Radygin A., Entov R.

Institutions and economic growth: contemporary theoretical approaches[1]

Mainstream economics and institutionalism: the convergence of approaches

Since David Hume and Adam Smith, the sources of economic growth have always been linked to capital accumulation. Any increase of capital, Smith argued, naturally results in an intensification of industrial activity and, consequently, in the growth of real wealth. Capital accumulation, in its turn, is determined by the volume of saving, since it is thrift and not industry that is the direct cause of capital growth. And it is not only that the accumulated funds (or proportion of them) are greater in more wealthy countries; a comparatively larger part of these funds is also 'employed [there] to maintain... productive hands'[2].

This thesis as to the significance of capital accumulation entered in its entirety into mainstream economics as can be seen in the detailed analysis of the role of savings and accumulated profit in maintaining economic activity and stable growth of public wealth in Book Four (The Agents of Production) of Alfred. Marshall's *Principles of Economics.*[3]

The Great Depression prompted the contemporaries and proponents of John Maynard Keynes to be more cautious in their understanding of accumulation processes, but these were applied mainly to short-term economic factors. Colin Clark, who studied long-term trends in economic development, wrote that as early as 1937 he had begun to have serious doubts regarding the truth of the doctrine, and that he considered capital accumulation to be a necessary but by no means sufficient precondition of economic progress[4].

The accumulation processes once again came to the fore in economic growth models developed by Roy Harrod, who had undoubtedly been considerably influenced by Keynes. In Harrod's basic economic growth equation the rate of expansion of production is directly

---

[1] The materials used in this article were in part published in Radygin A. D.,, Entov R. M., V poiskakh institutsional'nykh kharakteristik ekonomicheskogo rosta (novye podhody na rubezhe XX – XXI vv.) [In search of institutional characteristics of economic growth New approaches at the turn of the 21st century. Voprosy ekonomiki, 2008, № 8, pp. 4-27.

[2] 'The funds destined for the maintenance of productive labour are not only much greater in the former than in the latter, but are in a much greater proportion to those which, though they may be employed to maintain either productive or unproductive hands, have generally a predilection for the latter.' (Smith A. [1776] *An Inquiry into the Nature And Causes of the Wealth of Nations*. Moscow, Mysl', 1962, pp. 247-248).

[3] Marshall A. *Principles of Economics.* M., Progress, 1983.

[4] Clark C. Development Economics. The Early Years. // Pioneers in Development. Ed. by Meier G., Seers D. Oxford University Press, 1984, p. 59.

proportional to the rate of saving[5]. Essentially the same assumptions can be found in R. Solow's economic growth models[6], and in the theoretical models of endogenous growth and technological progress developed by R. Lucas[7].

However, empirical studies of the sources of economic growth applying standard production functions have failed to confirm the thesis as to the decisive role of 'physical capital accumulation'. One need only refer to the calculations of E. Denison, who was the first to suggest methods for the 'calculation' of economic growth. According to Denison, in the period 1929 – 1982 no more than 20 % of the growth of US national income per worker could be attributed to real capital formation. A decisive role in all estimates of this type, he argued, belongs to a productivity growth residual that cannot be further structured by input factors. E. Denison considered this parameter to be the progress of knowledge, which included both technological progress and the progress of knowledge of management and organization.[8] After Denison, the study of economic growth began gradually to encompass an increasing range of socio-political relationships in addition to the purely economic ones[9].

Factors of production also began to be differently understood. In the leading developed countries the view that the accumulation of material capital was the key economic growth factor was gradually modified to take into account the accumulation of human (as well as 'social') capital. In particular, factors determining the rate of growth of the labor force now began to be sought outside of the framework of demography proper[10].

Theorists in search of the origins of economic growth are increasingly relying on historic data and are taking a more in-depth view of the importance of political and social relations. This trend becomes even more evident when one compares Denison's calculations with the later publications of the very influential US economist, Robert J. Barro[11]. No only ordinary time series, but also cross-country studies are now increasingly utilized, and simple production functions are frequently replaced by multi-factor cross-section studies. Such variables as the rate

[5] R. Harrod [1948] *Towards a Dynamic Economics: Some Recent Developments of Economic Theory and Their Application to Policy*. Izdatelstvo inostrannoi literatury [The Foreign Literature Publishers], 1959.
[6] Solow R. A Contribution to the Theory of Economic Growth. // Quarterly Journal of Economics, 1956, Vol. 70/
[7] Lucas R. On the Mechanics of Economic Development. // Journal of Monetary Economics, 1988, Vol. 22.
[8] Denison E. Trends in American Economic Growth. 1929–1982. The Brookings Institution, 1985, p. 28.
[9] A more detailed analysis of attempts to decompose economic growth into its different factors can be found in: *Jorgenson D. Calculation of Economic Growth*. In: *Handbook of Economic Growth.* Ed. by Aghion Ph., Durlauf S. North-Holland, 2004.
[10] In their study of the sources of modern ('post-Malthusian') economic growth, O. Galor and O. Moav put forward a hypothesis of a significant change in preferences: a modern family, in their opinion, aims at accumulating the highest possibly human capital instead of increasing the number of children. See *Galor O., Moav O. Natural Selection and the Origin of Economic Growth*. In: *Quarterly Journal of Economics*, 2002, Vol. 117, Issue 4.
[11] See Barro R. Economic Growth in a Cross-section of Countries. In: The Quarterly Journal of Economics, 1991, Vol. 106, Issue 2; Barro R. Determinants of Economic Growth: a Cross-Country Empirical Study. NBER WP № 5698, Washington, 1996; Barro R., Lee J.-W. International Comparisons of Educational Attainment. In: Journal of Monetary Economics, 1993, Vol. 32; Barro R., Sala-i-Martin X. Economic Growth. McGraw Hill, 1995.

of personal saving (or saving rate) are not applied at all. Instead, prominence is given to those variables that are regarded by Barro as negative ones (the volume of public consumption, inflation, etc.) and (this appears to be especially significant) to variables in social and political relations (the extent to which a society is democratic, law abidance and, most importantly, the effectiveness of the protection of ownership rights and the sanctity of contract).

Since its first introduction, the 'economic growth calculation' has been criticized by proponents of institutionalism. In the early 1970s, D. North and R. Thomas noted that such factors as capital accumulation or economy of scale, were not sources of economic growth but represented *growth as such*[12].

According to one of the most prominent representatives of the new institutionalism, O. Williamson, there exist at a level deeper than that of ordinary economic activity certain political and economic structures that determine the rules of behaviour of individual actors.[13] It follows from this that the respect in an economy of ownership rights must be of a more fundamental importance than the kind of current transactions described by standard neoclassical economics. The abundance of studies published in the late 1980s and early 1990s can be regarded as an indication of a growing interest of researchers of economic growth theory in historic traditions and institutional structures.

Furthermore, the academic mainstream has recently been endorsing the idea that institutional structures, and above all *ownership rights, as well as the rights and responsibilities that arise within the system of contractual relations are, in fact, the deepest sources of long-term development and economic growth*. Another aspect of this trend is worth noting: the study of institutional structures is increasingly being incorporated into the framework of strictly formal analysis and hypotheses in this domain are based upon hi-tech theoretical models, which are then statistically tested by state-of-the-art econometric methods[14].

Without entering into any in-depth discussion of the complicated issue of the relationships between the neo-classical and institutional schools of modern economics, we may note that at the turn of the 21st century there was a further fundamental shift. Today, the many parameters governing institutional structures are being comprehensively subjected to theoretical modeling and econometric study. If neoclassical models are undergoing change, this is because, they are

[12] North D., Thomas R. The Rise of Western World: A New Economic History. Cambridge University Press, 1973, p. 2.
[13] Williamson O. The New Institutional Economics: Taking Stock, Looking Ahead. In: The Journal of Economic Literature, 2000, Vol. XXXVIII, № 3.
[14] It should be remembered that, until recently, some enthusiastic proponents of neoclassical economics have been treating even the founder of institutional theory,, Thorstein Veblen – and not only Marx and Schumpeter - as visionaries with 'insufficient analytical potential'. See Niehans J. A History of Economic Theory Classic Contributions, 1720-1980. The John Hopkins University Press, 1990, p. 522.

gradually exploring what O. Williamson describes as the "deeper" level" at which basic institutional structures have their effect. The borders between the ordinary objects of mainstream studies and the traditional themes of institutional studies are becoming increasingly blurred[15]. The main characteristics of the markets studied by both schools are now thought to be determined, at least in part, by prevailing ownership relations and by the system for enforcement of ownership rights and contract.

Historical features of the formation of economic institutions

One of the most popular current views of the emergence of market institutions can be summarized follows. The expansion of trade in the 16th and 17th centuries was conducive to a concentration of power – including '*de facto* political force' – in the hands of a small number of landowners and merchants. The accumulation of this power, at a certain stage, made it possible for property owners to form armed units that were qualitatively different from the levies of the feudal lords. By limiting the King's power, the owners of land and capital gradually asserted the rights of private ownership. The classical examples of this phenomenon are usually found in British history of the 17th and 18th centuries[16].

One of the most frequently referred to 'supporting structures' of institutional analysis is that of "credible commitments" as defined by D. North. Whilst a monarch's power remained unlimited, the contractual obligations signed by him could not be regarded as trustworthy since Kings often refused to repay their debt and even resorted to confiscating their creditors' property. This meant that credible commitments could become more or less widespread only if limitations were imposed on the powers of an absolute monarch.

With the coming of the modern era it became obvious that *for the smooth functioning of market property strict restrictions had to be imposed on executive authority in the sphere of ownership relations.* John Locke, in his *Two Treatises of Government,* written after the English Revolution, noted that a King should not violate any of the ownership rights of his subjects[17]. He defined political authorityas "a right of making laws…for the regulating and preserving of property"[18]. Charles II, for his part, took a special oath never to lay any claim to the property of

[15] In this connection, O. Williamson insists on the continuing superiority of the new institutional economics, basing his judgment, in particular, on the success of empirical studies in 'transaction cost economics' (Williamson O. The New Institutional Economics: Taking Stock, Looking Ahead. In: The Journal of Economic Literature, 2000, Vol. XXXVIII, No 3, pp. 605-607).
[16] See Acemoglu D., Robinson J. Economic Backwardness in Political Perspective. NBER WP No 8831, Washington, 2002; Acemoglu D., Aghion Ph., Zilibotti F. Distance to Frontier, Selection, and Economic Growth. NBER WP No 9066, Washington, 2002.
[17] J. Locke. Works in Three Volumes. M., Mysl', 1988, Vol. 3, p. 343.
[18] Ibid, p. 343.

his subjects[19]. The expansion of the powers of English Parliament towards the end of the 17th century and the guarantees it gave to the Crown created opportunities for dramatically increasing the Royal debt. This was also the beginning of a period of accelerated growth of England's financial markets [20].

As they developed, during the early modern period,, under the influence of political forces, private ownership relations, in their turn, left their own distinct mark upon the entire structure of socio-political relations. Property ownership as a specific legitimate 'right' came to be protected by the State. At the same time property ownership protected an individual *from* the State. In this way property ownership became, together with the law (and its 'subordinate' product) the most effective means for limiting state authority [21].

Market property was insitutionalized in different ways in different countries. There is plenty of evidence to show that emerging structures of ownership relations were largely dependent upon the specificities of previous historic development (the concept of 'path dependence').

In their study of long-term change in colonized countries, D. Acemoglu, S. Johnson and J. Robinson noted the following[22]. From the 11th through the 15th century, there was a more or less stable distribution of wealth. Then during the next four centuries, the situation began radically to change: the world outside Europe (the 'colonized' world) experienced diverse 'reversals of Fortune'. The previously comparatively rich countries gradually became poorer, whilst some of the previously poorer countries were able to increase their wealth – not only in absolute, but also in relative terms.

The authors linked the different forms of economic growth in the colonial countries with the differing strategies implemented by their European mother countries. For the first time in such a distinct form it was acknowledged in academic discourse that European countries had indeed applied intensive exploitation methods in certain colonies that were richly endowed with natural resources and were densely populated. In many cases these were lands with a hot climate that produced a higher rate of mortality amongst 'colonizers' who came from more temperate climatic zones. The economic strategy in these instances usually did not allow for any equality in market relations between the center of the empire and the colonies. The system of economic and

[19] Nenner H., Jones J. Liberty Secured? Britain Before and After 1688. Stanford University Press, 1992, p. 92.
[20] See Neal L. The Rise of Financial Capitalism: International Capital Markets in the Age of Reason. Cambridge University Press, 1990.
[21] R. Pipes. Property and Freedom. M., Moscow School of Political Studies, 2000. pp. 158-159.
[22] Acemoglu D., Johnson S., Robinson J. Institutions as the Fundamental Cause of Long-Run Growth. In: Handbook of Economic Growth. Ed. by Aghion Ph., Durlanf S. North-Holland, 2004.

political relations created in the colony was designed to produce specific benefits for the center[23]. However, a different strategy was applied in the sparsely populated lands of the temperate climatic zones. Usually there was migration from West European countries to those regions. The systems of ownership relations and the economic superstructures that emerged in the colonies, were not everywhere the same. These differences are especially evident if one compares the institutional structures existing today in the USA, Canada and Australia with those of, say, the countries of Tropical Africa

Such research has produced some impressive results. For example, data on mortality rates among colonists who came from countries with temperate climate and settled in Africa, Asia and Latin America in the previous centuries, taken together with data on population density in countries colonized in the early 16th century, can explain (or are 'predictive of') many of the differences in the indices describing the present-day effectiveness of private property protection in these countries. On the basis of the latter, differences in the levels and dynamics of GDP per capita can also be plotted.

The impact of colonization and the negative legacy of the colonial empires can thus be explained in terms of the absence of proper conditions for the emergence of competitive markets of the modern type. In some Latin American countries, for example, such features as the dominance of monopolies and the kind of total administrative regulation that originated in Spanish rule remained intact even after those countries had gained their independence. [24]

However, the processes of absorption and development of a foreign economic civilization cannot be viewed exclusively in terms of the migration of Europeans with an experience of a better developed market economy. The issue of 'transplantation' of legal and economic institutions will be dealt with in more detail later; here, we should like to point only to the following contrasting examples. In the USA and Canada the share of European migration in the 19th century was smaller than in Latin America (Uruguay, Argentina), while some countries of South-East Asia (for example, Singapore – one of the four Asian Tigers) with sound private property protection and very dynamic economic growth have never attracted large numbers of European migrants.

Within institutional structures a special role belongs to the presence or absence of in-built mechanisms for maintaining economic stability[25]. D. Acemoglu, S. Johnson, J. Robinson and Y. Thaicharoen have carried out a special econometric study in order to determine the degree of

[23] The authors refer to the work of one US historian, who described the results of colonial rule in the Congo; he wrote that the Belgian policy in the Congo as having been based on an unrestricted exploitation of natural and human resources that ultimately resulted in disintegration of all economic and social life (Ibid, p. 1375).
[24] Ibid, p. 1376.
[25] Here we speak mainly of the short- and medium-term stability of production and consumption; the indices of the stability of institutional environment are discussed later.

stability typical of the comparatively 'weaker' institutional structures. This study was based on the same sample group of colonial countries whose dynamics they compared to that of the corresponding indices of developed countries[26]. However, the intrinsic properties of institutions were not analyzed in any serious way: the institutional structures were assigned essentially the role of a 'black box'. The mechanisms through which the institutions could ensure a higher or lower degree of economic stability were not studied, either.

In order to identify the institutional structures that had formed over a lengthy period of time these authors applied historical indices of migrant mortality and derivative indices describing the degree of private property protection and the strictness of constraints imposed upon administrative personnel. Since an economy's stability also depends on the nature of a given macroeconomic policy, the parameters of the influence exerted by institutional structures were compared to the influence of a 'less than perfect' macroeconomic policy (excessive government spending, inflation-triggering monetary policy, and maintenance of the real currency exchange rate at too high a level).

The authors reached the following conclusions: *comparatively higher production volatility* (measured by standard deviation in the rate of change in real GDP per capita) during the period 1970–1997 was to a considerable extent *dependent on parameters reflecting historically developed institutional structures.* In countries with 'stronger' institutional structures the impact of a destabilizing macroeconomic policy was found to be less significant.

Equally, *countries with 'weak' institutions are more prone to suffer from crises,* as measured by the production drop index. Moreover, these authors are inclined to view even extremes of macroeconomic policyas 'symptoms reflecting the influence of deeper institutional factors'[27].

During the last few decades, economic historians have debated the extent to which the level of welfare can be negatively influenced by the instability of incomes and consumption *per se* (the average level remaining constant). By applying standard assumptions, R. Lucas in his study of economic cycles argues that losses of public welfare linked to personal consumption volatility in the modern US economy are, on the whole, comparatively low.[28] However, (in Lucas's research) the answer to the question what the potential consequences of changes in the final index of the volatility of consumption might be is largely determined by his initial preconditions (assumptions). It should be noted, in particular, that those economic mechanisms

[26] Acemoglu D., Johnson S., Robinson J., Thaicharoen Y. Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth. In: Journal of Monetary Economics, 2003, Vol. 50.

[27] Ibid, p. 108

[28] See Lucas R. Models of Business Cycles. Basil Blackwell, 1987.

that determine the stability of the processes of expansion of production can also, as a rule, to some extent suppress the rate of economic growth[29]. Moreover, in countries with comparatively low levels of economic development, greater fluctuations in the rate of growth can result in quite considerable public welfare losses[30]

Amongst the merits of the concept put forth by D. Acemoglu et al., we would specifically draw attention to their account of the mechanisms of interaction between political and economic institutions. We have already spoken of the influence of '*de facto* political force' on the character of emerging political institutions and, at the same time, upon the formation of the system of ownership rights. D. Acemoglu addresses not only the general but also certain specific features of the formation of economic and political institutions.

In the economy, the field of market interactions is especially broad. Following the methodology of R. Coase's[31], it can be argued that even in the presence of external effects (or externalities), where transaction costs can be disregarded, participants do manage to internalize, through their market interactions, at least part of these external effects. Can such phenomena ('Coasean' processes) also be observed in the field of political decision-making?

In one of his theoretical studies D. Acemoglu has attempted to answer this question[32]. He notes that, in economics, all Coasean processes assume that agreements are to be formalized in special contracts. A contract stipulates the obligations of the parties, and their rights and liabilities extend over the period envisaged in the contract. However, the effective enforcement of contractual rights and liabilities ultimately relies on the existence of a 'third party' capable of controlling the 'rules of the game' and acting as an unbiased arbiter. Most often, the functions of such an arbiter are performed by judicial instances and other components of the administrative-legal apparatus that possess a monopoly of legitimate coercion.

In politics, the State necessarily becomes one of the parties to the contract. But in politics it is rather difficult to find an unbiased arbiter possessing a monopoly of legitimate coercion. But, in the absence of such an arbiter these contracts cannot function as credible commitments. Clearly, considerations such as these provide additional arguments in favor of *promoting the development, in the public legal sphere, of mechanisms of checks and balances*[33].

---

[29] Ramey G., Ramey V. Cross-Country Evidence on the Links between Volatility and Growth. In: American Economic Review, 1995, Vol. 85.
[30] Pallage S., Robe M. On the Welfare Cost of Economic Fluctuations in Developing Countries. In: International Economic Review, 2003, Vol. 44, No 2.
[31] Coase R. The Problem of Social Cost. In: Journal of Law and Economics, 1960, Vol. 3.
[32] Acemoglu D. Why Not a Political Coase Theorem? In: Journal of Comparative Economics, 2003, Vol. 31.

[33] The consideration concerning the limited possibilities for implementing the Coasean mechanisms in the political sphere does not exclude, however, the possibility of making quite productive agreements between society and the State.

An especially important role in the 'political and legal infrastructure' securing the conditions for stable economic growth is, arguably, played by the principle of division of powers upon which the modern "rule of law" State is based. *The decisions of those agencies which in actual practice perform the functions of an arbiter supervising property sale and contractual obligations and which regulate compliance with 'rules of the game' of the market, must demonstrate that the the judicial system is truly independent of the executive authority*.

Protection of the possessions and incomes of individuals and companies from any infringements on the part of the State was very important in the early stages of development of the institution of private property, when private appropriation of wealth was no longer the hereditary 'divine right' of the monarch or feudal aristocracy but when the sphere of personal rights – both economic and socio-political – was, as ye,t rather imprecisely defined.[34] This problem has become especially acute in a society where the legislative and executive branches of authority are under strong pressure from the electorate, given that for several generations it was instilled in the population that private property was 'immoral' and 'harmful'.

The following problem which directly arises from the theoretical model ('comparative static'), but has not yet been elaborated in sufficient detail, is also of considerable importance,. *Measures implemented as part of economic policy and designed to bring about a transition to a more efficient system of allocation of resources can encounter obstacles deriving from the need to alter distribution relations.* In practical life the State consists of, among other things, a multitude of government officials, some of whom may (illegally) derive personal benefit from maintaining existing institutions (or political norms and decisions) in their unchanged form. The establishment of new institutions that introduce competitive mechanisms into the political and economic spheres can in many cases (sometimes explicitly, but more often just implicitly) be opposed by officials who profit from the existing administrative structures and constraints.

This makes for a chain of dependencies and a 'vicious circle'. The more widespread is the corruption of government officials in society, the fewer true opportunities there will be for consolidating market institutions and the mechanisms of competition (if the level of administrative discipline remains constant). Under certain conditions, effective market interactions can be replaced by rivalry in 'political markets' and by a struggle between bureaucratic interests[35].

[34] As the key condition for establishing market property, D. North and B. Weingast point to the emergence, during the English revolution in the 17th century, of a sufficiently independent judicial authority capable of moderating, more or less effectively, the king's (or parliament's) claims to the possessions of individuals (North D., Weingast B. *The Evolution of Institutions Governing Public Choice in 17-th Century England*. In: Journal of Economic History, 1989, Vol. 49).

[35] Also see *Problemy stanovlenia novoi institutsional'noi struktury v perekhodnykh stranakh. [The problems of establishing a new institutional structure in transition countries.]*.Ed. by Mau V. A. M, IET, 2001.

It was in this way that the increasing centralization of the Russian economy in the early 2000s was associated with a certain reduction of market competition and exacerbation of specifically bureaucratic rivalries "when individual government departments began to fight between themselves for additional resources and powers. Since such goals could not be acknowledged publicly, the 'regulators' needed to appeal at all times to the specific interests of one group of market participants or another. It was under this camouflage that the 'regulators' often realized their own interests and desires"[36].

Another type of unfavorable interaction consists of cases when only one group – and not a very representative group – of entrepreneurs acquires a '*de facto* political force' of their own, or a monopoly of access to the 'center' of political decision-making. Entrepreneurs, who are able to use judicial executive authority as a tool against their rivals are simply not interested in any real consolidation of stable private property relations[37].

The role of geographical factors: 'a war of variables'

As early as the mid-18th century, Charles de Montesquieu pointed out, that tropical climate had a negative influence on economic behavior.[38] In the past decade, the geography-based interpretation of factors influencing the formation of market institutions, and the differences in institutional structures and economic performance has acquired increasing support.

A recently published polemical works by Jeffrey. Sachs has the rather impressive title: *Institutions Don't Rule: Direct Effects of Geography on Per Capita Income*. [39] In fairness, it should be noted that in his other works Sachs has been less categorical. For example, in a report delivered to a conference of the World Bank, J. Gallup, J. Sachs and A. Mellinger argue that geographical factors can influence economic life not only directly but also indirectly, and in this latter case an important role belongs to the political and economic institutions that have been created under the influence of geographical factors.[40]

In this debate, as usual, econometric estimates figure prominently and so the problem of adequately identifying the variables to be used in describing the influence of geographical factors

[36] *Razvitie sprosa na pravovoe regulirovanie korporativnogo upravlenia v chastnom sektore. [The development of demand for legal regulation of corporate governance in the private sector.]* Nauchnye doklady MONF. [*Scientific Reports of the Moscow Public Science Foundation (MPSF)*] No 148, 2003, p. 51.

[37] The problem of uneven distribution of wealth and the relatively low effectiveness of production, when the most wealthy owners are not interested in non-selective and secure protection of ownership rights, is discussed in Polishchuk L., Savvateev A. *Spontaneous (non)emergence of Ownership Rights*. // *The Economy of Transition*, 2004, Vol. 12, No 1.

[38] Charles de Montesquieu [1748] *L'esprit des lois [The Spirit of Laws]*.

[39] Sachs J. *Institutions Don't Rule: Direct Effects of Geography on Per Capita Income*. NBER WP № 9490, Washington, 2003.

[40] Gallup J., Sachs J., Mellinger A. Geography and Economic Growth. Annual World Bank Conference on Development Economics, April 1998.

is also under discussion. Arguing against the geographical concept, D. Rodrik et al. employ in their regressions a variable that describes the distance of different countries from the equator. In the equations that emplopyed the indices describing the quality of economic institutions, the coefficient applied to the 'geographical' variable was in many instances found to be statistically insignificant. Even when in some calculations it turned out to be significant (say, at level of 95 %), the contribution of this factor was very modest) [41]. The authors of this econometric study (and the authors of some other studies)[42] have come to the conclusion that geographical factors most probably exercise their influence mainly indirectly, through existing economic and socio-political institutions. The question as to which mechanisms determine the influence of geographical factors upon the formation of particular institutions has remained essentially unanswered.

In the view of Sachs, distance from the equator can serve only as an imperfect measure of climatic differences,. Sachs insists that, in truth, the influence of geographical factors is much more varied. The main indicator of this influence, in his view, is the lower labor productivity of 'tropical' agriculture and the high incidence of certain epidemic diseases in the countries of the 'equatorial belt'. In his study of the sources of economic backwardness of countries in the tropical zone, Sachs argues that the main cause of the existing gap in development levels was that by the beginning of the modern era (or, perhaps, a little earlier), the technologies applied in the temperate zone had turned out to be much more productive than those employed in the agricultural economies of the equatorial belt[43].

In 1998, D. Bloom and J. Sachs published the results of their very thorough study of the problems of economic growth in African countries[44]. One of the sources of significant unfavorable influence on demographic growth factors was found to be tropical malaria: their estimates suggest that had malaria been conquered by the mid-19th century, real average income per capita by the turn of the century would have doubled[45].

In one of the studies already mentioned, Sachs employed a very elementary econometric model, in which the differences in real GDP per capita in 1995 were explained by only two factors: the 'quality of institutions' and the risk of contracting tropical malaria. Analysis of different samples of countries with the help of these two variables, seems to provide an

[41] Rodrik D., Subramanian A. Trebbi F. Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development. // Journal of Economic Growth, 2004, Vol. 9.
[42] Easterly W., Levine R. Tropics, Germs and Crops: How Endowments Influence Economic Development. // Journal of Monetary Economics, 2003, Vol. 50.
[43] Sachs J. Tropical Underdevelopment. NBER WP № 8119, Washington, 2001, p. 2.
[44] Bloom D., Sachs J. Geography, Demography, and Economic Growth in Africa. In: Brookings Papers in Economic Activity, 1998, Issue 2.
[45] Ibid.

explanation for a comparatively larger number of differences and the coefficients applied to these variables were most often found to be significant at a level of 99 %. However, despite the 'rebellious' title of the article mentioned above, Sachs eventually reached a more balanced conclusion: there were some serious theoretical and empirical arguments in favor of the thesis that the process of development reflects a complex interaction between institutional, political and geographical factors.[46]

The evolution of legal systems and the 'new comparative theory'

Among the studies aiming at an in-depth analysis of the evolution of legal systems and their influence on the character of ownership relations and enforcement of ownership rights we must first and foremost point to the works by R. La Porta, F. Lopes-de-Silanes, A. Shleifer, and R Vishny.[47] In these studies, the levels of property protection and the general parameters of economic functioning in those countries where the English common law system was introduced as compared with those that acquired a distinctly codified system of civil law.

As we know, Anglo-Saxon law dates back to the times of the Norman conquest.[48] The then emerging common law norms largely reflected the medieval relations between the king and the feudal aristocracy.[49] The codified legal norms directly established by laws (statutory law) became more widespread in continental Europe, culminating in the early 19th century in the adoption of *The Napoleonic Code* (or *Code Napoléon*). In Germany, after its unification, an 'advanced' system of laws was introduced, and the most complete version of the Civil Code came into force from the early 20th century. In addition to the Anglo-Saxon and French systems, R. La Porta, F. Lopes-de-Silanes, A. Shleifer, and R Vishny also identify the Scandinavian system as a 'basic' one[50].

The development of legal norms was in many cases intertwined with the processes of migration and colonization. Thus, in the lands colonized by the British, some version or other of common law was usually established (in the USA these norms underwent some significant changes after the American War of Independence and the Civil War). The laws introduced in the countries of Central and Latin America reflected Spanish traditions and these countries later on

[46] Sachs J. Institutions Don't Rule: Direct Effects of Geography on Per Capita Income. NBER WP No 9490, Washington, 2003, p. 9.

[47] See, for example: La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Investor Protection and Corporate Governance. // Journal of Financial Economics, 2000, Vol. 58; La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Investor Protection and Corporate Valuation. In: Journal of Finance, 2002, Vol. 57.

[48] See Berkovitz D., Pistor K., Richard J. Economic Development, Legality, and the Transplant Effect. In: European Economic Review, 2003, Vol. 47, p. 169.

[49] Glaeser E., Shleifer A. Legal Origins. In: Quarterly Journal of Economics, 2002, Vol. 117, Issue 4.

[50] D. Berkovitz, K. Pistor and J. Richard in their study offer a complete (from their point of view) list of 'basic' legal systems which, alongside the national systems that have emerged in European countries, also includes the 'American' system (as a separate one).

further developed under the influence of *the Napoleonic Code*. Active borrowing from the 'basic' legal system continued throughout the 19th and early 20th centuries. Reform of the judicial and legal systems in Brazil, Argentina, Chile, Ecuador and some other Latin American countries was completed during the mid-19th century.

The multiple econometric estimates offered by R. La Porta, F. Lopes-de-Silanes, A. Shleifer, and R. Vishny all serve to illustrate the core thesis of their theoretic concept – that in countries where the legal systems derives from the British "common law" tradition the Anglo-Saxon legal system the interests of private owners, including those of shareholders, are protected much better than in those where the legal system derives from the Napoleonic Code. *The more adequate implementation of the principles of private property represents a necessary condition for the more intensive development of financial markets*.[51] The protection of private ownership rights creates opportunities for more active capital investments and a higher rate of economic growth[52].

In 2003, S. Djankov, R. La Porta, E. Glaeser, F. Lopes-de-Silanes and A. Shleifer put forth the concept of a "new comparative economics", to replace the 'old comparative economics' based on comparisons between the socialist and capitalist economic systems. The new comparative economics deals with the differences between the economic and political institutions established in countries with more or less well-developed market systems, and studies the ways these differences influence the general parameters of economic performance.[53] This branch of economics is concerned with generalizing and bringing order into the vast amount of empirical material that has been accumulated so far, first of all with regard to cross-country comparisons.

In their generalizations, the authors of the new concept often refer to the opposition (dating back to Thomas Hobbes' *Leviathan*) between anarchy, which inevitably results from randomly applied human efforts in a situation when the right of private property prevails, and centralized administration ('dictatorship'). By applying standard microeconomic methods, the authors plot an IPC (institutional possibilities curve) which resembles in its shape an ordinary indifference curve. The operational analysis, however, is complicated by poorly verifiable sums of aggregate

[51] See La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Legal Determinants of External Finance. In: Journal of Finance, 1997, Vol. 52; La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Law and Finance. In: Journal of Political Economy, 1998, Vol. 106.

[52] Also see Radygin A. D., Entov R. M. Institutsional'nye problemy razvitia korporativnogo sektora: sobstvennost', kontrol', rynok tsennykh bumag. [The institutional problems of the corporate sector's development: property, control, the securities market.]. M., IET, 1999; Korporativnoe upravlenie i zashchita prav sobstvennosti: empiricheskii analiz i aktual'nye napravlenia reformy. [Corporate governance and protection of ownership rights: empirical analysis and important areas of reform.] M., IET, 2001.

[53] Djankov S., Glaeser E., La Porta R., Lopes-de-Silanes F., Shleifer A. The New Comparative Economics. In; Journal of Comparative Economics, 2003, Vol. 31, No 4, p. 596.

losses, which are derive from the use of such general principles as dictatorship methods (*x* axis) or chaos and anarchy (*y* axis).

The countries with better developed market economies, are, consistently with this theory, described by institutional possibilities curves lying closer to zero. The straight line graph describing countries with different development levels, influenced by the English common law tradition, belonging to the Anglo-Saxon legal system have a higher slope than a similar graph describing countries influenced by the Napoleonic Code (given that the continental system of codified law is, in the authors' opinion, more compatible with the kind of methods for suppressing disorder that are practiced under centralized regulation). Long-term institutional changes associated with substantial productivity growth are plotted by shifting the institutional possibilities curve downwards (towards zero).

Comment [b1]:

This concept links the implementation of market reforms in post-Communist countries to a leftward movement along the relevant institutional possibilities curves. The curves describing the institutional possibilities in the countries of Central and South-East Europe, according to the authors, are plotted far below the corresponding curves for the CIS countries (in view of the lower levels of development of their market economies).

As a result of the reforms implemented in the last two decades, Russia moved much further leftwards along its institutional possibilities curve than, say, Hungary or the Czech Republic did along theirs. Russia's present point must be indicative of the fact that its economy displays much more evident signs of disorganization, enclave structures and corruption. Employing highly generalized parameters of disorganization or 'excessive' centralization, the authors, regretfully, offer no methods for their empirical identification, and so the location of each individual country on this diagram is inevitably subjective.

The consistent implementation in a legal system of the principle of checks and balances, according to the authors, must be conducive to improving the performance of the economy. Earlier, we noted the potential importance of a truly independent judicial system for the adequate realization of the principles of private ownership. These estimates demonstrate that *in countries where judicial agencies are more independent, private ownership rights are better protected, and there are also better conditions for rapid economic growth*[54].

Building upon the aforesaid theoretic assumptions, the authors of the new comparative economics offer some considerations concerning the possibility of 'transplanting' the institutions

[54] La Porta R., Lopes-de-Silanes F., Pop-Eleches C., Shleifer A. Judicial Checks and Balances. In: Journal of Political Economy, 2004, Vol. 112.

functioning in the countries with developed market systems[55]. However, although they point to a very broad range of issues to be addressed by their methodology, in practice they always focus their attention on the legal systems that they have studied earlier. This means that they consider mainly the possibility of transplanting the 'basic' legal systems.

Just as in the countries with underdeveloped market systems the principle of freedom of speech is implemented less fully, and the actions of all levels of authority are less transparent, so the adoption of "Continental" norms is said to entail an 'overdevelopment' of administrative regulation. In the economic sphere this gives rise to numerous administrative constraints and, as a consequence, a comparatively large 'shadow' sector, whilst the legal sphere is characterized by excessive 'legal formalism'[56], more 'bulky' and protracted court proceedings, and, therefore, – higher law enforcement costs. In countries with developed market economies the protection of private ownership rights and the enforcement of contractual obligations is to a higher degree regulated by decentralized market mechanisms.

The integration, over centuries, of each country into the global economic turnover has given rise to questions concerning the actual forms of 'fusion' between natural economies and those with better developed market relations. The reception of the more 'advanced' economic institutions was an 'urgent' issue during the period of the formation of colonial empires[57].

One of the most eminent experts in the field of social history and history of economics, K Polanyi, noted that there is little sense in defining colonial exploitation in purely economic terms – for example in terms of the constant non-equivalence of exchange relations. In fact, interactions under colonialism clearly go beyond the narrow economic and legal categories. The policies pursued by the centers of colonial empires very often resulted in the destruction of formerly existing economic structures, and it was then that the terrible consequences of transplanting alien socio-economic institutions became fully apparent.

Transplanted institutions tended to fail owing to the fact that a market economy was being forced upon societies with fundamentally different types of organization; for example, labor and

[55] The issue of of transplanting economic institutions is also actively discussed in Russian literature. See, for example, Volkonskii V. A. *Institutsional'nye problemy rossiiskikh reform. [The institutional problems of Russian reforms]*. M., Dialog-MGU, 1998; Polterovich V. M. *Transplantatsia institutov. [Transplantation of institutions.]* In: *Economicheskaia nauka sovremennoi Rossii. [Economics in modern Russia*], 2001, No 3; Starkov O. Yu. *Razvitie institutov zhilishchnogo kreditovania: problema transplantatsii. [The development of the institutions of housing loans: the transplantation issue.]*. M., TsEMI RAN, 2002; Kleiner G. B.. *Evolutsia institutsional'nykh system. [Evolution of institutional systems]*. M., Nauka, 2004; Kuz'minov Ya. I., Radaev V. V., Yakovlev A. A., Yasin E. *Instituty: ot zaimstvovania k vyrashchivaniiu. Opyt rossiiskikh reform i vozmoshnosti kul'tivirovania institutsional'nykh izmenenii.* [Institutions: from borrowing to growing. Experience of Russian reforms and opportunities for cultivating institutional changes]. M., SU-HSE, 2005; etc.

[56] The methods for calculating the indices of 'legal formalism' are described in Djankov S., La Porta R., Lopes-de-Silanes F., Shleifer A. Courts. // Quarterly Journal of Economics, 2003, Vol. 118.

[57] Earlier we noted the role assigned by D. Acemogluet et al. to aggressive exploitation of colonial resources in the emergence of the modern institutional structure.

land were turned into commodities and all the cultural institutions of an 'organic' society were destroyed. It was not only the introduction of market relations but also the undermining of traditional institutions that resulted in crisis. Thus, in the second half of the 19th century in India, many Indians starved to death not because they were 'being exploited by Lancashire' but because the Indian peasant community had been destroyed.[58]

This, however, was not the only colonial path towards development. In many cases, the authorities in the mother country judged that it would be more feasible for them to 'infiltrate' the traditional economic and social system, maintaining and using for their own benefit the already existing socio-political structures and forms of personal dependence.[59] However, they, too,, were thereby creating preconditions for the future long-term economic backwardness of their colonies and dependencies. By contrast, in other instances, the social and economic institutions that were 'transplanted' into colonies, together with personnel from the mother country, thrived in their new location, and became a powerful engine of development This was the experience of the USA, Australia, Canada and some other states.[60]

Since the new comparative economics deals primarily with legal relations, let us turn back to the ways in which the transplanting of legal institutions may have influenced the processes of economic development. Over a lengthy historic period, legal relations were transplanted either with consent or by force, but success was by never in any case guaranteed.[61] For a transplanted system effectively to take root, a minimum requirement is for the natives to be sufficiently well acquainted with the system being imposed on them.[62] Secondly, there must be appropriate conditions for that system to take root. The classification applied by D. Berkovitz, K. Pistor and J. Richard was based on the principle that a transplanted system is considered to be assimilated (and the country – to be 'receptive') if at least one of these conditions was present. The most difficult problem, as demonstrated by their analysis, was always the need to coordinate the new norms with local historical traditions and institutions.

Their study addresses the characteristics of transplantation of legal norms in 39 countries. Only in six cases (Japan, Italy, The Netherlands, Argentina, Chile, and Israel) were the processes

---

[58] Karl Polanyi. *The Great Transformation The Political and Economic Origins of Our Time*. St Petersburg, Aletheia, 2002, pp. 178 – 179.

[59] See Abdel-Malek A. Civilization and Social Theory. State University of New York Press, 1981.

[60] See Acemoglu D., Johnson S., Robinson J. Institutions as the Fundamental Cause of Long-Run Growth. In: Handbook of Economic Growth. Ed. by Aghion Ph., Durlanf S. North-Holland, 2004.

[61] See Berkovitz D., Pistor K., Richard J. Economic Development, Legality, and the Transplant Effect. In: European Economic Review, 2003, Vol. 47.

[62] Thus, while implementing legal reform by establishing the norms stipulated in the Spanish Commercial Code (1829), the government of Columbia was simply unaware of their true meaning (Means R. Underdevelopment and the Development of Law. The University of North Caroline Press, 1980). According to Berkovitz D., Pistor K., and Richard J., the Japanese authorities were equally poorly aware of the essence of the legal system that they were introducing (the predominantly "German" system) during the legislative reform of 1868 – 1899.

of reception and adaptation, according to the authors, successfully completed. For example in Japan, where the authorities, as we noted earlier, were slow in understanding the true meaning of the transformations they had been implementing) the newly adopted codes were eventually reconciled with existing tradition.

One can conclude as follows: *the effect of transfer (transplantation) depends not so much upon the choice of 'legal family' as upon the local perception of the laws being transplanted.* A decisive role in implementing new legal norms was most often played by the process of 'grafting'. This means that the capacity for adaptation of the local society to the institutions being transplanted was crucial to the success or failure of the exercise..

To the list of systems less receptive to transplantation we would add the legal system of the USSR. The main problem in this case was by no means the inadequacy of the legislative norms that were introduced during the post-Communist legal reforms – at least in the economic sphere. *The most important obstacles to the adoption of a more advanced legal system were, rather, 'weak institutions' and, in particular, an enforcement system that was incapable of guaranteeing ownership rights and contractual obligations.* The problems of the functioning of ownership relations in Russia's national economy have been discussed by us in detail in several other works. Here we should like to note only the fruitfulness of general approaches that link the success of transplanting legal norms and institutions not only (and in the Russian case – not so much) to the nature of the new legislative system being implemented, but to the enforcement practices already existing in the receiving country[63].

The study of legal institutions in modern economics has encountered serious problems, in particular in formalizing legal norms and socio-political decision-making for the purposes of statistical testing of hypotheses, . Various indices have been applied, that are designed to reflect a particular expert's calculations or conventional variables. In trying to demonstrate the superiority of their approach, authors tend to refer to the most favourable statistical characteristics of their regression equations.

It is obvious, however, that the outcomes of such 'econometric wars' are critically dependent upon the choice of specific indices to be applied, upon their structure, upon the methods used in expert's calculations, and upon other parameters that are selected more or less arbitrarily. This area of research lacks strictly defined initial assumptions. When dealing with indices describing the protection of ownership right, the transplantation of legal systems, and systems of enforcement, a researcher becomes aware not only of a lack of precision, but also of

[63] This issue is discussed in more detail in Radygin A. D., Entov R. M. et al. *Problemy pravoprimenenia (inforsmenta) v sfere zashchity prav aktsionerov. [The problems of law enforcement in the sphere of protection of shareholder rights.]* M., IET, 2002; *Korporativnoe upravlenie i samoregulirovanie v sisteme institutsional'nykh izmenenii. [Corporate governance and self-regulation in the system of institutional changes.]* M., IET, 2006.

the absence of many important variables capable of uniformly describing existing customs and cultural traditions or differences in the social and psychological environment. However, these 'absent variables' also have to be taken into account[64]. As K. Arrow once noted, since this research is at present in its initial phase, one should avoid claiming too much precision[65].

Financial market, property and innovations

As we have pointed out, the development and strengthening of the private property market as it came to maturity provided, opportunities for creating a system of financial markets. Some of the studies conducted in recent years have produced a number particularly illustrative examples of the important role that financial markets play in ensuring economic growth.

We shall not attempt to describe all of the vitally important functions that financial markets perform in the present-day economy. It is sufficient to note that they not only provide opportunities for turning savings into capital and then effectively allocating it, but also for collecting and processing the huge masses of information necessary for competent decision-making in relation to investment. They also create conditions for the monitoring of investment projects and control of their performance levels. Schumpeter has described the capital market as 'the headquarters of the capitalist economy', where plans for further development are effectively discussed and approved.[66]

Each new phase in the development of the capitalist economy was preceded by qualitative changes in the performance of financial markets. Here is one example. According to J. Hicks, it was not the flow of technological innovation that was decisive in the advance of the Industrial Revolution of the late 18th – early 19th century., The Industrial Revolution would have taken place even without Crompton and Arkwright, and would have pursued the same course, especially in its latest phases. What, then, was the decisive factor that made possible massive investment in new machinery and production technologies? For Hicks the answer is the development of the financial system. - the availability of liquid capital was of critical importance. In the first half of the 18th century the opportunities for this type of financing appeared not only in England and Holland, but also in France. By that time, these countries had already developed their own financial markets in which a variety of securities could easily be

[64] The description of the potential shifts resulting from the existence of 'absent variables' can be found in standard textbooks on econometrics. See, for example, Greene W. Econometric Analysis, 5-th ed. Prentice-Hall, 2003.
[65] Arrow K. Essays in the Theory of Risk-Bearing. North-Holland, 1970, p. 224.
[66] J. A. Schumpeter. *Capitalism, Socialism and Democracy*. M., Ekonomika, 1995, p. 274.

traded. This opened up unprecedented opportunities (non-existent even a few years earlier) for obtaining the necessary liquid funds[67].

By now, it has become almost a platitude to point to the links between 'financial deepening' and the increasing efficiency of *economic processes and accelerated economic growth*.[68] Over the past 10 - 15 years, many econometric studies have been published that reveal the existence of a distinctly positive correlation between the development of financial markets and the rate of economic growth. In this connection, the impressive monograph (published in 2001) entitled *Financial Structure and Economic Growth*[69] deserves special mention. This work contains hundreds of cross-country comparisons, aiming at proving the favorable influence of the modern financial system on the general processes of economic development. The authors suggest the following system of parameters for describing the financial market:

1) size of the financial sector ($\log[\frac{PC+MC}{GDP}]$, where PC is the sum of loans granted by banking and non-banking intermediaries to the private sector; MC is the market value of shares in listed corporations; and GDP is gross domestic product in current prices;

2) activity of financial markets ($\log[\frac{PC}{GDP}\cdot\frac{VT}{GDP}]$, where VT represents overall value of transactions relating to purchase and sale of shares on a stock exchange;

3) performance of financial markets ($\log[\frac{VT}{GDP}:\frac{OC}{BA}]$, where OC is the sum of conventionally constant expenses (overheads), while BA describes the total volume of the banking system's assets;

4) aggregate index (the first major component singled out from the three aforesaid series);

5) indices pertaining to better developed markets (finance dummies) (the estimates do not encompass those countries where both coefficients $\frac{PC}{GDP}$ and $\frac{VT}{GDP}$ are found to be below the sample's mean values).

---

[67] J. Hicks [1969]. *A Theory of Economic History*. M., Voprosy ekonomiki [Issues of Economics], 2003, pp. 188, 184.

[68] Although there still remain some differences in opinion, available research often demonstrates the existence of close links between the development of a financial system and economic growth. See Beck T., Levine R. Legal *Institutions and Financial Development*. NBER WP No 10417, Washington, 2004, p. 2.

[69] *Financial Structure and Economic Growth. A Cross-Country Comparison of Banks, Markets and Development*" Ed. by Demirgüc-Kunt A., Levine R. MIT Press, 2001, chapters 4–5.

The authors' estimates are based on data for 48 countries over the period 1980 – 1995. It was found that the rate of GDP growth per capita demonstrated a statistically significant positive correlation with all the characteristics of financial markets selected for the study, excepting the first (the size of the financial sector). The calculations presented in this study do not provide sufficient ground for rejecting the hypothesis of R. La Porta, F. Lopes-de-Silanes, A. Shleifer, and R Vishny as to the special role of legislation designed to protect the rights of shareholders and creditors[70], since legislation influences the rate of economic growth *only indirectly* – through the impact of the aforesaid factors upon the development of financial markets (or upon other explanatory variables).

Even so, the thesis as to the important role of financial markets *per se*, viewed in isolation from the 'real' mechanisms of economic development powered by capital flows, can hardly be regarded as convincing. Those theoretical models that more specifically describe the channels through which financial markets influence the development of the real economy are more persuasive. In contemporary literature on economics we find an increasing number of theoretical models of the development of financial markets that are capable of 'being built into' the general mechanisms of technological progress and economic growth. One example is the work of M. Pagano: in his analytical model, *the degree of development of financial markets directly influences not only the norm (rate?) of saving, but also the choice of technology. It also determines the scale of labor and material resources needed for carrying out intermediary transactions, etc.*[71] All this is necessarily impacts upon the rate of stable economic growth.

In theoretical models of another type, the *functioning of developed financial markets promotes more intensive research and development and expands the sphere of innovative activity of entrepreneurs*.[72] However, most often the analytical patterns applied place this topic in a somewhat more general perspective[73] and seek to demonstrate that *the additional opportunities for making a choice between investment projects, on the one hand, and the strict and effective control ensured by financial markets, on the other, make possible a more efficiently use of*

[70] See La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Legal Determinants of External Finance. In: Journal of Finance, 1997, Vol. 52; La Porta R., Lopes-de-Silanes F., Shleifer A., Vishny R. Law and Finance. In: Journal of Political Economy, 1998, Vol. 106.

[71] Pagano M. Financial Markets and Growth: an Overview. In: European Economic Review, 1993, Vol. 37, No 2-3.

[72] Roubini N., Sala-i-Martin X. Financial Repression and Economic Growth. In: Journal of Development Economics, 1992, Vol. 39, No 1; King R., Levine R. Finance and Growth: Schumpeter Might Be Right. In: Quarterly Journal of Economics, 1993, Vol. 108.

[73] Bencivenga V., Smith B. Deficits, Inflation and the Banking System in Developing Countries: The Optimal Degree of Financial Repression. In: Oxford Economic Papers, 1992, Vol. 44; Greenwood J., Smith B. Financial Markets in Development, and the Development of Financial Markets. In: Journal of Economic Dynamics and Control, 1996, Vol. 21; Sirri E., Tufano P. The Economics of Pooling. In: The Global Finance System: a Functional Perspective Ed. by D. Crane. Harvard Business School Press, 1995.

available resources and promote the creation of adequate conditions for a more robust economic growth.

The conclusions of the authors of a monograph on endogenous growth, Ph. Aghion and P. Howitt, who augmented their theoretical models of economic growth involving technological progress by taking into account a number of auxiliary financial mechanisms, are quite interesting. A similar attempt was made earlier by Ph. Aghion in collaboration with D. Acemoglu and F. Zilibotti. This latter study, in addition to providing analysis of a theoretical model, also contains a large number of calculations designed to test theoretical hypotheses by econometric methods. A summary of the most important ideas suggested in these studies can be found in Ph. Aghion's paper *Growth and Institutions*[74].

The basic theoretical assumptions build upon an overall logic of cross-country studies, and so usually contain models of interaction between different countries. If technological innovations are introduced in a given country; then that country will presumably be participating in cross-country technology transfer. An important role in this model belongs to the technological threshold of production capacities shared by all these countries. The forward movement of this threshold is determined by equally balanced rates (within the framework of this system) of productivity growth.

In accordance with the conditions formulated in this model, the sample of countries under study is divided into two sets: those catching up with the leaders and approaching the technological threshold, and those that have been increasingly lagging behind over a long period of time. As the main endogenous variable, these models apply the rate of economic growth. Accordingly, the focus of the study is the so-called β-convergence – that is, these models describe the problem of steady-state growth.

One cannot but notice that "lagging behind" in such a model is associated with certain costs and benefits. Thus, an economy's distance from the technological threshold may serve as the condition capable of considerably improving the use of resources as a result of technology transfer. At the same time, the lagging behind of a given country has a negative impact on its own innovative activity – at a constant number of qualified workers the probability of successful implementation of its own innovations is assumed to be increasing (?), depending upon the closeness to the technological threshold.

In some new models, imperfect financial markets are added to the analysis (because the functioning of perfect financial markets would have produced no significant changes in the

[74] Aghion Ph. Growth and Institutions. In: Empirica, 2005, Vol. 32.

processes going on in the real sector of the economy).[75] In imperfect markets the participants are confronted with binding budget constraints: the size of external funding for capital investments depends on the net value of property owned by an entrepreneur.

This model also assumes that the higher the level of development of market institutions, the rarer are the opportunities for borrowers to take advantage of information asymmetry in order to deceive their creditors. As the probability of obtaining a loan directly depends upon the risk of potential losses (if the creditors are deceived), then the developed capital markets (all other conditions being equal) reduce the 'mathematical' expectations of the potential sum of losses and finance a large volume of investments, and in so doing narrow the existing gaps in growth rates between the countries belonging to the β-convergence group. At the same time, the greater the distance of a given economy from the technological threshold of production potential, the more often the firms applying for loans are met with refusals on the part of creditors. As a result, firms experience harder budget constraints and fully experience the negative impact of their economy's backwardness. Thus, *an underdevelopment of financial markets can be conducive to increasing gaps in the rates of economic growth between the leaders benefiting from implemented advanced technologies and countries deprived of opportunities for fully exploring the potential of modern technological progress.*

It should be noted that financial markets in this model may promote approximation to the technological threshold of production potential, or fail to provide adequate conditions for convergence (as the distance from the threshold increases, the favorable influence of the financial factors rapidly wanes). However, by the logic of the model, the functioning of financial markets cannot influence equally balanced rates of long-term economic growth because the latter depend only on the impact of real factors (in the model used in these studies they depend primarily on the parameters of technological progress).

From the theoretical models of endogenous growth with financial markets it follows that *those countries whose economies are farthest from the world technology frontier are in greatest need of economic institutions capable of easing the implementation of long-term investment projects that require borrowed advanced technologies* ('investment-based' institutions). Such institutions may help to more rapidly overcome existing gaps in growth rates. At the same time those *states whose economies have approached the technological threshold of production potential can increase the rates of their economic growth only if they apply the most flexible*

[75] Acemoglu D., Aghion Ph., Zilibotti F. Distance to Frontier, Selection, and Economic Growth. NBER WP No 9066, Washington, 2002; Aghion Ph., Howitt P., Mayer-Foulkes D. The Effect of Financial Development on Convergence: Theory and Evidence. In: The Quarterly Journal of Economics, 2005, Vol. CXX, Issue 1.

economic norms and institutions oriented towards comprehensive promotion of entrepreneurial initiative and a search for new technologies ('innovation-based' institutions). Such practices include, in particular, the highest degree of openness of the economy, financial outsourcing, intensive development of the securities market and venture businesses.

Some interesting results have been derived from studies of more than a hundred countries over the period from 1960 through 2000 (the data for USA being applied as the 'world technology frontier').[76] The authors demonstrate that in the countries most distanced from the world technology frontier the unfavorable consequences of the 'closed' character of financial markets are not very noticeable, while *in some relatively more developed countries (where GDP per capita is much closer to the US level) the policy of 'closedness' has a very negative impact on the rate of economic growth.*

The 'degree of closedness' of certain sectors can serve as yet another parameter for evaluating the structure of economic institutions. The barriers to competition depend upon the magnitude of the costs of outsider companies' relevant to their entry into a given sector and to gaining access to the market of necessary commodities ("entry costs"). Statistical computations have confirmed the existence of the same regularity: *the barriers to competition have the strongest negative impact on the rate of economic growth in the wealthiest countries, and are a much weaker factor in relatively less developed countries*.

In Ph. Aghion, P. Howitt and D. Mayer-Foulkes' model, the sustainable development index for country *i* (λ_i) has a linear dependence on the development level of financial markets (F_i). The financial development indices will increase the probability of economic growth achieving a convergence rate only if β_{fy} (the regression coefficient applied to 'interaction variable' $F_i \cdot (y_i - y_1)$, where the difference in brackets describes the relevant gap in GDP per capita), is strictly negative. The estimates based on the data of 71 countries (1960 – 1995) and encompassing a variety of financial development indices – the size of aggregate private credit, the sum of bank assets, etc., demonstrated that coefficient β_{fy} is always, as a rule, at very different specifications of the regression equation, statistically significant (most often at the 99 % level), and in all the cases studied it was less than zero.[77] Thus it becomes obvious that the group of countries under consideration is, *on the average*, compatible with one of the necessary conditions – that of gradually increasing similarities of economic growth rates. Certain countries, and first of all some African states (Ghana, Sierra Leone, Zaire, Liberia), have been found to belong to the 'convergence club'.

[76] Acemoglu D., Aghion Ph., Zilibotti F. Distance to Frontier, Selection, and Economic Growth. NBER WP No 9066, Washington, 2002

[77] Aghion Ph., Howitt P., Mayer-Foulkes D. The Effect of Financial Development on Convergence: Theory and Evidence. In: The Quarterly Journal of Economics, 2005, Vol. CXX, Issue 1.

A number of econometric studies of the mechanisms linking financial markets to the real economy have been conducted by sother researchers. We shall mention here only some aspects of this problem – those that we consider to be the most interesting. Thus, when analyzing the channels through which changes occurring on the financial market are transmitted to the real sector, T. Beck, R. Levine and N. Loayza demonstrated that *the influence of emerging financial relations can be seen not so much in the increased amount of savings and a more rapid accumulation of real capital as in the increasing efficiency of utilization of available resources and in accelerated growth of aggregate factor productivity*[78].

R. Rajan and L. Zingales have approached this issue from another angle: they have found that the attraction of external sources of finance is conducive not so much to the growth of middle-sized companies in a given sector as to an increase in the overall number of all types of companies.[79] In other words, *in those sectors where the need for capital inflow from financial markets is greatest, the use of these resources contributed to the creation of new companies and enhancement of competition.* In another study[80], the same authors expanded the area for their analysis of the links between 'the deepening' of the financial system and the functioning of competitive market mechanisms. They demonstrated that *there exists a stable positive correlation between the development of the financial system and the openness of the commodities markets in the relevant countries (especially when capital actively flows out of one country into another).*

The development of financial markets is linked (indirectly) to the need to overcome the resistance of 'local' businessmen (who have a vested interest in monopolizing their market), and so to 'switch on' the mechanisms of international competition. Some calculations may suggest that the hypothesis of the Granger causality relationship linking an economy's openness to a financial system's 'depth' cannot really be disproved. [81] Thus, *the role of a financial system in overruling the interests of monopolistic groups and in expanding the possibilities for competitive market forces to function freely* is demonstrated even more graphically.

For example, some of Japan's biggest corporate exporters in the 1970s and 1980s were actively increasing their presence on international markets and were in great need of additional financial resources. Breaking through the 'siege' laid against them by certain Japanese banks, they succeeded in obtaining the necessary funding on the Eurobond market, after which the local

[78] Beck T., Levine R., Loayza N. Finance and the Source of Growth. In: Journal of Financial Economics, 2000, Vol. 58.

[79] Rajan R., Zingales L. Financial Dependence and Growth. In: American Economic Review, 1998, Vol. 88.

[80] Rajan R., Zingales L. The Great Reversals: the Politics of Financial Development in the Twentieth Century. In: Journal of Financial Economics, 2003, Vol. 69, No 1.

[81] Svaleryd H., Vlachos J. Market for Risk and Openness to Trade: How Are They Related? In: Journal of International Economics, 2002, Vol. 57.

banks were forced to offer them financial support on better, 'more liberal' conditions. Another example is the Mexican economy. The intensive development of the financial market there during the 1980s and early 1990s was directly associated with liberalization of foreign trade relations and deregulation.

When studying the role of financial markets in the efficient allocation of resources, J. Wurgler made use of a vast body of statistics, including annual panel data for 65 countries (for 28 individual sectors) over a period of 33 years (1963 – 1995). He investigated the links between investments and rates of growth in each specific sector (loglinear regression which does not account for lag dependencies) in different countries. The results of his calculations were quite compatible with the initial hypothesis – that in countries with developed financial markets such relationships were inevitably closer, higher than the indices of capital growth rate elasticity by the rates of value added growth in a given sector.

In the top quintile were Germany, France, the UK, Japan, the USA, Denmark, Belgium and other developed countries. Germany (in 1st place) displayed an elasticity index of 0.988, while its coefficient of determination was 0.364; the same indices for Kuwait (63rd) were 0.047 and 0.001 respectively. In other words, if value added increases by 10 % (on average across different sectors), capital investments in Germany (all other conditions being equal) will increase also by approximately 10 %, in the USA – by 7%, in India – by 1 %, and in Kuwait – by 0.5 %, bearing in mind that financial markets allocate their investment resources primarily to the most dynamic sectors. So, these estimates reveal the existence of a highly significant positive correlation (P = 5.3) between elasticity indices and the variable describing the financial markets' 'level of development'[82].

In this way, theoretic models and econometric estimates seem to point to an important mutual dependence between *innovation processes and implementation of state-of-the-art technologies, on the one hand, and the competition mechanisms functioning on the financial markets, on the other.* The functioning of financial markets today is viewed as one of the most important factors for intensifying competition and improving economic performance.

***

The main purpose of this article has been to offer a purely academic overview of all the truly significant economic, political and legal relationships that are directly associated with the

[82] In contrast to domestic markets, these markets display a distinct downward trend (of growth rate) in capital investments in the less dynamically developing sectors. The coefficient of regression between elasticity and financial development level, when estimated only on the basis of observations made during periods when the volume of value added in a given sector was decreasing, was found to be statistically significant at a a level of 99-percent. In countries with developed market systems this decline in investment volume was especially noticeable. See Wurgler J. *Financial Markets and the Allocation of Capital*. In: Journal of Financial Economics, 2000, Vol. 58.

institutional parameters of economic growth and have already been recognized in modern economics. In particular, we should like to point out the following relationships:

- ownership rights and the rights and responsibilities established by a system of contracts have been found to be the most profound source of long-term development and economic growth;

- the higher the level of development of private property institutions (guarantees against expropriation by the State and the ruling élites), the greater their positive influence on long-term economic growth, investments and the performance of financial markets;

- there exists a stable mutual dependence between the level of investments in GDP and the institutional variables describing the level of protection of ownership rights (in countries with a more favorable situation in the sphere of ownership rights an acceleration of investment processes can be observed with a 5-year lag);

- the most important condition that can assist property functioning in a market economy has been found to be strict limitation of the powers of executive authority in the sphere of ownership relations;

- countries with 'weak' institutions are more susceptible to crises measured by 'depth' of production decline;

- the effect of transfer (or transplantation) of institutions depends not so much on the choice of a particular 'family of legal norms' as on the actual perception of the laws being transplanted;

- trust in the contracts being concluded is ensured by a universal (comprehensive?) development of the mechanisms of mutual checks and balances in the public legal sphere;

- the decisions made by those instances of the judicial system (?) that have the role of arbiter supervising the exercise of ownership rights, compliance with contractual obligations and with the market 'rules of the game' must demonstrate their genuine independence from executive authority;

- the implementation of economic policy measures aimed at achieving a more efficient allocation of resources can be retarded by the circumstance that such a restructuring inevitably alters distribution relations.

- the more widespread the corruption of government officials in a society the fewer genuine opportunities there will be (at a constant level of administrative discipline) for consolidating market institutions and competition mechanisms;

- in those countries where judicial agencies are comparatively more independent, private ownership rights are better protected, and there are better conditions for rapid economic growth;

- an effective implementation of private property principles is a necessary precondition for fostering the development of financial markets;

- 'financial deepening' is very closely linked to enhancement of the efficiency of economic processes and accelerated economic growth;

- financial markets serve as indicators for assessing the levels of enforcement and protection of ownership rights (because of the long-term character of debtor-creditor relations)

- not only the structure of a financial system but also the quality and availability of financial services are factors of vital importance because banks and securities markets pursue economic goals that are broadly similar;

- legislation that protects the rights of shareholders and creditors can influence only indirectly the rate of economic growth – through the impact of this legislation on the development of financial markets;

- the degree of development of financial markets directly influences not only the rate of saving, but also the choice of technology; it also determines the scale (volume?) of labor and material resources needed for carrying out intermediary transactions;

- the functioning of developed financial markets (or of their competition mechanisms) promotes more intensive research and development and expands the sphere of innovative activity of entrepreneurs;

- additional opportunities for making a choice between investment projects, on the one hand, and the strict and effective control ensured by financial markets, on the other, facilitate a more efficient utilization of available resources and promote the creation of adequate conditions for more energetic economic growth;

- insufficient development of financial markets can be conducive to increasing the gaps in the rates of economic growth between the leaders benefiting from implemented advanced technologies and countries deprived of opportunities for fully exploring the potential of modern technological progress;

- for the comparatively better developed countries the policy of 'closedness' has a very negative impact on the rate of economic growth;

- barriers to competition have the strongest negative impact on the rate of economic growth in the most wealthy countries, while their impact on the dynamics of production is much weaker in comparatively less developed countries;

- the influence of emerging financial relations can be seen not so much in an increased sum (volume?) of saving and a more rapid accumulation of real capital, as in the improving efficiency

of utilization of available resources and in the accelerated growth of aggregate factor productivity;

- there exists a stable positive correlation between the development of the financial system and the openness of the commodities markets in the relevant countries (especially when capital actively flows from one country into another), on the one hand, and the overruling of the interests of monopolistic groups and expansion of the area for competitive market forces, on the other.

On the whole, it can be argued that progress in terms of effective economic growth depends not so much upon the choice of a particular model of economic and legal institutions as upon implementation of a more efficient system of enforcement of ownership rights and contractual obligations and upon perfecting the emerging market system. This includes the establishment of true equality for different forms of ownership, financial 'deepening' and the development of new financial markets. Another indisputable precondition for achieving the goals of socioeconomic development is modernization of the political system.