The Shaping Mechanism of Institutional Quality Differences on the Long-Term Economic Growth Path and Its Theoretical Explanation

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Abstract. This paper explores how the long-term economic growth paths of countries are shaped by differences in institutional quality and the underlying theoretical mechanisms, and constructs a comprehensive analytical framework for the impact of institutional quality on economic growth after reviewing relevant literature in institutional economics, new growth theory, and comparative institutional analysis. The research shows that many aspects such as property rights protection, transaction costs, technological innovation incentives, factor accumulation and allocation efficiency are the ways in which institutional quality affects the economic growth path, among which high-quality institutions can reduce uncertainty, provide reasonable incentive structures to promote the effective operation of markets, support innovation activities to achieve sustainable growth, On the contrary, low-quality institutions may lead to rent-seeking, misallocation of resources and thus fall into a growth trap. Further analysis reveals that institutional evolution is path-dependent and that both historical initial conditions and cultural factors act on the direction of institutional change, resulting in a diverse growth trajectory. This study presents a theory of institutional co-evolution from the perspectives of new institutional economics, endogenous growth theory, and comparative political economy, which explains the dynamic interaction between institutional bundles and economic performance, as well as the situation where differences in institutional quality affect innovation, human capital accumulation, and resource allocation efficiency, resulting in sustained development differences among countries. This theoretical framework opens up a new perspective for understanding long-term economic growth disparities and offers policy implications for institutional reform in developing countries.

Keywords: Institutional quality; Long-term economic growth; Path dependence; Technological innovation; Institutional complementarity.

1. Introduction

The fundamental rule system of human social interaction, that is, the institution, which has a profound impact on economic growth, has been regarded as a basic consensus in contemporary development economics. Against the backdrop of globalization, due to the significant differences in economic development levels among countries, scholars have begun to consider some fundamental issues. For example, what is the reason that some countries can continue to thrive while others fall into the trap of low growth, as Nobel laureate in economics Douglas North once said, "Institutions are the rules of the game in society, and more formally, these rules designed by people shape the constraints of human interaction." This insight provides a key perspective for understanding the imbalance in global economic development.

In recent years, the development of institutional economics has led the academic community to increasingly recognize that differences in institutional quality play a decisive role in explaining differences in long-term economic growth paths, and that data from the World Bank's Global Governance Indicators (WGI) show that high-income countries' average institutional quality scores were significantly higher than those of low-income countries during 2019-2023, with a difference of approximately 2.5 times. The differences in institutional quality are not only a reflection of current economic performance, but also continue to shape long-term growth trajectories in countries by influencing investment incentives, technological innovation, and the efficiency of resource allocation.

In the field of economics, various theoretical contexts have been developed regarding the impact of institutional quality differences on economic growth. Among them, new institutional economics

focuses on property rights protection and transaction costs at the core of economic activities, while endogenous growth theory focuses on the impact of the institutional environment on technological innovation and human capital accumulation. Comparative institutional analysis also focuses on how different combinations of institutions produce differentiated economic performance. These theoretical perspectives together form a multi-dimensional framework for understanding the relationship between institutions and economic growth.

This paper aims to explore how differences in institutional quality shape long-term economic growth paths in countries and provide systematic theoretical explanations. Specifically, the study will first define the concept and measurement methods of institutional quality, then construct a theoretical framework of institutional quality affecting economic growth to analyze the core transmission mechanism, and then explore the threshold effect and nonlinear influence characteristics of institutional quality. Finally, with this analytical framework, this paper aims to provide a theoretical explanation for understanding the differences in long-term global economic growth from an institutional perspective and offer policy implications for institutional reform in developing countries.

This study can deepen people's theoretical understanding of the fundamental drivers of economic development and has important reference significance for China's current deepening of economic system reform and improvement of institutional quality. It has dual significance in exploring the intrinsic connection between institutional quality and economic growth in the context of significant adjustments in the global economic landscape, which can both promote high-quality domestic development and help participate in the reconstruction of the international economic governance system.

2. Theoretical Definition and measurement methods of Institutional quality

2.1 The concept and connotation of institutional quality

Institutional quality refers to the degree of effectiveness of the institutional arrangements of a society in promoting efficient economic operation, ensuring fairness and justice, and maintaining social stability. Essentially, it reflects the rationality of the design of the social rule system and the effectiveness of its implementation. It covers both formal institutions (such as laws and regulations, policies and measures) and informal institutions (such as social norms, cultural traditions), and high-quality institutions can effectively reduce social transaction costs, provide clear incentive structures, protect property rights security, maintain market order, and thereby create a favorable environment for the production, exchange and innovation activities of economic entities.

In terms of connotation, institutional quality is multi-dimensional and encompasses many core elements such as government governance capacity, the level of the rule of law, regulatory quality, property rights protection, corruption control, and the degree of market openness. In 2012, Acemoglu and Robinson classified institutions into "inclusive institutions" and "extractive institutions". Inclusive institutions guarantee broad property rights protection, fair market competition and political participation to promote economic prosperity, while extractional institutions restrict the distribution of political and economic power, allowing a few elites to seize social resources and hinder long-term economic development. This division provides an important framework for understanding the relationship between institutional quality and economic growth, as research in institutional economics deepens, Scholars are gradually reaching a consensus that institutional quality is not only related to economic efficiency but also to broader aspects such as social justice and governance capacity, and is a key indicator of a country's overall strength and potential for development.

2.2 Measurement methods and evaluation indicators of institutional quality

To measure institutional quality, it is necessary to establish a scientific and reasonable evaluation system. Currently, the commonly used methods for measuring institutional quality internationally are roughly divided into two types: the objective indicator method and the subjective perception method. The objective indicator method builds an institutional quality evaluation system by collecting

quantifiable indicator data such as the guarantee of political rights, the quality of legal texts, and the efficiency of government administration. The subjective perception method is based on questionnaires and expert evaluations of market participants' perception and evaluation of the institutional environment. Both methods have their own strengths and weaknesses. The advantage of the objective indicator method is that it has good comparability and high data reliability. However, it is often difficult to fully reflect the actual effectiveness of the implementation of the system. The advantage of the subjective perception method is that it can better grasp the actual operation of the system, but it may be affected[2] by sample selection bias and cultural differences.

Specifically in terms of evaluation indicators, the major institutional quality indicator systems that are currently influential internationally include the World Bank's "Global Governance Indicator" (WGI), which covers six dimensions: political stability, government effectiveness, regulatory quality, rule of law level, corruption control, and discourse power and accountability. The Economic Freedom Index (EFI) focuses on market openness and economic freedom, and the institutional sub-indicators of the Global Competitiveness Index (GCI) and the DoingBusiness Index are also included. These indicator systems have different focuses and evaluation methods. In recent years, with the development of big data technology, some studies have begun to try to use new methods such as text mining and satellite night light data to supplement traditional measures of institutional quality, further improving the comprehensiveness and accuracy of the evaluation.

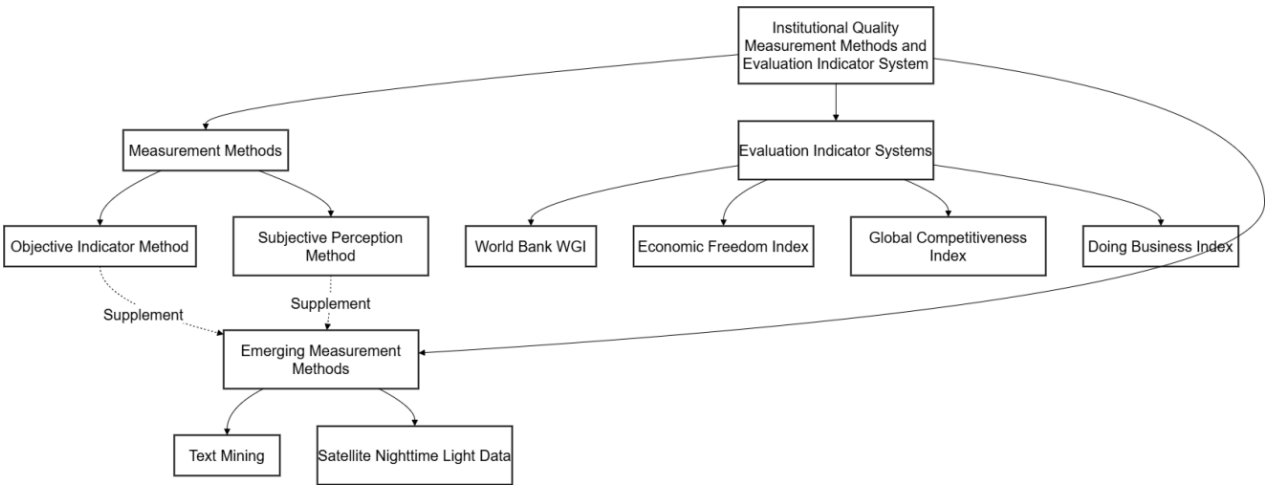

Figure 1. Measurement methods and evaluation index system for institutional quality

2.3 Current status of institutional quality disparities among major global economies

There are significant differences in institutional quality among the world's major economies, according to the latest data from the World Bank's Global Governance Indicators (WGI), the average institutional quality of OECD countries during 2019-2023 far exceeded the global average. Nordic countries such as Denmark, Finland, Sweden and Norway are particularly outstanding in terms of rule of law, government effectiveness and corruption control, with average scores ranging from 1.8 to 2.0 (out of 2.5), while many developing countries and emerging market economies have scores ranging from 0 to 0.5, and some low-income countries have negative scores. This indicates serious problems with the quality of their systems.

In terms of regional distribution, institutional quality has a distinct geographical gradient, with Western Europe and North America generally having higher levels, followed by East Asia and Southeast Asia, while Latin America, the Middle East and sub-Saharan Africa as a whole have lower levels, and particular attention should be paid to the significant improvement in institutional quality in East Asian economies such as Singapore, Japan and South Korea over the past few decades. There is a positive interaction with economic take-off. China, an emerging economy, has seen improvements in government efficiency and regulatory quality in recent years, but there is still much room for development in the rule of law and market openness.

In terms of the evolution trend of institutional quality, the overall global institutional quality will be differentiated from 2019 to 2023. The institutional quality of some developed countries and emerging market countries that have successfully transformed will continue to improve, while factors such as geopolitical conflicts and the rise of populism have led to a decline in the institutional quality of approximately one-third of countries worldwide. This divergence has led to an widening gap in global institutional quality and, to some extent, explains the continued divergence[3] in economic growth performance among countries.

3. The theoretical framework for the impact of institutional quality Disparities on Economic Growth

3.1 The relationship between institutions and growth from the perspective of New Institutional Economics

The understanding of the relationship between institutions and economic growth can be achieved through the systems theory framework provided by New institutional economics. Scholars like North and Williamson, who reintroduced institutional variables, have successfully interpreted what traditional neoclassical growth theory finds difficult to answer: why the economic performance of countries with similar factor endowments is so different. And new institutional economics holds that institutions are social game rules that affect transaction costs and incentive structures, thereby fundamentally shaping economic behavior and the efficiency of resource allocation and determining long-term economic growth potential.

From the perspective of new institutional economics, economic growth is driven by high-quality institutional arrangements through three core mechanisms. First, uncertainty in market transactions is reduced due to well-defined and effective protection of property rights, which leads to reduced precautionary spending by economic entities and the flow of resources to the most productive areas. Second, A good contract enforcement mechanism and judicial system cut transaction costs and expand market size, which led to the realization of specialized division of labor and the development of economies of scale. Third, effective government governance and public service provision created a stable environment for the operation of the market economy, filled the gaps of market failure and promoted the development of long-term investment and innovation activities.

A series of studies by Asimoglu et al. (2001-2005) further strengthened this theoretical perspective, using the "natural experiments" brought about by colonial history to demonstrate the decisive influence of institutions on long-term economic development. The research shows that institutional quality is an important factor for economic growth and may be the fundamental factor determining the long-term development differences between countries. The importance goes beyond the traditional factors such as geographical conditions, natural resources, and initial levels of human capital.

3.2 Institutional quality acts on the transmission mechanism of economic growth

Multiple channels and transmission mechanisms are the ways in which institutional quality affects the path of economic growth. Five core transmission mechanisms can be summarized from existing research results, and these mechanisms together form the theoretical framework[4] of institutional quality affecting economic growth.

The investment incentive mechanism is influenced by the quality of the system, and the path of capital accumulation is thus shaped. High-quality systems will protect property rights, stabilize expectations, and reduce risks, thereby encouraging the private sector to increase investment. Research shows that for every 10% increase in the degree of property rights protection, the investment rate will increase by approximately 2 percentage points on average. Data from 2018 to 2022 show that countries in the top 25 percent of the global property rights protection index have an average investment rate of 24.7% of GDP, while those in the bottom 25 percent have only 17.3%. Additionally,

a good institutional environment can attract more foreign direct investment to promote capital formation and technology spillover.

The efficiency of technological innovation and knowledge accumulation is determined by institutional quality. Because innovation activities are risky and cyclical, a stable institutional environment and effective intellectual property protection are needed. High-quality institutions can create a fair competitive environment, provide innovation incentives and strengthen intellectual property protection, which prompts enterprises to be more active in R&D investment and innovation activities. And empirical research shows that for every unit increase in the rule of law index between 2019 and 2023, the average number of patent applications per capita increased by approximately 25%, and the share of research and development expenditure in GDP rose by approximately 0.3 percentage points.

The process of human capital investment and accumulation is influenced by institutional quality. A quality education system, a fair talent market, and an effective social security system encourage individuals to invest in human capital and thereby increase labor productivity. Data from the past five years show that in countries with high institutional quality, the average gross enrollment rate in higher education is over 70%, while in countries with poor institutional quality, the figure is only about 25%[5].

The impact of institutional quality on total factor productivity is reflected in the efficiency of resource allocation, because when there is a market-oriented mechanism for resource allocation and antitrust laws are effective and market access conditions are fair, factors of production flow from the inefficient sector to the efficient sector to achieve the optimal allocation of resources, while in an environment with high institutional quality, The loss of total factor productivity caused by resource misallocation can be reduced by 30% to 50%.

The quality and stability of macroeconomic policy are influenced by institutional quality. Institutional arrangements such as independent central banks, transparent fiscal budgets, and prudent financial regulation can maintain macroeconomic stability and reduce inflation rate fluctuations and financial crisis risks, thereby creating a favorable environment for economic growth.

3.3 Threshold effects and non-linear Impacts of institutional quality

The influence of institutional quality on economic growth is not simply linear but has obvious threshold effects and nonlinear characteristics. Research shows that there is a "critical quality threshold" for institutional quality on economic growth. That is to say, institutional quality needs to reach a certain level to effectively promote economic growth. If this threshold is not reached, institutional improvement may not have a significant growth effect. This can be explained by the theory of institutional complementarity, because individual institutional improvements need to work in synergy with other related institutions to have a positive effect.

Recent studies have shown that there is an "inverted U-shaped" relationship between institutional quality and economic growth. When institutional quality is low, the impact of institutional improvement on economic growth is more significant. When institutional quality reaches a medium level, the marginal impact gradually decreases, and in countries with extremely high institutional quality, further institutional improvement has a relatively less promoting effect on economic growth. Cross-country data analysis from 2018 to 2022 shows that in countries with institutional quality ranging from 0.3 to 0.7 (standardized from 0 to 1), for every 0.1 unit increase in institutional improvement, the average per capita GDP growth rate increases by 0.5 to 0.8 percentage points. However, in countries with institutional quality exceeding 0.8, The same magnitude of institutional improvement only leads to an increase of 0.1 to 0.3 percentage points in growth[6].

The lock-in effect is a manifestation of the impact of institutional quality. Once a certain institutional arrangement is formed and operates stably, it creates a self-reinforcing mechanism that leads to path dependence, which makes the cost of subsequent institutional changes very high. The lock-in effect can be benign and help high-quality institutions continue to work, or malignant and make inefficient institutions difficult to change, thereby hindering economic development. To

develop targeted institutional reform strategies, it is necessary to understand this non-linear effect, especially for economies at different stages of development.

4. An analysis of the mechanisms by which institutional Quality shapes long-term Growth paths

4.1 Property rights protection and innovation Incentive mechanisms

The core component of the quality of the national system includes the property rights protection system, which has a profound impact on the innovation behavior of economic entities. If the property rights protection system is sound, innovators will receive economic returns commensurate with their innovation achievements and sustained innovation drive will follow. The Global Innovation Index (GII) data shows that the average proportion of R&D investment to GDP in the top 20 countries with the highest level of property protection from 2019 to 2023 was 2.8%, while in the bottom 20 countries it was only 0.3%. This gap is directly reflected in the number of patent applications. Because the average number of patent applications per patent in high-protected countries is more than 15 times that in low-protected countries each year.

The incentive mechanism for innovation is mainly achieved through property rights protection, by reducing "free-rider" behavior and lowering the risk of innovation, because with a sound intellectual property system, innovators are granted exclusive rights to use the results of innovation and the benefits of innovation are guaranteed, and clear property rights will reduce the uncertainty of innovation activities, making enterprises more willing to invest in long-term research and development. According to a 2022 study by the World Intellectual Property Organization, for every 10% increase in the intensity of intellectual property protection, enterprises' R&D investment increases by an average of 7.3%, and innovation output in terms of patents increases by approximately 9.5%. This institutional quality provides a positive stimulus to innovation and eventually becomes a sustained driving[7] force for technological progress and economic growth.

4.2 Government Governance effectiveness and resource allocation efficiency

Institutional quality encompasses the important dimension of government governance effectiveness, which influences resource allocation efficiency through rule-making, market regulation, and the supply of public services, and efficient government governance can reduce transaction costs, correct market failures, and create a stable market environment, thereby optimizing economic resource allocation. Data from the World Bank's Governance Indicators (WGI) show that between 2018 and 2022, countries in the top quarter of the government efficiency indicators had an average capital productivity about 40 percent higher and a public resource waste rate about 35 percent lower than those in the bottom quarter, which directly reflects the significant impact of governance quality on resource utilization efficiency.

Multiple mechanisms have made governance effectiveness affect the path to economic growth. First, a high-quality governance system can create a fair competitive market environment, reduce rent-seeking and corruption, and thereby lower the degree of resource misallocation. A 2021 study by the International Monetary Fund showed that if corruption were reduced by 10%, resource allocation efficiency would increase by approximately 8.3% and total factor productivity would also grow. Secondly, efficient governments streamline administrative approvals and increase policy transparency to reduce business transaction costs and uncertainties. Data from the Organization for Economic Cooperation and Development shows that for every standard deviation improvement in the quality of government regulation, the proportion of business administrative costs to turnover drops by an average of 2.5 percentage points, leaving more resources available for productive investment to form a virtuous cycle[8] of economic growth.

4.3 The impact of financial and market institutions on capital formation

In the modern economy, financial and market systems are important infrastructure and play a decisive role in the efficiency of capital formation and allocation. A sound financial market system can reduce information asymmetry, diversify risks and increase liquidity, thereby facilitating the efficient conversion of savings into investment, and data from the World Economic Forum's Global Competitiveness Report indicates that during 2019-2023, The average capital formation rate in the top 20 percent of financial market development countries is 25.8 percent, while in the bottom 20 percent it is only 17.2 percent. The former has a capital output efficiency about 35 percent higher than the latter, indicating that the quality of the financial system has an impact on both the quantity and quality of capital formation.

The long-term economic growth path is influenced by multiple channels of financial and market systems, among which sound financial regulation and market systems can effectively alleviate the financing constraints faced by innovative enterprises and emerging industries Because the Institute of International Finance's (IIF)2020 study shows that for every 10-percentage-point increase in the financial deepening index, the financing accessibility of small and medium-sized enterprises increases by an average of 12.6 percent, which is significant for economic restructuring and the improvement of total factor productivity, And a sound market price mechanism and capital market can optimize the allocation of resources across different sectors and increase the overall return on capital, data from the McKinsey Global Institute also shows that economies with high financial market efficiency have an average capital allocation efficiency 23% higher than those with low efficiency, and this difference accumulates over a long period of time, causing a significant divergence in economic growth trajectories.

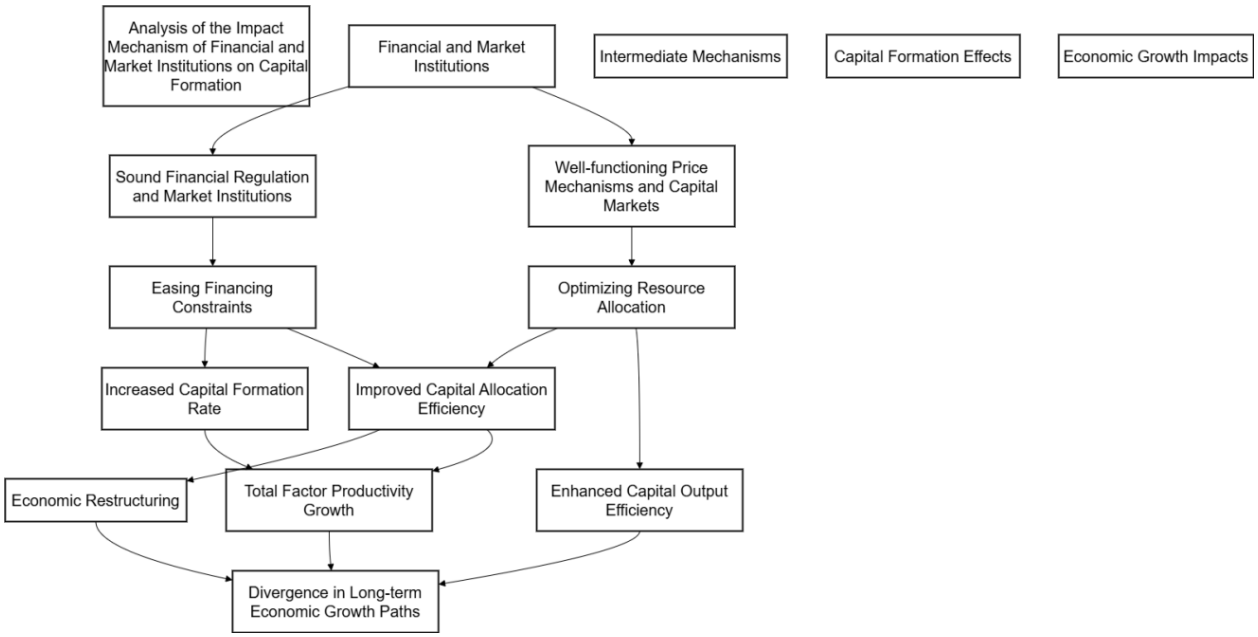

Figure 2. Analysis of the mechanisms by which financial and market institutions affect capital formation

4.4 The long-term impact of institutional quality on human capital accumulation

Channels such as the education system, labor market regulation, and social security are deeply influenced by institutional quality and have a profound impact on the process of human capital accumulation. High-quality institutions can bring better educational opportunities, enhance the return on human capital investment, and optimize the allocation of talents. UNESCO data shows that between 2018 and 2022, countries in the top 25 percent of institutional quality index spent an average of 5.8% of GDP on education, while those in the bottom 25 percent spent 3.2%, and countries with

high institutional quality had an average education return rate (calculated by wage growth) that was about 40 percent higher. This shows that the institutional environment has an incentive effect[9] on investment in human capital.

Human capital accumulation is also influenced by institutional quality, among which the labor market and social mobility are important mechanisms. This is because when the institutional environment is favorable, the degree of skill mismatch will decrease and talents can be allocated efficiently. A 2021 study by the Organization for Economic Cooperation and Development (OECD) shows that countries with high institutional efficiency in the labor market The average skill mismatch rate is 10.5 percentage points lower and labor productivity is about 15 percent higher. In addition, inclusive institutions reduce barriers to access to education and increase social mobility, thereby expanding the social base for human capital accumulation. Therefore, high-quality institutions have a long-term advantage in promoting human capital accumulation, which largely explains the differences in economic growth paths among countries.

4.5 The interaction between economic openness and institutional quality

A country's long-term economic growth path is shaped by the significant interaction between economic openness and institutional quality, and economic openness requires high-quality institutions as a prerequisite for maximizing dividends. A joint study by the World Trade Organization (WTO) and the World Bank shows that during 2018-2022, countries in the top one-third of the world in terms of institutional quality contributed an average of about 65% more to growth from trade and investment than those in the bottom one-third at similar levels of openness, thanks to good property rights protection, efficient government governance and sound market rules. These countries are better able to absorb external technology spillovers and optimize their position in the global value chain, thereby effectively managing the risks and shocks brought by openness, while economies with poor institutional quality often fail to take full advantage of openness opportunities and may instead suffer from negative situations such as capital flight and increased environmental pollution due to poor governance capacity, thereby significantly reducing the benefits of openness. So the complementary relationship between institutions and openness is a key factor in explaining the differences in growth performance among countries in the process of globalization.

5. Conclusions

This study systematically examined how differences in institutional quality shape long-term economic growth paths and their mechanisms. Through theoretical analysis and a review of empirical evidence, it was found that institutional quality affects economic growth trajectories through multiple channels and is a key element in explaining long-term development disparities among countries.

Institutional quality affects transaction costs and the strength of property rights protection and thereby determines the fundamental operating environment of economic activities. High-quality institutions can reduce uncertainty, reduce opportunistic behavior and improve market transaction efficiency, and also stimulate innovation activities through effective property rights protection to promote technological progress. Low-quality institutions, on the contrary, make transaction costs high and the property rights environment unsafe, thereby suppressing productive investment and innovation willingness and creating economic growth traps. Moreover, institutional quality shapes incentive structures and resource allocation mechanisms and affects the accumulation and allocation efficiency of factors of production such as capital, labor and technology. Good governance corrects market failures and supplies necessary public goods to optimize resource allocation, while efficient financial markets and market institutions promote capital formation and effective allocation, and institutional quality has a profound impact on the accumulation of human capital and the benefits of economic openness and is a key determinant of long-term growth capacity.

The research also shows that there is a complex and path-dependent interaction between economic growth and institutions, because the elements within the institutional bundle complement each other

and need to co-evolve to be most effective, and institutional change is greatly influenced by historical conditions and cultural factors, so there is a strong path-dependent relationship. This also explains why the differences in the quality of different institutions have persisted for a long time and led to different growth trajectories. It should be noted that while good institutions generally have a positive impact on economic growth, the best institutional arrangements may vary from country to country, and blindly transplanting other countries' institutions may backfire.

The different long-term growth paths in various countries are shaped by differences in institutional quality through mechanisms such as transaction costs, incentive structures, resource allocation efficiency and factor accumulation, and this finding enriches the theory of economic growth and provides important inspiration for institutional reform in developing countries. It is necessary to take institutional building as the core of long-term development strategies and consider one's own special circumstances to enable the elements of the system to evolve together, so that the quality of the system can be truly improved and sustainable economic growth can be achieved.

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