

The Influence of Sino-american Cultural Differences on Economic Development based on Game Theory and Solow Growth Model

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Abstract

From 1960 to 2000, East Asian countries' gdp grew at an average annual rate of 6 percent, much higher than the OECD average annual growth rate of 2 percent. As analyzed by the Solow growth Model, when relatively poor countries share some of the same factors as developed countries, the average annual growth rate of East Asian countries is much higher. The economies of poor countries tend to converge with those of rich ones, including better legal systems, competitive markets, and better health programmes. But the real process and the model's conclusions do not match perfectly. Despite the continuous optimization of various systems in East Asia, it is still far away for East Asia to converge with the economic level of developed countries. One of the reasons is that developed countries led by the United States take advantage of their economic advantages and international status under the guidance of capitalist human rights values. The intention is to hinder the development of developing countries, including China, in order to maintain their international status advantages and seek benefits. As the largest developing country, China's development speed in recent years is beyond doubt. With the improvement of economy, the improvement of system and the continuous improvement of international status, different from the exploitation of other countries by the so-called human rights doctrine by the United States, under the principle of socialist core values derived from Chinese culture, China carries out the Belt and Road Initiative, deepens practical cooperation among countries, and holds the World Expo. To issue a green call to the world, jointly build a green earth, jointly cast a community of shared future for mankind, and use comparative advantages to benefit the world. With the improvement of the strength of most developing countries such as China, the contradiction between the behavior patterns determined by the different consciousness of developing countries and developed countries in the international world is deepening day by day. From the perspective of Marxist contradiction analysis, the contradiction is bound to be solved in a way that conforms to the fundamental interests of most people. Let's combine this argument with different arguments in economics to think about what cultural ideas end up dominating world culture when two cultures collide. This paper first uses Marxist materialist dialectics to introduce the reasons for the formation of social forms in developed capitalist countries and the dominant cultural thoughts in the formation process, and then introduces the dominant culture in China's 5,000 years of history. Compare different domestic and international economic behaviors determined by different consciences influenced by different cultures, and compare and analyze the process and results of economic interaction between the two cultural conflicts on the basis of the game model and Solow's growth model. The analysis results show that the expanded Soro growth model of domestic economy on the basis of adhering to the moral primacy culture overcomes the free-rider problem of scientific and technological innovation under the principle of human rights primacy. Therefore, in the end, under steady state, China's domestic economic growth will still be higher than that of the United States, while the international status of the United States will decline due to the rise of a large number of developing countries. Finally, the United States will be forced to give up the current exploitation of developing

countries, and the idea of win-win cooperation will become the mainstream idea of international trade.

Keywords

Solow Growth Model; Materialist Dialectics; Game Theory; Analysis of Contradiction; Core Socialist Values.

1. Introduction

1.1. Background and Significance of the Topic

The social form of a country is determined by the unity of a country's economic base and superstructure. From the materialist point of view, the economic base is fundamental, and the superstructure can promote or inhibit it. To put it simply, if a country wants to be economically strong, it must be supported by a stable superstructure (including political superstructure and ideological superstructure, that is, a country's political system and people's cultural ideology). In reality, whether a country is strong or not depends not only on a good political superstructure, but also on the conceptual superstructure of a country's people. A good political superstructure is the foundation of a country's strength, and the people's ideological superstructure is the key to a country's strength. If the people live and work in peace and contentment, but a small number of people, because they lack a mode of thinking that matches the economic foundation, blame their dissatisfaction with life on the country and the political system, and are misled by others, then the society is bound to be in turmoil. If the people of a country do not have a culture of hard work, always thinking of opportunism, and always thinking of exploiting the interests of others by exploiting the loopholes of the institutional system, then fundamentally speaking, the real economy of a country's economic foundation cannot develop at a high speed, and there is no high-speed productive forces as the guarantee of the material life of the people, let alone the happiness of the people. Since the early days of the founding of the People's Republic of China, China has been converging to the United States with a rare economic growth rate, people's living standards have improved, and the country is stable. However, due to some people's misunderstanding of the Chinese system, and because some people are misled by the remarks of those who intend to stop China's economic growth, their unintentional remarks have damaged ethnic unity and social stability. Destructive to the people's hard work out of their expectations of a happy life. In this context, the author hopes that this paper will help more people to understand the superiority of the Chinese political superstructure, which originates from the creative transformation and innovative development of traditional Chinese culture. Only with a good system, the country's people work hard, trust the country, do not regard the good system as a kind of opportunism, the combination of the two, China can be truly strong, can benefit the people of the country, benefit the people of the world to carry forward the system.

1.2. Study the Significance of a Country's Economic and Cultural Construction

For a nation, culture is the source that guides the behavior pattern of a nation's people and government. A fine traditional culture plays an inestimable role in the development of economy and society, and is an important factor that determines the comprehensive competitiveness of a country. Since the 21st century, with the inexorable development of economic globalization, the cultural integration of various countries has become more and more close. In this era of great cultural integration, how to identify the shortcomings of one's own culture and absorb the cultural essence of other countries that is beneficial to its own development has become an inevitable problem for every country. As far as the significance of economic construction is concerned, the most basic driving force for the development of a social form is the replacement

of productive forces and production relations, followed by the change of the superstructure that is incompatible with the economic foundation. Therefore, the importance of economic construction is very important for any country. However, there are many factors that affect economic construction, such as system and capital accumulation, and this paper focuses on the influence of cultural construction on economic construction.

1.3. Research Status at Home and Abroad

Wang Baodi (1996) argues on the basis of dialectical materialism that the economic base determines the upper construction, while the upper construction has a huge reaction to the economic base. As an important aspect of superstructure, cultural construction plays an obvious role in promoting economic development. If cultural construction is well done, economic development can be accelerated. Otherwise, it will play an obstructive role.

Hebiao Lou and Heya Li (2001) extracted some key points from the differences between modern Chinese and Western cultures (first: Chinese culture emphasizes the harmony between man and nature, emphasizing the unity of nature and man, while the West emphasizes the exploration of nature, the transformation of spirit, and the separation of nature and man). Second: Chinese culture emphasizes group-oriented, while Western culture emphasizes individual-oriented). And the dialectical relationship between material and consciousness of Marxism is used to analyze the fundamental cause of the two completely different cultural differences between China and the west, that is, the difference between the economic foundation of China and the west. On the premise of proving the profound connection between cultural differences and economic differences, we advocate that China should combine the beneficial part of Western culture with the essence of traditional Chinese culture in the process of reform and opening up and the construction of socialist market economy, so as to help us build a more perfect system and mechanism.

From the perspective of international trade theory, Deyuexhong (2011) took the traditional view that "resource endowment and factor differences will affect production behavior" and added cultural differences to creativity will also carry part of process design. Differences in product styles will lead to differences in commodities and form comparative advantages to a certain extent, thus affecting international economy and trade. Moreover, historical data are introduced to prove that the convergence of cultural differences between the two countries will lead to similar consumption demands and expand bilateral trade, thus affecting the economy of the two countries.

From the perspective of the Wealth of Nations, Zhang Qian (2013) discussed the political and economic system level and people's living standard in the Western world at the end of the 18th century, which far exceeded that of China, and pointed out that the Confucian-based cultural thought in ancient China was an important cultural factor that stopped the development of ancient Chinese society, and called for looking forward along the path of ideological progress shared by mankind. Instead of looking back to the past glory, and adhering to a more inclusive and open attitude, to seriously examine the essence of Adam Smith's thought of self-interest and ultimately benefit people.

Cultural factors have an immeasurable contribution to the development of a country, because culture determines the consciousness of a country's people, and consciousness determines the behavior pattern of a country's people. Although culture plays such a great role in the development of a country, its role is obscure (although people may be influenced by the culture of a certain environment and cast their own values, views on good and evil, etc., few people realize that it is this cultural environment that casts their own consciousness), and even modern documents are the same. It is also rare to discuss the influence factors of a country's culture on economic development, and modern literature all discusses the influence of ideology on economic construction from the perspective of philosophy, but ignores the economic

perspective of this proposition. Here, I hope to combine Marxist philosophy with Western economics to analyze the influence of cultural society on economic and social development.

2. The Difference of Dominant Culture between China and America in the Process of Historical Social Formation Change

2.1. The Dominant Culture of Modern American Capitalist Society

Marx, a famous philosopher, founded the radical materialism and combined it with dialectics to provide the world with the basic method to analyze things and transform things. The content of materialism is mainly to explore the mutual relationship between the human spiritual world and the real material society, and the final conclusion is that matter determines consciousness, and consciousness has a dynamic reaction on matter, while dialectics is to explore the properties of things in the world, whether they exist in isolation or there is a certain connection between different things, and finally conclude that different things always have a certain connection. Beneficial relations promote the development of things, while bad relations, that is, contradictions, hinder the development of things, and eventually things overcome the contradictions between them through their own movement, and this is the process of development. It is abstractly like two men walking opposite each other, supposing that among all their connections there is a relatively simple connection, a rope tied around their waists, and the motion of two substances (philosophical motion refers not only to the movement of space, but to the process of changing the various properties of things, and here we ignore the more complicated motions. Conflict, that is, contradiction, will limit the development of things, just as two people walking towards each other will be blocked in space because of the connected rope, their interests will conflict, and the resolution of the contradiction predicts the development of things, development is the result of the movement of things. Because it is in the fundamental interest of most people, here you can think of untying this rope or two people going in the same direction as a result of development, development is an upward and inevitable process, and the result is in the fundamental interest of most people.

There have been many different forms of society in history, so let's think about the previous model of two people working against each other, and use it for our analysis, and let's assume that different class groups in different social forms represent different people in the model, for example, the peasant class is one person, the working class is another person, And we want to analyze the transformation of social form caused by the struggle between the most contradictory classes, so in order to simplify the analysis, we focus on the two powerful and contradictory class groups existing in the same social form, and analyze the impact of their conflict of interest on the change of social form. In the slave society, it is the contradiction between the slave owner's permanent possession of the slave's personal rights and the slave's desire to fight for his personal freedom. In feudal society, the royal family used political rights to exploit the interests of a large number of merchants and merchants to protect their own interests. In capitalist society it is the struggle of the capitalists who own capital to exploit the working class and the working class to resist. This paper mainly analyzes the changes in the economic foundation and superstructure of the feudal society replaced by capitalism in Europe in the 14th century, and the cultural thoughts that guided people's behavior during this change. In the 14th century, in Western Europe, due to the discovery of the New World by Columbus, a piece of America with extremely backward economic, cultural and military strength was presented to the European feudal countries. Western Europe with strong military force used colonial expansion and other means to dump goods in the Americas and buy American labor force cheaply. For a time, commodity trade in Western Europe achieved unprecedented development, but the good times were short-lived. Due to the corruption of the political system in Western Europe, the royal family and religions exploited the economic interests of merchants

by various means. Subsequently, the bourgeoisie in Western Europe carried out revolutions one after another to safeguard their own interests. Among them, the Dutch Revolution, the British bourgeois revolution and the French Revolution were the major movements that severely attacked the political rights of the papal sect and the royal family in Europe. Power is on the businessmen's side. Being released promotes the development of the productive forces, so in this respect capitalist society is progressive. But according to Marx why it has its insuperable limitations. So in Marx's opinion, what kind of new exploitation of interests is hidden in the human rights produced by the capitalist revolution? Compared with the feudal society, the change of capitalist ownership can be described by a sentence in the French Revolution, that is, private property is sacred and inviolable, and the monarch is no exception. Without the unlimited exploitation of the absolute monarchy, the enthusiasm of labor production is greatly improved and the development of productive forces is promoted. Therefore, compared with the feudal society, the capitalist ownership is progressive. People who had no capital to produce began to sell their labor force to capitalists for survival. Compared with slave society, in which slaves as the main producers were directly deprived of personal rights, this new type of employment relationship seemed to be very fair, but it was not so. Let's take another example, quoting a market model that was in line with the market competition relationship at that time. Perfectly competitive market. In a market of perfect competition for both means of production and commodities, the number of buyers and sellers of production factors and products is so large that each individual cannot control the transaction price of the market, and the price of commodities in the market is completely provided by the market supply and demand relationship. To simplify the analysis and assume that there is only one commodity to be produced, and that the production of the book requires only one factory and workers and no other raw materials, the producer, in order to maximize profits, must mathematically make the use price of the marginal factor equal to the marginal product of the factor. Finally, the conclusion that all income from the production of commodities in a perfect competitive market with constant returns to scale will be distributed by capital owners and market laborers in a certain proportion under the market mechanism is applied to the actual situation. Suppose that the production value of 10 yuan of income is distributed by capitalists and workers in the form of 5 yuan each under the action of the market mechanism. When the depreciation value of the factory as a kind of capital is 1 yuan, the problem in this scenario is that the capitalist only needs to hold the factory to earn 5 yuan a year, and after spending 1 yuan to supplement the capital depreciation, he can earn 4 yuan for free without labor in the next year. When this asset is used by the capitalists here the following year to expand the capital stock, the factory, the capitalists can earn higher capital gains, and the cycle continues, widening the wealth gap between capitalists and workers. Therefore, this mode of exploitation in which workers can be imprisoned for life due to the possession of capital is more obscure than the mode of production and exploitation in slave society that directly deprives personal rights. Perhaps this model neglects the mental labor of capitalists, but in fact, based on the original model, capitalists are regarded as both workers who provide complex labor such as mental labor and capitalists who provide capital. The income of the Labour counted as a part of the worker is counted among the five dollars of the worker's total Labour income, and there is no reasonable income of exploitation, but the five dollars of his capital as a capitalist minus the depreciation of one dollar still has the character of slave Labour. To put it simply, when capitalists hold capital for production, they can get an income that exceeds the value of the labor they provide. According to this statement, it seems that capitalists with capital can certainly make profits in the market, while the reality seems not to be like this. The answer is that this model does not take into account the excess surplus value obtained by the competition between firms in the market. Asset owners not only exploit the surplus value of workers, but also compete with each other and exploit each other to obtain greater profits,

which will further widen the gap between the rich and the poor, and capitalists who own capital make profits from their own capital to expand capital accumulation. In the end, most capital is concentrated in the hands of a small number of capitalists. They can even control the presidential election, the direction of public opinion, to deepen their control over society.

The bourgeois revolution in Western Europe in the Middle Ages claimed that the rights gained from the papacy and the imperial power were in favor of their own classes, and were wrapped in the name of human rights, and eventually even became a national culture that played a decisive role in a country. Theoretically, the human rights mentioned by the bourgeoisie revolutionaries were indeed in favor of most classes, but the bourgeoisie benefited the most. In general, the emergence of the bourgeois private system limited the royal power, developed the commodity economy, and brought a better life to the country and the people. But in the end, the bourgeoisie hid the essence of the exploitation of private ownership in the continuous accumulation of capital, making the working class a slave with personal freedom generation after generation.

2.2. The Dominant Culture in China's 5,000 Years of History

Mencius devoted himself to teaching that the people were the most valuable, the state the second, and the king the light. The happiness of the people is the most important, so that there is a country, there is a king. Mencius said that if there is no social order, where will the state be, and how will the interests of the people be protected without it? Since the Spring and Autumn period and the Warring States period, the various schools of thought formed, and the Western European feudal society of the same papal sect, later became the ideological basis for the stability of their feudal rule, among which the Confucius Mozi Lao-tzu, and Han Fei-zi thought, is to help China's feudal power to continue for thousands of years. But unlike the popes of Western Europe, who promoted the divine right of the army to exploit the people, Confucians, Taoists, legalists all advocated the idea that when the society was stable, the citizens of a country should not destroy the social order at will, while the king, the power vested in the people, should stabilize the country. In China's feudal society, it was precisely because of the existence of such people and such culture that the power of the monarch and the actions of the people were constrained by morality that the Chinese feudal society continued to be stable. If we say that the change of class society is the process of the development of things, the old contradictions can be resolved, and the interests of the general people can be better guaranteed, then it is also feudal exploitation. Why did China's feudal society last for a long time, the peak of national power in the feudal period, so amazing? Whether it was feudal society in Western Europe or feudal society in China, there were insurmountable contradictions in feudal society. Marx once said that quantitative change of things will lead to qualitative change when it reaches a certain degree, so this degree is the key. In contrast to Western Europe's endless exploitation of the people through theology, the moral culture of China's feudal society was the key to limit the.

3. The Differences in Behavior Patterns between China and America Caused by Cultural Differences in Modern Times

3.1. The Manifestation of the Dominant Culture in American Capitalist Society in Modern Times

Since the end of the two Wars of Independence, the American people have ended the painful history of being colonized and started a new era, all of which rely on the American people's pursuit of national independence and people's happiness. Therefore, the United States is the most aware of the exploitative darkness of capitalist development, but under the guidance of the so-called capitalist human rights thought, In order to rapidly improve its economic strength

and still move towards the road of capitalist exploitation, about 1869 after the Civil War, the US economy entered a high-speed stage of development, with an average annual GDP growth rate of 2% higher than that of almost all other countries. In addition, during World War I and World War II, the US was isolated from the war zones by virtue of its geographical environment. The economy was less affected by the war and absorbed a large number of top Jewish scientists after World War II. Due to the emptiness of the Treasury of other countries after the war, the United States became the creditor of many countries. For a time, the international status of the United States was unprecedented and became the top power in the world. With the continuous improvement of its economic and international status, the United States could have used its advanced institutional system and economic development to help other weak developing countries achieve win-win results, which could not only maintain its international status, but also contribute to the development of the world and the progress of mankind. However, due to the endless greed of capitalists, they are not satisfied with exploiting the interests of other classes in the country. They are also reaching out to other countries. Whether after the end of World War II, the United States used its newly risen status to exploit the loopholes of the Bretton Woods system and exploit the assets of other countries, or today, it attacks other countries at will with its own military strength, or it repeatedly breaks its promises in Sino-US diplomacy to seize China's legitimate rights in foreign trade. It can be said that everything that can occupy the affairs of other interested countries in terms of weak international law has been done. The behavior of the modern United States is actually the same as the colonial behavior of the United Kingdom after experiencing the same economic and military power in the world after the two industrial revolutions, so it can be seen that the means are more hidden.

3.2. The Performance of China's 5,000 Years of Dominant Culture in History

China's economy began to develop normally about 80 years later than that of the United States. In the first 20 years or so after the founding of the People's Republic of China, about half of China's population belonged to the poor population, that is, to eliminate inflation was equivalent to a daily income of less than one dollar in 2000. The country's industry and agriculture were just starting up. But then the Communist Party of China led the people to extract the essence from the 5,000 years of Chinese history and culture, and extracted the core values that could guide the behavior of the Chinese nation, and under its guidance, completed the land reform, carried out reform and opening up, carried out important ideas such as three Represents and Scientific Outlook on development, improved the country's political thought, improved China's economic strength, and enhanced China's environmental protection awareness. The economy, the system, the welfare and contradictions of the people's class, and the environment, which afflict most countries, are not afraid in the face of China's constantly improving system, government, and hardworking people. Because it can use its comparative advantages to benefit the people of all countries and achieve a win-win situation for all countries, it finally wins the consensus of most countries. From a moral point of view, China's international behavior is indeed much better than that of the United States, but when the two mainstream ideas collide with each other, moral dominance does not mean that it can defeat the other idea. Then, from the perspective of economic interests, the American government's cultural style of exploiting people of other countries through its status and lack of international laws, and China's attention to morality, are not enough. What kind of result will the win-win culture style collide together?

4. The Result of the Economic and Social Function of the Different Behavior Patterns between China and America

4.1. The Role and Results of Different Dominant Cultures in Economic Diplomacy between China and the United States

1) Analysis of the results of the two cultural effects based on symbiotic game theory

Let's look at A simple game model. If there are a group of people in a community who don't know each other very well, they are composed of two kinds of people. The code of conduct of type A people represents the style of modern Chinese culture. The B group, on the other hand, is biased towards the United States, whose code of conduct is to maximize their own interests, but there is no other obvious difference between the two groups. If they have to randomly play A game with other people every day, when two people of type A play together, they will share the fun of the game, so they will both get 2 yuan of revenue, and when A person of type A meets a person of type B, the person of type A will not enjoy the game because of the behavior of type B at the expense of others, and finally get negative 0 yuan effect. And B gets a \$4 effect because he's acting at the expense of others. When two type B people meet, because they do not give in, not only did they not get the joy of the game, but because of the physical collision in the game led to a negative 2 yuan effect. From the perspective of economics, if people of class A account for a of the total, and people of class B account for $1-a$, then the weighted average of income of people of class A is $2a$, and the weighted average of income of people of class B is $6a-2$. Under the assumption that other factors of people of all kinds are the same, there is not much difference between the game income of people of class A and people of class B in the game process theoretically. Because there is no reason to believe that the various other components (including status, etc.) will be the same for different people when there are economic disparities. So in the ideal case, the payoff for AB and AB should be the same, $2a=6a-2$, and $a=0.5$. So the ideal population is 50 percent A and 50 percent B. Let's put this model in the foreign policies of different countries, and the result of calculating the proportion of the two types of strategies may be different from the size of the effect number we set. However, under the premise that the income ratio of the two types of strategies is the same, the result is that there are n percent of class A people and 1 minus n percent of class B people, and the size of n is determined by the effect number we set. However, in practice, the effect figures are difficult to measure, and the model ignores the influence of factors such as international status, so it seems that it cannot be perfectly realistic for the time being. However, in view of the fact that the economic growth of East Asia and Western Europe continues to converge, and the unity of developing countries reduces the difference in international status between developing countries and developed countries, so the above model is not a good fit for the current situation, but rather a prediction of the future international diplomatic status of countries and the inevitable trend of continuous convergence of economic status. As A result, different foreign policies A and B do not necessarily replace the capitalist human rights culture with socialism as Marx said, but the two are in a certain proportion of symbiosis. Let's loosen our assumptions a bit again, bringing them closer to the model of diplomacy between China and the United States.

4.2. The Effect of the Two Cultural Differences after the Expansion of the Symbiotic Game Model

If everyone in the community plays not just one game, but an infinite number of games, which is reasonable relative to economic globalization and the endless trend of international trade cooperation, then everyone in the community will have an extra element called reputation, for example, in the last game, A chose strategy A, then he will be given the title of amiable. In the face of B who chose strategy B last time, he will be labeled as A villain. According to this honorary title, in this case, it is unreasonable for the Type A strategist to continue to assume

that B will use the Type A strategy. In combination with the actual situation, it is realistic for the Type A strategist to adopt another behavior pattern that can guarantee his own interests rather than sit still and give his own interests to B. So what strategy can protect their interests? Because the last time B's improper behavior obtained A higher return, this behavior must be punished, otherwise B will continue to adopt strategy B, so the strategy of type A should not continue to use strategy A, because even if B chooses strategy A this time, B will compare the recent two games and find that after he adopts strategy B against the other party, the other party still chooses strategy A. Then in the future, B is less likely to give up strategy B. On the other hand, if strategy A chooses strategy B, telling strategy B that because of your misbehavior, we no longer trust you, and if you continue to choose strategy B, then we will all continue to lose, and as a sign that you want me to continue to trust you, you must give back the gains you made from the first time you exploited me, that is, I choose strategy B once, you choose strategy A once, In order to make up for my losses, otherwise, we will continue to fight, when two countries have the same economic status, B will inevitably give up strategy B to treat type A people for the sake of long-term interests, because they know that even if they can make profits for a while, but in an infinite number of games, he will inevitably give up the profits he has exploited. In this case, B will not use strategy B to exploit benefits in the face of strategic person A, and what should B do when he meets the same type B person as himself? B is greedy in nature and always wants to exploit others, but his opponent is also a Type B person, so they will recognize each other in the infinite game. We should also know that it is impossible to exploit the opponent all the time, because the opponent is also A villain, forcing strategy B will inevitably suffer retaliation from the other side, so his strategy should be the same as that of a type of strategist, using a punishment to let the opponent know that it is impossible to exploit him, either we keep losing money, or you tell me that you want to cooperate and return the profits you exploited before. Then we both learned that we couldn't exploit each other, so the strategy of cooperation was king.

The famous political scientist Robert once proved this argument in a series of experiments. He demonstrated this process on the computer, and finally obtained the strategy scheme with the highest return, that is, the confrontation, which is the above scheme. No matter what strategy the other side adopts, if the other side chooses the wrong strategy and causes us to lose money, I can easily imitate the strategy of the other side in a game. This allows him to punish the other party's misbehavior immediately, and for the other party's aggressive behavior, he will be punished only once.

4.3. Combination of Reality: The Combination of Model and Reality

In contrast to the recent Chinese government's firm position in the Sino-US trade war, for the economic differences and frictions between the two countries, China is willing to adopt a cooperative way to resolve, promote mutually beneficial agreements, for the trade war, China is not willing to fight, is not afraid of fighting, and has to fight when necessary. In the face of the new coronavirus, China understands that the virus is the enemy of all mankind. In the current state of economic globalization and rapid population flow, even if only one country still has the virus, it will be enough to endanger the fate of all mankind. For the security of the world economy and the security of people around the world, China's behavior is indeed in line with the style of a big country. It is also actively helping other countries as the domestic virus crisis continues to abate. This moral spirit from Chinese culture, which can benefit the people of the world, is not in line with the strategy of competing in our above model? In abandoning the gap in international political status, in abandoning domestic political differences, in the Chinese people's solidarity and mutual assistance, not being seduced by other countries, the international attitude of the Chinese government is indeed to provide welfare for other countries, while maintaining China's own economic interests.

5. Different Influences of Different Dominant Cultures in China and the United States on Domestic Economic Development

5.1. Analyze the Idealized Domestic Economic Development Trend of China and the United States based on the Basic Solow Growth Model

In the business operation, the larger the enterprise, the more difficult it is to manage, perhaps because the human resources are too large, and if there is no perfect system to manage, it will cause a large amount of human resources waste. So from the early days of the founding of the People's Republic of China to the present day, how did the Chinese government lead the country with 20% of the world's population to prosperity at such an astonishing speed? Let's refer to a standard Solow growth model to explain these issues.

In the Solow growth model, the economic production behavior in a country has the following characteristics: (1) the return to scale is usually constant; (2) the return to scale is constant. The proportion of capital and labor in the output is constant. According to the above two characteristics, the production function can be expressed by the Cochran Glass production function $Y=AKaL^{1-a}$, assuming that the factors of production are only labor and capital. Let's say there's a product market, a labor market, a capital market, and a lending market. In the market we use two sectors of the economy, households, and businesses. Since a business is run by people, and the profits of the business are usually either distributed to shareholders or retained in the business in the form of capital for a rainy day, we combine the functions of the household and the business for the sake of simplicity, that is, we assume that each household is a small business, which buys and sells factors of production in the market and provides labor for profit. On the premise that the technical level is unchanged, that is, A is a constant value, and the output is determined by the input of labor and capital. Assuming that the input of labor accounts for a fixed proportion of the population level, then the input of labor will increase with the size of the population growth rate, and the population growth rate is a constant value n . There are two ways to describe the change in the amount of capital per worker, and I'm going to do it in what I think is a more realistic way and say that the change in k is equal to s times the difference between total income and capital depreciation minus k times the proportion of population growth. A change in total savings, or k , will raise the capital stock of newly entered workers to the level of capital output per worker, and the remaining savings will be evenly distributed among each person's capital increase (the model uses a simpler income distribution, that is, assuming that the economy follows the following steps, the number of workers in reality is n , and so on). The population growth rate is 1, the capital stock of each person is k , the output produced is y , and the savings rate is s , that is, after each worker consumes sy of his own income, the remaining $(1-s)y$ is used as savings, and the total savings will increase the capital stock of the newly increased population n from 0 to the level of k . The remaining amount will be distributed equally among people with a population of $2n$ in the form of capital stock), and as k accumulates, the marginal returns to factors decline, eventually leading to a fixed amount of capital per person. Therefore, in the end, each person will produce a fixed amount of products every year, but due to population growth, total domestic gdp will rise at the rate of population growth. This model explains one of the most important reasons for the rise of total national gdp, the rate of population growth, so it is reasonable to attribute the rapid growth of China's gdp in recent years to China's high population growth rate. However, a country's happiness index is not only related to the total gdp, but more closely related to the per capita gdp growth rate, and to explain the increase in per capita gdp, it needs the introduction of technological progress.

5.2. Extend Basic Solow Growth Model to Analyze More Realistic Economic Trends

We regard technological progress as a change in the work efficiency of workers, that is, the work efficiency of a person due to technological progress is g times the original work efficiency, and the work intensity of a person is equal to the work intensity of $(1+g)$ initial people, and we set the initial work intensity of a person as the number of effective labor units. If we change the formula and the algorithm $Y=ka(A1/(1-a)L)^{1-a}$, each person can be likened to an increasing number of effective workers as technology continues to improve. Now, we find that when we look at $(A1/(1-a)L)$ as a change in the number of effective workers, at the steady state, we come to the same conclusion as before, that the steady state stock of capital per effective worker is constant, and the output produced is constant, but since one person's labor is equal to more and more effective labor, So everybody's capital stock and output will increase at a fixed rate. Solow's basic growth model regards technological progress as an exogenous variable without explanation, which may be because the reasons for technological progress are too difficult to explain. In economics, technological progress not only refers to the development of science and technology, but he classified all the influences not brought by l and k changes, such as weather and policy changes, as technological progress. For example, if K and L remain unchanged, the decline in gdp caused by national disasters is classified as the change of A , but this change may only be temporary, because we cannot always assume such an unexpected occurrence, otherwise we cannot explain it with the model. Let's put aside the possibility of causing technological progress other than scientific and technological progress, and make scientific and technological progress internal. Then the problem arises. What factors influence scientific and technological progress? An extended model of Solow growth considers investment in human resources as a factor affecting technological progress. Assuming that exogenous factors other than the amount of investment remain constant, the higher the proportion of investment, the faster the rate of technological progress. The following model loosens some of the restrictions further to bring it into line with reality. We add the concept of different attributes of human resources in each country to the model, and focus on analyzing the impact of different attributes of human resources caused by different ideological and cultural emphasis of each country on the expansion of Solow's growth model. Just as we have analyzed before, each country has its different cultural elements, and the citizens of a country will be more or less influenced by their own national culture to form the conceptual superstructure. We adhere to Marx's view that cognition determines behavior, and behavior reacts on consciousness. The behavior of scientific and technological innovation determined by the consciousness of the people of a country affected by their own national culture is included in the model, that is, the people of every country are subconsciously affected by the national culture. In the following model, we can consider that the human rights doctrine of the United States emphasizes the protection of individual interests, while the collectivism of China emphasizes the dedication of individuals to benefit the collective. And these different perceptions also affect the speed of technological innovation, simply put, how much water a bucket can pour depends not only on how much water he has, but also on how much water he is willing to pour.

First of all, from the perspective that every scientific and technological progress in history has a profound impact on a country or a world, from the well-known two industrial revolutions to the recent two decades, the development of Internet technology has had a crucial impact on the change of the world pattern and human progress. Compared with the value created by it, The cost of scientific and technological innovation is almost negligible, so why don't governments join together to conduct scientific research for the benefit of the people of the world? The answer is very simple, because science and technology is a public good, and like other public goods, the phenomenon of free riding restricts the progress of science and technology in the world.

For A simple example, suppose there are two countries in the world, country A and country B, both of whom are thinking about developing a new scientific and technological product, but because the scientific and technological product has been developed, its research results can be copied by any other country. Therefore, such a technology product is a public good, so will they choose to develop this product, and what way will they choose to develop this product?

We assume that the product will be invented as long as the R&D cost exceeds c , so as long as the cost p_1 provided by country A plus the cost p_2 provided by country B is greater than c , the product will be invented. Suppose that when country A owns this product, it can obtain the income of x_1 , and when country B owns this product, it can obtain the income of x_2 . Then the reserve price of investment of AB in this product (the maximum price it is willing to offer for the development of this product) is x_1x_2 respectively. The reason is simple: When this product can provide x yuan value at most, Developers naturally do not want to spend more than x yuan to develop the product. Therefore, in theory, when (x_1+x_2) is greater than c , this product should be developed, otherwise it is the performance of Pareto inefficiency (when there is a way to make the interests of any one person is not damaged and there is a way to increase the utility of several individuals), and there must be a waste of welfare. But when $(x_1 \text{ plus } x_2)$ is greater than c , will the governments of both countries really choose to invent the research product? Let's use the following game model.

First of all, in the absence of scientific research cooperation between the two countries, due to the high level of scientific research products, the country that develops the product will gain -50 utility after the product is developed, while the other country that gets the research results without spending any money as a free rider will gain 100 utility, while the utility level of each country is 0 when neither country develops the product, and when both countries develop the product, the utility level is 0. Since they're not cooperating, their utility level is still -50, and ultimately the dominant strategy in this game is that neither country develops the product. But this is not A Pareto efficient scenario, imagine, although A through the development of the product to get -50 effects, but then country B from the obtained effect of 100 as long as more than 50 effects to country A, then both countries will benefit from the invention of the product. The reality is also that when the cost of a costly scientific research is borne by one country, they may abandon the research because the high costs outweigh the benefits, but if the costs are shared among countries, the benefits will far exceed the costs. However, different from the reality of this model, we are not sure about the reserve price of various countries, and the reserve price may only be obtained by the governments of various countries after rigorous calculation. But even if they get the reserve price in their mind, they still have the intention to lie, because the lower the reserve price they quote, the lower the reserve price is. The higher the income they will end up with. So in this model, if everyone wants to maximize their own interests, then the people of the world will miss more and more inventions that benefit everyone, and the speed of scientific research will slow down, but if everyone who does research does not aim to maximize their own interests, but focuses on the collective interests, then the results of this model will be very different. Perhaps the future will create a convenient system or mathematical formula to calculate these reserve prices, but have you ever thought about how perfect a system can perfectly calculate these indicators for each country, these systems, the cost of calculation is itself a waste of resources. There are also people who argue that everyone above must be good, must be collectivist, but this is impossible, this is another utopia, a fantasy society. It is true that it cannot be realized under the current realistic conditions, but here we can quote the famous philosopher Marx's description of the communist world, the highest social form in the future. Just as people in primitive society never imagined that there would be a day when people would not worry about food and clothing and exchange their own overproduced goods under the commodity economy system, because the extremely scarce productivity limited their ideas, people's knowledge always depended on practice, and

in that era of scarce productivity, people really did not think of a day when there was a commodity economy. Just like now, we imagine that one day in the future, with the continuous expansion of productive forces, when everyone can realize their own material needs, with the continuous expansion of the economic base, the superstructure will inevitably take a qualitative leap, because the material life is rich enough to meet the needs of everyone, people begin to pay more attention to meeting the needs of their own spiritual world. Without exploitation and oppression, the social relations between people are harmonious and stable. So this fantasy utopia doesn't seem impossible, does it?

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