, firstly, the assets of the Fed's balance sheet can only be refinanced, but not reproduced, and secondly, the Treasury attracts liquidity. from third-party markets without any obligation or reference to appeal requirements.

However, the situation of the reckless behavior of the issuer of the world currency as a whole is also not new [1], and the activities of the Federal Reserve System and the US Treasury can be considered the first step towards the emergence of fictitious capital, but the scale of expansion cannot be fully explained by these reasons alone. The next step should be to consider the structure of assets and liabilities of commercial banks. It is interesting to compare the dynamics of the US government debt and the size of the equity capital of commercial banks (*Fig. 1*).

With similar growth rates, the equity capital of banks outpaced the growth rate of national debt until 2000, then the situation changed dramatically, and in 2014 the growth rate has balanced out. The similarity in growth rates is confirmed by the significant regression (*Fig. 2*).

We believe that the situation is easy to explain: as the national debt grows and demand for appropriate instruments from the global financial community grows, the dollar strengthens and confidence in dollar-denominated assets and the US financial market grows [17], which strengthens the

[1] U.S. Long-Term Securities Held by Foreign Residents. URL: https://ticdata.treasury.gov/Publish/slt2d.txt (accessed on 14.11.2020).

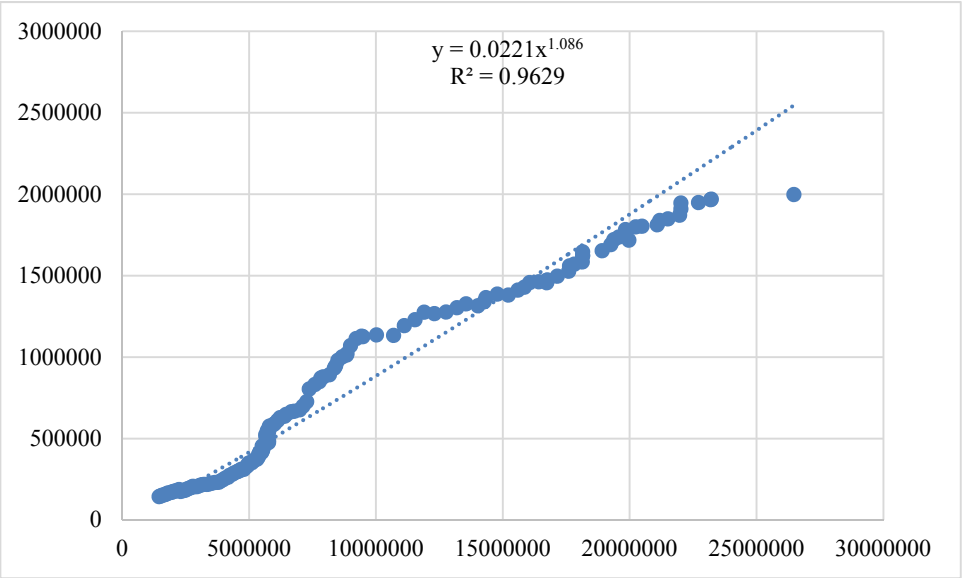

Fig 2. **Dependence of equity capital of commercial banks on the dynamics of the US national debt**

Source: FRED DATABASE. URL: https://fred.stlouisfed.org (accessed on 14.11.2020).

value of shares and the market valuation of the equity capital of commercial banks. In other words, *Fig. 1, 2* illustrate mutual transitions of fictitious capital between sectors of debt (in this case, national) instruments and stock market instruments. Further, according to the same scheme, fictitious capital moves into other segments of the financial market in order to fight for its liquidity.

However, back to bank accounts. The website https://fred.stlouisfed.org/categories/100 provides data on the dynamics (in terms of growth rates) of various aggregates of the US banking sector. We selected a sample of the main indicators to assess their interdependence. The calculations were carried out in several stages for different sample sizes: first, the values were estimated for the period from 1973, then from 2008, then from 2014. It is interesting to analyze the change in the values of the correlation coefficients when changing the analysis intervals (*Table 4*).

Comparison of these calculations made it possible to identify the directions of changes in the course of the investigated expansion of fictitious capital:

- while narrowing the analysis period from 1973 to 2008 revealed a negative mutual influence of bank deposits and mortgage loans, which is explained by the mortgage crisis and changes in the loan portfolio of banks [6]; positive mutual influence of the amount of deposits and net assets, which means the search for alternative sources of funding after the liquidity crisis; a decrease in the relationship between treasury bonds and total assets, which, taking into account the results of the analysis shown in *Fig. 2*, indicates the focus of Treasury instruments to support the stock market, rather than bank balance sheets;
- with a further limitation of the study period in 2014, the strengthening of the interdependence of all assessed parameters, except for mortgage loans and treasury securities on the balance sheets of banks, with cash on the balance sheets of banks is striking. In other words, any operations of commercial banks are not translated into changes in financial results but are aimed at forming the money supply. This is a chase for liquidity from the largest banking system in the world. If we associate this trend with the growth of the share of profit in income and the share of dividends in profit [18], then we get that banks become "collectors" of money for shareholders who receive an increase in prices for their instruments due to the Treasury's activities to increase global dependence on the dollar.

Table 4

Correlation coefficients between the balance sheet indicators of commercial banks

Correlation coefficients	Deposits	Total assets	Loan	Real estate loan	Treasury and agency securities	Net assets	Total liabilities
1973–2020							
Deposits	x						
Total assets	0.64582	x					
Credit	0.50097	0.746358	x				
Mortgage loans	0.21812	0.412757	0.668	x			
Investments in treasury securities	0.14693	0.161007	0.317	–0.00443	x		
Net assets	–0.1554	0.053858	0.088	0.101239	0.087563	x	
Aggregate liabilities	0.61941	0.802671	0.573	0.278149	0.066638	–0.52	x
Monetary assets	0.37574	0.53823	0.062	–0.11341	–0.01073	–0.11	0.520257
2008–2020							
	Deposits	**Total assets**	**Loan**	**Real estate loan**	**Treasury and agency securities**	**Net assets**	**Total liabilities**
Deposits	x						
Total assets	0.67273	x					
Credit	0.52319	0.675635	x				
Mortgage loans	0.04141	0.213481	0.648	x			
Investments in treasury securities	0.1357	0.050632	0.280	–0.04754	x		
Net assets	–0.0020	0.122747	0.003	0.030242	–0.03315	x	
Aggregate liabilities	0.64781	0.907093	0.643	0.185856	0.066779	–0.30	x
Monetary assets	0.35174	0.69656	0.123	–0.18688	–0.05529	–0.01	0.669157

Table 4 (continued)

2014–2020							
	Deposits	**Total assets**	**Loan**	**Real estate loan**	**Treasury and agency securities**	**Net assets**	**Total liabilities**
Deposits	x						
Total assets	0.8225	x					
Credit	0.6806	0.858847	x				
Mortgage loans	–0.0919	0.118101	0.323	x			
Investments in treasury securities	0.18731	0.154868	0.403	–0.09836	x		
Net assets	–0.05096	0.057981	0.105	0.090418	0.23393	x	
Aggregate liabilities	0.82764	0.991927	0.845	0.106903	0.127304	–0.07	x
Monetary assets	0.83174	0.942268	0.714	0.033468	–0.03484	–0.01	0.942387

Source: FRED balance sheets statistics. URL: https://fred.stlouisfed.org/categories/100 (accessed on 14.11.2020).

The lack of dependence between monetary assets and mortgage loans, as well as treasury obligations, seems to be a consequence of the fact that these instruments have their own well-functioning mechanisms for the formation of liquidity through independent circulation in the world financial markets.

To support this assumption, we consider the review of banking systems prepared by researchers from the World Bank and IMF.[2] In this report, the performance of banking systems in many countries is grouped according to various indicators. We consider a number of indicators of interest to us.

First of all, we pay attention to the dynamics of the return on assets in the banking sector (*Fig. 3*).

Attention is drawn to the dynamics of the return on assets of the US banking sector, which provoked the global financial crisis: after the passage of extremely low (but positive) values of profitability in 2008, rapid growth began, and by the end of the study period, the US banking system caught up with Canada and China, which did not show a decrease in 2008 in terms of the profitability of banks [19].

A slightly smoother trend is observed when analyzing the return on equity (*Fig. 4*).

According to the Orbis methodology, both profitability indicators are calculated in units of net profit, while in relation to the United States, it is known that total assets exceed the growth rates of banks' equity capital [20]. However, we see that after 2008, the return on equity grew more slowly than the return on assets. It is known that these indicators are interconnected by the effect of financial leverage, to identify the results of the influence of which we will

[2] Aslı Demirgüç-Kunt, Martin Čihák, Erik Feyen, Thorsten Beck, Ross Levine, The World Bank, Washington D.C., International Monetary Fund, Washington D.C., Cass Business School, University College London, United Kingdom, University of California at Berkeley, California.

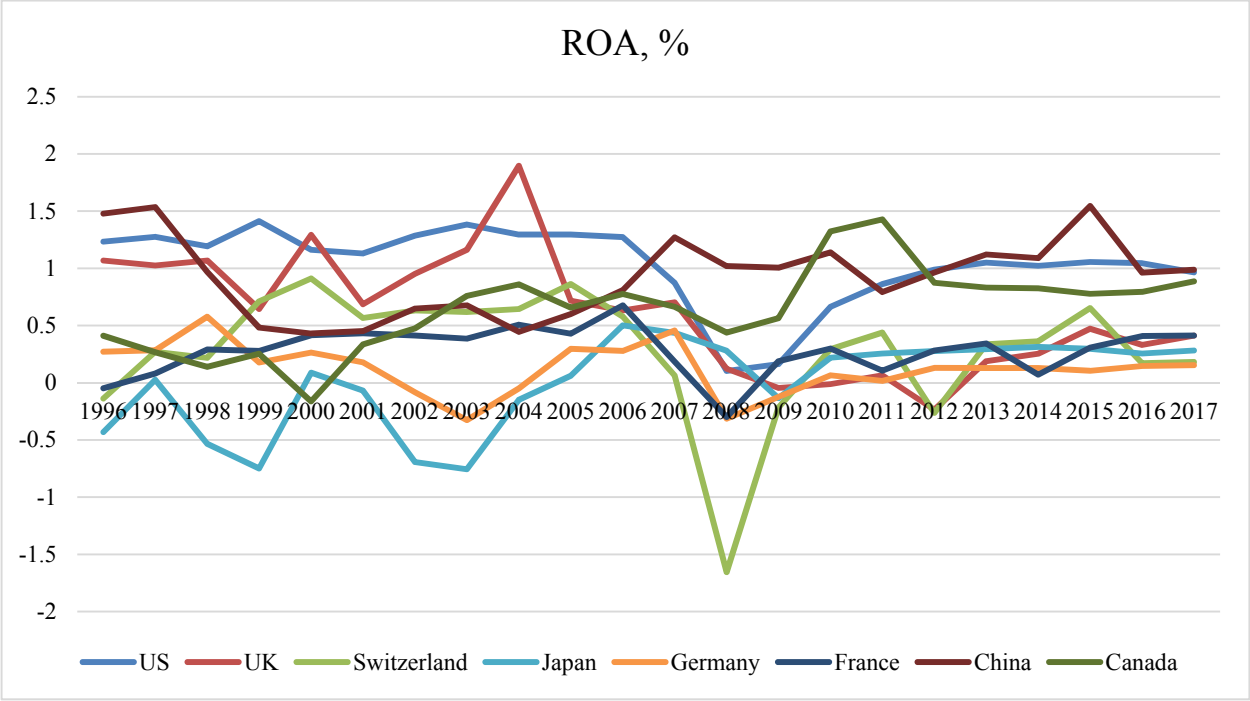

Fig. 3. **Dynamics of ROA**

Source: Global Financial Development Report 2019/2020. URL: https://issuu.com/world.bank.publications/docs/9781464809675 (accessed on 11.11.2020).

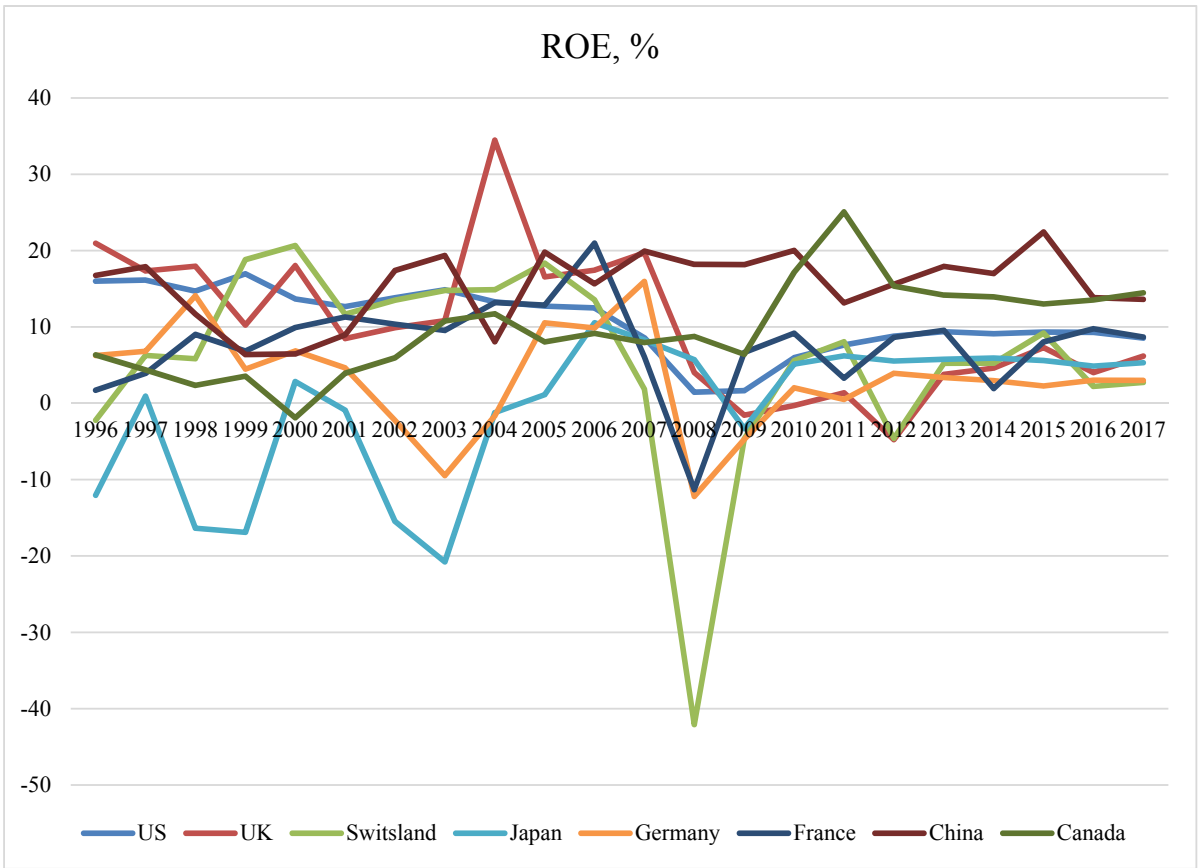

Fig. 4. **Dynamics of ROE**

Source: Global Financial Development Report 2019/2020. URL: https://issuu.com/world.bank.publications/docs/9781464809675 (accessed on 11.11.2020).

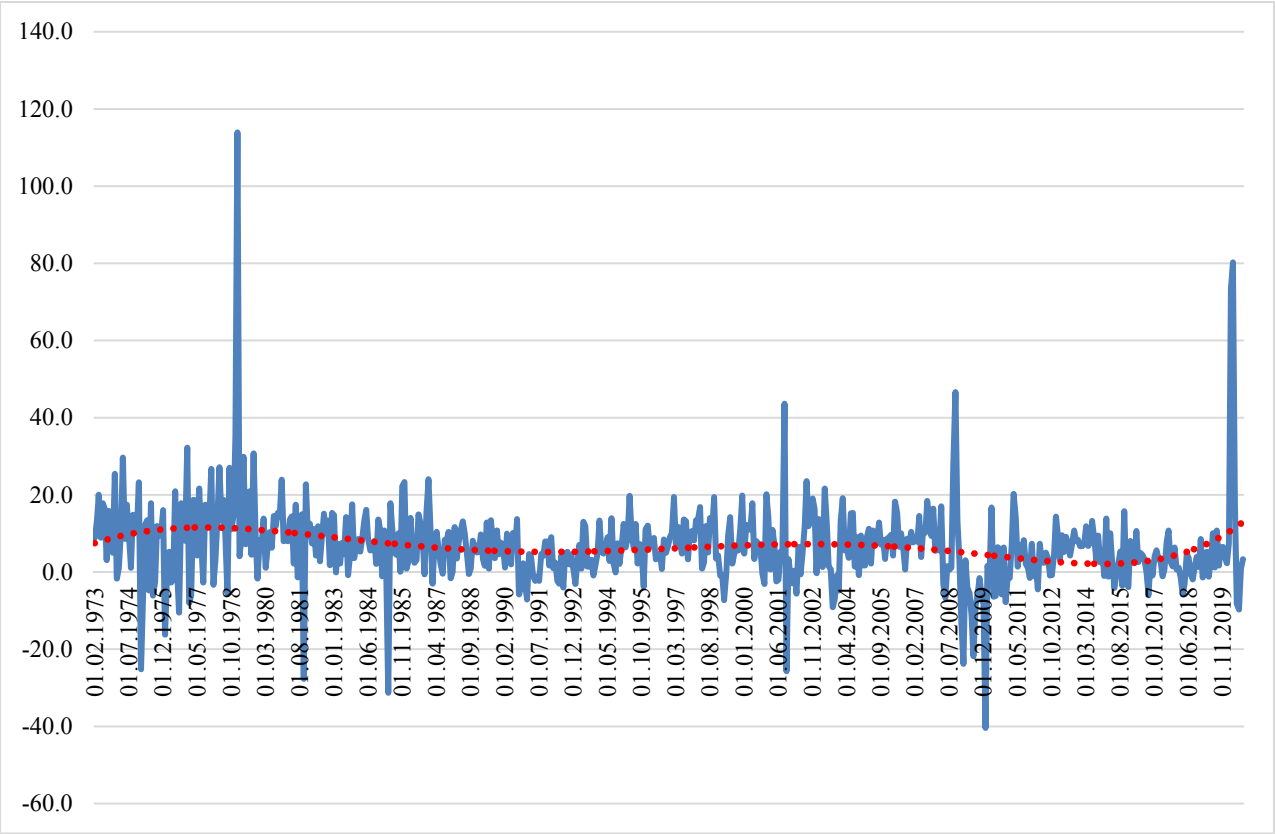

Fig. 5. **Dynamics of liabilities of the US banks**

Source: Global Financial Development Report 2019/2020. URL: https://issuu.com/world.bank.publications/docs/9781464809675 (accessed on 11.11.2020).

consider the dynamics of liquid liabilities in the US banking system (*Fig. 5*).

Indeed, in the period from 2008 to 2017, the dynamics of growth of banks' liabilities slightly slowed down, however, the main condition for the lag of the growth rate of the return on equity from the return on assets is that the market valuation of banks' equity capital is determined by the attractiveness of instruments denominated in dollars and external demand for treasury US bonds.

In addition, a sharp jump in banks' liabilities at the beginning of 2020 is noticeable, and about half of this growth is associated with an increase in the deposit base. The question arises: how did the pandemic and election uncertainty in the United States collectively affect the massive growth of the banks' resource base? We believe that the answers should again be sought in the activities of the regulator (*Fig. 6*).

The growth of liquidity in the banking system occurs at the expense of various bank funds placed by the FRS in order to provide preventive measures to maintain the liquidity of banks. It is interesting to note that, according to Forbes, "the Fed chose not banks, as usual, for its current quantitative easing operations, but the management companies BlakcRock and PIMKO" [21]. Thus, we are dealing with another superstructure of the fictitious capital pyramid.

The cited article contains data with reference to the Boston Consulting Group report, according to which the 10 largest asset management companies collectively own 35% of marketable assets in the United States, and the total inflow of funds is distributed among the 18 largest asset management companies. We believe that such a huge depersonalization of transactions in the financial market is also a sign of fictitious capital — capital that is not tied to specific assets, investors, countries and other

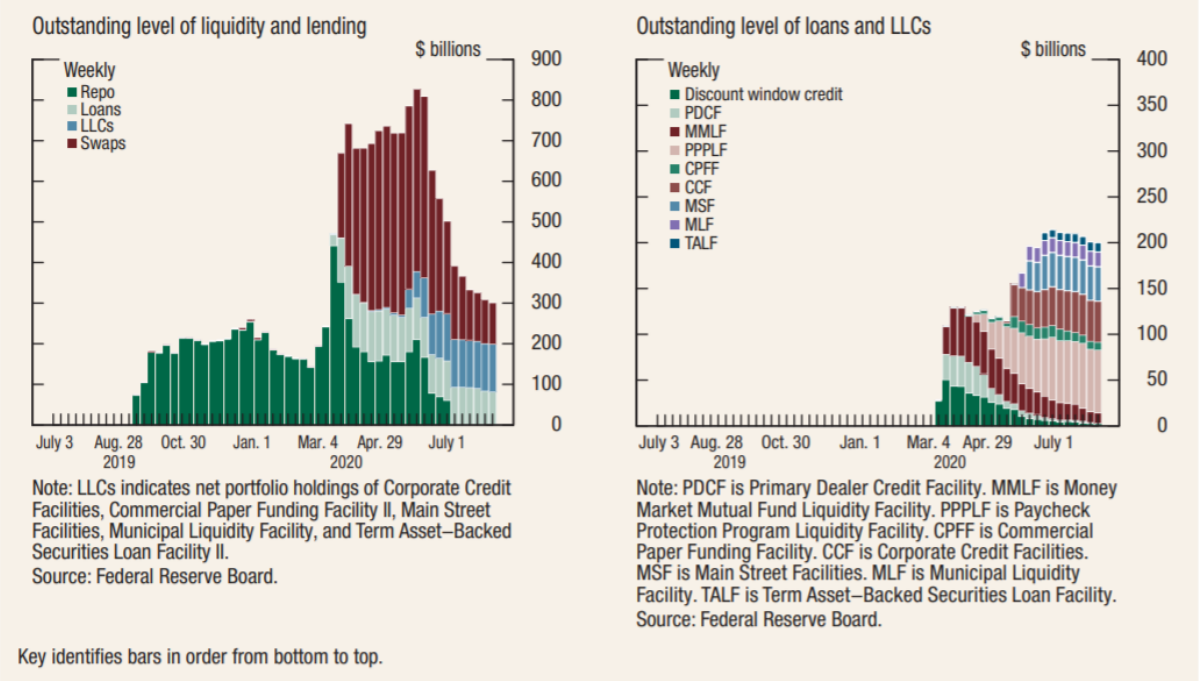

Fig. 6. **Federal Reserve's balance sheet report, August 2020**

Source: Balance sheet developments report. URL: https://www.federalreserve.gov/publications/files/balance_sheet_developments_report_202008.pdf.pdf (accessed on 11.11.2020).

Table 5

Balances on off-balance sheet transactions of US banks, billions of dollars

Instrument	2018	2019	Q2 2020
Unclaimed liabilities	7693.9	8003.8	8235.0
Credit derivatives	2078.1	1895.2	1545.4
Interest rate derivatives	128 173.9	125 078.3	132 102.0

Source: Off-balance sheet items Report. URL: https://www.federalreserve.gov/releases/efa/off-balance-sheet-items.pdf (accessed on 11.11.2020).

more or less tangible entities. It is clear that the subjectivity in the distribution of financial resources in such a system is questionable, since the impersonal "packaged" units of financial capital include an uncountable number of complexly structured elements [22], in which it is not possible to identify the directions of real financial resources.

In this context, we consider it necessary to analyze the available data on the volumes of off-balance-sheet transactions of banks (*Table 5*).

We get that more than 8 trillion US bank loans were transferred to off-balance-sheet accounts for their subsequent "packing" in secured bonds. This can also be a factor in the uneven dynamics of the profitability of assets and equity capital of banks [23]: if assets are systematically written off the balance sheet, it becomes somewhat easier to ensure the profitability of the remaining funds.

In addition, the estimated cost of derivative financial instruments of the US banks is about $ 133 trillion, and most of them are aimed

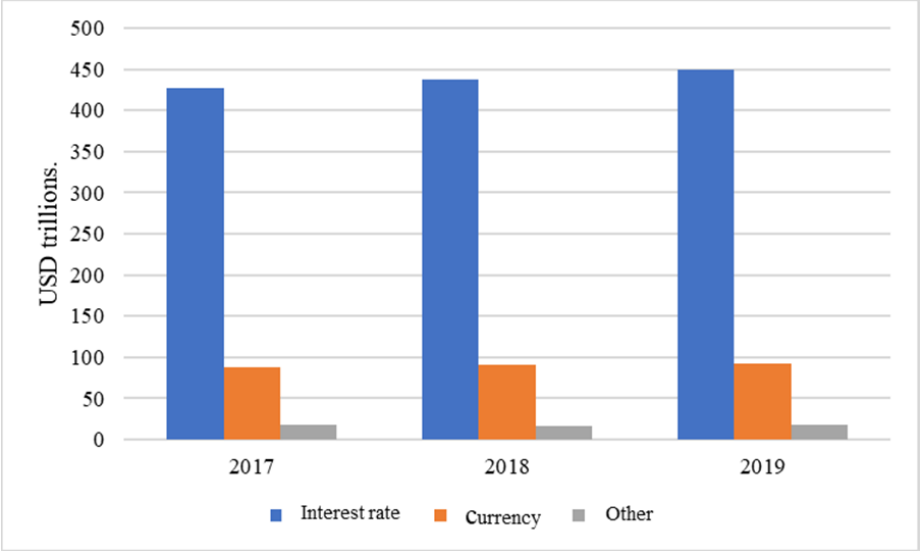

Fig. 7. **Underlying asset value under derivative contracts**

Source: BIS STAT EXPLORER. URL: https://stats.bis.org/statx/srs/tseries/OTC_DERIV/H:D:A:A:5J:A:5J:A:TO1:TO1:A:A:3:C?t=D5.1&p=20191&i=1.8&x=DER_TYPE.1.CL_OD_TYPE&o=s:line (accessed on 12.10.2020).

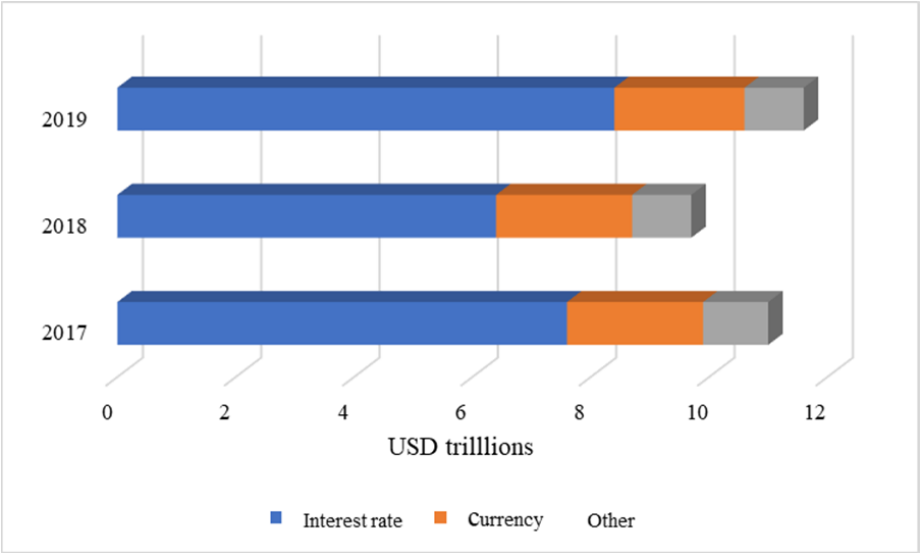

Fig. 8. **Market value of derivatives**

Source: BIS STAT EXPLORER. URL: https://stats.bis.org/statx/srs/tseries/OTC_DERIV/H:D:A:A:5J:A:5J:A:TO1:TO1:A:A:3:C?t=D5.1&p=20191&i=1.8&x=DER_TYPE.1.CL_OD_TYPE&o=s:line (accessed on 12.10.2020).

at speculating with interest rates, which is incomparable with the cost of interest-bearing liabilities, does not obey the logic of their formation and repayment, and, therefore, is fictitious.

For a more detailed information on the role of derivatives in the formation of fictitious capital, we turn to the report KEY TRENDS IN THE SIZE AND COMPOSITION OF OTC DERIVATIVES MARKETS IN THE SECOND HALF OF 2019,[3] which reflects the results of actions with derivatives. Data on the value

[3] KEY TRENDS IN THE SIZE AND COMPOSITION OF OTC DERIVATIVES MARKETS IN THE SECOND HALF OF 2019. URL: https://www.bis.org/publ/otc_hy2005.pdf (accessed on 12.10.2020).

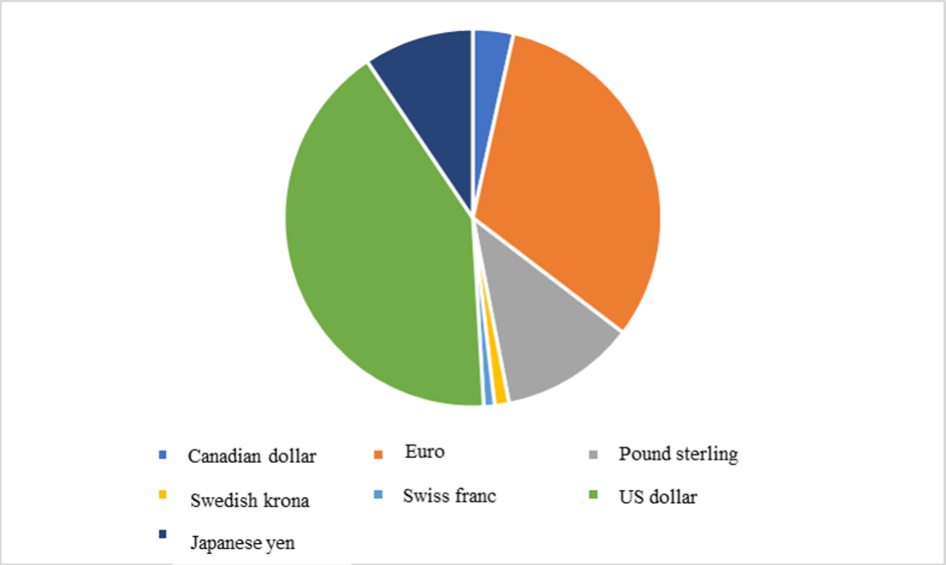

Fig. 9. **Key currencies of derivative contracts**

Source: BIS STAT EXPLORER. URL: https://stats.bis.org/statx/srs/tseries/OTC_DERIV/H:D:A:A:5J:A:5J:A:TO1:TO1:A:A:3:C?t=D5.1&p=20191&i=1.8&x=DER_TYPE.1.CL_OD_TYPE&o=s:line (accessed on 12.10.2020).

of underlying assets and the market value of derivative financial instruments are presented in *Fig. 7, 8*, respectively.

There is an opinion in the specialized press that the official statistics on derivatives are greatly underestimated (according to various estimates, from 40 to 100%), however, even using official data, it is easy to prove that instruments for the spread of fictitious capital are widely represented in the derivatives market [24]. Moreover, the 12 trillion market value of derivatives accounted for 13.7% of global GDP in 2019, and this amount actually accounted for transactions in derivative contracts, and, therefore, the demand for adequate liquidity was presented and removed from reproduction as financial instruments. and real capital. That is, if the value of the underlying asset will never be realized in the derivatives market, since it is just a matter of speculation and arbitrage, then the market value of the contracts themselves is involved in the transactions when they are entered into. Such a demand for liquidity cannot be satisfied without the use of debt financing [17], therefore the role of banks in financing the corresponding operations to create fictitious capital becomes even more noticeable.

It is also necessary to consider the currency structure of claims for derivative contracts (*Fig. 9*).

Slightly less than half of the claims on the relevant contracts are denominated in US dollars, which is undoubtedly an important factor in the demand for dollar liquidity.

However, we believe that the role of the derivatives market is not only and not so much in the formation of a pyramid of claims for non-existent foreign exchange and interest-bearing assets [25], and even not so much in inciting speculative races in financial markets. We believe that the derivatives market is a channel of fictitious capital due to changes in the pricing rules in the financial and commodity markets. In particular, derivatives for real goods practically do not respond to supply and demand in the markets of underlying assets, but on the contrary, prices of underlying assets are subject to dependence on exchange quotes in stock markets, since derivatives for goods are bought for diversification of financial portfolios. Thus, the prices of physical goods depend on stock indices. This trend can be traced in two ways: firstly, to track changes in world prices for various tradable goods relative to each other, and secondly, to assess the degree of influence of

Table 6

The results of the correlation analysis of the price dynamics of various product groups

Product	Corn	Iron ore	Bananas	Rubber	Coal	Aluminum	Palm oil	Soybeans	Rice	Coffee	Cotton	Nickel	Rapeseed oil	Sugar	Zinc	Wool	Price index: metals	Price index: energy	Price index: industrial production	Price index: APSP crude oil
Corn	x	1.00	0.98	0.72	0.41	0.49	0.71	0.87	0.74	0.54	0.54	0.75	0.78	0.58	–0.42	0.11	0.78	0.85	0.78	0.82
Iron ore	x	x	0.99	0.88	0.56	0.60	0.82	0.70	0.78	0.61	0.69	0.83	0.90	0.71	–0.21	0.27	0.97	0.74	0.96	0.72
Bananas	x	x	x	-0.39	-0.10	-0.11	–0.43	–0.60	–0.25	–0.38	–0.21	–0.29	–0.38	–0.55	0.51	0.20	–0.26	–0.56	–0.29	-0.51
Rubber	x	x	x	x	0.67	0.74	0.92	0.70	0.72	0.78	0.85	0.84	0.94	0.87	–0.16	0.39	0.91	0.70	0.94	0.65
Coal	x	x	x	x	x	0.85	0.58	0.36	0.42	0.46	0.71	0.57	0.66	0.56	0.36	0.84	0.68	0.60	0.70	0.57
Aluminum	x	x	x	x	x	x	0.65	0.39	0.45	0.62	0.78	0.76	0.68	0.57	0.39	0.72	0.77	0.60	0.79	0.57
Palm oil	x	x	x	x	x	x	x	0.75	0.72	0.79	0.75	0.80	0.91	0.89	–0.22	0.25	0.85	0.73	0.87	0.67
Soybeans	x	x	x	x	x	x	x	x	0.74	0.45	0.45	0.61	0.77	0.67	–0.37	0.05	0.70	0.84	0.71	0.82
Rice	x	x	x	x	x	x	x	x	x	0.48	0.40	0.64	0.82	0.62	–0.35	0.11	0.76	0.66	0.75	0.63
Coffee	x	x	x	x	x	x	x	x	x	x	0.71	0.78	0.70	0.79	–0.18	0.19	0.68	0.51	0.71	0.43
Cotton	x	x	x	x	x	x	x	x	x	x	x	0.78	0.74	0.68	0.08	0.52	0.78	0.53	0.82	0.49
Nickel	x	x	x	x	x	x	x	x	x	x	x	x	0.82	0.69	–0.09	0.29	0.91	0.72	0.92	0.70
Rapeseed oil	x	x	x	x	x	x	x	x	x	x	x	x	x	0.83	–0.24	0.36	0.92	0.77	0.93	0.73
Sugar	x	x	x	x	x	x	x	x	x	x	x	x	x	x	–0.22	0.23	0.73	0.63	0.76	0.57
Zinc	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.56	–0.06	–0.21	–0.07	-0.18
Wool	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.41	0.33	0.43	0.33
Price index: metals	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.79	0.9968	0.77
Price index: energy	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.80	0.99
Price index: industrial production	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0.77

Source: Global prices. URL: https://fred.stlouisfed.org (accessed on 11.11.2020).

Table 7

Top commodity derivatives in 2019

No.	Commodity derivative	Exchange	Volume, number of contracts	Underlying asset price	Open interest, end of 2019
1	Futures on Brent oil	Moscow Exchange	616,575,370	25,413,037	2,684,190
2	PTA futures	Zhengzhou Commodities Exchange	312,470,222	8,882,021	918,896
3	Iron Ore futures	Dalian Commodity Exchange	296,538,010	19,873,140	702,827
4	CRUDE OIL futures	CME Group	291,648,494	16,596,793	2,146,037
5	Soybean Meal futures	Dalian Commodity Exchange	272,869,691	7,603,012	2,925,246
6	Methanol futures	Zhengzhou Commodities Exchange	265,094,214	6,100,150	877,821
7	Brent Crude futures	ICE Futures Europe	221,329,190	10,490,953	2,594,785
8	Rapeseed meal futures	Zhengzhou Commodities Exchange**	138,085,360	3,201,333	329,954
9	Palm Olein futures	Dalian Commodity Exchange	135,504,196	7,129,820	888,380
10	CRUDEOILM futures	Multi Commodity Exchange of India	134,909,828	5,390,660	45

Source: The WFE's Derivatives Report 2019. URL: www.world-exchanges.org (accessed on 14.11.2020).

stock market indices on changes in commodity prices.

The initial data for the analysis were obtained at https://fred.stlouisfed.org, the analysis covers 10 years with a monthly breakdown. The results of the correlation analysis of prices for different product groups are presented in *Table 6*.

Insignificant values of pair correlation coefficients show products made of zinc and wool, for the "banana" category the correlation is negative, all other product groups and price indices demonstrate a tangible relationship in price dynamics. However, it is known from the course of economic theory that the factors of demand in different markets cannot be the same, and the level of inflation does not explain the dynamics of prices due to its gradual decline and uneven manifestation.

It is noteworthy that the highest correlation coefficients correspond to the following types of goods: wheat, iron ore, palm oil, soybeans, rapeseed oil, nickel, as well as by composite price indices. If we consider the report on the dynamics of exchange trading in derivatives for 2019, we can see that these commodity groups are the leaders in terms of trading volumes in exchange derivatives as underlying assets (*Table 7*).

Thus, prices for commodities traded on an exchange are determined not by the markets

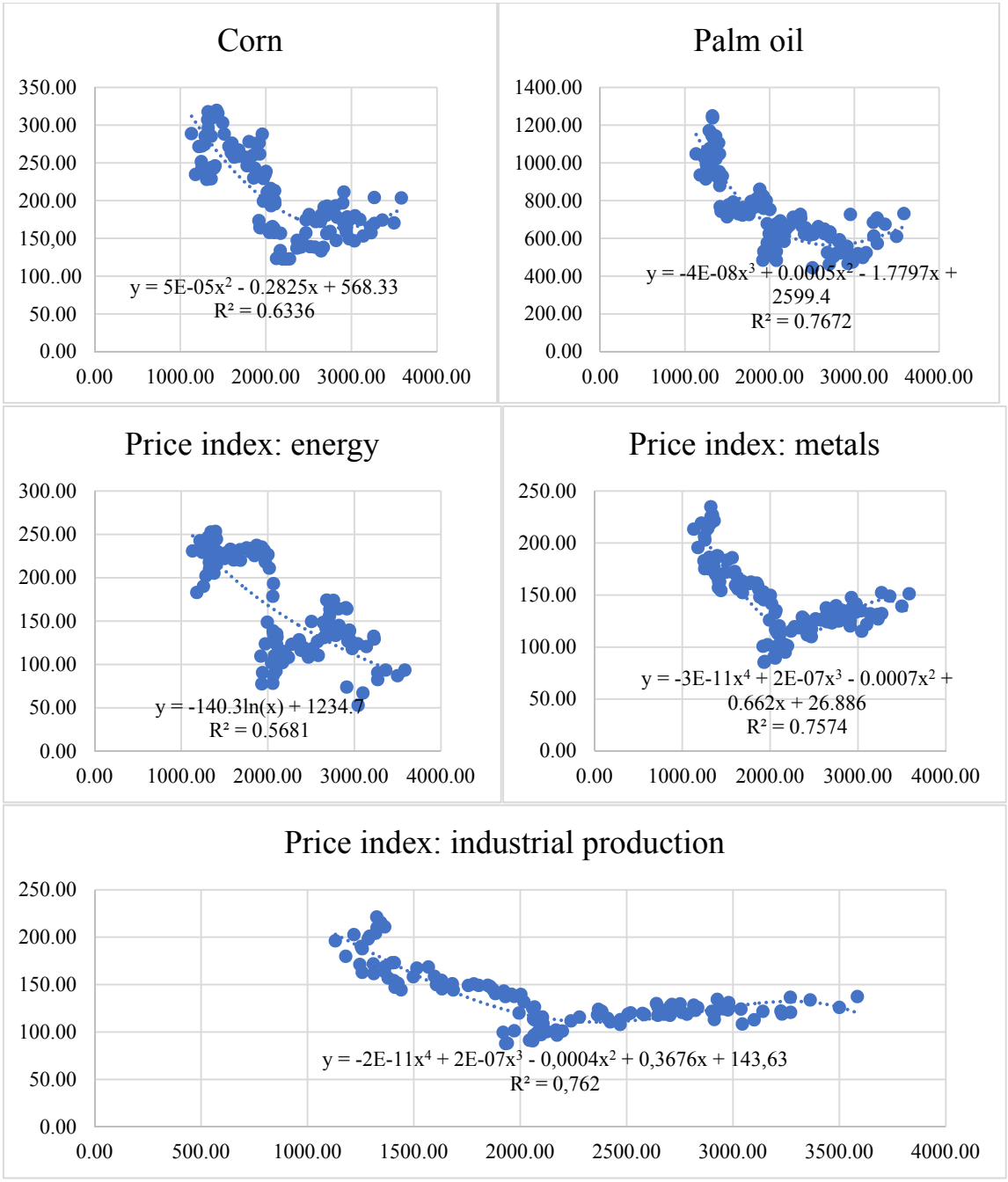

Fig. 10. **Regression on commodity prices and indices on the dynamics of the S&P 500**

Sources: Global prices. URL: https://fred.stlouisfed.org (accessed on 11.11.2020); S&P 500 Dynamic Participation Index. URL: https://www.spglobal.com/spdji/en/indices/strategy/sp-500-dynamic-participation-index/#overview (accessed on 11.11.2020).

of the respective commodities, but by general market trends. Then we need to show the connection to the stock market (*Fig. 10*).

All the figures presented make it possible to unambiguously identify the relationship between the studied values, however, the presence of a "turning point" on all charts is noteworthy: with the S&P index of 2000 points, the direction of the dependence changes. If before 2000 the dependence is strictly inverse, i.e. it seems that commodity markets are becoming an instrument for hedging the risk of changes in the value of shares and are more interesting to investors as a way to diversify the portfolio, then after the index reaches 2000 points, the direction changes, and the

connection becomes direct: an increase in stock prices leads to an increase in prices for goods. This can probably be explained by the speculative sentiment of investors and the inflation of financial bubbles in the markets of various assets. It is interesting to note, however, that the S&P is above 2,000 points in 2014, and we showed earlier that it has been precise since 2014 that banking in the United States has been fully dedicated to the struggle for liquidity. We believe that such a coincidence cannot be called accidental. If the key goal of banking operations is to maximize liquidity, then the real reasons for transactions cease to play any role, and all efforts to overheat the markets are aimed at obtaining a percentage of each exchange transaction when a financial bubble is inflated through credit financing. The condition for achieving the efficiency of using banking resources to inflate a financial bubble is the absolute universality of trading objects and the possibility of their multiple divisibility, regardless of the physical properties of the objects, which is fully achieved through the use of derivative financial instruments.

Meanwhile, it was noted above that the process of financialization by itself does not guarantee the presence of fictitious capital in the economy [26] and, although we have already indirectly proved the opposite, it is necessary to take into account the activities of companies in various sectors of the economy and identify elements of fictitious capital in the results of this activity. The analysis was carried out using the public database of A. Damodaran.[4] Used data on 95 different sectors of the US economy for the period 1999–2019 on 21 indicators of firms' performance. Such coverage is necessary to identify not specific trends, but the "general line" of the behavior of US firms in real and financial markets.

The purpose of this phase of the study is to identify changes in the patterns that channel the financial resources of firms. The results of the analysis of the dependences of the indicators are presented in *Table 8* (by year) and *9* (by industry).

We will give an interpretation of the obtained analysis results. *Table 8* shows how the structure of financial impulses changes over time and what financial decisions companies make. The conclusions are as follows:

The number of firms in the industry is not affected by the size of net profit and market capitalization (in *Table 8* the calculated values of the correlation coefficients for these ratios are close to 50%, with the exception of 2003). Moreover, there is a downward trend in the number of public companies due to the concentration of financial resources among the recognized leaders of various industries and the lack of the possibility of real competition with them in the financial markets due to the massive advantage in terms of market liquidity of financial instruments issued by market leaders [27].

The influence of the size of net cash flow on market capitalization is gradually weakening, which was also typical in the run-up to the 2007–2008 crisis. For example, in 2003–2004 the dynamics of the market capitalization of the flow was 90% in accordance with the dynamics of the net cash flow (NCF), while in the pre-crisis 2006 the correlation coefficient was 1%. Currently, the correlation coefficient for this ratio does not exceed 70%.

Net profit, on average, has a greater impact on market capitalization than net cash flow, which can be the result of poor investment policies or excessive dividend payments. The correlation coefficient in this pair of factors does not fluctuate as much as when comparing market capitalization to net cash flow. Partly, this may be due to the fact that net cash flow is a more objective financial indicator, being exempted from tax and accounting aspects of its formation. However, we believe that the after-tax profit distribution process is also a factor of the greater volatility of the dependence of capitalization on cash flow.

Net profit of companies does not correlate with the level of capital investments. For a given

[4] Damodaran Online. URL: http://people.stern.nyu.edu/adamodar/New_Home_Page/dataarchived.html (accessed on 19.10.2020).

pair of factors, none of the analysis periods gives a stable relationship (*Table 8*). Consequently, reinvestment of profits is not an important way of financing capital investments. The reason lies in leverage and excessive dividends, as well as share buybacks to maintain fictitious capitalization [17].

The relationship between dividends and the size of net profit is weakening, in other words, to support the demand for liquidity from investors, companies are looking for resources other than financial indicators. So, according to *Table 8*, if in 1999 88% of dividend payments could be attributed to the dynamics of net profit, then in 2019 — only 61%. As the impact of dividends on capitalization is also weakening, the reason for this is the buyback of shares.

Weighted average cost of capital according to *Table 8* has practically no effect on market capitalization, despite the fact that when conducting financial analysis, the weighted average cost of capital cannot but influence the discount rate (the discount rate considered when analyzing the time value of cash flows, as a rule, cannot be lower than the price of attracting financial resources. Since discounted cash flow is the basis for predicting the prices of financial instruments, including shares, there should be a negative relationship between capitalization and the weighted average cost of capital. The absence of such dependence can be the result of either incorrect estimation of discount rates by decision-makers, or the lack of influence of the price of raising capital on the dynamics of market capitalization.). Since in this case the standard deviation and beta of stock prices also do not have a significant impact on capitalization, we conclude that the liquidity risk of stocks is not considered when making an investment decision. The concept of accounting for liquidity risk [2], reflected, for example, in the Merton model, is based on the fact that market liquidity depends on the ratio between the market capitalization of a company and the size of its debt predicted by investors. When assessing the forecast capitalization considering the liquidity risk in accordance with this model, it is necessary to take into account the beta coefficient, the level of volatility of the share price, and the weighted average cost of capital. The lack of connection between capitalization and the listed parameters indicates either a violation of the basic principles of market fundamentalism or incorrect assessments of market participants. In any case, the concept of assessing liquidity risk does not work in practice, since the latter is viewed by financial speculators to a greater extent as a possibility of appropriating liquidity, rather than as a threat of portfolio losses.

An additional argument is that the equity ratio is not related to the cost of borrowed capital, which also contradicts the basic parameters for assessing solvency, which are used, by the way, by rating agencies and banks. We see that the ability to attract liquidity from the stock market does not depend either on liquidity risks (market) or on solvency indicators (balance sheet), i.e. in fact, activity in the financial markets exists in isolation from the results of the activities of firms, which clearly indicates the fictitiousness of the capitals serving this process.

The level of dividends is not related to economic added value, although dividends affect the weighted average cost of capital in the EVA formula, which clearly indicates the independence of the results of using investments and their ability to generate profit in the matter of paying dividends [22]. Economic value added indicates whether investors have a better way to allocate their assets, however, if investors are only interested in cash flow in the form of dividends, such conventions can be ignored.

There is a stable relationship between the size of capital investments, net working capital, and dividends, and the amount of borrowed funds. The exception is the pre-crisis years of financial bubble inflation (2005–2007) [7]. All other time intervals are characterized by a stable strong connection between indicators. In other words, borrowed funds are used to finance investments, are necessary to replenish working capital and

Table 8

Results of the analysis of the mutual influence of various indicators of the performance of companies in the United States (by year)

Correlation coefficients	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of firms by industry – net profit	0.434	0.234	0.206	0.164	0.987	0.391	0.439	0.402	0.065	0.393	–0.053	0.170	0.243	0.392	0.286	0.299	0.044	0.048	0.338	0.261	0.316
Number of firms by industry – market capitalization	0.598	0.591	0.561	0.531	0.994	0.605	0.608	0.590	0.498	0.465	0.550	0.590	0.532	0.558	0.448	0.461	0.497	0.514	0.529	0.511	0.495
Number of firms by industry – spread	0.516	0.407	0.327	0.325	0.151	0.312	0.295	0.334	0.368	0.364	0.227	0.276	0.383	0.387	0.231	0.330	0.318	0.025	0.221	0.119	0.079
Market capitalization – net cash flow	0.501	0.187	0.605	0.691	0.985	0.801	0.549	–0.109	0.080	0.272	0.495	0.504	0.679	0.942	0.220	0.411	0.373	0.481	0.759	0.622	0.688
Market capitalization – net profit	0.828	0.324	0.728	0.625	0.994	0.858	0.909	0.891	0.065	0.873	0.570	0.615	0.773	0.931	0.577	0.826	0.563	0.514	0.826	0.712	0.768
Net profit – capital investment	0.065	–0.169	–0.018	–0.018	–0.004	0.057	0.060	0.050	0.013	0.079	0.024	0.061	0.012	–0.020	–0.080	–0.132	–0.026	0.039	0.020	0.010	–0.067
Net profit – dividends	0.880	0.849	0.786	0.700	0.994	0.840	0.875	0.889	0.817	0.931	0.703	0.679	0.787	0.925	0.508	0.733	0.420	0.442	0.718	0.678	0.614
Net profit – net working capital	0.383	0.427	–0.073	–0.280	–0.901	0.145	–0.447	0.344	0.333	0.148	–0.135	0.203	–0.105	–0.437	0.070	0.234	0.122	0.219	0.089	–0.003	0.143
Market capitalization – book value of equity	0.796	0.821	0.684	0.778	0.998	0.881	0.904	0.937	0.850	0.820	0.846	0.858	0.853	0.853	0.728	0.752	0.706	0.781	0.723	0.665	0.621
Market capitalization – equity ratio	0.301	0.290	0.258	0.139	–0.003	0.074	n/a	n/a	n/a	0.193	0.117	0.071	0.075	0.037	0.217	0.117	0.206	0.130	0.152	0.267	0.306
Market capitalization – dividends	0.754	0.215	0.756	0.787	0.994	0.869	0.873	0.901	0.095	0.853	0.883	0.841	0.897	0.923	0.751	0.789	0.704	0.759	0.707	0.655	0.640
Market capitalization – weighted average cost of capital	0.381	0.229	0.216	0.077	0.003	0.131	n/a	n/a	n/a	0.077	–0.076	–0.066	–0.053	–0.061	–0.020	n/a	0.099	0.023	0.059	0.176	0.136

Table 8 (continued)

Correlation coefficients	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Market capitalization – standard deviation of market prices	0.251	0.276	0.224	0.055	0.050	–0.011	0.120	0.159	0.224	0.161	0.147	0.163	–0.030	0.223	0.011	0.001	0.039	–0.057	–0.066	0.095	0.109
Market capitalization – Beta	0.339	0.176	0.166	0.056	–0.005	0.127	0.100	0.104	0.036	–0.088	–0.169	–0.151	–0.159	–0.111	–0.146	–0.230	–0.113	–0.158	–0.077	0.001	–0.081
Equity ratio – capital investment	0.017	–0.025	–0.128	–0.280	–0.042	–0.176	n/a	n/a	n/a	–0.034	–0.036	–0.084	–0.037	–0.054	–0.115	–0.062	–0.142	–0.159	–0.162	–0.093	–0.081
Capital investment – EVA	0.754	0.183	–0.093	0.509	0.670	0.851	0.335	0.219	0.269	0.459	0.585	0.227	0.390	0.670	–0.245	n/a	–0.192	–0.057	–0.004	0.073	0.117
Depreciation – cost of debt	0.051	0.004	0.090	0.074	n/a	0.115	0.036	0.099	0.128	0.090	0.036	–0.056	0.003	0.045	–0.045	n/a	0.270	0.156	0.015	–0.078	0.025
Cost of debt – equity ratio	0.405	0.287	0.161	0.193	n/a	0.209	n/a	n/a	n/a	0.048	0.085	0.208	0.226	0.153	0.276	n/a	0.003	0.125	0.139	0.186	0.264
EVA – Beta	0.094	–0.078	–0.189	–0.188	–0.145	n/a	–0.115	–0.066	–0.028	0.028	–0.184	–0.292	–0.158	–0.108	0.116	n/a	0.074	0.066	0.158	0.234	0.141
EVA – dividends	0.626	0.319	0.189	0.255	0.733	#N/A	0.337	0.319	0.061	0.493	0.721	0.565	0.561	0.807	0.181	n/a	–0.032	–0.024	–0.039	–0.070	0.006
Capital investment – debt	0.422	0.390	0.601	0.472	0.964	0.411	0.218	0.219	0.149	0.193	0.255	0.239	0.186	0.183	0.082	0.083	0.076	0.106	0.105	0.110	0.119
Capital investment + net working capital + dividends – debt	0.969	0.713	0.980	0.953	0.985	0.902	0.334	0.266	0.180	0.567	0.963	0.954	0.964	0.964	0.973	0.956	0.951	0.934	0.919	0.903	0.899
Weighted average cost of capital – standard deviation of the market prices of a stock	0.640	0.749	0.763	0.786	0.506	0.120	0	0	0	0.462	0.504	0.562	0.148	0.411	0.718	0	0.443	0.553	0.599	0.495	0.430
Weighted average cost of capital – Beta	0.806	0.938	0.950	0.943	0.695	0.967	n/a	n/a	n/a	0.696	0.837	0.830	0.805	0.844	0.860	n/a	0.733	0.745	0.843	0.868	0.838

Source: Damodaran Online. URL: http://people.stern.nyu.edu/adamodar/New_Home_Page/dataarchived.html (accessed on 19.10.2020).

Table 9

Results of the analysis of the mutual influence of various indicators of the performance of companies in the United States (by industry – selectively)

Industry	Number of firms in the industry – net profit	Number of firms in the industry – market capitalization	Number of firms in the industry – spread	Market capitalization – net cash flow	Market capitalization –net profit	Market capitalization – book value of equity	Market capitalization –equity ratio	Market capitalization – dividends	Market capitalization – weighted average cost of capital	Market capitalization – standard deviation of market prices	Equity ratio – capital investments	Capital investments – EVA	Depreciation – cost of debt	Cost of debt – equity ratio	Eva –Beta	Eva – dividens	Capital investments – debt	Capital investments + net working capital + dividends – debt
Advertising	–0.07033	0.128241	0.171814	0.307086	–0.26548	0.368879	0.590194	0.370634	0.330382	–0.2928	–0.10316	–0.40057	–0.04753	0.011211	–0.28515	–0.21332	0.515824	–0.00926
Aerospace/ Defense	0.548737	0.586996	0.397509	0.372549	0.650408	0.811033	0.379787	0.466147	0.167956	0.419945	–0.2125	0.679233	–0.01524	0.282469	0.165569	0.242245	0.442937	0.266511
Air Transport	–0.24336	0.193749	–0.2041	0.087196	0.127214	0.008349	0.675161	0.500772	0.077721	–0.36291	–0.23395	0.03317	–0.20747	–0.57057	0.017565	–0.04769	0.831864	0.851195
Apparel	–0.02341	–0.09003	0.624351	0.179446	0.521668	0.767288	0.694944	0.843118	0.275507	–0.06498	0.100827	0.575059	–0.16781	0.021931	–0.40349	0.045452	0.857229	0.70108
Auto and Track	–0.7426	–0.63309	0.243515	0.863009	0.952922	0.992124	–0.61069	0.982442	–0.31149	–0.0644	–0.65588	0.353261	0.001761	0.319424	–0.15414	0.336544	0.999393	0.998879
Banks	0.882287	0.902418	–0.15035	0.994697	0.993477	0.99328	0.120653	0.993012	0.066395	–0.19153				0.019859				0.900709
Building Materials	0.060202	–0.21733	0.300387	–0.07763	–0.45136	0.075939	0.628124	–0.12086	0.254133	–0.06201	0.102405	0.212475	–0.05748	0.192844	–0.20765	–0.11838	0.680594	0.525532
Chemicals	–0.05052	–0.09409	0.692141	0.05942	0.775595	0.808748	0.428584	0.027205	–0.135	–0.08666	0.02466	0.528771	–0.1723	–0.15029	–0.33603	0.077721	0.258456	0.147921
Computers/ Peripherals	0.306374	0.171278	–0.30568	0.405832	0.64222	0.604893	0.615573	0.037925	0.114876	–0.3512	–0.15529	–0.41717	–0.1167	0.023811	–0.10571	0.061064	–0.33637	–0.29169
Electrical Equipment	–0.14146	0.129337	–0.02376	0.025126	–0.17473	0.476224	0.490304	–0.1531	0.027287	–0.1569	–0.58317	–0.0506	–0.2701	0.118252	–0.41506	–0.51553	0.160631	0.320687

Table 9 (continued)

Industry	Number of firms in the industry – net profit	Number of firms in the industry – market capitalization	Number of firms in the industry – spread	Market capitalization – net cash flow	Market capitalization –net profit	Market capitalization – book value of equity	Market capitalization –equity ratio	Market capitalization – dividends	Market capitalization – weighted average cost of capital	Market capitalization – standard deviation of market prices	Equity ratio – capital investments	Capital investments – EVA	Depreciation – cost of debt	Cost of debt – equity ratio	Eva –Beta	Eva – dividens	Capital investments – debt	Capital investments + net working capital + dividends – debt
Financial services	0.469795	0.325708	–0.47972	0.267	0.225289	0.19916	0.257398	0.410195	–0.05965	–0.25254	–0.58636	n/a	–0.61505	0.352012	n/a	n/a	0.882891	0.062402
Homebuild-ing	–0.61494	–0.00703	0.191454	0.089756	0.305148	0.753534	0.505384	–0.32392	0.123469	–0.03942	0.13545	0.161129	–0.05895	0.168107	–0.49463	–0.50351	0.629132	–0.32191
Internet	–0.05123	0.023354	0.251875	0.118706	0.181548	0.012906	0.473357	n/a	–0.18695	–0.06982	–0.10318	n/a	–0.07444	–0.0467	n/a	n/a	–0.70655	–0.4621
Machinery	0.122218	0.445231	–0.07311	0.521295	–0.08241	0.772487	0.215566	–0.05122	–0.21153	–0.31267	–0.41262	0.354419	–0.08217	–0.10476	0.074854	0.086554	0.510462	0.378482
Semicon-ductor Equipment	0.276343	0.407505	–0.15126	0.495549	0.469785	0.676411	0.555987	n/a	0.247913	–0.01168	–0.13814	0.006959	–0.20289	–0.17133	0.45505	n/a	0.213787	0.230355
Steel	–0.77068	0.464427	0.022314	–0.11501	–0.51038	0.698732	0.324391	0.20858	0.151237	–0.18915	–0.31349	0.198935	–0.2406	0.124839	–0.00132	0.069145	0.794808	0.379726
Telecommu-nication	0.445719	0.244915	0.317003	–0.07416	0.078647	0.719075	0.613053	0.076894	0.097796	–0.49623	–0.13133	0.418156	–0.05682	–0.51228	–0.0131	0.286088	0.942596	0.943481

Source: Damodaran Online. URL: http://people.stern.nyu.edu/adamodar/New_Home_Page/dataarchived.html (accessed on 19.10.2020).

Table 10

Results of the regression analysis of FDI outflows

Country, number of observations	R 2 multiple regression	Significance F	Internal corporate debt-to-GDP coefficient	P-value	Capitalization coefficient	P-value
Austria, 19	0.4424	0.00935	928.87	0.018	72	0.056
Belgium, 13	0.157	0.275	296.603	0.76	77.33	0.14
Luxembourg, 18	0.51206	0.0046	7.02	0.97	383.177	0.00149
Germany, 19	0.41076	0.01453	371.259	0.673	68.4455	0.0193
France, 19	0.077805	0.52309	292.2	0.7742	11.38961	0.5472
Netherlands, 19	0.01911	0.857	229.647	0.951	36.775	0.6
Switzerland, 27	0.47804	0.000408	443.781	0.58	39.527	0.027
UK, 30	0.2156	0.0377	90.32	0.87523	54.917	0.0197
USA, 30	0.4284	0.0005253	–4.345	0.204	4002.144	0.00098
Canada, 19	0.56077	0.00139	468.725	0.02386	0.000000014	0.15187
Japan, 30	0.68245	0.000000188	–1204.47	0.00272	28.6914	0.000086
China, 17	0.82295	0.0000055	996.17	0.14371	12.5455	0.0135
Hong Kong, 30	0.70616	0.00000007	204.782	0.273	14.55	0.0024

Sources: compiled by the authors on the basis of UNCTAD World Investment Report FDI inflows / outflows. URL: https://unctad.org/topic/investment/world-investment-report (accessed on 05.12.2020); World Bank Open Data URL: https://data.worldbank.org (accessed on 05.12.2020).

pay dividends, but all this has nothing to do with an increase in economic added value and an increase in market capitalization due to a stable cash flow. We see that balance sheet indicators (capital investments, working capital, payments on equity capital) are formed through loans, and this is one of the areas of corporate finance in the United States, and market indicators exist in isolation from this process and are characterized by own dynamics, regardless of indicators balance.

As a result, we find that financing of activities is carried out regardless of its performance through borrowed funds, but at the same time market capitalization is an independent tool for managing liquidity in financial markets, since its dynamics do not take into account the fundamental financial risks of issuers. In this case, firms become intermediaries, transferring momentum from banks to financial markets and transferring bank liquidity there, accumulating liabilities on balance sheets and inefficiency of fixed assets.

Table 9 allows us to detail the findings in terms of differences in the behavior of industries in the financial markets. When considering the data for the entire period of analysis, but with a grouping by industry, it can be seen that most industries actively use the debt financing method, the links between fundamental indicators are even less significant [22]. Stronger links between fundamentals by industry can

Table 11

Results of the regression analysis of FDI inflows

Country, number of observations	R 2 multiple regression	Significance F	Stock turnover coefficient	P-value	Trading volume coefficient	P-value
Austria, 30	0.2008	0.048	–4.49	0.58	314.1	0.014
Belgium, 13	0.3188	0.14663	–816.57	0.1	2292.98	0.064
Luxembourg, 18	0.00557	0.95899	–8709.57	0.844	5950.08	0.873
Germany, 30	0.48857	0.00012	–436.441	0.00248	1656.62	0.0000249
France, 25	0.1718	0.1256	–50.8788	0.75	246.247	0.1493
Netherlands, 25	0.57688	0.000078	–291.57	0.011	616.28	0.000029
Switzerland, 30	0.0447	0.539	–150	0.3437	111.7	0.303
UK, 19	0.504	0.003637	–79.92	0.885	1332.26	0.0168
USA, 29	0.6373	0.0000019	–905.7	0.014	1747.09	0.000073
Canada, 30	0.58289	0.0000075	63.1336	0.77	675.145	0.004218
Japan, 30	0.2521	0.01979	52.44	0.3527	39.898	0.49148
China, 17	0.45594	0.01411	320.667	0.05131	–133.354	0.444
Hong Kong, 30	0.6162	0.0000024	–550.658	0.0738	153.405	0.0000007

Sources: compiled by the authors on the basis of UNCTAD World Investment Report FDI inflows / outflows. URL: https://unctad.org/topic/investment/world-investment-report (accessed on 05.12.2020); World Bank Open Data URL: https://data.worldbank.org (accessed on 05.12.2020).

be seen in sectors such as banks, automotive, computers, electronics, and semiconductor manufacturing, chemicals, and the Internet and telecommunication.

The auto industry, an industry with a high share of US exports, clearly demonstrates exclusively debt financing and a negative relationship between the dynamics of the equity ratio and market capitalization. We have low balance sheet liquidity, financing of capital investments against the background of a decrease in the share of our own funds in the balance sheet, with an increase in capitalization and a priority export regime.

An analysis of the world economy in the context of financialization and the movement of liquidity flows is impossible without taking into account the dynamics of foreign direct investment. Since the purpose of this work is to assess the impact of globalization trends in financing on the formation of fictitious capital that obeys exclusively the laws of redistribution and violates the contours of reproduction of the world economy, we will conduct a regression analysis of the influence of financial market indicators on the dynamics of foreign direct investment [28].

To do this, we used a set of multiple linear regression tools (autoregression is not applicable due to the extremely limited amount of input data for analysis). The outgoing flows of foreign direct investment were analyzed in terms of the impact on them of the internal debt of resident companies and the dynamics

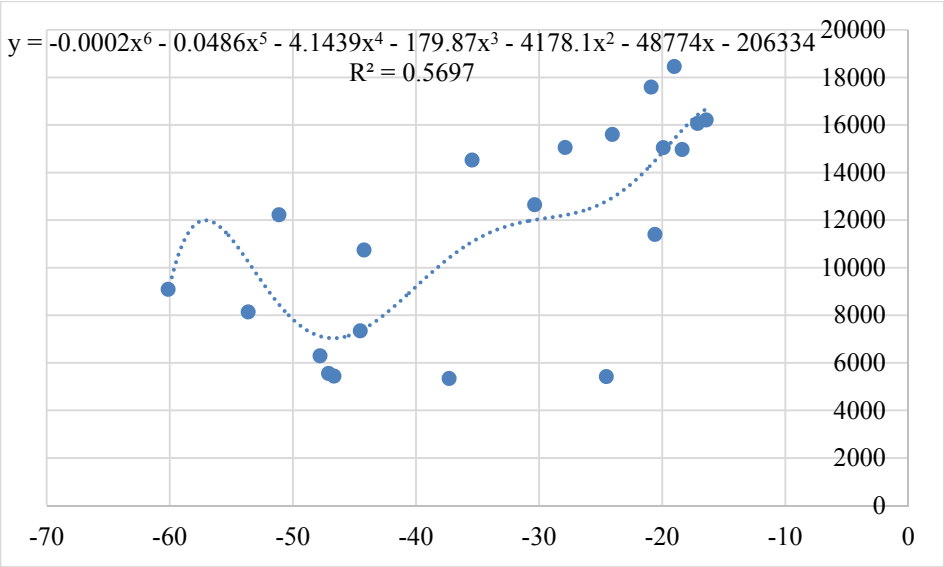

Fig. 11. **Dependence of global investment in fixed assets on the US international financial flows (% of GDP)**

Sources: Balance of payment analytical presentation by country. URL: https://data.imf.org/?sk=7A51304B-6426–40C 0–83DD-CA473CA1FD 52&sId=1542633711584 (accessed on 19.10.2020); Gross fixed capital formation data. URL: https://data.worldbank.org/indicator/NE.GDI.FTOT.CD (accessed on 19.10.2020).

of the market capitalization of national companies (in the original version, the analysis perimeter also included the share of income tax in company profits) to identify offshore flows, the share of finance in GDP, the share of services in GDP, and the share of financial services in the export of services, however, the listed indicators at the preliminary stage of the analysis did not show significant regressions). Incoming flows of foreign direct investment were tested for the dependence on the share turnover ratio in the domestic stock market and on the volume of stock trading in the domestic stock market in relation to the country's GDP (initially, the hypothesis of the influence of the share of industry in GDP on the dynamics of FDI was also tested, but the performance of the model was violated). The analysis period is 1990–2019 (for a number of countries, the range of analysis is already due to the lack of official data) the analysis was carried out on the basis of absolute values, as well as the growth rates of indicators to improve the quality of the models. The results of the regression analysis are presented in *Table 10, 11*.

The highlighted cells correspond to insignificant regressions or low significance of this or that factor, however, despite the presence of such values, often explained by the limitation of the sample size, we can talk about the presence of certain trends.

Firstly, for most of the countries under consideration, which are active players in the financial markets, there is a significant regression with a high proportion of the explanatory power of the influence of the factors under consideration on the flows of foreign direct investment. For example, 68.25% of outgoing foreign direct investment flows to Japan are explained by the mutual influence of debt and capitalization of the domestic market, and an increase in debt by 1% in relation to GDP explains a decrease in outgoing direct investment at the expense of $ 1204.47 million, and an increase in Japanese capitalization — to increase the outflow of FDI by $ 28.69 million. Another example, the inflow of FDI to Germany by 48.86% is explained by the dynamics of the domestic stock market and the acceleration of stock markets. Turnover by 1% leads to a decrease in FDI by $ 436.41 million, and an increase in trading volumes leads to an increase in FDI by $ 1,656.62 million.

Secondly, in *Table 11*, the attention to the prevalence of negative values in the column Coefficient of the factor "stock turnover" should be paid. This indicator can be obtained by dividing the volume of trading in shares by capitalization (no autocorrelation was found), while the dynamics of the trading volume has a positive, significant, in most cases, impact on the dynamics of the inflow of foreign direct investment. In addition, we note that the indicators used for the regression analysis of FDI inflows are also indicators of market depth in assessing its liquidity, which explains their choice. As a result, we find that the connecting link in the considered models is the capitalization of the domestic stock market, which is the main factor influencing the movement of FDI.

In the model of foreign direct investment inflow, the following logical relationship can be distinguished: when the turnover of trade in the stock market grows faster than market capitalization, the inflow of FDI slows down, and if there is a reverse trend, the inflow to this market accelerates. Capitalization, together with an increase in debt obligations (with the exception of the United States and Japan, where an increase in debt leads to a decrease in investment abroad) has a direct impact on the outflow of foreign direct investment by resident companies: the faster capitalization increases, the more intensive investment by residents abroad.

The lack of relationship between FDI and productivity in the recipient country, noted in the works of J. Stiglitz [5] and P. Krugman [29], D. Rodrik [30] and W. Easterly [31], enhances the negative impact of our findings. On average, half of the FDI inflow is associated with changes in the capitalization of national stock markets, and the growth in capitalization accelerates both the inflow and outflow of foreign direct investment. It is also interesting to note that international financial flows (from the point of view of the balance of payments as a whole), serving as the center of attraction for global finance, negatively affect the dynamics of investments in fixed assets. We consider the ratio of the level of financial capital attracted to the United States and the level of global investment in fixed assets (*Fig. 11*).

This conclusion, in our opinion, is indirect but obvious evidence of the presence of fictitious capital in the financial relations of the world economy in terms of the movement of foreign direct investment and explains a significant part of their total volume circulating between the centers of the world economy.

CONCLUSIONS

The process of financialization of the world economy today has become, firstly, difficult to analyze, and secondly, completely uncontrollable. The process of unmanageability of national economies is indicated, in particular, by the fact that, despite the change in the structure of GDP, only a few countries were able to briefly approach the dynamics of pre-crisis growth rates. The complexity and often the impossibility of establishing links between indicators of real output, productivity, capital intensity and the dynamics of financial flows leads to erroneous financial decisions at the level of private investors, companies, states and international organizations. The placement of financial resources in the US markets contributes to inflating financial bubbles, enhancing imbalances between the indicators of financial markets and the real sector, which ultimately poses a threat to the stability of global liquidity and the speculative nature of its circulation. Of particular concern are global derivatives markets, of which they are not key characteristics.

There is a number of indirect evidences of the chaos that has arisen in world finance, but we believe that the most important task of theoretical comprehension and practical analysis today is to find ways to protect capital from the threat of loss by withdrawing liquidity and forming fictitious capital in its place. Without pretending to solve this

problem as a whole, the authors proposed a methodological approach that makes it possible to identify the presence of fictitious capital and the forms of its manifestation on the basis of publicly available statistical data on the state of the banking sector and corporations at the center of the world financial system, the dynamics of foreign direct investment and the derivatives market. Identifying causal relationships and justifying tools for assessing the sources of fictitious capital and the forms of its manifestation in world financial markets will allow investors to avoid investments in toxic speculative instruments, and regulators — to timely predict the likelihood of a financial crisis in a particular market with signs of a financial bubble.

Signs of fictitious capital in the corporate sector include: independence of market liquidity from solvency in terms of balance sheet ratios, independence of capitalization from fundamental indicators of economic sector development, transformation of fundamental risks into opportunities for trading and arbitrage on a scale that significantly exceeds the calculated risk positions, not the main indicators of investment attractiveness are taken into account when making decisions on capital allocation.

Fictitious capital that does not have "citizenship" becomes an active participant, accounting for up to 50% of foreign direct investment plying between financial centers, traditional or developing. If a slowdown in capitalization in a certain market leads to an increase in foreign direct investment both in the direction of inflow and outflow, then this often indicates a financial bubble as a result of the formation of fictitious capital, i.e., the withdrawal of liquidity from production and trade sectors.

The process of increasing international turnover of financial resources through the United States is accompanied by a decrease in global investment in fixed assets, which indicates an increase in the impersonality and universality of financial capital when it turns into fictitious forms. Indeed, if banks direct resources in such a way that through firms they return to the financial market in a liquid form, then the process of their reinvestment seems questionable. In the same way, the diversion of resources to the US financial sector leads to their refusal to reproduce real capital by repackaging them into universal "faceless" units of fictitious capital that can quickly circulate and pass through the balance sheets of firms only to preserve sources of liquidity.

REFERENCES

1. Kindleberger C., Aliber R. Manias, panics and crashes: A history of financial crises. Hoboken, NJ: John Wiley & Sons, Inc.; 2005. 355 p. (Wiley Investment Classics Series. Book 39). (Russ. ed.: Kindleberger C., Aliber R. Mirovye finansovye krizisy. Manii, paniki i krakhi. St. Petersburg: Piter; 2010. 544 p.).
2. Galbraith J.K. The economics of innocent fraud: Truth for our time. Boston: Houghton Miffin Co.; 2004. 62 p. (Russ. ed.: Galbraith J.K. Ekonomika nevinnogo obmana. Pravda nashego vremeni. Moscow: Eksmo; 2019. 124 p.).
3. Polychroniou C.J. Financialization has turned the global economy into a house of cards: An interview with Gerald Epstein. Other News: Voices against the Tide. July 24, 2017. URL: http://www.other-news.info/2017/07/financialization-has-turned-the-global-economy-into-a-house-of-cards/
4. Perez C. Technological revolutions and financial capital: The dynamics of bubbles and golden ages. Northampton: Edward Elgar Publ.; 2003. 224 p. (Russ. ed.: Perez C. Tekhnologicheskie revolyutsii i finansovyi kapital. Dinamika puzyrei i periodov protsvetaniya. Moscow: Delo; 2013. 232 p.).
5. Stiglitz J.E. People, power, and profits: Progressive capitalism for an age of discontent. New York: W.W. Norton & Co.; 2019. 366 p. (Russ. ed.: Stiglitz J.E. Lyudi, vlast' i pribyl': Progressivnyi kapitalizm v epokhu massovogo nedovol'stva. Moscow: Alpina Publisher; 2020. 430 p.).

6. Calomiris C.W., Haber S.H. Fragile by design: The political origins of banking crises and scarce credit. Princeton, Woodstock: Princeton University Press; 2014. 584 p. (The Princeton Economic History of the Western World. Vol. 50). (Russ. ed.: Calomiris C., Haber S. Neprochnye po konstruktsii: politicheskie prichiny bankovskikh krizisov i defitsita kreditov. Moscow: Gaidar Institute Publ.; 2017. 713 p.).
7. Wolf M. The shifts and the shocks: What we've learned — and have still to learn — from the financial crisis. New York, London: Penguin Books; 2015. 528 p. (Russ. ed.: Wolf M. Sdvigi i shoki: Chemu nas nauchil i eshche dolzhen nauchit' finansovyy krizis. Moscow: Gaidar Institute Publ.; 2016. 512 p.).
8. Lewis M. The big short: Inside the doomsday machine. New York: W.W. Norton & Co.; 2011. 291 p. (Russ. ed.: Lewis M. Bol'shaya igra na ponizhenie. Tainye pruzhiny finansovoi katastrofy. Moscow: Alpina Publisher; 2015. 280 p.).
9. Shiller R.J. Irrational exuberance. Princeton, NJ: Princeton University Press; 2005. 336 p. (Russ. ed.: Shiller R.J. Irratsional'nyi optimizm: Kak bezrassudnoe povedenie upravlyaet rynkami. Moscow: Alpina Publisher; 2013. 424 p.).
10. Batra R. Greenspan's fraud: How two decades of his policies have undermined the global economy. New York: St. Martin's Press; 2005. 288 p. (Russ. ed.: Batra R. Moshennichestvo Grinspena. Kak dva desyatiletiya ego politiki podorvali global'nuyu ekonomiku. Minsk: Poppuri; 2006. 496 p.).
11. Brenner R. The economics of global turbulence: The advanced capitalist economies from long boom to long downturn, 1945–2005. New York: Verso Books; 2006. 369 p. (Russ. ed.: Brenner R. Ekonomika global'noy turbulentnosti: razvitye kapitalisticheskie ekonomiki v period ot dolgogo buma do dolgogo spada, 1945–2005. Moscow: HSE Publ.; 2014. 552 p.).
12. Tobin D. Monetary policy and economic growth. Transl. from Eng. Moscow: Librokom; 2010. 272 p. (In Russ.).
13. Eichengreen B. Exorbitant privilege: The rise and fall of the dollar and the future of the international monetary system. Oxford: OUP Publ.; 2012. 240 p. (Russ. ed.: Eichengreen B. Nepomernaya privilegiya. Vzlet i padenie dollara. Moscow: Gaidar Institute Publ.; 2013. 320 p.).
14. Field J. Is capitalism working? A primer for the 21st century. London: Thames & Hudson; 2018. 144 p. (Russ. ed.: Field J. Est' li budushchee u kapitalizma? Vvedenie v XXI vek. Moscow: Ad Marginem; 2019. 144 p.).
15. Mau V.A. Opportunities and prerequisites for ensuring sustainable economic growth in Russia. *Srednerusskii vestnik obshchestvennykh nauk = Central Russian Journal of Social Sciences*. 2017;12(3):14–18. (In Russ.). DOI: 10.22394/2071–2367–2017–12–3–14–36
16. Dubinin S.K Financialization of economic growth and the Russian national financial system. *Finansy: teoriya i praktika = Finance: Theory and Practice*. 2017;21(4):6–21. (In Russ.).
17. Minsky H.P. The financial instability hypothesis. The Levy Economics Institute Working Paper. 1992;(74). URL: http://www.levy.org/pubs/wp74.pdf
18. Srnicek N. Platform capitalism. Cambridge, Malden: Polity Press; 2017. 120 p. (Russ. ed.: Srnicek N. Kapitalizm platform. 2nd ed. Moscow: HSE Publ.; 2020. 128 p.).
19. Piketty Th. Le capital au XXIe siècle. Paris: Éditions du Seuil; 2013. 976 p. (Russ. ed.: Piketty T. Kapital v XXI veke. Moscow: Ad Marginem; 2016. 592 p.).
20. Mueller J. Capitalism, democracy and Ralph's pretty good grocery. Princeton, NJ: Princeton University Press; 2001. 352 p. (Russ. ed.: Mueller J. Kapitalizm, demokratiya i udobnaya bakaleynaya lavka Ral'fa. Moscow: Olymp-Business; 2006. 288 p.).
21. Loginov V. New looking glass: How the global stock market fell prey to tech giants and brokerage houses. Forbes. 14.09.2020. URL: https://www.forbes.ru/finansy-i-investicii/408727-novoe-zazerkale-kak-mirovoy-fondovyy-rynok-stal-dobychey (In Russ.).
22. Buzgalin A.V., Kolganov A.I. Global capital (in 2 vols.). Vol. 1. Methodology: Beyond positivism, postmodernism and economic imperialism (Marx re-loaded). Moscow: Lenand; 2015. 640 p. (In Russ.).
23. Musatov V.T. International migration of fictitious capital. Moscow: Mezhdunarodnye otnosheniya; 1983. 207 p. (In Russ.).

24. Hilferding R. Das Finanzkapital: Eine Studie über die jüngste Entwickiung des Kapitalismus. Wien: Wiener Volksbuchandlung; 1910. 477 p. (Russ. ed.: Hilferding R. Finansovyi kapital. Noveishaya faza v razvitii kapitalizma. Moscow: Librokom; 2011. 480 p.).
25. Ermolaev K.N. Title capital: Methodology, theory and practice. Doct. econ. sci. diss. Samara: Samara State Economic University; 2014. 256 p. (In Russ.).
26. Lane P.R., Milesi-Ferretti G.M. International financial integration in the aftermath of the global financial crisis. IMF Working Paper. 2017;(115). URL: https://www.elibrary.imf.org/doc/IMF001/24287–9781484300336/24287–9781484300336/Other_formats/Source_PDF/24287–9781484300381.pdf
27. Coyle D. GDP: A brief but affectionate history. Princeton, Oxford: Princeton University Press; 2015. 184 p. (Russ. ed.: Coyle D. VVP: Kratkaya istoriya, rasskazannaya s piyetetom. Moscow: HSE Publ.; 2016. 176 p.).
28. Aganbegyan A.G. How to resume social and economic growth in Russia? *Nauchnye trudy Vol'nogo ekonomicheskogo obshchestva Rossii = Scientific Works of the Free Economic Society of Russia.* 2020;222(2):164–182. (In Russ.). DOI: 10.38197/2072–2060–2020–222–2–164–182
29. Krugman P. The conscience of a liberal. New York: W.W. Norton & Co.; 2007. 352 p. (Russ. ed.: Krugman P. Kredo liberala. Moscow: Evropa; 2009. 368 p.).
30. Rodrik D. The globalization paradox: Democracy and the future of the world economy. New York: W.W. Norton & Co.; 2012. 368 p. (Russ. ed.: Rodrik D. Paradoks globalizatsii: demokratiya i budushchee mirovoy ekonomiki. Moscow: Gaydar Institute Publ.; 2014. 576 p.).
31. Easterly W. The elusive quest for growth: Economists' adventures and misadventures in the tropics. Cambridge, MA: The MIT Press; 2002. 256 p. (Russ. ed.: Easterly W. V poiskakh rosta. Priklyucheniya i zloklyucheniya ekonomistov v tropikakh. Moscow: Institute for Complex Strategic Studies; 2006. 352 p.).

ABOUT THE AUTHORS

Dar'ya A. Dinets — Cand. Sci. (Econ.), Assoc. Prof., Head of the Transport Management and Economics Department, Irkutsk State Transport University, Irkutsk, Russia
dardinets@gmail.com

Roman A. Kamaev — Dr. Sci. (Econ.), Prof., Moscow University of Finance and Law, Moscow, Russia
Romanalex2000@yandex.ru

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