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## **Studying the "vanishing effect" of the impact of financial development on economic growth in Russian regions**

The effective use of regions' potential in order to achieve higher levels of economic development and spur economic growth is understood as one of the most urgent and priority tasks of the economic policy in Russia. In turn, the study of the scientific problem considering "finance – growth" nexus at the local level makes it possible to deeper understand the economic growth factors, as well as the causes of regional disparities by the level of development.

The recent researches of influence of financial development of the countries on their economic growth ("finance growth" nexus) revealed nonlinear nature of this dependence. It is shown, for example, that if during 1960-1990 in the developed countries significant causal dependence on finance to growth was observed, then in the new millennium it either strongly weakens, or at all disappears.

This fact is explained in different ways. In particular, the point of view is widespread according to which when financial systems achieve a high level of development the increased risk collects in them. Besides, the developed financial sector can exert negative impact on growth when it withdraws resources from productive sectors.

Some researches of interrelation of financial and economic development at the level of regions in the countries also revealed a phenomenon of "vanishing effect" of influence of finance on growth.

Features of development of the banking sector and the Russian economy in general in the last fifteen years also contain some prerequisites for manifestation of nonlinearity of influence of finance on growth.

Firstly, the growth of financial depth after 2000 happened in high gear and in the conditions of soft constraint of the supply of the loans by 2007-08 the quality of a loan portfolio of the Russian banks decreased. It means, at least, weakening the connection of volumes of credit and growth and if the volume of the unattended credits begins to grow (that actually occurred, since 2009), then the investigated relationship can even be negative. Thus, there are grounds for detecting the changing connection of these indicators with growth measuring financial development by means of an indicator of the ratio of volume of the loans to regional GDP.

Secondly, changing the nature of the considered connection could happen due to the deep and long crisis. The 2008 - 2009 crisis in addition to cyclic components contains an essential structural component. Some researchers affirm in this respect, that the crisis put an end to the possibility of continuing economic growth in Russia based on the old model, and sharply designated the need to develop a new growth model. However, no new model of growth has been launched yet, and preserving the existing institutions and mechanisms of economy (including the decentralized finance system) in the conditions of the new reality does not allow expecting growth that is steady and adequate to potential.

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Relying on the available premises of nonlinearity of “finance-growth” nexus in regions of Russia, we conducted a research in which we check a hypothesis of nonlinearity of interrelation of finance and growth at the level of regions. For this purpose we estimate the equation of dependence of growth rates of GDP on a set of control variables, standard for similar researches, we include the tested variable of financial development and its square in the equation.

The financial variable is presented in models to one of the indicators - the ratio of the loans granted to the resident organizations and physical resident persons to GDP (further "Credits to GDP") and the ratio of deposits of legal entities and individuals in rubles and foreign currency to GDP (further "Deposits to GDP").

The sample covers the specified variables in regions of Russia from 2002 to 2014.

The initial check of the hypothesis put forward is performed by means of assessing cross-sectional regressions by the least-squares method and testing for the inverted U-form. Then the dynamic model of panel data based on application of the system generalized method of moments is considered (system GMM, Arellano-Bover / by Blundell-Bond system estimator). This model allows to receive more exact results owing to elimination of the problem of endogeneity which is present at cross-sectional regressions.

The OLS-assessment of the model showed that coefficients at the linear and square member have various signs - positive in the first case, and negative in the second. At the same time both are statistically significant for 5 percent level.

It confirms our assumption that when reaching a certain threshold value of its development the financial system ceases to influence the economy of regions positively. It should be noted that before reaching the threshold of the financial depth the banking sector makes a tangible contribution to economy - when increasing the ratio of credits to GDP by 1 percent the growth rates increase by 0.06 percent.

The test result on the inverted U-form shows that the studied interrelation is visualized in the form of the inverted U-shaped curve, also confirming the hypothesis of nonlinearity.

Further the model was estimated with the help of the system generalized method of the moments. The nonlinearity of communication is confirmed also in this case. Linear and square members in the received specification are statistically significant, and, as well as in the first case, differ by the sign. Linear and square members in the received specification, as well as in the first case, differ by the sign and are statistically significant, but already for 1% level. The positive influence of financial depth on growth is higher, than at the OLS-assessment, the increase in the credits to GDP ratio by 1 percent yields an additional 0.33 percent of growth.

The model assessment from the tested variable “Deposits to GDP” showed the same results.

To check the robustness of the obtained results we estimated the interrelation of financial development and economic growth separately for the periods of 2002-2008 and 2009-2014. It is of interest as crisis of 2008 could influence the weakening of the studied interrelation.

The assessment of the data from 2002 to 2008 suggests the availability of positive and significant interrelation between the development of bank intermediation and economic growth during this period. At the same time the nonlinearity revealed in the analysis of the complete pool of sample is not observed: the coefficient at the square composed is negative, but statistically insignificant. The analysis of the results obtained when assessing the models for the period of 2009-2014 shows that the interrelation between the financial variable and growth rates is not identified.

On the basis on the obtained results it is possible to draw a conclusion that the cause of nonlinearity and weakening of “finance-growth” nexus at the level of the Russian regions is first of all the protracted economic crisis which in the country. This conclusion is natural to some extent because traditionally the influence of finance on economy is considered through the influence on the total factorial productivity. And the period of 2009-2014 essentially differs from 2002-2008 in decomposition of growth; in the earlier period the total factorial productivity made a significant positive contribution to growth, however, in the second one it was negative. When this crisis is over, it is worth expecting a recovery of the direct positive interrelation between financial development and economic growth in regions of Russia.