RPI for the Wood Subsystem based on Zangxiang and Jingluo– Mathematical Reasoning of Economic Intervening Principle Based on Yin Yang Wu Xing Theory in Traditional Chinese Economics (III)

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Abstract— Theory of both Zangxiang (藏象) and Jingluo (经络) is useful in understanding economic disease. By using mathematical reasoning based on Yin Yang Wu Xing Theory in Traditional Chinese Economics (TCE), this paper demonstrates the treatment principle: "Searching for the primary cause of disease in treatment, treat both symptoms and root-cause"(治病求本,标本兼治). It means that for the economic society, there is the mathematical structure of both Zangxiang and Jingluo as the second physiological system of steady multilateral systems. It can be used to determine both the root-cause and symptoms of the sick subsystem by uing both Zangxiang and Jingluo. The first or second transfer law of economic society energies of both Zangxiang and Jingluo changes according to the different RPI (Retail Price Index) inflation rate of economic society whether in the normal range or not. In general, for the RPI inflation rate, the normal range of theory is[0.8789%,5.2241%] nearly to [1%,5%] , and the center is 2.7047% nearly to 3% . Assume that the range of a RPI inflation rate is divided into four parts from small to large. Both second and third are for a healthy economy. The treating works are the treatment directly for a root-cause and the prevention indirectly for a more serious relation economic disease as symptoms. Both the root-cause and symptoms come from the first transfer law of economic society energies. And both first and fourth are for an unhealthy economy. The treating works are the treatment directly for a root-cause or the prevention indirectly for a more serious relation economic disease as symptoms. Both the root-cause and symptoms come from the second transfer law of economic society energies. Economic disease treatment should protect and maintain the balance of two incompatibility relations: the loving relationship and the killing relationship.As an application, the Chinese RPI inflation rate can be used for the wood subsystem how to do works based on to determine both the root-cause and symptoms of the sick subsystem of steady multilateral systems.

Index Terms— Traditional Chinese Economics (TCE), Yin Yang Wu Xing Theory, steady multilateral systems, incompatibility relations, side effects, medical and drug resistance problem

I. INTRODUCTION

Theory of both Zangxiang(藏象) and Jingluo(经络) is useful in understanding disease. Zangxiang and Jingluo are two general mathematical structures. The RPI (Producer Price Index) of both Zangxiang and Jingluo is a general parameter linking together the complexity of relations between subsystem pairs of economic social system,

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economic social system itself, the capabilities for intervention reaction and self-protection of the economic social system as an economy and mind as a whole, related to the environment, food, health and personal history, air, water, earth, climate, season, etc. The RPI is as useful in understanding economic disease as the average is in statistics, or as the expected value is in probability calculation.

Teach in retail prices of commodities is the last link in the process of the flow of goods in the price index, it covers all industrial, commercial, catering and other retail enterprise groups to the urban and rural residents, organ selling prices of consumer goods and office supplies, reflect a certain period retail price change trend and degree of index data. RPI index statistics of major commodities, including food, beverages, tobacco, clothing shoes and hats, textiles, Chinese and western medicines, cosmetics, books, newspapers, magazines, cultural and sports supplies, daily necessities, household appliances, jewelry, fuel, building decoration materials and mechanical and electrical products, such as 14 categories.In each class, in several categories and points within the class divided into small classes, the program is to small class first, then in the class, major categories, finally by the various categories of commodity retail price index weighted average income. Look from the definition, the commodity retail price refers to (RPI) and consumer price index (CPI) both are similar, this is, commodity retail price index statistics scope is wide than the consumer price index, and the different aims of both statistical and RPI compiled the purpose is to grasp the changes in prices of goods market, and compiled on the basis of various other derived counsel, for studying market circulation and the national economic accounting.The CPI is mainly to see inflation levels.Of course, look from the China statistical yearbook, both trends are almost synchronous, has a high degree of correlation.

A microcosm of the macro economy as RPI is headed. RPI index is commodity the price of the last link in the process of circulation.According to the law of supply and demand rule, it is known: what is the price of high demand and increase supply, demand for lower prices to increase supply decrease.If commodity retail price overall level continues to increase, in the case of other factors unchanged, people's consumption atrophy, reduced demand, this leads to a lot of unsold goods, supply, direct impact on corporate profits and the future market is likely to enter the vicious circle.So how do you solve this problem, the general government will implement a proactive fiscal and monetary policy, increase spending on people's livelihood, measures such as increasing

the income of people and to expand domestic demand to stimulate consumption, to solve the problems about circulation field, the market into a virtuous cycle.But the problem is not so simple, if the RPI index rise is due to the circulation of money increase inflation pressure, are much more difficult to solve, you need to shrink in circulation currency, such as raising interest rates and other measures to solve them.Because both the RPI and CPI trend with synchronicity, so it is said, the RPI is a miniature of the macro economy.

Internationally, RPI data applications also is more, in the United States, the ministry of commerce investigation into national commercial sampling every month, summarize from commodity retail price index, and on the basis of paying close attention to the macro economy is headed.The RPI statistical product range is wide, pay by cash or credit card form of retail goods were included in the survey, including furniture, electrical appliances, supermarket sales of goods and medicine, etc., but excludes services consumption.

Through the growth rate of price index to calculate the rate of inflation, prices can be respectively by the consumer price index (CPI), the producer price index (PPI), the retail price index (RPI), and the gross national product (GNP) as conversion price index. In order to examine the retail business development situation, general use of RPI, its formula is as follows:

$$RPI = a_1(P_{1t}/P_{10}) + a_2(P_{2t}/P_{20}) + ... + a_n(P_{nt}/P_{n0}), \qquad (1)$$

where the type of digital and t, n is the number in the subscript, P_* as the representative of retail business goods prices, a_n is the weight.

Both the rate of RPI inflation and the RPI are two different concepts. Calculation method of the rate of RPI inflation through the calculation of the RPI changes:

The rate of RPI inflation (price rises)

$$= \frac{\text{current price level - base price level}}{\text{base price level}} \times 100\%, \qquad (2)$$

where the price rise level from low to high, to base the level of prices for base. One of the base period is selected one price level as a reference, so that you can put the other periods of price level with a comparison between base level to measure the current level of inflation.

Note on the type, the rate of RPI inflation is not a price index, which is not a price rise, but the price index to rise. In fact, what is said above is just one of the three methods (CPI,PPI,RPI) of measuring inflation index reduced living consumption laws, but it is the most commonly used for studying the retail business economy, in addition to Gross Domestic Product (GDP) and consumer price index (CPI) or producer price index (PPI) conversion method.

The RPI is the government measure of inflation one of the data. Popular speaking, the RPI is the price of the retail goods on the market growth percentage. As an important indicator, observe the level of inflation in China, much attention has been paid to also for such an important indicator, as a new era of youth, more objective view should be observed. First of all, let the RPI be met. The RPI is to reflect the retail goods, related to the retail goods calculated price, retail business index usually observed inflation as an important indicator.

Levell [1] has found that there is the important relation between the RPI and the CPI. The RPI plays a key role in the CPI. So the central bank can minimize the inflation by taking certain predictive measures to keep the input prices under control. Because of the relation between the RPI and the CPI, the normal range of the RPI inflation rate can be obtained from the normal range of the CPI inflation rate. It is found that the normal range of the CPI inflation rate is from 2% to 5%. There are a lot of evidences (e.g., experimental identification for probability and real applications) to support this viewpoint, such as, Crone etc [2], Pauhofova etc [3],Funke etc [4], Formica etc [5], Fan etc [6], Adams [7], Hausman [8], Nahm [9], Moosa [10], Zhao [11], Daniel [12], Anonymous [13-14], and so on.

It is believed that the normal range of the RPI inflation rate is from 1% to 5%. It is because the RPI is more sensitive than the CPI at the low RPI inflation rate, so changes in the wider range at the low RPI inflation rate. Thus the retail business economic social system identifies an important indicator for an economic social system health: the value of RPI inflation rate, which, under normal conditions, ranges from 1% to 5%. Outside this range (low:Yin condition; high: Yang condition), economic disease appears. Almost always, when there is economic disease, the condition of inflation rate is a Yin condition, little is a Yang condition.

If the RPI rose is too large, it shows that the inflation has become the economic instability, the central bank will be a tight monetary policy and fiscal policy paying risk, resulting in the uncertain economic outlook. As a result, the index of high rise is often not welcome by the market. In the past 12 months, for example, the RPI roses 2.2%, that means, the cost of industry making rose by an average of 2.2% more than 12 months ago. When the cost of living increase, your money value drops. That is to say, a 100-yuan notes, only can buy $97.70 worth of living goods except for services. Generally when the RPI inflation rate $> 1\%$, it is called plus, is INFLATION. And when the RPI inflation rate $> 5\%$, it is treated as a SERIOUS plus, is a SERIOUS INFLATION.

In this paper, the rate of inflation can be considered as the price level rises rather than the currency quantity rises from the basic concept of RPI. It is because the RPI is the direct reflection of living standards, although the price level increase is difficult to be controlled directly.

The RPI is a general parameter linking together the complexity of relations between subsystem pairs of economic social system, economic social system itself, the capabilities for intervention reaction and self-protection of the economic social system as an economy and mind as a whole, related to the environment, food, health and personal history, air, water, earth, climate, season, etc. RPI is as useful in understanding economic disease as the average is in statistics, or as the expected value is in probability calculation.

The economic social system as an economy begins to activate the necessary mechanisms to restore this parameter to its appropriate range. If the economic social system as an economy is unable to restore optimal RPI levels, the economic disease may become chronic and lead to dire consequences.

Zhang etc [15-23] have started a great interest and admired works for Traditional Chinese Economics (TCE), where, through mathematical reasoning, they demonstrate the presence of incompatibility relations, which are predominant in daily life, yet absent in traditional Aristotelian Western logic.

Many people as Western persons are beyond all doubt the Yin Yang Wu Xing theory is superior to the traditional true-false logic, which does not contemplate incompatibility relations, which Zhang [19] has expertly explained from a mathematical standpoint.

The work Zhang [15,16] has started, allows many people like Western person to think of a true re-foundation of mathematical language, to make it a better suited tool for the needs of mankind economic social system and the environment. Although so doing, Zhang [18] also brings to light the difficulty of establishing the values of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 as parameters with due accuracy.

In this paper, the introduction of a parameter such as a RPI will be suggested, in order to facilitate the understanding and the calculation of the values of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3. This paper ventures to suggest this with all due to respect, because it be believed that the path Zhang [15,16] has started, in such an understandable way from the mathematical point of view, will be very useful for all mankind searching for tools to understand the mechanisms of economic social system.

The article proceeds as follows. Section 2 contains a parameter model and basic theorems, in order to explain both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 through the introduction of a parameter model to study the normal range of a RPI inflation rate, while the first or second transfer law of economic society energies is demonstrated in Section 3, proved through the concept of both relation costs and a relationship analysis of steady multilateral systems. Furthermore, if the range of the RPI inflation rate is divided into four parts, for the economy in every part, the prevention or treatment method of economic diseases as the treatment principle of TCE is given in Section 4. As an application, the Chinese RPI inflation rate can be used for the wood(X) subsystem how to do works based on to determine both the root-cause and symptoms of the sick subsystem of steady multilateral systems in Section 5 and conclusions are drawn in Section 6.

II. PARAMETER MODEL AND BASIC THEOREMS

The concepts and notations in Zhang etc [21] are start and still uesd.

Let $\varphi = (\sqrt{5} - 1)/2 = 0.61803399$ be the **gold number**. Denoted $\rho_0 = 0.5897545123$ such that $\rho_1 = \rho_3$ and $\rho_2 = \rho_1 \rho_3$ and $1 - \rho_2 \rho_3 = \rho_1 + \rho_2 \rho_3$ if $\rho_1 = \rho_0, \rho_2 = \rho_0^2$ and $\rho_3 = \rho_0$, namely **healthy number**.

Assuming $\rho_0' = 0.68232780$, namely **unhealthy number**. It is because under a poor self-protection ability, the unhealthy number ρ_0' can make the poor healthy balance conditions hold:

$$\rho_1 - \rho_3 = \rho_3 = \rho_0'/2 = 0.34116390,$$
$$\rho_2 - \rho_1 \rho_3 = \rho_1 \rho_3 = (\rho_0')^2/2 = 0.23278561$$
$$1 - \rho_2 \rho_3 = \rho_1 + \rho_2 \rho_3$$

if $\rho_1 = \rho_0', \rho_2 = (\rho_0')^2 = 0.46557123$ and $\rho_3 = \frac{1}{2}\rho_0'$.

Thus $\rho_0 < \varphi < \rho_0'$.

A parameter model of a RPI inflation rate in a mathematical sense based on Yin Yang Wu Xing Theory of TCE is reintroduced by using the functions $\lambda(x)$ and $\rho(x)$ of the RPI inflation rate x described as follows.

Let $x \in (-0.08, 0.6)$ be a RPI inflation rate, where the values -0.08 and 0.6 are the minimum and maximum acceptable the RPI inflation rate. Denoted the value 0.027047 is the target as the expectation of the RPI inflation rate. Define a function $\lambda(x)$ of the RPI inflation rate x in below:

$$\lambda(x) = \frac{|x - 0.027047|}{(0.6 - x)(x + 0.08)}, \forall x \in (-0.08, 0.6)$$

$$= \begin{cases} \dfrac{x - 0.027047}{(0.6 - x)(x + 0.08)}, & 0.6 > x \geq 0.027047; \\ \dfrac{0.027047 - x}{(0.6 - x)(x + 0.08)}, & -0.08 < x < 0.027047. \end{cases} \quad (3)$$

A parameter model is considered as

$$\rho(x) = \frac{1/2}{\lambda(x) + 1/2}, \forall x \in (-0.08, 0.6). \quad (4)$$

Theorem 2.1 *Under model (4), the following statements hold.*

(1) The one that $0 < \rho(x) = \dfrac{1/2}{\lambda(x) + 1/2} \leq 1$ *is equivalent to the other that*

$$0 \leq \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} < +\infty,$$

where $\lambda(x)$ *is a monotone decreasing function of* x *if* $x \in (-0.08, 0.027047]$ *or a monotone increasing function of* x *if* $x \in [0.027047, 0.6)$; *and* $\rho(x)$ *is a monotone decreasing function of* $\lambda(x)$ *if* $\lambda(x) \in [0, +\infty)$; *and* $\lambda(x)$ *is a monotone decreasing function of* $\rho(x)$ *if* $\rho(x) \in (0, 1]$.

(2) If $1 \geq \rho(x) \geq \rho_0$, *then*

$$\lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \frac{1 - \rho_0}{2\rho_0} = \rho_0^2 = \rho(x)^2 \leq 1;$$

$$\frac{\lambda(x)}{\rho(x)} = \frac{1 - \rho(x)}{2\rho(x)^2} \leq \frac{1 - \rho_0}{2\rho_0^2} = \rho_0 \leq \rho(x) \leq 1; \quad and$$

$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1 - \rho(x)}{2\rho(x)^3} \leq \frac{1 - \rho_0}{2\rho_0^3} = 1.$$

(3) If $0 < \rho(x) < \rho_0$, *then*

$$\lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} > \frac{1 - \rho_0}{2\rho_0} = \rho_0^2 > \rho(x)^2 > 0;$$

$$\frac{\lambda(x)}{\rho(x)} = \frac{1 - \rho(x)}{2\rho(x)^2} > \frac{1 - \rho_0}{2\rho_0^2} = \rho_0 > \rho(x) > 0; \quad and$$

$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1 - \rho(x)}{2\rho(x)^3} > \frac{1 - \rho_0}{2\rho_0^3} = 1.$$

(4) Taking $0 < \rho_1 = \rho(x) < \rho_0, \rho_2 = \rho(x)^2$ *and* $\rho_3 = c\rho(x)$ *where* $0 \leq c \leq 1$, *there are* $\rho_1 - \rho_3 = \rho(x)(1 - c) \geq 0, \rho_2 - \rho_1 \rho_3 = \rho(x)^2(1 - c) \geq 0$, *and* $(\rho_1 + \rho_2 \rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2 \rho_3 = 1 - c\rho(x)^3$,

where $|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)| > 2(1-c)\rho_0^3 = (1-c)0.41024$.

(5) Taking $1 \geq \rho_1 = \rho(x) \geq \rho_0, \rho_2 = \rho(x)^2$ *and*

$\rho_3 = c\rho(x)$ *where* $0 \leq c \leq 1$, *there are*

firstly, $\rho_1 - \rho_3 = \rho(x)(1-c) \geq 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \geq 0$

and $(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 \geq 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *if*

$1 \geq c \geq \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \geq 0$;

Secondly, $\rho_1 - \rho_3 = \rho(x)(1-c) > \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) > \rho(x)^2/2$

and $(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *where*

$|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)| \leq (\rho_0')^3 = 0.31767$ *if*

$0 \leq c < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq \dfrac{1}{2}$ *in which* $1 > \rho(x) \geq \rho_0'$;

thirdly, $\rho_1 - \rho_3 = \rho(x)(1-c) \geq \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \geq \rho(x)^2/2$ *and*

$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *where*

$|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)| \leq 2\rho_0^3 = 0.41024$ *if*

$0 \leq c \leq \dfrac{1}{2} < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq 1$ *in which*

$\rho_0 \leq \rho(x) < \rho_0'$;

finally, $\rho_1 - \rho_3 = \rho(x)(1-c) < \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) < \rho(x)^2/2$ *and*

$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *where*

$|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)| < (\rho_0')^3 = 0.31767$ *if*

$\dfrac{1}{2} < c < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq 1$ *in which* $\rho_0 \leq \rho(x) < \rho_0'$.

In particular, when c is nearly to 1/2, there are $\rho_1 - \rho_3 = \rho(x)(1-c) \to \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \to \rho(x)^2/2$ *and the following statements hold.*

(a). The absolute value $|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)|$ *is nearly to 0 if* $0 < c < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq \dfrac{1}{2}$ *in which*

$1 > \rho(x) \geq \rho_0'$.

(b). The value $[(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)]$ *is included in the interval* $[-\rho_0^3 = -0.20512, 0)$ *if*

$0 < c \leq \dfrac{1}{2} < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq 1$ *in which* $\rho_0 \leq \rho(x) < \rho_0'$.

(c).The value $[(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)]$ *is included in the interval* $[-\rho_0^3 = -0.20512, 0)$ *if* $\dfrac{1}{2} < c < \dfrac{1 - \rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \leq 1$ *in which* $\rho_0 \leq \rho(x) < \rho_0'$. #

Corollary 2.1 *Under model (4), the following statements hold.*

(1) For any $0 < d < 1$, *there is an unique solution* $u \in (-0.08, 0.027047)$ *and there is also an unique solution* $v \in (0.027047, 0.6)$, *such that*

$$\lambda(0.027047) = 0 \leq \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \lambda(u) = \lambda(v) = (1-d)/(2d),$$

$$\rho(u) = \rho(v) = d \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.027047).$$

(2) The condition $x \in [0.01, 0.05]$ *is equivalent to each of the following conditions:*

$$\lambda(0.027047) = 0 \leq \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \lambda(0.01) = \lambda(0.05) = 0.32103,$$

$$\rho(0.01) = \rho(0.05) = 0.60899 \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.027047).$$

(3) The condition $x \in [0.010552, 0.049013]$ *is equivalent to each of the following conditions:*

$$\lambda(0.027047) = 0 \leq \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \lambda(0.010552) = \lambda(0.049013) = \frac{1-\varphi}{2\varphi} = 0.30902,$$

$$\rho(0.010552) = \rho(0.049013) = \varphi \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.027047).$$

(4) The condition $x \in [0.008789, 0.052241]$ *is equivalent to each of the following conditions:*

$$\lambda(0.027047) = 0 \leq \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \lambda(0.008789) = \lambda(0.052241) = \rho_0^2 = 0.34781,$$

$$\rho(0.008789) = \rho(0.052241) = \rho_0 \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.027047).$$

(5) The condition $x \in [0.014201, 0.042994]$ *is equivalent to each of the following conditions:*

$$\lambda(0.027047) = 0 \leq \lambda(x) \leq \lambda(0.014201) = \lambda(0.042994) = (\rho_0')^2/2 = 0.23279,$$

$$\rho(0.014201) = \rho(0.042994) = \rho_0' \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.027047). ^\#$$

Theorem **2.1** and Corollary **2.1** can be found in Zhang [23].

Remark 1. In west, through experiment or through practice observation, by using the relation between the RPI and the CPI, many researchers [1-14] can obtain the normal range of the RPI inflation rate as $x \in [0.01, 0.05]$ from the normal range of the CPI as $x \in [0.02, 0.05]$. But in TCE, from Yin Yang Wu Xing Theory, Zhang etc [21] have already determined: $\rho_0 \leq \rho_1 \leq 1$ for the normal range of a healthy economy. Taking $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ and $\rho_3 = c\rho(x)$ where $0 \leq c \leq 1$ for an economic society which has the capabilities of both intervention reaction and self-protection. From Corollary **2.1**, the condition $\rho_0 \leq \rho_1 \leq 1$ is equivalent to that $x \in [0.8789\%, 5.2241\%]$. In other words, in Theory of TCE, the normal range of the RPI inflation rate is considered as $x \in [0.8789\%, 5.2241\%]$, nearly to $x \in [0.01, 0.05]$. Of course, little difference of the two intervals which makes the diagnosis of disease as a result, there may be no much difference as a suspect. In fact, TCE uses the rule $\rho_0 \leq \rho_1 \leq 1$ from Yin Yang Wu Xing Theory instead of the normal range of a RPI inflation rate. The equivalence of Corollary **2.1** shows that TCE is The scientific which is from TCM (Traditional Chinese Medicine).

Zhang etc [21] have already determined: an economy is said a healthy mathematical complex system when the intervention reaction coefficient ρ_1 satisfies $1 \geq \rho_1 \geq \rho_0$. In logic and practice, it's reasonable that $\rho_1 + \rho_2$ is near to 1 if the input and output in a complex system is balanced, since a mathematical output subsystem is absolutely necessary other subsystems of all consumption. In case: $\rho_1 + \rho_2 = 1$, all the energy for intervening mathematical complex subsystem can transmit to other mathematical complex subsystems which have neighboring relations or alternate relations with the intervening mathematical complex subsystem. The condition $\rho_1 \geq \rho_0$ can be satisfied when $\rho_2 = \rho_1\rho_3$ and $\rho_3 = \rho_1$ for a mathematical complex

system since $\rho_1 + \rho_2 = 1$ implies $\rho_1 = \varphi \approx 0.61803 \geq \rho_0$. In this case, $\rho_2 = \varphi^2 \approx 0.38197$. If this assumptions is set up, then the intervening principle: "Real disease with a healthy economy is to rush down his son and virtual disease with a healthy economy is to fill his mother" based on the Yin Yang Wu Xing theory in image mathematics [20], is quite reasonable. But, in general, the ability of self-protection often is insufficient for an usual mathematical complex system, i.e., ρ_3 is small. A common standard is $\rho_3 = \dfrac{1-\rho_1}{2\rho_2} \approx \dfrac{1}{2}$ which comes from the balance condition $(1 - \rho_2\rho_3) = (\rho_1 + \rho_2\rho_3)$ of the loving relationship if $\rho_1 + \rho_2 \approx 1$. In other words, there is a principle which all losses are bear in mathematical complex system. Thus the general condition is often $\rho_1 \approx 0.61803 \geq \rho_3 \approx 0.5 \geq \rho_2 \approx 0.38197$. Interestingly, they are all near to the golden numbers. It is the idea to consider the balance number $\rho_0' = 0.68232780$ since the poor condition of self-protection ability $\rho_3 = \rho_1/2 = \rho_0'/2 = 0.34116390$ can make the poor healthy balance conditions hold:

$\rho_1 - \rho_3 = \rho_3 = \rho_0'/2 = 0.34116390$,

$\rho_2 - \rho_1\rho_3 = \rho_1\rho_3 = (\rho_0')^2/2 = 0.23278561$

$1 - \rho_2\rho_3 = \rho_1 + \rho_2\rho_3$

if $\rho_1 = \rho_0'$ and $\rho_2 = (\rho_0')^2 = 0.46557123$.

By Theorem **2.1** and Corollary **2.1**, the interval $x \in [0.01, 0.05]$ implies the following condition

$1 \geq \rho_1 = \rho(x) \geq 0.60899 = \rho(0.01) = \rho(0.05)$;

and the interval $x \in [0.010552, 0.049013]$ implies the following condition

$1 \geq \rho_1 = \rho(x) \geq \varphi = \rho(0.010552) = \rho(0.049013)$;

and the interval $x \in [0.8789\%, 5.2241\%]$ implies the following condition

$1 \geq \rho_1 = \rho(x) \geq \rho_0 = \rho(0.008789) = \rho(0.052241)$,

where $\lambda(0.008789) = \lambda(0.052241) = \dfrac{1-\rho_0}{2\rho_0} = \rho_0^2$ since

$(1 - \rho_0^3) = (\rho_0 + \rho_0^3)$;

and the interval $x \in [0.014201, 0.042994]$ implies the following condition

$1 \geq \rho_1 = \rho(x) \geq \rho_0' = \rho(0.014201) = \rho(0.042994)$,

where $\lambda(0.014201) = \lambda(0.042994) = \dfrac{1-\rho_0'}{2\rho_0'} = \dfrac{(\rho_0')^2}{2}$

since $(\rho_0')^3 = (1 - \rho_0')$.

The last one is the healthy interval in an economic society's self-protection ability poor conditions. The interval range than the normal economic society health requirements is too strict, only the first three interval ranges can be considered as a normal economic society health. If keep two decimal places, then first three intervals are the same as $x \in [0.01, 0.05]$. This shows that range $x \in [0.01, 0.05]$ is stable. The interval as the normal range of a RPI inflation rate may be also appropriate. To conservative estimates, one of the first three interval ranges with the largest length is used, i.e.,

$x \in [0.8789\%, 5.2241\%]$, as our theoretical analysis of the normal range. In fact, the range $x \in [0.8789\%, 5.2241\%]$ is better than the range $x \in [0.01, 0.05]$ because $\rho_0 = \rho(0.008789) = \rho(0.052241)$ and $\lambda(0.008789) = \lambda(0.052241) = \dfrac{1-\rho_0}{2\rho_0} = \rho_0^2$, which satisfy the healthy balance conditions $\rho_1 = \rho_3, \rho_2 = \rho_1\rho_3$, and $(1 - \rho_2\rho_3) \leq (\rho_1 + \rho_2\rho_3)$ at the same time if $\rho_1 = \rho_0$, $\rho_2 = \rho_0^2$ and $\rho_3 = c\rho_0$ where $c \to 1$. In other words, the parameter $\rho_1 = \rho(x) \geq \rho_0$ or the range $x \in [0.8789\%, 5.2241\%]$ is the healthy condition of both the killing relationship and the loving relation at the same time. But neither are the others. The RPI inflation rate must be precise calculation to keep at least 6 decimal places can ensure correct because of its sensitivity to the diagnosis of economic society disease.#

Remark 2. Western Economics is different from TCE because the TCE has a concept of *Chi or Qi* as a form of energy. From the energy concept, that one organ or subsystem of the economic society is **not running properly** (or **disease**, **abnormal**), is that the energy deviation from the average of the organ is too large, the high (**real disease**) or the low (**virtual disease**). But there do not exist these concepts of both real diseases and virtual diseases in Western science. For the normal range of a RPI inflation rate of some economic society as $x \in [0.8789\%, 5.2241\%]$, in TCE, if $x > 0.052241$, the economy is considered as a real disease since the RPI inflation rate is too high; if $x < 0.008789$, the economy is considered as a virtual disease since the RPI inflation rate is too low. Thus TCE identifies an important indicator for an economic society's health: the value of the RPI inflation rate, which, under normal conditions, ranges from 0.008789 to 0.052241. Outside this range (too low: Yin condition; too high: Yang condition), disease appears. Almost always absolutely, when there is a virtual disease, the condition of the RPI inflation rate is a Yin condition; when there is a real disease, the condition of the RPI inflation rate is a Yang condition.#

Remark 3. Obviously, when applying the hypothesis of Theorem **2.1** and Corollary **2.1** to other fields rather than economic society's health, it is necessary to identify a global parameter in each field that is able to yield a general Yin or Yang condition in relation to the average behavior of the studied phenomenon, and that maintains the equations at a sufficiently simple level of writing and application. In fact, let $x \in (min, max)$ where the values min and max are the minimum and maximum acceptable the index x. Denoted the value t_0 is the target as the expectation of the index x such that $\rho(t_0) = 1$. In Eqs.(3) and (4), replace $-0.08, 0.6, 0.027047$ by min, max, t_0, respectively. The equivalent condition of a healthy economy $\rho_0 \leq \rho_1 = \rho(x) \leq 1$ can be obtained as $x \in [u, v], min < u < t_0 < v < max$, where

$\rho(u) = \rho(v) = \rho_0 \leq \rho_1 = \rho(x) = (1/2)/[\lambda(x) + (1/2)] \leq \rho(t_0) = 1$,

$\lambda(t_0) = 0 \leq \lambda(x) = (1-\rho(x))/(2\rho(x)) \leq \rho_0^2 = \lambda(u) = \lambda(v)$

$= \rho(u)^2 = \rho(v)^2 \leq \rho_2 = \rho(x)^2 \leq \rho_1 = \rho(x) \leq 1$.#

III. RELATIONS OF STEADY MULTILATERAL SYSTEMS

3.1 Energy Changes of a Steady Multilateral System

In order to apply the reasoning to other fields rather than society's health, Zhang etc [21] have started a steady multilateral system imitating economic society. A most basic steady multilateral system is as follows .

Theorem 3.1 [20] *For each element* x *in a steady multilateral system* V *with two incompatibility relations, there exist five equivalence classes below:*

$$X = \{y \in V \mid y \sim x\}, X_S = \{y \in V \mid x \to y\}, X_K = \{y \in V \mid x \Rightarrow y\},$$
$$K_x = \{y \in V \mid y \Rightarrow x\}, S_x = \{y \in V \mid y \to x\},$$

which the five equivalence classes have relations in Figure 1. #

The Yin Yang Wu Xing model can be written as follows:Define

$$V_0^5 = X, V_1^5 = X_S, V_2^5 = X_K, V_3^5 = K_x, V_4^5 = S_x,$$

corresponding to wood, fire, earth, metal, water, respectively, and assume $V^5 = V_0^5 + V_1^5 + V_2^5 + V_3^5 + V_4^5$ where $V_i^5 \cap V_j^5 = \varnothing, \forall i \neq j$ (hereinafter the same).

And take $\mathfrak{R}^5 = \{R_0^5, R_1^5, \cdots, R_4^5\}$ satisfying

$$R_r^5 = \sum_{i=0}^{4} V_i^5 \times V_{mod(i+r,5)}^5, \forall r \in \{0,1,\cdots,4\}, R_i^5 * R_j^5 = R_{mod(i+r,5)}^5,$$

where $V_i^5 \times V_j^5 = \{(x, y) : x \in V_i^5, y \in V_j^5\}$ is the Descartes product in set theory and $R_i^5 * R_j^5 = \{(x, y) : \exists u \in V \text{ such that } (x,u) \in R_i^5, (u, y) \in R_j^5\}$ is the **multiplication relation operation**. The relation multiplication of $*$ is isomorphic to the addition of module 5. Then $(V^5, \mathfrak{R}^5)$ is a steady multilateral system with one equivalent relation R_0^5 and two incompatibility relations $R_1^5 = (R_4^5)^{-1}$ and $R_2^5 = (R_3^5)^{-1}$ where $(R_i^5)^{-1} = \{(x, y) : (y, x) \in R_i^5\}$ is the **inverse relation operation**. The Yin and Yang means the two incompatibility relations and the Wu Xing means the collection of five disjoint classification of $V^5 = V_0^5 + V_1^5 + V_2^5 + V_3^5 + V_4^5$. The model is called Yin Yang Wu Xing model, denoted simply by $V^5 = \{0, 1, 2, 3, 4\}$.

It can be proved by Theorem 3.2 in Zhang [23] that the steady multilateral system in Theorem **3.1** is the reasoning model of Yin Yang Wu Xing in TCE if there is an energy function $\varphi(*)$ satisfying

$$\frac{\Delta\varphi(X)}{\Delta} \to \frac{d\varphi(X)}{dX} = (1 - \rho_2\rho_3) = (1 - c\rho(x)^2) > 0;$$

$$\frac{\Delta\varphi(X_S)}{\Delta} \to \frac{d\varphi(X_S)}{dX} = (\rho_1 + \rho_2\rho_3) = \rho(x)(1 + c\rho(x)^2) > 0;$$

$$\frac{\Delta\varphi(X_K)}{\Delta} \to \frac{d\varphi(X_K)}{dX} = -(\rho_1 - \rho_3) = -\rho(x)(1 - c) < 0;$$

$$\frac{\Delta\varphi(K_x)}{\Delta} \to \frac{d\varphi(K_x)}{dX} = -(\rho_2 - \rho_1\rho_3) = -\rho(x)^2(1 - c) < 0;$$

$$\frac{\Delta\varphi(S_x)}{\Delta} \to \frac{d\varphi(S_x)}{dX} = (\rho_2 - \rho_1\rho_3) = \rho(x)^2(1 - c) > 0,$$

if increase the energy of X ($\forall \Delta\varphi(X) = \Delta > 0$).

The parameter $\rho_v = \rho_1 + \rho_2\rho_3$ is called the coefficient of the **vital** or righteousness energy. The parameter $\rho_e = 1 - \rho_2\rho_3$ is called the coefficient of the **evil** energy. An economy is called **healthy** if the vital or righteousness

coefficient $\rho_v = \rho_1 + \rho_2\rho_3$ is greater than or equal to the evil coefficient $\rho_e = 1 - \rho_2\rho_3$. Otherwise, the economy is called unhealthy. For a healthy economy, the transfer law of the Yang vital or righteousness energy in the Yin Yang Wu Xing Model is

$$Wood(X) \to Fire(X_S) \to Earth(X_K) \to Metal(K_x) \to Water(S_x) \to Wood(X).$$

Figure 1 in Theorem **3.1** is the figure of Yin Yang Wu Xing theory in Ancient China. The steady multilateral system V with two incompatibility relations is equivalent to the logic architecture of reasoning model of Yin Yang Wu Xing theory in Ancient China. What describes the general method of complex systems can be used in the economic society complex systems.

By non-authigenic logic of TCE, i.e., a logic which is similar to a group has nothing to do with the research object [20], in order to ensure the reproducibility such that the analysis conclusion can be applicable to any complex system, a logical analysis model can be chosen which has nothing to do with the object of study. The *Tao* model of Yin and Yang is a generalized one which means that two is basic. But the *Tao* model of Yin Yang is simple in which there is not incompatibility relation. The analysis conclusion of *Tao* model of Yin Yang cannot be applied to an incompatibility relation model. Thus the Yin Yang Wu Xing model with two incompatibility relations of Theorem **3.1** will be selected as the logic analysis model in this paper.

On the other hand, the steady multilateral system $(V^2, \mathfrak{R}^2) = (V_0^2 + V_1^2, \{R_0^2, R_1^2\})$ is called the *Tao* model, denoted simply by $V^2 = \{0, 1\}$, if it satisfies the following conditions:

$$R_r^2 = \sum_{i=0}^{1} V_i^2 \times V_{mod(i+r,5)}^2, r \in \{0, 1\}, R_i^2 * R_j^2 = R_{mod(i+r,2)}^2,$$

$$R_0^2 = \{(0,0), (1,1)\}, R_1^2 = \{(0,1), (1,0)\}.$$

The relation multiplication of $*$ is isomorphic to the addition of module 2. The element $1, or \ 0$ is called a **Yang** force or a **Yin** force respectively. For a healthy economy, the transfer law of the *Tao* force in the *Tao* model is from Yang to Yin.

In TCE, any material can be found, not Yang is Yin. No matter of Yin and Yang are unable to see, known as dark matter, or nonphysical. Therefore, the *Tao* force is often exist in the physical world. Any steady multilateral system only force under the action of the *Tao*, may be to perceive.

Furthermore, the steady multilateral system

$$(V^6, \mathfrak{R}^6) = (V_1^6 + \cdots + V_6^6, \{R_1^6, \cdots, R_6^6\})$$

is called the ***Telluric effluvium*** model, denoted simply by $V^6 = \{e, (12), (13), (23), (123), (132)\}$, if it satisfies the following conditions:

$$R_r^6 = \sum_{i=1}^{6} V_i^6 \times V_{i*r}^6, \forall r \in \{1, 2, \cdots, 6\},$$

$$R_i^2 * R_j^2 = R_{i*r}^2,$$

$i*r$	$1 = e$	$2 = (12)$	$3 = (13)$	$4 = (23)$	$5 = (123)$	$6 = (132)$
$1 = e$	$1 = e$	$2 = (12)$	$3 = (13)$	$4 = (23)$	$5 = (123)$	$6 = (132)$
$2 = (12)$	$2 = (12)$	$1 = e$	$5 = (123)$	$6 = (132)$	$3 = (13)$	$4 = (23)$
$3 = (13)$	$3 = (13)$	$6 = (132)$	$1 = e$	$5 = (123)$	$4 = (23)$	$2 = (12)$
$4 = (23)$	$4 = (23)$	$5 = (123)$	$6 = (132)$	$1 = e$	$2 = (12)$	$3 = (13)$
$5 = (123)$	$5 = (123)$	$4 = (23)$	$2 = (12)$	$3 = (13)$	$6 = (132)$	$1 = e$
$6 = (132)$	$6 = (132)$	$3 = (13)$	$4 = (23)$	$2 = (12)$	$1 = e$	$5 = (123)$

The number $1, or \ 2, or \ 3$, is called the tengen (天元), the earth

material (地元), the people ability (人元) ,respectively. The set of $\{1, 2, 3\}$ is called three types of talent or material. It is with elements, $e, (12), (13), (23), (123), (132)$. The each of elements, $e, (12), (13), (23), (123), (132)$, is called the primordial energy (元气), essence derived from food (谷气), defensive energy (卫气), essential substance circulating in the channels and blood vessels (营气), genuine energy (真气), pectoral energy (宗气), respectively. Another name is respectively

shaoyang (e)(少阳), yangming ((12)) (阳明), taiyang ((13)) (太阳), jueyin ((23)) (厥阴), shaoyin ((123)) (少阴), taiyin ((132)) (太阴).

Generally positive or Yang material, they are able to be perceived, but few can see the material itself, can only use signs. Therefore, the Yang energy symptoms of the set $M_1 = \{e, (12), (13)\}$ is call the marrow energy (髓); The Yin energy of the set $M_2 = \{(123)\}$ is call the blood energy (血); The Yin energy of the set $M_3 = \{(132)\}$ is call the saliva energy (津); The Yin energy of the set $M_4 = \{(23)\}$ is call the essence of water and grain (水谷精微).

Growth and conveyance in the six energies $e, (12), (13), (23), (123), (132)$, known as the **six roots** (根); As the fruit of these six energies $e, (12), (13), (23), (123), (132)$, known as the **six fruits** (结); Storage of these four energies M_1, M_2, M_3, M_4, known as the **four seas** (四海); Energy exchange of the four kinds of M_1, M_2, M_3, M_4, known as the **four streets** (四街). Of course, for a healthy Economy, the transfer law of each of the six energies $e, (12), (13), (23), (123), (132)$, is from its **root (root-causes)** (根) to its **fruit (symptoms)** (结).

Western Economy is different from TCE because the TCE has a concept of *Chi or Qi* (气) as a form of energy of steady multilateral systems. It is believed that this energy exists in all things of steady multilateral systems (living and non-living) including air, water, food and sunlight. *Chi* is said to be the unseen vital force that nourishes steady multilateral systems' Economy and sustains steady multilateral systems' life. It is also believed that an individual is born with an original amount of *Chi* at the beginning of steady multilateral systems' life and as a steady multilateral system grows and lives, the steady multilateral system acquires or attains *Chi* or energy from "eating" and "drinking", from "breathing" the surrounding "air" and also from living in its environment. The steady multilateral system having an energy is called **the anatomy system** or **the first physiological system**. And the first physiological system also affords *Chi* or energy for the steady multilateral system's meridian system (*Zang Xiang* (藏象) and *Jing-Luo* (经络)) which forms a parasitic system of the steady multilateral system, called **the second physiological system** of the steady multilateral system. The second physiological system of the steady multilateral system controls the first physiological system of the steady multilateral system. A steady multilateral system would become ill or dies if the *Chi* or energy in the steady multilateral system is imbalanced or exhausted, which means that

$\rho_1 = \rho(x) \to 0, \rho_2 = \rho(x)^2 \to 0$ and $\rho_3 = c\rho(x) \to 0$.

For example, in TCE, an economy as the first physiological system of the steady multilateral system following the Yin Yang Wu Xing theory was classified into five equivalence classes as follows:

wood (X)={industry, PPI (the Producer Price Index) or RPI (Retail Price Index), liver, bravery, soul, ribs, sour, east, spring, birth};

xiang-fire(X_S^x)={agriculture, AAF (the total output value of Agriculture forestry Animal husbandry and Fishery), pericardium, the triple energizer, nerve, the blood, bitter taste, the south, summer, growth};

earth(X_K)={ commerce, CPI (the Consumer Price Index), spleen, stomach, willing, meat, sweetness, center, long summer, combined};

metal(K_X)={science-education, GDP (the General Budget Revenue), lung, large intestine, boldness, fur, spicy, west, autumn, accept};

water(S_X)={army-economic,GDP (the Gross Domestic Product), kidney, bladder, ambition, bone, salty, the north, winter, hiding};

jun-fire(X_S^j)={President or Governor, Finance (right of making money), heart, small intestine, bitter taste, whole economy, throughout the year, overall growth}.

fire(X_S)= xiang-fire(X_S^x) $\bigcup$ jun-fire(X_S^j).

There is only one of both loving and killing relations between every two classes. General close is loving, alternate is killing. In every category of internal, think that they are with an equivalent relationship, between each two of their elements there is a force of similar material accumulation of each other. It is because their pursuit of the goal is the same, i.e., follows the same "Axiom system". It can increase the energy of the class at low cost near to zero if they accumulate together. Any nature material activity follows the principle of maximizing so energy or minimizing the cost. In general, the size of the force of similar material accumulation of each other is smaller than the size of the loving force or the killing force in a stable complex system. The stability of any complex system first needs to maintain the equilibrium of the killing force and the loving force. The key is the killing force. For a stable complex system, if the killing force is large, i.e., $\rho_3 = c\rho(x)$ becomes larger by Theorems **3.4** and **3.5** below, which needs positive **exercise**, then the loving force is also large such that the force of similar material accumulation of each other is also large. They can make the complex system more stable. If the killing force is small, i.e., $\rho_3 = c\rho(x)$ becomes smaller by Theorems **3.4** and **3.5** below, which means little **exercise**, then the loving force is also small such that the force of similar material accumulation of each other is also small. They can make the complex system becoming unstable.The *Chi* or energy is also called the food hereafter for simply. In order to get the food, by Attaining Rule in Zhang [23], the second physiological system must make the first physiological system intervened, namely **exercise**. It is because only by intervention on the first physiological system, the second physiological system can be to get food.

The second physiological system of the steady multilateral system controls the first physiological system of the steady multilateral system, abiding by the following rules.

Definition 3.1 (Zangxiang(藏象)) *Assume the Yin Yang Wu Xing model* V^5 *is implemented by the Tao force of the Tao*

model V^2. Then the steady multilateral system

$V^2 \times V^5 = \{(i, j) \mid i \in V^2, j \in V^5\}$ is called the **Zangxiang** or the **Five Zang-organs** model of the steady multilateral system.

The Zangxiang model satisfies as follows:

$$R_{(r,r')}^{(2,5)} = \sum_{(i,i')=(0,0)}^{(1,4)} V_{(i,i')}^{(2,5)} \times V_{(mod(i+r,2),mod(i'+r',5))}^{(2,5)}, \forall (r,r') \in V^2 \times V^5,$$

$$R_{(i,i')}^{(2,5)} * R_{(j,j')}^{(2,5)} = R_{(mod(i+j,2),mod(i'+j',5))}^{(2,5)}.$$

Each of the elements,

(1, O), (O, O), (1, 1), (O, 1), (1, 2),
(O, 2), (1, 3), (O, 3), (1, 4), (O, 4),

is called respectively

Jia(1,O),Yi(O,O),Bing(1,1),Ding(O,1),Wu(1,2),

Ji(O,2),Geng(1,3),Xin(O,3),Ren(1,4),Gui(O,4),

corresponding to the Chinese words respectively:

甲(1,O),乙(O,O),丙(1,1),丁(O,1),戊(1,2),
己(O,2),庚(1,3),辛(O,3),壬(1,4),癸(O,4),

also corresponding to the notations in Theorem **3.1** respectively:

$X^+(1,0), X^-(0,0), X_S^+(1,1), X_S^-(0,1), X_K^+(1,2),$
$X_K^-(0,2), K_X^+(1,3), K_X^-(0,3), S_X^+(1,4), S_X^-(0,4).$

Here, each of the elements: X, X_S, X_K, K_X, S_X is called

wood, fire,earth,metal,water, respectively, and this is $*^+$ Yang, $*^-$ is Yin.

In TCE, an other name of the **Zangxiang system** is the ten **Heavenly Stems**（天干）. It means in the changes of energy transmission, plays a major role, is under the power of positive (Yang), although it is invisible, the reason of behind the sign.

In the ten heavenly stems, Yang is respectively:

Jia $X^+(1,0)$ liking Yang wood, Bing $X_S^+(1,1)$ liking Ynag fire,

Wu $X_K^+(1,2)$ liking Yang earth, Geng $K_X^+(1,3)$ liking Yang metal,

Ren $S_X^+(1,4)$ liking Yang water;

Yin is respectively:

Yi $X^-(0,0)$ liking Yin wood，Ding $X_S^-(0,1)$ liking Yin fire，

Ji $X_K^-(0,2)$ liking Yin earth，Xin $K_X^-(0,3)$ liking Yin metal，

Gui $S_X^-(0,4)$ liking Yin water.

Yin is in the inside（里）, Yang is in the outside（表）. The relationship between the inside and the outside is the liking relationship.

The laws of the **Zangxiang** system or the **ten Heavenly Stems model** are summarized in Figure 2.#

Definition 3.2 (Jingluo) Assume the **Telluric effluvium** model V^6 is implemented by the Tao force of the Tao model V^2. Then the steady multilateral system

$V^2 \times V^6 = \{(i, j) \mid i \in V^2, j \in V^6\}$ is called the **Jingluo** or the **Six Fu-organs** model of the steady multilateral system.

The Jingluo model satisfies as follows:

$$R_{(r,r')}^{(2,6)} = \sum_{(i,i')=(0,1)}^{(1,6)} V_{(i,i')}^{(2,6)} \times V_{(mod(i+r,2),i'*r')}^{(2,6)}, \forall (r,r') \in V^2 \times V^6,$$

$$R_{(i,i')}^{(2,6)} * R_{(j,j')}^{(2,6)} = R_{(mod(i+j,2),i'*j'))}^{(2,6)}.$$

Each of the elements,

(0,e)   (1,e)   (0,(12))   (1,(12))   (0,(13))   (1,(13))
(0,(23))   (1,(23))   (0,(132))   (1,(132))   (0,(123))   (1,(123))

is called respectively

Zi(0,e)   Hai(1,e)   Chen(0,(12))   Mao(1,(12))   Shen(0,(13))   Wei(1,(13))
Chou(0,(23))   Xu(1,(23))   Si(0,(132))   Yin(1,(132))   You(0,(123))   Wu(1,(123));

Corresponding to the Chinese words respectively:

子(0,e)   亥(1,e)   辰(0,(12))   卯(1,(12))   申(0,(13))   未(1,(13))
丑(0,(23))   戌(1,(23))   巳(0,(132))   寅(1,(132))   酉(0,(123))   午(1,(123));

Also corresponding to the notations in Theorem **3.1** as the five viscera and six entrails respectively:

$X^+(0,e)$ $X_S^{x+}(1,e)$ $X_K^+(0,12)$ $K_X^+(1,(12))$ $S_X^+(0,(13))$ $X_S^{j+}(0,(13))$
$X^-(0,(23))$ $X_S^{x-}(1,(23))$ $X_K^-(0,(132))$ $K_X^-(1,(132))$ $S_X^-(0,(123))$ $X_S^{j-}(1,(123))$.

Here, each of the elements: $X, X_S^x, X_K, K_X, S_X, X_S^j$ is called wood, xiang-fire（相火）, earth,metal,water, jun-fire

（君火）respectively, and this is $*^+$ Yang, $*^-$ is Yin.

In TCE, an other name of the **Jingluo** system is the **twelve Earthly Branches**（地支）. It means in the changes of energy transmission, plays a secondly role, is under the power of negative (Yin), although it is tangible, a sign of strength can be observed directly.

In the twelve earthly branches, Yang is respectively

Zi $X^+(0,e)$ liking Yang water, Hai $X_S^{x+}(1,e)$ liking Yin water,

Chen $X_K^+(0,(12))$ liking Yang earth, Mao $K_X^+(1,(12))$ liking Yin wood,

Shen $S_X^+(0,(13))$ liking Yang metal, Wei $X_S^{j+}(1,(13))$ liking Yin earth;

Yin is respectively

Chou $X^-(0,(23))$ liking Yin earth, Xu $X_S^{x-}(1,(23))$ liking Yang earth,

Si $X_K^-(0,(132))$ liking Yin fire, Yin $K_X^-(1,(132))$ liking Yang wood,

You $S_X^-(0,(123))$ liking Yin metal, Wu $X_S^{j-}(1,(123))$ liking Yang fire.

Yin is in the inside（里）, Yang is in the outside（表）. The relationship between the inside and the outside is the liking relationship.

In the twelve earthly branches,other names of them are corresponding to the human body organs respectively:

Foot jueyin liver meridian (0,(23)),
Foot shaoyang gallladder meridian (0,e),
Hand jueyin pericardium meridian (1,(23)),
Hand shaoyang triple energizer meridian (1,e),
Foot taiyin spleen meridian (0,(132)),
Foot yangming stomach meridian (0,(12)),
Hand taiyin lung meridian (1,(132)),
Hand yangming large intestine meridian (1,(12)),
Foot shaoyin kidney meridian (0,(123)),
Foot taiyang bladder meridian (0,(13)),
Hand shaoyin heart meridian (1,(123)),
Hand taiyang small intestine meridian (1,(13)).

Or, respectively,

足厥阴肝经(0,(23)),足少阳胆经(0,e),
手厥阴心包经(1,(23)),手少阳三焦经(1,e),
足太阴脾经(0,(132)),足阳明胃经(0,(12)),
手太阴肺经(1,(132)),手阳明大肠经(1,(12)),
足少阴肾经(0,(123)),足太阳膀胱经(0,(13)),
手少阴心经(1,(123)),手太阳小肠经(1,(13)).

The laws of the **Jingluo** system or the **twelve Earthly Branches model** are summarized in Figure 3.#

In TCE, the Zangxiang and Jingluo models are not the anatomy systems as the first physiological system corresponding to their steady multilateral systems, are only

them the mathematical logic models. If there are the **Yin Yang Wu Xing** model V^5, the **Telluric effluvium** model V^6 and the **Tao** model V^2, then the **Zangxiang** model $V^2 \times V^5$ and the **Jingluo** model $V^2 \times V^6$ must be exist in logic. So they form a parasitic system of the Yin Yang Wu Xing system V^5, namely the second physiological system of the steady multilateral systems $V^2 \times V^5$ and $V^2 \times V^6$.

In TCE, the Zangxiang model cannot be observed directly, so it is hidden behind the Jingluo system, namely the Zangxiang (藏象) model. Chinese word "藏" is the meaning of the hidden behind. Therefore, only the twelve meridians can be observed. Began to grow the 12 kinds of energies of each place, referred to as the basic **root-causes** (本). To generate the results of the 12 kinds of energies, referred to as the **symptoms** (标). Management of the 12 kinds of energies of each system, known as **meridians or the Jingluo systems.** Of course, for a healthy Economy, the transfer law of each of the 12 kinds of energies is from its basic **root-causes** (本) to its **symptoms** (标).

In spite of the ten heavenly system cannot be observed, but it can be observed according to the reasoning of the twelve earthly branches system.So the logic relation of both the ten heavenly stems system and the twelve earthly branches system must be known.

Definition 3.3 (Logic Relation of Ten Heavenly Stems Hidden behind Twelve Earthly Branches) *Logic Relation of Ten Heavenly Stems Hidden behind Twelve Earthly Branches must follow the relationship between the growth of the ten heavenly elements.*

For the ten heavenly stems, although they are hidden in the 12 earthly branches, but the existing way is not completely the same. They each have 12 kinds of growth status: rowing (长生), bathing (沐浴), crowned (冠带), officer (临官), emperor (帝旺)，decay (衰退), disease (得病), death (死亡), tomb (墓), extinction (绝), child (胎), raise (养).

According to the names of Yin and Yang attribute is different, their growth way also each are not identical. Yang heavenly stems energy transmission is energy transmitted along the twelve earthly branches, and Yin heavenly stems energy transfer is against the twelve earthly branches transmission of energy transmitted sequence.

The following ten heavenly stems are hidden behind the twelve earthly branches as follows:
$Zi(0, e) = \{Gui(0,4)\}$, liking Yang water;

$Chou(0, (23)) = \{Ji(0,2), Gui(0,4), Xin(0,3)\}$, liking Yin earth;

$Yin(1, (132)) = \{Jia(1,0), Bing(1,1), Wu(1,2)\}$, liking Yang wood;

$Mao(1, (12)) = \{Yi(0,0)\}$, liking Yin wood;

$Chen(0, (12)) = \{Yi(0,0), Wu(1,2), Gui(0,4)\}$, liking Yang earth;

$Si(0, (132)) = \{Bing(1,1), Geng(1,3), Wu(1,2)\}$, liking Yin fire;

$Wu(1, (123)) = \{Ding(0,1), Ji(0,2)\}$, liking Yang fire;

$Wei(1, (13)) = \{Ding(0,1), Ji(0,2), Yi(0,0)\}$, liking Yin earth;

$Shen(0, (13)) = \{Geng(1,3), Ren(1,4), Wu(1,2)\}$, liking Yang metal;

$You(0, (123)) = \{Xin(0,3)\}$, liking Yin metal;

$Xu(1, (23)) = \{Xin(0,3), Wu(1,2), Ding(0,1)\}$, liking Yang earth;

$Hai(1, e) = \{Ren(1,4), Jia(1,0)\}$, liking Yin water.

All Logic Relations of Ten Heavenly Stems Hidden behind Twelve Earthly Branches are summarized in Figure 4.

See Figure 4. and Tables 1 and 2, all pure Yang: Jia, Bing, Geng,Ren of Ten Heavenly Stems are hidden behind Palms

corners, clockwise for growth and officer. Only Yang earth: Wu of Ten Heavenly Stems is hidden behind Palms on both sides, clockwise for the growth, crowned, officer, disease and cemeteries.

All pure Yin: Yi, Ding, Xin, Gui of Ten Heavenly Stems are hidden behind the sides of the palms, counterclockwise to raise, crowned and officer. Only Yin earth: Ji of Ten Heavenly Stems is hidden behind Palms up and down, counterclockwise for the tomb, crowned and officer. #

Property 3.1 (Ten Heavenly Stems Grow-Strong-Die-Extinction Hidden behind Twelve Earthly Branches) *Ten heavenly stems under a number of laws, the ten heavenly stems inside the twelve earthly branches transmission rule can be gotten as follows. The five Yang heavenly stems: Jia, Bing, Wu, Geng, Ren was born by Hai, Yin, Yin, Si, Shen clockwise respectively; The five Yin heavenly stems: Yi, Ding, Ji, Xin, Gui was born by Wu, You, You, Zi, Mao counterclockwise respectively. Using mathematical language, all of these laws are summarized in Tables 1 and 2.*#

Property 3.2 (The rationality of the name of Twelve Earthly Branches) *The following notations in Definition 3.2 is reasonable.*

X^+	X_S^{x+}	X_K^+	K_X^+	S_X^+	X_S^{j+}
$(0, e)$	$(1, e)$	$(0, (12))$	$(1, (12))$	$(0, (13))$	$(1, (13))$
X^-	X_S^{x-}	X_K^-	K_X^-	S_X^-	X_S^{j-}
$(0, (23))$	$(1, (23))$	$(0, (132))$	$(1, (132))$	$(0, (123))$	$(1, (123))$.

It is with the correct meaning of the Yin Yang Wu Xing Model in Theorem 3.1.#

Energy concept is an important concept in Physics. Zhang etc [21] introduce this concept to the steady multilateral systems or image mathematics [20] and uses these concepts to deal with the steady multilateral system diseases (mathematical index too high or too low). In mathematics, a steady multilateral system is said to have **Energy** (or **Dynamic**) if there is a non-negative function $\varphi(*)$ which makes every subsystem meaningful of the steady multilateral system. Similarly to Zhang etc [21], unless stated otherwise, any equivalence relation is the liking relation, any neighboring relation is the loving relation, and any alternate relation is the killing relationship.

Suppose that V is a steady multilateral system having an energy, then V in the steady multilateral system during a normal operation, its energy function for any subsystem of the steady multilateral system has an **average** (or **expected value** in Statistics), this state is called as **normal** when the energy function is nearly to the average. Normal state is the better state.

That a subsystem of the steady multilateral system is **not running properly** (or **disease**, **abnormal**) is that the energy deviation from the average of the subsystems is too large, the high (**real disease**) or the low (**virtual disease**).

In addition to study these real or virtual diseases, TCE is often not only considered the energy change (Attaining or Affording) of each element in the corresponding group, but also studied a kind of **relation costs**. There are three kinds of relationship between each two elements of the Zangxiang system or the Jingluo system, namely the **merged, synthesized** and **combined**.

The **merged** relationship between two the same elements x and y is the joining operation in a set, i.e., $\{x\} \cup \{y\} = \{z\}$.

The element z is the result of two the same elements x and y merging. The purpose of merging is in order to get the large result energy of element z through inputting two the same elements x and y.

The **synthesized** relationship between two elements x and y is the multiply operation in the corresponding group system with a multiplication *, i.e., $x*y=z$. The element z is the result of two elements x and y synthesized. The purpose of synthesized is in order to get the result energy of element z through inputting two elements x and y.

The **combined** relationship between two elements x and y is the division operation in the corresponding group system with a multiplication *, i.e., $x^{-1}*y=z$. The element z is the cost of two elements x and y combined. The purpose of combined is in order to maintain or strengthen the relation between x and y through inputting the cost element z.

In general, a relationship cost is low if the cost element in the corresponding group is easy to get. A relationship cost is high, on the other hand, if the cost element in the corresponding is hard to come by.

In this case, in general, the RPI inflation rate $x \in [0.8789\%, 5.2241\%]$ which means $\rho_0 \leq \rho_1 = \rho(x) \leq 1$. This relation cost is low because this relation cost element is easy to get. The low relation cost can make the intervention increasing the sizes of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3.

But in general, the RPI inflation rate $x \notin [0.8789\%, 5.2241\%]$ which means $0 < \rho_1 = \rho(x) < \rho_0$. This relation cost is high because the relation cost element is hard to come by. The high relation cost can make the sizes of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 decreasing response to intervention.

The purpose of intervention is to make the steady multilateral system return to normal state. The method of intervention is to increase or decrease the energy of a subsystem.

What kind of intervening should follow the principle to treat it? Western mathematics emphasizes directly mathematical treatments on a disease subsystem after the disease of subsystem has occurred, but the indirect intervening of oriental mathematics is required before the disease of subsystem will occur. In mathematics, which is more reasonable?

Based on this idea, many issues are worth further discussion. For example, if an intervening has been implemented to a disease subsystem before the disease of subsystem will occur, what relation disease will be low cost which does not need to be intervened? what relation disease will be high cost which needs to be intervened?

3.2 Kinds of Relationship costs of Steady Multilateral Systems

For a steady multilateral system V with two incompatibility relations, suppose that the subsystems

X, X_S, X_K, K_X, S_X are the same as those defined in Theorem **3.1**. Then the relation diseases can be decomposed into the following classes:

Definition 3.4 (merged（合并）**, synthesized** （合化或者合成）**and combined**（化合）**)** *Suppose that both x and y are two elements of the **Zangxiang** system or the **Jingluo** system.*

*The **merged** relationship between two the same elements x and y is the joining operation in a set, i.e., $\{x\} \cup \{y\} = \{z\}$. The element z is the result of two the same elements x and y merging. The purpose of merging is in order to get the large result energy of element z through inputting two the same elements x and y.*

*The **synthesized** relationship between two elements x and y is the multiply operation in the corresponding group system with a multiplication *, i.e., $x*y=z$. The element z is the result of two elements x and y synthesized. The purpose of synthesized is in order to get the result energy of element z through inputting two elements x and y.*

*The **combined** relationship between two elements x and y is the division operation in the corresponding group system with a multiplication *, i.e., $x^{-1}*y=z$. The element z is the cost of two elements x and y combined. The purpose of combined is in order to maintain or strengthen the relation between x and y through inputting the cost element z.*#

Property 3.3 *Suppose that both x and y are two elements of the **Zangxiang** system. Then the following statements are true.*

(1) The lowest cost element is

$$\text{Yi}(0,0) = 乙(0,0) = X^-(0,0).$$

The second low cost is

$$\text{Jia}(1,0) = 甲(1,0) = X^+(1,0).$$

The third low cost is

$\text{Ding}(0,1) = 丁(0,1) = X_S^-(0,1) = [S_X^-(0,4)]^{-1} = [癸(0,4)]^{-1} = [\text{Gui}(0,4)]^{-1}.$ *The fourth low cost is*

$\text{Bing}(1,1) = 丙(1,1) = X_S^+(1,1) = [S_X^+(1,4)]^{-1} = [壬(1,4)]^{-1} = [\text{Re}\,n(1,4)]^{-1}.$ *(2) The highest cost element*

$\text{Wu}(1,2) = 戊(1,2) = X_S^+(1,2) = [X_K^+(1,3)]^{-1} = [庚(1,3)]^{-1} = [\text{Geng}(1,3)]^{-1}$.

The second high cost is

$\text{Ji}(0,2) = 己(0,2) = X_S^-(0,2) = [X_K^-(0,3)]^{-1} = [辛(0,3)]^{-1} = [\text{Xin}(0,3)]^{-1}.$

(3) The synthesized relationships of the ten Heavenly Stems at zero costs are as follows:

The ten heavenly stems synthesized（十天干合化）

Jia(1,0)*Ji(0,2)=Wu(1,2) → Yang earth（甲己合化土）,

Yi(0,0)*Geng(1,3)=Geng(1,3) → Yang metal（乙庚合化金）,

Bing(1,1)*Geng(0,3)=Ren(1,4) → Yang water（丙辛合化水）,

Ding(0,1)*Ren(1,4)=Jia(1,0) → Yang wood（丁壬合化木）,

Wu(1,2)*Gui(0,4)=Bing(1,1) → Yang fire（戊癸合化火）.

(4) The combined relationships of the ten Heavenly Stems at low costs are as follows:

Jia(1,0) and Yi(0,0) like Jia(1,0) and Yi(0,0)（甲乙同类甲乙）

$(Jia(1,0))^{-1}*Jia(1,0) =Yi(0,0) \rightarrow$ Yin wood（甲甲比肩），

$(Jia(1,0))^{-1}*Yi(0,0)=Jia(1,0) \rightarrow$ Yang wood（甲乙劫财），

$(Yi(0,0))^{-1}*Jia(1,0)=Jia(1,0) \rightarrow$ Yang wood（乙甲劫财），

$(Yi(0,0))^{-1}*Yi(0,0)=Yi(0,0) \rightarrow$ Yin wood（乙乙比肩）；

Bing(1,1) and Ding(0,1) like Bing(1,1) and Ding(0,1)（丙丁同类丙丁）

$(Bing(1,1))^{-1}*Bing(1,1)=Yi(0,0) \rightarrow$ Yin wood（丙丙比肩），

$(Bing(1,1))^{-1}*Ding(0,1)=Jia(1,0) \rightarrow$ Yang wood（丙丁劫财），

$(Ding(0,1))^{-1}*Bing(1,1)=Jia(1,0) \rightarrow$ Yang wood（丁丙劫财），

$(Ding(0,1))^{-1}*Ding(0,1)=Yi(0,0) \rightarrow$ Yin wood（丁丁比肩）；

Wu(1,2) and Ji(0,2) like Wu(1,2) and Ji(0,2)（戊己同类戊己）

$(Wu(1,2))^{-1}*Wu(1,2)=Yi(0,0) \rightarrow$ Yin wood（戊戊比肩），

$(Wu(1,2))^{-1}*Ji(0,2)=Jia(1,0) \rightarrow$ Yang wood（戊己劫财），

$(Ji(0,2))^{-1}*Wu(1,2)=Jia(1,0) \rightarrow$ Yang wood（己戊劫财），

$(Ji(0,2))^{-1}*Ji(0,2)=Yi(0,0) \rightarrow$ Yin wood（己己比肩）；

Geng(1,3) and Xin(0,3) kill Geng(1,3) and Xin(0,3)（庚辛同类庚辛）

$(Geng(1,3))^{-1}*Geng(1,3)=Yi(0,0) \rightarrow$ Yin wood（庚庚比肩），

$(Geng(1,3))^{-1}*Xin(0,3)=Jia(1,0) \rightarrow$ Yang wood（庚辛劫财），

$(Xin(0,3))^{-1}*Geng(1,3)=Jia(1,0) \rightarrow$ Yang wood（辛庚劫财），

$(Xin(0,3))^{-1}*Xin(0,3)=Yi(0,0) \rightarrow$ Yin wood（辛辛比肩）；

Ren(1,4) and Gui(0,4) like Ren(1,4) and Gui(0,4)（壬癸同类壬癸）

$(Ren(1,4))^{-1}*Ren(1,4)=Yi(0,0) \rightarrow$ Yin wood（壬壬比肩），

$(Ren(1,4))^{-1}*Gui(0,4)=Jia(1,0) \rightarrow$ Yang wood（壬癸劫财），

$(Gui(0,4))^{-1}*Ren(1,4)=Jia(1,0) \rightarrow$ Yang wood（癸壬劫财），

$(Gui(0,4))^{-1}*Gui(0,4)=Yi(0,0) \rightarrow$ Yin wood（癸癸比肩）.

Jia(1,0) and Yi(0,0) love Bing(1,1) and Ding(0,1)（甲乙生丙丁）

$(Jia(1,0))^{-1}*Bing(1,1) =Ding(0,1) \rightarrow$ Yin fire（甲偏印丙），

$(Jia(1,0))^{-1}*Ding(0,1)=Bing(1,1) \rightarrow$ Yang fire（甲正印丁），

$(Yi(0,0))^{-1}*Bing(1,1)=Bing(1,1) \rightarrow$ Yang fire（乙正印丙），

$(Yi(0,0))^{-1}*Ding(0,1)=Ding(0,1) \rightarrow$ Yin fire（乙偏印丁）；

Bing(1,1) and Ding(0,1) love Wu(1,2) and Ji(0,2)（丙丁生戊己）

$(Bing(1,1))^{-1}*Wu(1,2)=Ding(0,1) \rightarrow$ Yin fire（丙偏印戊），

$(Bing(1,1))^{-1}*Ji(0,2)=Bing(1,1) \rightarrow$ Yang fire（丙正印己），

$(Ding(0,1))^{-1}*Wu(1,2)=Bing(1,1) \rightarrow$ Yang fire（丁正印戊），

$(Ding(0,1))^{-1}*Ji(0,2)=Ding(0,1) \rightarrow$ Yin fire（丁偏印己）；

Wu(1,2) and Ji(0,2) love Geng(1,3) and Xin(0,3)（戊己生庚辛）

$(Wu(1,2))^{-1}*Geng(1,3)=Ding(0,1) \rightarrow$ Yin fire（戊偏印庚），

$(Wu(1,2))^{-1}*Xin(0,3)=Bing(1,1) \rightarrow$ Yang fire（戊正印辛），

$(Ji(0,2))^{-1}*Geng(1,3)=Bing(1,1) \rightarrow$ Yang fire（己正印庚），

$(Ji(0,2))^{-1}*Xin(0,3)=Ding(0,1) \rightarrow$ Yin fire（己偏印辛）；

Geng(1,3) and Xin(0,3) love Ren(1,4) and Gui(0,4)（庚辛生壬癸）

$(Geng(1,3))^{-1}*Ren(1,4)=Ding(0,1) \rightarrow$ Yin fire（庚偏印壬），

$(Geng(1,3))^{-1}*Gui(0,4)=Bing(1,1) \rightarrow$ Yang fire（庚正印癸），

$(Xin(0,3))^{-1}*Ren(1,4)=Bing(1,1) \rightarrow$ Yang fire（辛正印壬），

$(Xin(0,3))^{-1}*Gui(0,4)=Ding(0,1) \rightarrow$ Yin fire（辛正印癸）；

Ren(1,4) and Gui(0,4) love Jia(1,0) and Yi(0,0)（壬癸生甲乙）

$(Ren(1,4))^{-1}*Jia(1,0)=Ding(0,1) \rightarrow$ Yin fire（壬偏印甲），

$(Ren(1,4))^{-1}*Yi(0,0)=Bing(1,1) \rightarrow$ Yang fire（壬正印乙），

$(Gui(0,4))^{-1}*Jia(1,0)=Bing(1,1) \rightarrow$ Yang fire（癸正印甲），

$(Gui(0,4))^{-1}*Yi(0,0)=Ding(0,1) \rightarrow$ Yin fire（癸偏印乙）.

(5)

*The combined relationships of the ten Heavenly Stems are **at highest costs** as follows:*

Jia(1,0) and Yi(0,0) kill Wu(1,2) and Ji(0,2)（甲乙克戊己）

$(Jia(1,0))^{-1}*Wu(1,2)=Ji(0,2) \rightarrow$ Yin earth（甲戊偏相克），

$(Jia(1,0))^{-1}*Ji(0,2)=Wu(1,2) \rightarrow$ Yang earth（甲己正相克），

$(Yi(0,0))^{-1}*Wu(1,2)=Wu(1,2) \rightarrow$ Yang earth（乙戊正相克），

$(Yi(0,0))^{-1}*Ji(0,2)=Ji(0,2) \rightarrow$ Yin earth（乙己偏相克）；

Wu(1,2) and Ji(0,2) kill Ren(1,4) and Gui(0,4)（戊己克壬癸）

$(Wu(1,2))^{-1}*Ren(1,4)=Xin(0,3) \rightarrow$ Yin metal（戊壬偏相克），

$(Wu(1,2))^{-1}*Gui(0,4)=Geng(1,3) \rightarrow$ Yin metal（戊癸正相克），

$(Ji(0,2))^{-1}*Ren(1,4)=Geng(1,3) \rightarrow$ Yin metal（己壬正相克），

$(Ji(0,2))^{-1}*Gui(0,4)=Xin(0,3) \rightarrow$ Yin metal（己癸偏相克）；

Ren(1,4) and Gui(0,4) kill Bing(1,1) and Ding(0,1)（壬癸克丙丁）

$(Ren(1,4))^{-1}*Bing(1,1)=Ji(0,2) \rightarrow$ Yin earth（壬丙偏相克），

$(Ren(1,4))^{-1}*Ding(0,1)=Wu(1,2) \rightarrow$ Yin earth（壬丁正相克），

$(Gui(0,4))^{-1}*Bing(1,1)=Wu(1,2) \rightarrow$ Yin earth（癸丙正相克），

$(Gui(0,4))^{-1}*Ding(0,1)=Ji(0,2) \rightarrow$ Yin earth（癸丁偏相克）；

Bing(1,1) and Ding(0,1) kill Geng(1,3) and Xin(0,3)（丙丁克庚辛）

$(Bing(1,1))^{-1}*Geng(1,3)=Ji(0,2) \rightarrow$ Yin earth（丙庚偏相克），

$(Bing(1,1))^{-1}*Xin(0,3)=Wu(1,2) \rightarrow$ Yang earth（丙辛正相克），

$(Ding(0,1))^{-1}*Geng(1,3)=Wu(1,2) \rightarrow$ Yang earth（丁庚正相克），

$(Ding(0,1))^{-1}*Xin(0,3)=Ji(0,2) \rightarrow$ Yin earth（丁辛偏相克）；

Geng(1,3) and Xin(0,3) kill Jia(1,0) and Yi(0,0)（庚辛克甲乙）

$(Geng(1,3))^{-1}*Jia(1,0)=Ji(0,2) \rightarrow$ Yin earth（庚甲偏相克），

$(Geng(1,3))^{-1}*Yi(0,0)=Wu(1,2) \rightarrow$ Yang earth（庚乙正相克），

$(Xin(0,3))^{-1}*Jia(1,0)=Wu(1,2) \rightarrow$ Yang earth（辛甲正相克），

$(Xin(0,3))^{-1}*Yi(0,0)=Ji(0,2) \rightarrow$ Yin earth（辛乙偏相克）.

The ten heavenly stems rushing（十天干相冲）

$(Jia(1,0))^{-1}*Geng(1,3)=Xin(0,3) \rightarrow$ Yin metal（甲庚相冲），

$(Yi(0,0))^{-1}*Xin(0,3)=Xin(0,3) \rightarrow$ Yin metal（乙辛相冲），

$(Ren(1,4))^{-1}*Bing(1,1)=Ji(0,2) \rightarrow$ Yin earth（壬丙相冲），

$(Gui(0,4))^{-1}*Ding(0,1)=Ji(0,2 \rightarrow$ Yin earth（癸丁相冲），

$(Wu(1,2))^{-1}*Ji(0,2)=Jia(1,0) \rightarrow$ Yang wood（戊己无冲）.

*All relation laws of the **Zangxiang** system or the **ten Heavenly Stems model** are summarized in Figure 2. It means that both the liking relation and the loving relation have the low cost, but the killing relation has high cost. #*

Property 3.4 *Suppose that both x and y are two elements of the Jingluo system.*

Then the following statements are true.

(1)The lowest cost elements are as follows:

Chou$(0,(23))$=丑$(0,(23))$=$X(0,(23))$=阴营气 $\rightarrow$ liver（肝），

You$(0,(132))$=巳$(0,(132))$=$K_X(0,(132))$=阴宗气 $\rightarrow$ spleen（脾），

Wu$(0,(123))$=酉$(0,(123))$=$X_S^x(0,(123))$=阴真气 $\rightarrow$ kidney（肾）.

The second low cost elements are as follows:

Zi$(0,e)$=子$(0,e)$=$X(0,e)$=阴元气 $\rightarrow$ gallbladder（胆），

Chen$(0,(12))$=辰$(0,(12))$=$X_K(0,(12))$=阴谷气 $\rightarrow$ stomach（胃），

Shen$(0,(13))$=申$(0,(13))$=$S_X(0,(13))$=阴卫气 $\rightarrow$ bladder（膀胱）.

(2)The highest relation cost elements are as follows

Hai(1,e)=亥(1,e)=X_s^j(1,e)=阳元气 → triple energizer (三焦),

Mao(1,(12))=卯(1,(12))=K_X(1,(12))=阳谷气 → large intestine (大肠),

Wei(1,(13))=未(1,(13))=S_X(1,(13))=阳卫气 → small intestine (小肠).

The second high cost elements are as follows

Xu(1,(23))=戌(1,(23))=X_s^-(1,(23))=阳营气 → pericardium (心包),

Yin(1,(132))=寅(1,(132))=K_X(1,(132))=阳宗气 → lung (肺),

Wu(1,(123))=午(1,(123))=X_s^+(1,(123))=阳真气 → heart (心).

*(3) The **merged and synthesized** relationships of the twelve Earthly Branches **at zero costs** are as follows:*

Number three rendezvous（地支三会局）

{Yin(1,(132))，Mao(1,(12))，Chen(0,(12))}

→ {Yang wood, Yang wood, Yang erath }

（寅卯辰三会东方木），

{Si(0,(132))，Wu(1,(123))，Wei(1,(13))}

→ {Yin fire, Yang fire, Yin earth}

（寅卯辰三会南方火），

{Shen(0,(13))，You(0,(123))，Xu(1,(23))}

→ {Yang metal, Yin metal, Yang earth}

（寅卯辰三会西方金），

{Hai(1,e)，Zi(0,(23))，Chou(0,(23))}

→ {Yin water, Yang water, Yin earth}

（亥子丑三会北方水）.

Number six synthesized（地支六合化）

Zi(0,e)*Chou(0,(23))=Chou(0,(23))=丑(0,(23))

→ Yin earth(子丑合化土），

Yin(1,(132))*Hai(1,e)=Si(0,(132))

Si(0,(132))*Hai(1,e)=Yin(1,(132))

→ Yang wood(寅亥合化木），

Mao(1,(12))*Xu(1,(23))=Si(0,(132))

→ Yin fire(卯戌合化火），

Chen(0,(12))*You(0,(123))=Shen(0,(13))

→ Yang matal(辰酉合化金），

Si(0，(132))*Shen(0,(13))=Chou(0,(23))

Chou(0,(23))*Chou(0,(23))=Zi(0,e)

→ Yang water(巳申合化水），

Wu(1,(123))*Wei(1,(13))=Chen(0,(12))

→ Yang earth(未午合化土）.

*(4)The **combined** relationships of the twelve Earthly Branches **at low costs** are as follows:*

Number six combined (地支三合局)

(Shen(0,(13)))$^{-1}$*Zi(0,e)=Shen(0,(13))，

(Zi(0,e))$^{-1}$*Chen(0,(12))=Chen(0,(12))，

(Chen(0,(12)))$^{-1}$*Shen(0, 13))=You(0,(123))，

Chen(0,(12))*You(0,(123))*Shen(0,(13))=Zi(0,e)

→ Yang water(申子辰化合水局）；

(Hai(1,e))$^{-1}$*Mao(1,(12))=Chen(0,(12))，

(Mao(1,(12)))$^{-1}$*Wei(1,(13))=You(0,(123))，

(Wei(1,(13)))$^{-1}$*Hai(1,e)=Shen(0,(13))，

Shen(0,(13))*Chen(0,(12))*Hai(1,e)=Yin(1,(132))

→ Yang wood (亥卯未化合木局）；

(Yin(1,(132)))$^{-1}$*Wu(1,(123))=Si(0,(132))，

(Wu(1,(123)))$^{-1}$*Xu(1,(23))=Chen(0,(12))，

(Xu(1,(23)))$^{-1}$*Yin(1,(132))=Shen(0,(13))，

Xu(1,(23))*Chen(0,(12))=Wu(1,(123))

→ Yang fire（寅午戌化合火局）；

(Si(0,(132)))$^{-1}$*You(0,(123))=Si(0,(132))，

(You(0,(123)))$^{-1}$*Chou(0,(23))=Chen(0,(12))，

(Chou(0,(23)))$^{-1}$*Si(0,(132))=Shen(0,(13))，

Mao(0,(12))*You(0,(123))=Shen(0,(13))

→ Yang metal（巳酉丑化合金局）.

Number six combined（地支六化合）

[Zi(0,e)]$^{-1}$*Chou(0,(23))=Chou(0,(23))

→ Yin earth（子丑化合土），

[Yin(1,(132))]$^{-1}$*Hai(1,e)=You(0,(123))

[You(0,(123))]$^{-1}$*Hai(1,e)=Yin(1,(132))

→ Yang wood（寅亥化合木），

[Mao(1,(12))]$^{-1}$*Xu(1,(23))=Si(0,(132))

→ Yin fire（卯戌化合火），

[Chen(0,(12))]$^{-1}$*You(0, (123))=Shen(0,(13))

→ Yang metal（辰酉化合金），

[Si(0，(132)]$^{-1}$*Shen(0,(13))=Chen(0,(12))

[Chen(0,(12))]$^{-1}$*Chen(0,(12))=Zi(0,e)

→ Yang water（巳申化合水），

[Wu(1,(123))]$^{-1}$*Wei(1,(13))=Chou(0,(23))

→ Yin earth（午未化合土）.

*(5)The **combined** relationships of the twelve Earthly Branches **at high costs** are as follows:*

Number six evils（地支六害）

(Zi(0,e))$^{-1}$*Wei(1,(13))=Wei(1,(13)) → Yin earth (子未相害),

(Chou(0,(23)))$^{-1}$*Wu(1,(123))=Mao(1,(12)) → Yin wood (丑午相害),

(Yin(1,(132)))$^{-1}$*Si(0,(132))=Hai(1,e) → Yin water (寅巳相害),

(Mao(1,(12)))$^{-1}$*Chen(0,(12))=Hai(1,e) → Yin water (卯辰相害),

(Shen(0,(13)))$^{-1}$*Hai(1,e)=Wei(1,(13)) → Yin earth (申亥相害),

(You(0,(123)))$^{-1}$*Xu(1,(23))=Mao(1,(12)) → Yin wood (酉戌相害).

Number six rushed（地支六冲）

(Zi(0,e))$^{-1}$*Wu(1,(123))=Wu(1,(123)) → Yang fire(子午相冲),

(Chou(0,(23)))$^{-1}$*Wei(1,(13))=Yin(1,(132)) → Yang wood(丑未相冲),

(Yin(1,(132)))$^{-1}$*Shen(0,(13))=Mao(1,(12)) → Yin wood(寅申相冲),

(Mao(1,(12)))$^{-1}$*You(0,(123))=Wei(1,(13)) → Yin earth (卯酉相冲),

(Shen(0,(13)))$^{-1}$*Xu(1,(23))=Wu(1,(123)) → Yang fire (申戌相冲),

(Si(0,(132)))$^{-1}$*Hai(1,e)=Wu(1,(123)) → Yang fire (巳亥相冲).

Number three punished（地支三刑）

(a). Three-elements punishment (三元刑, 环刑)

(No punishment of kindness (无恩之刑))

(Yin(1,(132)))$^{-1}$*Si(0,(132))=Hai(1,e) → Yin water（寅刑巳），

(Si(0,(132)))$^{-1}$*Shen(0,(13))=Chen(0,(12)) → Yang earth（巳刑申），

(Shen(0,(13)))$^{-1}$*Yin(1,(132))=Mao(1,(12)) → Yin wood（申刑寅）.

(b). Three-elements punishment (三元刑, 环刑)

(The power of punishment (持势之刑))

(Chou(0,(23)))$^{-1}$*Xu(1,(23))=Hai(1,e) $\rightarrow$ Yin water(丑刑戌),

(Xu(1,(23)))$^{-1}$*Wei(1,(13))=You(0,(132)) $\rightarrow$ Yin metal (戌刑未),

(Wei(1,(13)))$^{-1}$*Chou(0,(23))=Wu(1,(123)) $\rightarrow$ Yang fire (未刑丑).

(c). Two-elements punishment (二元刑, 对刑)

(A punishment of rude (无礼之刑))

(Zi(0,e))$^{-1}$Mao(1,(12)) = Mao(1,(12)) $\rightarrow$ Yin wood (子刑卯),

(Mao(1,(12)))$^{-1}$Zi(0,e) = Mao(1,(12)) $\rightarrow$ Yin wood (卯刑子).

(d). One-element punishment (一元刑, 自刑)

(A punishment of things very (物极之刑))

(Chen(0,(12)))$^{-1}$Chen(0,(12)) = Zi(0,e) $\rightarrow$ Yang water (辰刑辰),

(Wu(1,(123)))$^{-1}$Wu(1,(123)) = Zi(0,e) $\rightarrow$ Yang water(午刑午),

(You(0,(123)))$^{-1}$You(0,(123)) = Zi(0,e) $\rightarrow$ Yang water(酉刑酉),

(Hai(1,e))$^{-1}$Hai(1,e) = Zi(0,e) $\rightarrow$ Yang water(亥刑亥).

All relation laws of the *Jingluo* system or the *twelve Earthly Branches model* are summarized in *Figure 3*. It means that the Your palm in *Figure 3*, all transverse relationship with low cost, but all vertical relationship with high cost. On the other hand, in the three types: {Yin,Mao}, {Wu,Wei}, {Xu,Hai} or the three types:{Chen,Si},{Shen,You},{Zi,Shou} for the vertices of the triangle respectively, the relationship between the cost is low. Otherwise, the relationship between the cost is high.#

3.3 First Transfer Laws of Economic Society Energies of Steady Multilateral Systems with a healthy Economy

Suppose that a steady multilateral system V having energy function $\varphi(*)$ is normal or healthy. Let x be the RPI inflation rate of V. Taking $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$, and $\rho_3 = c\rho(x)$ where $0 \le c \le 1$ and $\rho(x)$ is defined in Eqs.(3) and (4). The healthy economy means that the conditions $\rho_0 \le \rho(x) \le 1$ and $0 < c \le 1$ hold. By Corollary **2.1**, it is equivalent to the normal range $x \in [0.8789\%, 5.2241\%]$ or the healthy condition $\rho_1 + \rho_2\rho_3 \ge 1 - \rho_2\rho_3$. That $c \rightarrow 0$ implies that the economy is without the ability of self-protection, i.e., $\rho_3 = c\rho(x) \rightarrow 0$. Of course, the economy cannot be healthy. It is because for any $x \ne 2.7047\%$, when $c \rightarrow 0$, there are

$\rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^3 \rightarrow \rho(x) < 1 \leftarrow 1 - c\rho(x)^3 = 1 - \rho_2\rho_3$,

such that the healthy condition $\rho_1 + \rho_2\rho_3 \ge 1 - \rho_2\rho_3$ cannot hold.

By using Corollary **2.1** and Theorems **2.1** and **3.1**, the following Theorems **3.2** and **3.3** can be obtained as the transfer law of occurrence and change of economic society energies with a healthy economy.

Theorem 3.2 (**The transfer law of the ten Heavenly Stems with a healthy economy**) *Let the RPI inflation rate $x \in [0.8789\%, 5.2241\%]$ which is equivalent to the conditions $\rho_0 \le \rho_1 = \rho(x) \le 1$ and $0 < c \le 1$.*

The transfer law of each of the 10 kinds of energy in the the *Zangxiang* system or the **ten Heavenly Stems model** is from its **root-causes** to its **symptoms**. Furthermore, for the healthy economy, the transfer law of the **Yang** vital or righteousness energies of the ten heavenly stems is transferring **along** the loving or liking order of the ten heavenly stems as follows:

$\xrightarrow{less}$ real Jia(1,0)$X^+ \xleftrightarrow{less}$ real Yi(0,0)X^-

$\xrightarrow{less}$ real Bing(1,1)$X_S^+ \xleftrightarrow{less}$ real Ding(0,1)X_S^-

$\xrightarrow{rare}$ virtual Wu(1,2)$X_K^+ \xleftrightarrow{less}$ virtual Ji(0,2)X_K^-

$\xrightarrow{more}$ virtual Geng(1,3)$K_X^+ \xleftrightarrow{less}$ virtual Xin(0,3)K_X^-

$\xrightarrow{rare}$ real Ren(1,4)$S_X^+ \xleftrightarrow{less}$ real Gui(0,4)S_X^-

$\xrightarrow{less}$ real Jia(1,0)$X^+ \xleftrightarrow{less}$ real Yi(0,0)$X^- \xrightarrow{less} \cdots$.

And the transfer law of the **Yin** vital or righteousness energies of the ten heavenly stems is transferring **against** the loving or liking order of the ten heavenly stems as follows:

$\cdots \xleftarrow{less}$ virtual Yi(0,0)$X^- \xleftrightarrow{less}$ virtual Jia(1,0)X^+

$\xleftarrow{less}$ virtual Gui(0,4) $S_X^- \xleftrightarrow{less}$ virtual Ren(1,4) S_X^+

$\xleftarrow{rare}$ real Xin(0,3)$K_X^- \xleftrightarrow{less}$ real Geng(1,3) K_X^+

$\xleftarrow{more}$ real Ji(0,2)$X_K^- \xleftrightarrow{less}$ real Wu(1,2)X_K^+

$\xleftarrow{rare}$ virtual Ding(0,1)$X_S^- \xleftrightarrow{less}$ virtual Bing(1,1)X_S^+

$\xleftarrow{less}$ virtual Yi(0,0)$X^- \xleftrightarrow{less}$ virtual Jia(1,0)$X^+ \xleftarrow{less} \cdots$.

All transfer laws of the **Zangxiang** system or the **ten Heavenly Stems model for a healthy economy** are summarized in *Figure 2*. It means that only both the liking relation and the loving relation have the transfer law of the **Yang or Yin** vital or righteousness energies of the ten heavenly stems . **Yang** is transferring **along** the loving or liking order of the ten heavenly stems. **Yin** is transferring **against** the loving or liking order of the ten heavenly stems.#

Theorem 3.3 (**The transfer law of the twelve Earthly Branches with a healthy economy**) *Let the RPI inflation rate $x \in [0.8789\%, 5.2241\%]$ which is equivalent to the conditions $\rho_0 \le \rho_1 = \rho(x) \le 1$ and $0 < c \le 1$. The transfer law of each of the 12 kinds of energy in the **Jingluo** system or the **twelve Earthly Branches model** is from its **root-causes** to its **symptoms**.*

Furthermore, for the healthy economy, the transfer law of the **Yang** vital energies of the twelve earthly branches is transferring **along** the loving or liking order of the twelve earthly branches as follows:

$\xrightarrow{less}$ virtual Mao $K_x^+(1,(12))$	real Zi $X^+(0,e) \xrightarrow{less}$	real Hai $X_S^{x+}(1,e)$
$\updownarrow less$	$\updownarrow less$	$\updownarrow less$
virtual Yin $K_x^-(1,(132)) \xRightarrow{more}$	real Chou $X^-(0,(23))$	real Xu $X_S^{x-}(1,(23)) \xLeftarrow{rare}$
real Shen $S_X^+(0,(13)) \xRightarrow{rare}$	real Wei $X_S^{j+}(1,(13))$	virtual Chen $X_K^+(0,(12)) \xrightarrow{less}$
$\updownarrow less$	$\updownarrow less$	$\updownarrow less$
$\xLeftarrow{rare}$ real You $S_X^-(0,(123))$	real Wu $X_S^{j-}(1,(123)) \xrightarrow{rare}$	virtual Si $X_K^-(0,(132))$

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*The transfer law of the **Yin** vital energies of the twelve earthly branches is transferring **against** the loving or liking order of the ten heavenly stems as follows:*

real Mao

$K_X^+ (1,(12)) \overset{more}{\leftarrow}$

$\updownarrow less$

$\overset{less}{\leftarrow}$real Yin

$K_X^- (1,(132))$

$\overset{rare}{\Leftarrow}$virtual Shen

$S_X^+ (0,(13))$

$\updownarrow less$

virtual You

$S_X^- (0,(123)) \overset{rare}{\Rightarrow}$

real Chen

$X_K^+ (0,(12))$

$\updownarrow less$

real Si

$X_K^- (0,(132)) \overset{rare}{\leftarrow}$

virtual Hai

$X_S^{x+} (1,e) \overset{less}{\leftarrow}$

$\updownarrow less$

virtual Xu

$X_S^{x-} (1,(23))$

virtual Wei

$X_S^{j+} (1,(13)) \overset{rare}{\Leftarrow}$

$\updownarrow less$

virtual Wu

$X_S^{j-} (1,(123))$

virtual Zi

$X^+ (0,e)$

$\updownarrow less$

virtual Chou

$X^- (0,(23)) \overset{less}{\leftarrow}$.

*All transfer laws of the **Jingluo** system or the **twelve Earthly Branches model for a healthy economy** are summarized in Figure 3. It means that only both the liking relation and the adjacent relation have the transfer law of the **Yang or Yin** vital or righteousness energies of the twelve earthly branches. **Yang** is transferring **along** the loving or liking order of the twelve earthly branches. **Yin** is transferring **against** the loving or liking order of the twelve earthly branches. #*
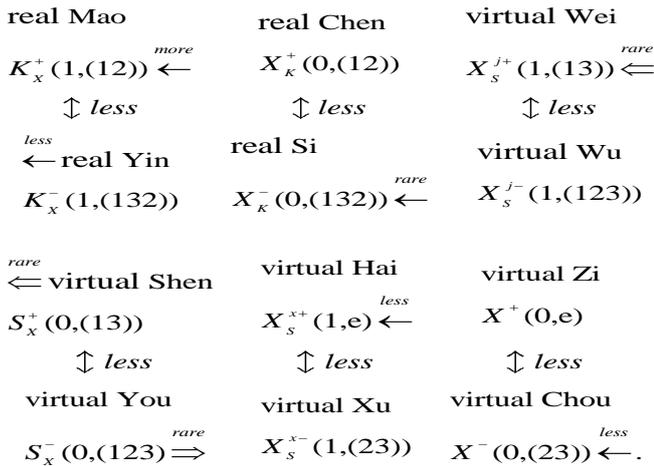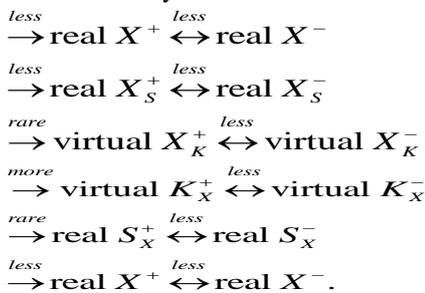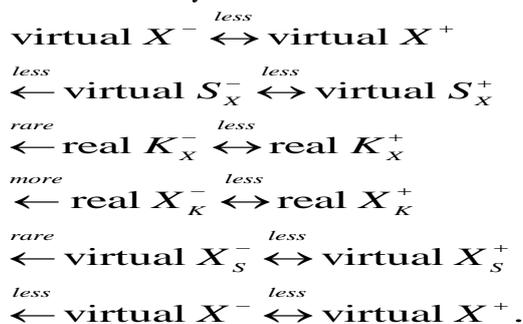
Remark 4. Theorems **3.2** and **3.3** are called the transfer law of occurrence and change of economy energies with a healthy economy, simply, **the first transfer law**.

For a **Yang** energy of X and the **Zangxiang system or the ten Heavenly Stems model for a healthy economy**, the first transfer law is transferring **along** the loving or liking order of the ten heavenly stems as follows:

$\overset{less}{\rightarrow}$real $X^+ \overset{less}{\leftrightarrow}$ real X^-

$\overset{less}{\rightarrow}$real $X_S^+ \overset{less}{\leftrightarrow}$ real X_S^-

$\overset{rare}{\rightarrow}$virtual $X_K^+ \overset{less}{\leftrightarrow}$ virtual X_K^-

$\overset{more}{\rightarrow}$virtual $K_X^+ \overset{less}{\leftrightarrow}$ virtual K_X^-

$\overset{rare}{\rightarrow}$real $S_X^+ \overset{less}{\leftrightarrow}$ real S_X^-

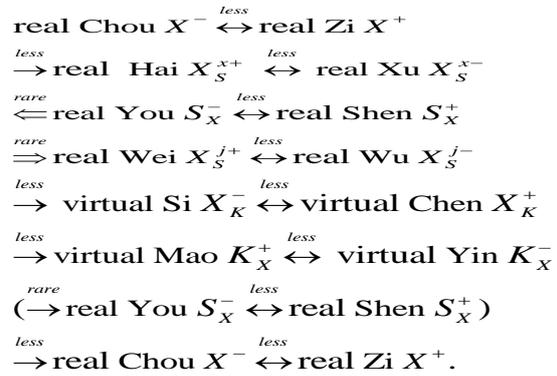$\overset{less}{\rightarrow}$real $X^+ \overset{less}{\leftrightarrow}$ real X^-.
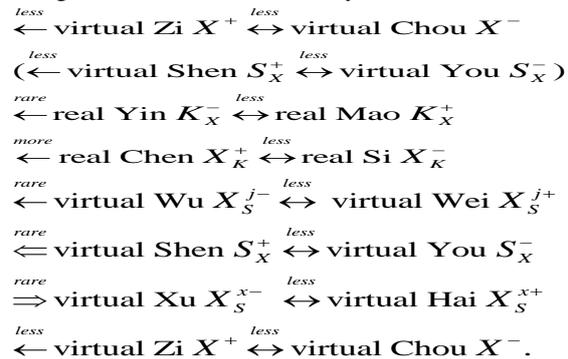
For a **Yin** energy of X and the **Zangxiang system or the ten Heavenly Stems model for a healthy economy**, the first transfer law is transferring **against** the loving or liking order of the ten heavenly stems as follows:

virtual $X^- \overset{less}{\leftrightarrow}$ virtual X^+

$\overset{less}{\leftarrow}$ virtual $S_X^- \overset{less}{\leftrightarrow}$ virtual S_X^+

$\overset{rare}{\leftarrow}$ real $K_X^- \overset{less}{\leftrightarrow}$ real K_X^+

$\overset{more}{\leftarrow}$ real $X_K^- \overset{less}{\leftrightarrow}$ real X_K^+

$\overset{rare}{\leftarrow}$ virtual $X_S^- \overset{less}{\leftrightarrow}$ virtual X_S^+

$\overset{less}{\leftarrow}$ virtual $X^- \overset{less}{\leftrightarrow}$ virtual X^+.

For a **Yang** energy of X and the **Jingluo system or the twelve Earthly Branches model for a healthy economy,** the first transfer law is transferring **along** the loving or liking order of the twelve earthly branches as follows:

real Chou $X^- \overset{less}{\leftrightarrow}$ real Zi X^+

$\overset{less}{\rightarrow}$real Hai $X_S^{x+} \overset{less}{\leftrightarrow}$ real Xu X_S^{x-}

$\overset{rare}{\Leftarrow}$real You $S_X^- \overset{less}{\leftrightarrow}$real Shen S_X^+

$\overset{rare}{\Rightarrow}$real Wei $X_S^{j+} \overset{less}{\leftrightarrow}$real Wu X_S^{j-}

$\overset{less}{\rightarrow}$ virtual Si $X_K^- \overset{less}{\leftrightarrow}$ virtual Chen X_K^+

$\overset{less}{\rightarrow}$virtual Mao $K_X^+ \overset{less}{\leftrightarrow}$ virtual Yin K_X^-

$(\overset{}{\rightarrow}$real You $S_X^- \overset{less}{\leftrightarrow}$real Shen $S_X^+)$

$\overset{less}{\rightarrow}$real Chou $X^- \overset{less}{\leftrightarrow}$real Zi X^+.

For a **Yin** energy of X and the **Jingluo system or the twelve Earthly Branches model for a healthy economy,** the first transfer law is transferring **against** the loving or liking order of the twelve earthly branches as follows

$\overset{}{\leftarrow}$ virtual Zi $X^+ \overset{less}{\leftrightarrow}$ virtual Chou X^-

$(\overset{less}{\leftarrow}$ virtual Shen $S_X^+ \overset{less}{\leftrightarrow}$ virtual You $S_X^-)$

$\overset{rare}{\leftarrow}$real Yin $K_X^- \overset{less}{\leftrightarrow}$real Mao K_X^+

$\overset{more}{\leftarrow}$ real Chen $X_K^+ \overset{less}{\leftrightarrow}$real Si X_K^-

$\overset{rare}{\leftarrow}$virtual Wu $X_S^{j-} \overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}

$\overset{rare}{\Leftarrow}$virtual Shen $S_X^+ \overset{less}{\leftrightarrow}$virtual You S_X^-

$\overset{rare}{\Rightarrow}$virtual Xu $X_S^{x-} \overset{less}{\leftrightarrow}$virtual Hai X_S^{x+}

$\overset{less}{\leftarrow}$virtual Zi $X^+ \overset{less}{\leftrightarrow}$virtual Chou X^-.

Because the energy change between

$\overset{less}{\leftarrow}$virtual Zi $X^+ \overset{less}{\leftrightarrow}$virtual Chou $X^-$and $\overset{less}{\leftarrow}$real Yin $K_X^- \overset{less}{\leftrightarrow}$real Mao K_X^+ needs to be adjusted by the energy of $\overset{less}{\leftarrow}$virtual Shen $S_X^+ \overset{less}{\leftrightarrow}$virtual You S_X^-, so generally believe that the **Yin** energy of X begins with the **Yang** energy of real Yin $K_X^- \overset{less}{\leftrightarrow}$real Mao K_X^+. This is in Zi to Yin (11 PM at night to the next day at half past five) need to have a rest.

The transfer relation of the first transfer law running is the loving or liking relationship, denoted by $\rightarrow$ or $\leftrightarrow$. The running condition of the first transfer law is

both $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$ and $\rho_3 = c\rho(x) > 0$.

By Theorem **2.1** and Corollary **2.1**, the running condition is nearly equivalent to both $\rho_0 \leq \rho_1 = \rho(x) \leq 1$ and $0 < c \leq 1$. The best-state condition of the first transfer law is $\rho_3 = c\rho(x)$ where $c \rightarrow 1$ which is the best state of ρ_3 for a healthy economy. To follow or utilize the running of the first transfer law is equivalent to the following method. For dong so, it is in order to protect or maintain the loving relationship. The method can strengthen both the value $(\rho_1 + \rho_2\rho_3) = (\rho(x) + c\rho(x)^3)$ tending to be large and the value $(1 - \rho_2\rho_3) = (1 - c\rho(x)^3)$ tending to be small at the same time. In other words, the way can make all of both $\rho(x)$ and c tending to be large. It is because the running condition of the loving or liking relationship $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$ is the stronger the use, which dues to $\rho_1 = \rho(x)$ the greater the use. In other words again, if the treatment principle of the loving relationship disease is to use continuously abiding by the first transfer law, then all of both the intervention reaction coefficients

$\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ and the coefficient of self-protection $\rho_3 = c\rho(x) > 0$ where $0 < c \leq 1$ will tend to be the best state, i.e., $\rho(x) \to 1$ and $0 < c \to 1$. #

Side effects of medical problems were the question: in the medical process, destroyed the balance of the normal systems which are not sick or intervened subsystems. The energy change of the intervened system is not the true side effects issue. The energy change is called the pseudo or non-true side effects issue since by Attaining Rule in Zhang [23], it is just the food of the second physiological system of the steady multilateral system for a healthy economy. The best state of the self-protection coefficient $\rho_3 = c\rho(x)$, i.e., $\rho_3 = c\rho(x) \to \rho(x) = \rho_1$, where $c \to 1$, implies the non-existence of any side effects issue if the treatment principle of TCE is used. Therefore any disease that causes side effects issue occurrence in the first place dues to the non-best state of self-protection ability, i.e., $\rho_3 = c\rho(x) < \rho(x) = \rho_1$. To follow or utilize the running of the first transfer law can make both $\rho(x) \to 1$ and $0 < c \to 1$. At this point, the paper advocates to follow or utilize the first transfer law. It is in order to avoid the side effects issue occurrence for a healthy economy. #

3.4 Second Transfer Laws of Economic Society Energies of Steady Multilateral Systems with an unhealthy Economy

Suppose that a steady multilateral system V having energy function $\varphi(*)$ is abnormal or unhealthy. Let x be the RPI inflation rate of V. Taking $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ and $\rho_3 = c\rho(x)$ where $0 \leq c \leq 1$, and $\rho(x)$ is defined in Eqs.(3) and (4). The unhealthy economy means that the conditions $\rho_0 > \rho_1 = \rho(x) > 0$ and $0 \leq c \leq 1$ hold, which is equivalent to the abnormal range $x \notin [0.8789\%, 5.2241\%]$.

From [20] and by using Corollary **2.1** and Theorems **2.1** and **3.1**, the following Theorems **3.4** and **3.5** can be obtained as the transfer law of occurrence and change of economic society energies with an unhealthy economy.

Theorem 3.4 (**The transfer law of the ten Heavenly Stems with an unhealthy economy**) *Let the RPI inflation rate* $x \notin [0.8789\%, 5.2241\%]$ *which is equivalent to the conditions* $\rho_0 > \rho_1 = \rho(x) > 0$ *and* $0 \leq c \leq 1$.

The transfer law of each of the 10 kinds of energy in the **Zangxiang** *system or the* **ten Heavenly Stems model for an unhealthy economy** *is from its* **root-causes** *to its* **symptoms**.

Furthermore, for the unhealthy economy, if a subsystem X *of a steady multilateral system* V *falls a real disease, then the disease comes from the mother* S_X *of* X. *The transfer law of the* **Yang** *vital or righteousness energies of the ten heavenly stems is transferring* **against** *the killing or liking order of the ten heavenly stems as follows:*

real Jia $(1,0)$ X^+ $\overset{less}{\Longleftrightarrow}$ real Yi $(0,0)$ X^-

$\overset{rare}{\Longleftarrow}$ real Geng $(1,3)$ K_X^+ $\overset{less}{\Longleftrightarrow}$ real Xin $(0,3)$ K_X^-

$\overset{rare}{\Longleftarrow}$ real Bing $(1,1)$ X_S^+ $\overset{less}{\Longleftrightarrow}$ real Ding $(0,1)$ X_S^-

$\overset{rare}{\Longleftarrow}$ real Ren $(1,4)$ S_X^+ $\overset{less}{\Longleftrightarrow}$ real Gui $(0,4)$ S_X^-

$\overset{more}{\Longleftarrow}$ virtual Wu $(1,2)$ X_K^+ $\overset{less}{\Longleftrightarrow}$ virtual Ji $(0,2)$ X_K^-

$\overset{less}{\Longleftarrow}$ real Jia $(1,0)$ X^+ $\overset{less}{\Longleftrightarrow}$ real Yi $(0,0)$ X^-

And if a subsystem X *of a steady multilateral system* V *falls a virtual disease, then the disease comes from the son* X_S *of* X.

The transfer law of the **Yin** *vital or righteousness energies of the ten heavenly stems is transferring* **along** *the killing or liking order of the ten heavenly stems as follows:*

virtual Yi $(0,0)$ X^- $\overset{less}{\Longleftrightarrow}$ virtual Jia $(1,0)$ X^+

$\overset{rare}{\Longrightarrow}$ virtual Ji $(0,2)$ X_K^- $\overset{less}{\Longleftrightarrow}$ virtual Wu $(1,2)$ X_K^+

$\overset{rare}{\Longrightarrow}$ virtual Gui $(0,4)$ S_X^- $\overset{less}{\Longleftrightarrow}$ virtual Ren $(1,4)$ S_X^+

$\overset{rare}{\Longrightarrow}$ virtual Ding $(0,1)$ X_S^- $\overset{less}{\Longleftrightarrow}$ virtual Bing $(1,1)$ X_S^+

$\overset{more}{\Longrightarrow}$ real Xin $(0,3)$ K_X^- $\overset{less}{\Longleftrightarrow}$ real Geng $(1,3)$ K_X^+

$\overset{less}{\Longrightarrow}$ virtual Yi $(0,0)$ X^- $\overset{less}{\Longleftrightarrow}$ virtual Jia $(1,0)$ X^+.

All transfer laws of the **Zangxiang** *system or the* **ten Heavenly Stems model for an unhealthy economy** *are summarized in* Figure 2. *It means that only both the liking relation and the killing relation have the transfer law of the* **Yang or Yin** *vital or righteousness energies of the ten heavenly stems .* **Yang** *is transferring* **against** *the killing or liking order of the ten heavenly stems.* **Yin** *is transferring* **along** *the killing or liking order of the ten heavenly stems.#*

Theorem 3.5 (**The transfer law of the twelve Earthly Branches with an unhealthy**) *Let the RPI inflation rate* $x \notin [0.8789\%, 5.2241\%]$ *which is equivalent to the conditions* $\rho_0 > \rho_1 = \rho(x) > 0$ *and* $0 \leq c \leq 1$.

The transfer law of each of the 12 kinds of energy in the **Jingluo** *system or the* **twelve Earthly Branches model for an unhealthy economy** *is from its* **root-causes** *to its* **symptoms**.

Furthermore, for the unhealthy economy, if a subsystem X *of a steady multilateral system* V *falls a real disease, then the disease comes from the mother* S_X *of* X. *The transfer law of the* **Yang** *vital energies of the twelve earthly branches is transferring* **against** *the killing or liking order of the twelve earthly branches as follows:*

real Mao	real Hai	real Wei
$K_X^+ (1,(12)) \overset{rare}{\Longleftarrow}$	$X_S^{x+}(1,e)$	$X_S^{j+}(1,(13)) \overset{rare}{\Longleftarrow}$
$\Updownarrow$ less	$\Updownarrow$ less	$\Updownarrow$ less
$\overset{rare}{\Longleftarrow}$ real Yin	real Xu	real Wu
$K_X^- (1,(132))$	$X_S^{x-}(1,(23)) \overset{less}{\Longleftrightarrow}$	$X_S^{j-}(1,(123))$
$\overset{rare}{\Longleftarrow}$ real Shen	virtual Chen	real Zi
$S_X^+ (0,(13))$	$X_K^+ (0,(12)) \overset{less}{\Longleftarrow}$	$X^+ (0,e)$
$\Updownarrow$ less	$\Updownarrow$ less	$\Updownarrow$ less
real You	virtual Si	real Chou
$S_X^- (0,(123)) \overset{more}{\Longleftarrow}$	$X_K^- (0,(132))$	$X^- (0,(23)) \overset{rare}{\Longleftarrow}$.

For the unhealthy economy, if a subsystem X *of a steady multilateral system* V *falls a virtual disease, then the disease comes from the son* X_S *of* X. *The transfer law of the* **Yin** *vital energies of the twelve earthly branches is transferring* **along**

the killing or liking order of the twelve earthly branches as follows:

real Mao

$$K_X^+(1,(12)) \overset{less}{\Longrightarrow}$$

$$\Updownarrow less$$

$$\overset{more}{\Longrightarrow} \text{real Yin}$$

$$K_X^-(1,(132))$$

$$\overset{rare}{\Longrightarrow} \text{virtual Shen}$$

$$S_X^+(0,(13))$$

$$\Updownarrow less$$

virtual You

$$S_X^-(0,(123)) \overset{less}{\Longrightarrow}$$

virtual Zi

$$X^+(0,e)$$

$$\Updownarrow less$$

virtual Chou

$$X^-(0,(23)) \overset{rare}{\Longrightarrow}$$

virtual Wei

$$X_S^{+j}(1,(13)) \overset{less}{\Longleftrightarrow}$$

$$\Updownarrow less$$

virtual Wu

$$X_S^{-j}(1,(123))$$

virtual Chen

$$X_K^+(0,(12)) \overset{rare}{\Longrightarrow}$$

$$\Updownarrow less$$

virtual Si

$$X_K^-(0,(132))$$

virtual Hai

$$X_S^{-x}(1,e)$$

$$\Updownarrow less$$

virtual Xu

$$X_S^{-x}(1,(23)) \overset{more}{\Longrightarrow}.$$

*All transfer laws of the **Jingluo** system or the **twelve Earthly Branches model for an unhealthy economy** are summarized in Figure 3. It means that only both the liking relation and the alternate relation have the transfer law of the **Yang or Yin** vital or righteousness energies of the twelve earthly branches. **Yang** is transferring **against** the killing or liking order of the twelve earthly branches. **Yin** is transferring **along** the killing or liking order of the twelve earthly branches. #*

Remark 5. Theorems **3.4** and **3.5** are called the transfer law of occurrence and change of energies with an unhealthy economy, simply, **the second transfer law**.

For a **Yin** energy of X and *the **Zangxiang** system or the **ten Heavenly Stems model for an unhealthy economy***, the second transfer law is transferring **along** the killing or liking order of the ten heavenly stems as follows:

$$\overset{less}{\Longrightarrow} \text{virtual } X^- \overset{less}{\Longleftrightarrow} \text{virtual } X^+$$

$$\overset{rare}{\Longrightarrow} \text{virtual } X_K^- \overset{less}{\Longleftrightarrow} \text{virtual } X_K^+$$

$$\overset{rare}{\Longrightarrow} \text{virtual } S_X^- \overset{less}{\Longleftrightarrow} \text{virtual } S_X^+$$

$$\overset{rare}{\Longrightarrow} \text{virtual } X_S^- \overset{less}{\Longleftrightarrow} \text{virtual } X_S^+$$

$$\overset{more}{\Longrightarrow} \text{real } K_X^- \overset{less}{\Longleftrightarrow} \text{real } K_X^+$$

$$\overset{less}{\Longrightarrow} \text{virtual } X^- \overset{less}{\Longleftrightarrow} \text{virtual } X^+.$$

For a **Yang** energy of X and **the Zangxiang system or the ten Heavenly Stems model for an unhealthy economy,** the second transfer law is transferring **against** the killing or liking order of the ten heavenly stems as follows:

$$\overset{less}{\Longleftarrow} \text{real } X^+ \overset{less}{\Longleftrightarrow} \text{real } X^-$$

$$\overset{rare}{\Longleftarrow} \text{real } K_X^+ \overset{less}{\Longleftrightarrow} \text{real } K_X^-$$

$$\overset{rare}{\Longleftarrow} \text{real } X_S^+ \overset{less}{\Longleftrightarrow} \text{real } X_S^-$$

$$\overset{rare}{\Longleftarrow} \text{real } S_X^+ \overset{less}{\Longleftrightarrow} \text{real } S_X^-$$

$$\overset{more}{\Longleftarrow} \text{virtual } X_K^+ \overset{less}{\Longleftrightarrow} \text{virtual } X_K^-$$

$$\overset{less}{\Longleftarrow} \text{real } X^+ \overset{less}{\Longleftrightarrow} \text{real } X^-.$$

For a **Yin** energy of X and **the Jingluo system or the twelve Earthly Branches model for an unhealthy economy ,** the second transfer law is transferring **along** the killing or liking order of the twelve earthly branches as follows:

$$\overset{less}{\Longrightarrow} \text{virtual Zi } X^+ \overset{less}{\Longleftrightarrow} \text{virtual Chou } X^-$$

$$\overset{rare}{\Longrightarrow} \text{virtual Si } X_K^- \overset{less}{\Longleftrightarrow} \text{virtual Chen } X_K^+$$

$$\overset{rare}{\Longrightarrow} \text{virtual Shen } S_X^- \overset{less}{\Longleftrightarrow} \text{virtual You } S_X^-$$

$$\overset{rare}{\Longrightarrow} \text{virtual Wu } X_S^{j-} \overset{less}{\Longleftrightarrow} \text{virtual Wei } X_S^{j+}$$

$$\overset{less}{\Longleftrightarrow} \text{virtual Hai } X_S^{x+} \overset{less}{\Longleftrightarrow} \text{virtual Xu } X_S^{x-}$$

$$\overset{more}{\Longrightarrow} \text{real Yin } K_X^- \overset{less}{\Longleftrightarrow} \text{real Mao } K_X^+$$

$$\overset{less}{\Longrightarrow} \text{virtual Zi } X^+ \overset{less}{\Longleftrightarrow} \text{virtual Chou } X^-.$$

For a **Yang** energy of X and **the Jingluo system or the twelve Earthly Branches model for an unhealthy economy,** the second transfer law is transferring **against** the killing or liking order of the twelve earthly branches as follows:

$$\overset{less}{\Longleftarrow} \text{real Zi } X^+ \overset{less}{\Longleftrightarrow} \text{real Chou } X^-$$

$$\overset{less}{\Longleftarrow} \text{real Yin } K_X^- \overset{less}{\Longleftrightarrow} \text{real Mao } K_X^+$$

$$\overset{rare}{\Longleftarrow} \text{real Hai } X_S^{x+} \overset{less}{\Longleftrightarrow} \text{real Xu } X_S^{x-}$$

$$\overset{less}{\Longleftrightarrow} \text{real Wu } X_S^{j-} \overset{less}{\Longleftrightarrow} \text{real Wei } X_S^{j+}$$

$$\overset{rare}{\Longleftarrow} \text{real Shen } S_X^+ \overset{less}{\Longleftrightarrow} \text{real You } S_X^-$$

$$\overset{more}{\Longleftarrow} \text{virtual Si } X_K^- \overset{less}{\Longleftrightarrow} \text{virtual Shen } X_K^+$$

$$\overset{less}{\Longleftarrow} \text{real Zi } X^+ \overset{less}{\Longleftrightarrow} \text{real Chou } X^-.$$

The transfer relationship of the second transfer law running is the killing or liking relationship, denoted by $\Longrightarrow$ or $\Longleftrightarrow$. The running condition of the second transfer law is both $(\rho_1 + \rho_2\rho_3) < (1 - \rho_2\rho_3)$ and $\rho_3 = c\rho(x) \geq 0$.

By Theorem **2.1** and Corollary **2.1**, the running condition is equivalent to both $\rho_0 > \rho_1 = \rho(x) > 0$ and $1 \geq c \geq 0$. That $\rho_3 = c\rho(x) \to 0$ means the lack of capability of self-protection. Of course, it is the basis condition of running the second transfer law.

The stopping condition of the second transfer law is both $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$ and $\rho_3 = c\rho(x) > 0$, which is the running condition of the first transfer law, or, the existence condition of capabilities of both intervention reaction and self-protection. To follow or utilize the running of the second transfer law is equivalent to the following method. For dong so, it is to protect and maintain the killing or liking relationship of the steady multilateral system. The method can strengthen all of both $\rho_1 - \rho_3 = \rho(x)(1-c)$ and $\rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c)$ tending to be small at the same time. In other words, using the method can make c tends to be large for a fixed $\rho(x) > 0$. It is because the transferring condition of the killing or liking relation disease $(\rho_1 + \rho_2\rho_3) < (1 - \rho_2\rho_3)$ is the weaker the use, which dues to $\rho_3 = c\rho(x)$ is the greater the use. The transferring way can make both $\rho_1 - \rho_3 \to 0$ and $\rho_2 - \rho_1\rho_3 \to 0$ at the same time such that the killing or liking relation disease cannot be transferred. In other words again, if the treatment principle of the killing relationship diseases is to use continuously abiding by the second transfer law, then the coefficient of self-protection will tend to be the occurrence state, i.e., $\rho_3 = c\rho(x) > 0$ where

$1 \geq c \geq \dfrac{1 - \rho(x)}{2\rho(x)^3} \geq 0$, and the coefficients of intervention reaction also will tend to the healthy state, i.e., $\rho_0 \leq \rho_1 = \rho(x) \leq 1$, such that $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$.#

Medical and drug resistance problem is that such a question, beginning more appropriate medical treatment, but is no longer valid after a period. In the state

$$\rho_1 - \rho_3 = \rho(x)(1 - c) \longrightarrow 0,$$
$$\rho_2 - \rho_1\rho_3 = \rho(x)^2(1 - c) \longrightarrow 0,$$

by Theorems **3.2** and **3.3**, any medical and drug resistance problem is non-existence if the treatment principle of TCE is used. But in the state

$$\rho_1 - \rho_3 = \rho(x)(1 - c) \longrightarrow \rho(x),$$
$$\rho_2 - \rho_1\rho_3 = \rho(x)^2(1 - c) \longrightarrow \rho(x)^2,$$

by Theorems **3.4** and **3.5**, the medical and drug resistance problem is always existence, even if the treatment principle of TCE has been used. It is because virtual X_K cannot kill real S_X if X is intervened by increasing its energy. In other words, the lack of capability of self-protection, i.e., $\rho_3 = c\rho(x) \longrightarrow 0$, implies the possible existence of a medical and drug resistance problem, although the treatment principle of TCE has been used. At this point, the paper advocates to follow or utilize the second transfer law in order to prevent and avoid the medical and drug resistance issue occurrence for the unhealthy economy.#

IV. TREATMENT PRINCIPLE OF TCE

In order to explain treatment principle of TCE , the changes in the range of RPI inflation rate is divided into four parts. From [20] , Theorems **2.1**, **3.1-3.5**, Properties **3.1-3.4** and Corollary **2.1**, it can be easily proved that the following theorem is true.

Theorem 4.1 *Suppose that the subsystem X of a steady multilateral system falls ill. Let x be the economy RPI inflation rate of the steady multilateral system. Denoted the parameters of the normal range as follows*

$a = 0.8789\%, b = 5.2241\%, t_0 = 2.7047\%.$

Then the following statements are true.

*(1) Suppose that $x < a$ as **virtual**, in which X or X_K falls a virtual disease with an unhealthy economy. The subsystem X or X_K itself is the root-cause of a happened virtual disease. And the son X_S of X is the symptoms of an expected or a happened virtual disease. The primary treatment is to increase the energy of the subsystem X or X_K directly. And the secondary treatment is to increase the energy of the son X_K of X , and at the same time, to decrease the energy of the prisoner K_X of X_S .*

*(2) Suppose that $x \in [a, t_0)$ as **virtual-normal**, in which X or S_X will fall a virtual disease with a healthy economy. The mother S_x of X is the root-cause of an expected virtual disease. And the subsystem X or S_X is the symptoms of an expected virtual disease. The primary treatment is to increase the energy of the mother subsystem S_x of X which is an indirect treating for X . And the secondary treatment is to increase the energy of X itself,*

and at the same time, to decrease the energy of the prisoner X_K of X .

*(3) Suppose that $x \in [t_0, b]$ as **real-normal**, in which X or X_S will encounter a real disease with a healthy economy. The son X_S of X is the root-cause of an expected real disease. And the subsystem X itself is the symptoms of an expected real disease. The primary treatment is to decrease the energy of the son subsystem X_S of X which is an indirect treating for X . And the secondary treatment is to decrease the energy of X itself, and at the same time, to increase the energy of the bane K_X of X .*

*(4) Suppose that $x > b$ as **real**, in which X or K_X encounters a real disease with an unhealthy economy. The subsystem X or K_X itself is the root-cause of an expected or a happened real disease. And the mother S_X of X is the symptoms of an expected real disease. The primary treatment is to decrease the energy of the subsystem X or K_X directly. And the secondary treatment is to decrease the energy of the mother S_X of X , and at the same time, to increase the energy of the bane X_K of S_X . #*

Remark 6. Treatment principle of Theorem **4.1** based on ranges of the economy RPI inflation rate is called **the treatment principle of TCE**, since it is in order to protect and maintain the balance of two incompatibility relations: the loving or liking relationship and the killing or liking relationship.

For the unhealthy economy where $x < a$ or $x > b$, the treatment principle is the method for doing so in the following:

The primary treatment is to increase or decrease the energy of X directly corresponding to $x < a$ or $x > b$ respectively, and the secondary treatment is to increase the energy of X_S or X_K while to decrease the energy of K_X or S_X , respectively.

The primary treatment is in order to protect and maintain the loving or liking relationship, abiding by TCE's ideas "Virtual disease with an unhealthy economy is to fill itself" and "Real disease with an unhealthy economy is to rush down itself". It is because the method for dong so is not only greatly medical diseases of their own, but also provides the pseudo side effects as the food for the second physiological system. The method is to promote the first physiological system running since the second physiological system controls the first physiological system. And it is also to improve the loving or liking relationship to develop since the loving or liking relationship mainly comes from the first physiological system. The loving or liking relationship to develop can strengthen both that $\rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^2$ tends to be large and that $1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ tends to be small at the same time. In other words, the way can make all of both $\rho(x)$ and c tend to be large, at least, c greater than zero for an unhealthy economy and $\rho_0 \leq \rho(x) \leq 1$, such that the economy from unhealthy to healthy, or the first physiological system works, or, the occurrence of capability

of self-protection, or, the running of the first transfer law, or, the stopping of the second transfer law.

The secondary treatment is in order to protect or maintain the killing or liking relationship, abiding by TCE's ideas "Don't have disease cure cure non-ill" and "Strong inhibition of the same time, support the weak". By the second transfer law in Theorems **3.4** and **3.5**, the more serious relation disease is the relation disease between virtual X_S and real K_X, or between real S_X and virtual X_K respectively.

Abiding by TCE's idea "Don't have disease cure cure non-ill", it must be done to prevent or avoid the more serious relation disease between virtual X_S and real K_X, or between real S_X and virtual X_K occurrence respectively.

Abiding by TCE's idea 'Strong inhibition of the same time, support the weak", it must be done to increase the energy of X_S or X_K while decrease the energy of K_X or S_X respectively.

The method for doing so can improve the killing or liking relationship to develop since real X_S or X_K can kill virtual K_X or S_X respectively. The killing or liking relationship to develop means that both $\rho_1 - \rho_3 = \rho(x)(1-c)$ and $\rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c)$ tend to be small at the same time. In other words, the way can make, for fixed $\rho(x)$, c tending to be large, at least, greater than zero for an unhealthy economy, such that the economy from unhealthy to healthy, or the first physiological system works, or, the occurrence of capability of self-protection, or, the running of the first transfer law, or, the stopping of the second transfer law.

For the healthy economy where $x \in [a, t_0]$ or $x \in (t_0, b]$, the treatment principle is the method for doing so in the following:

The primary treatment is to increase or decrease the energy of S_X or X_S corresponding to $x \in [a, t_0]$ or $x \in (t_0, b]$ respectively, and the secondary treatment to increase the energy of K_X or X while to decrease the energy of X or X_K, respectively.

The primary treatment is in order to protect and maintain the loving or liking relationship, abiding by TCE's ideas "Virtual disease with a healthy economy is to fill mother" and "Real disease with a healthy economy is to rush down its son". It is because the method for dong so is not only greatly medical diseases of their own, but also provides the pseudo side effects as the food for the second physiological system. The method is to promote the first physiological system running since the second physiological system controls the first physiological system. And it is also to improve the loving or liking relationship developing since the loving or liking relationship mainly comes from the first physiological system. The loving or liking relationship developing can strengthen both that $\rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^2$ tends to be large and that $1 - \rho_2\rho_3 = 1 - c\rho(x)$ tends to be small at the same time. In other words, using the way can make all of both $\rho(x)$ and $0 < c$ tending to be large, the best, all equal to 1 for a healthy economy, such that the capability of self-protection is in the best state, or, the non-existence of side

effects issue, or, the non-existence of medical and drug resistance problem.

The secondary treatment is in order to protect or maintain the killing or liking relationship, abiding by TCE's ideas "Don't have disease cure cure non-ill" and "Strong inhibition of the same time, support the weak". By the first transfer law, the more serious relation disease is the relation disease between real x and virtual K_X or between virtual x and real X_K corresponding to real x or virtual x, respectively.

Abiding by TCE's idea "Don't have disease cure cure non-ill", it must be done to prevent and avoid the more serious relation disease between real x and virtual K_X or between virtual x and real X_K occurrence corresponding to real X or virtual x respectively.

Abiding by TCE's idea "Strong inhibition of the same time, support the weak", it must be done to increase the energy of K_X or x while decrease the energy of x or X_K respectively.

The method for doing so can improve the killing or liking relationship developing since real K_X or real X can kill virtual x or virtual X_K respectively. The killing or liking relationship developing also means that both $\rho_1 - \rho_3 = \rho(x)(1-c)$ and $\rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c)$ tend to be small at the same time. In other words, using the way can make, for fixed $\rho(x)$, $0 < c$ tending to be large, the best, equal to 1 for a healthy economy, such that the capability of self-protection is in the best state, or, the non-existence of side effects, or, the non-existence of medical and drug resistance issue. #

V. CHINESE RPI FOR THE WOOD SUBSYSTEM

Suppose that M_2 as issued in the circulation of money and GDP as Gross Domestic Product in Chinese from 1990 to 2014, the annual RPI and the annual RPI inflation rates can be measured in Table 3.

Also watching Table 3, the state of the RPI inflation rate is: real, real, real, real, real, real-normal, for 1991-1996, respectively. During this period of time, large-scale goods have been made.

It means that the subsystem wood(x) of the economic social system with an unhealthy economy encounters a real economic disease since the RPI inflation rate belongs to "industry" of wood(x).

Also watching Table 3, the state of the GBR inflation rate is: virtual, virtual-normal, real, real-normal, real-normal, real-normal, for 1991-1996, respectively.

It means that the subsystem metal(K_X) of the economic social system with a healthy economy encounters an expected real economic disease since the GBR inflation rate belongs to "science, education, and public facilities" of metal(K_X).

There are two subsystems wood(x) and metal(K_X) which have the killing relationship and fall a real disease or an expected real disease. By Definition 3.2 in Zhang [23], the relation economic disease is **rare** because real-normal metal(K_X) cannot kill real wood(x) which cannot destroy the balance of the killing relation from metal(K_X) to wood(x). If

metal(K_X) is intervened such that it is from real to virtual, then there is **a more serious disease** to occur since virtual metal(K_X) cannot kill real wood(X). Thus the mainly root-cause is the real disease of the subsystem wood(X).

So, at present the most serious problem is to treat the subsystem wood(X) falling a real disease for an unhealthy sub-economy. It is the case in (4) of Theorem **4.1** for wood(X).

By (4) of Theorem **4.1**, the subsystem wood(X) itself is the root-cause of a happened real disease. And the mother subsystem water(S_x) of wood(X) is the symptoms of an expected real disease.

By (4) of Theorem **4.1** again, the primary treatment is gotten to decrease the energy of the subsystem wood(X) directly. And the secondary treatment is gotten to decrease the energy of the mother water(S_x) of wood(X), and at the same time, to increase the energy of the bane earth(X_K) of water(S_x).

In fact, the Chinese government did just that. For 1993-1999, not only had decreased gradually the financial amounts of investment in the manufacture (to decrease the energy of the subsystem wood(X) directly), but also had decreased investment in the Army , such as, big disarmament, a freeze on a large number of military engineering, etc. (for decreasing the energy of water(S_x)) while had increased little by little the workers' wages, the social security and social welfare, such as, the public accumulation fund for housing construction, pension funds, medical insurance, unemployment insurance, etc.(to increase the energy of earth(X_K)).

Also watching Table 3, the state of the RPI inflation rate is: virtual, virtual, virtual, real-normal, virtual, virtual, virtual-normal, for 1997-2003, respectively. During this period of time, mass goods cannot be made. Supplies are still scarce. Rush on still appear on the market.

It means that the subsystem wood(X) falls a virtual disease for an unhealthy economy since the RPI inflation rate belongs to the "industry" of wood(X).

But also watching Table 3, the state of the CPI inflation rate is virtual-normal, virtual, virtual, virtual, virtual, virtual, virtual, for 1997-2003, respectively.

It means that the subsystem earth(X_K) of the economic social system with an unhealthy economy encounters a virtual economic disease since the CPI inflation rate belongs to "commerce" of earth(X_K).

There are two subsystems wood(X) and earth(X_K) which have the killing relation and fall virtual diseases. By Definition 3.2 in Zhang [23], the relation disease between virtual wood(X) and virtual earth(X_K) is **rare** since virtual wood(X) cannot kill virtual earth(X_K) which cannot destroy the killing order from wood(X) to earth(X_K). But if the subsystem earth(X_K) is intervened such that it is from virtual to real, there is **a more serious relation disease** between virtual wood(X) and real earth(X_K). It is because the virtual

wood(X) cannot kill the real earth(X_K) which can destroy the balance of the killing relation from wood(X) to earth(X_K).

So, at present the most serious problem is to treat the subsystem wood(X) falling a virtual disease for an unhealthy sub-economy. It is the case in (1) of Theorem **4.1** for wood(X).

By (1) of Theorem **4.1**, the subsystem earth(X_K) itself is the root-cause of a happened virtual disease. And the son subsystem metal(K_X) of earth(X_K) is the symptoms of an expected virtual disease.

By (1) of Theorem **4.1**, the primary treatment is gotten to increase the energy of the subsystem wood(X) directly. And the secondary treatment is gotten to increase the energy of the son fire(X_S) of wood(X), and at the same time, to decrease the energy of the prisoner metal(K_X) of fire(X_S).

In fact, the Chinese government did just that. For 1999-2008, not only had increased gradually the financial amounts of investment in the manufacture (e.g.,to invest in real estate, to increase the energy of the subsystem wood(X) directly), but also had increased to make money, and investment in the agriculture, such as, exempt from the agricultural taxation, increase of agricultural land expropriation compensation, etc. (to increase the energy of fire(X_S) including jun-fire(X_S^j) and xiang-fire(X_S^x)) while had decreased in the science and education, such as, a small amount of teachers and researchers for a raise, schools and research institutions self-sustaining, etc.(to decrease the energy of metal(K_X)).

Therefore, application of nature for the treatment principle of TCE by the Chinese government had brought the sustained and rapid growth of industry economy for 1991-2008.

Also watching Table 3 again, the state of the RPI inflation rate is: real, real-normal, real-normal, real-normal, real, virtual, real-normal, real, for 2004-2011, respectively. During this period of time, large-scale goods have been still made. But a lot of society problems begin occurring.

It means the subsystem wood(X) is mainly with a healthy sub-economy. It is because the manufacture of large-scale goods or the normal RPI inflation rate belongs to "industry" of the subsystem wood(X).

But the Finance inflation rate is continuously smaller than $a^6 = 2.9515\%$ (deflation) from 2004 to 2008 as virtual, except for 2005 year's normal state. It means the whole economy still is unhealthy. Its some subsystem still has encountered a virtual disease. Observation of the whole economic and social five subsystems, it can be found that there is a virtual disease state of the subsystem earth(X_K).

There are two subsystems wood(X) and earth(X_K) which have the killing relation. But the subsystem wood(X) is real-normal and the subsystem earth(X_K) falls a virtual disease. By Definition 3.2 in Zhang [23], the relation disease between real wood(X) and virtual earth(X_K) is **less** since real wood(X) can kill virtual earth(X_K) which cannot destroy the killing order from wood(X) to earth(X_K). Now the subsystem

earth(X_K) can be intervened such that it is from virtual to real-normal.

So, at present the most serious problem is to treat the subsystem earth(X_K) falling a virtual disease for an unhealthy sub-economy of earth(X_K). It is the case in (1) of Theorem **4.1** for earth(X_K).

By (1) of Theorem **4.1**, the subsystem earth(X_K) itself is the root-cause of a happened virtual disease. And the son subsystem metal(K_X) of earth(X_K) is the symptoms of an expected virtual disease.

The X_K as X in theorem **4.1**, using (1) of Theorem **4.1** again, the primary treatment is gotten to increase the energy of the subsystem earth(X_K) directly. And the secondary treatment is gotten to increase the energy of the son metal(K_X) of earth(X_K), where $(X_K)_S = K_X$ in Figure 1, and at the same time, to decrease the energy of the bane wood(X) of earth(X_K),where $K_{(X_K)} = X$ in Figure 1.

In fact, the Chinese government did just that. For 2004-2014, not only had increased the financial amounts of investment in commerce, such as, strengthen the support for the WTO trade, etc. (to increase the energy of the subsystem earth(X_K) directly), but also had increased investment in science, education and public facilities, such as to build high speed rail, etc. (to increase the energy of metal(K_X)) while had reduced the industrial support, such as, the appreciation of the RMB, etc. (to decrease the energy of wood(X)).

Therefore, again application of nature for the treatment principle of TCE by the Chinese government had brought the 2004-2014 economic taking off again.

Also watching Table 3 again and again, the state of the RPI inflation rate is: virtual, virtual, virtual, for 2012-2014, respectively.

It means that the the subsystem wood(X) is a happen virtual disease for an unhealthy sub-economy. It is because the manufacture of large-scale goods or the RPI inflation rate belongs to"industry" of the subsystem wood(X).

The virtual disease of wood(X) is not because of its low energy, but because of its energy is too high to make producing products too much, so much so that there is no way to sell products, low profit of industrial production. In the TCE, this disease is Yang irritability turned to deficiency disease. This disease is not the current urgent problems since it cannot destroy the killing order balance of the economy.

But if this virtual-normal disease of wood(X) is continuously to develop, by Theorems **3.2** and **3.3**, the virtual wood(X) will make its mother subsystem water(S_X) falling a virtual economic disease when it encounters an economic disease. In fact, the economic indicators of GDP which belongs to the subsystem water(S_X) is beginning to decline. Abiding by TCE's idea "Don't have economic disease cure cure non-ill", the prevention and treatment of the current work is the need to prevent the virtual disease of the subsystem water(S_X) for a healthy economy.

So, at present the most serious problem is to treat the subsystem water(S_X) falling a virtual disease with a healthy sub-economy of the subsystem of the subsystem water(S_X). It is the case in (2) of Theorem **4.1** for water(S_X).

By (2) of Theorem **4.1**, the mother subsystem metal(K_X) of water(S_X) is the root-cause of an expected virtual disease. And the subsystem water(S_X) itself is the symptoms of an expected virtual disease.

The S_X as X in (2) of Theorem **4.1**, the primary treatment is gotten to increase the energy of the mother subsystem metal(K_X) of the water(S_X), where $S_{(S_X)} = K_X$ in Figure 1. And the secondary treatment is gotten to increase the energy of the water(S_X) itself while decrease the energy of the prisoner fire(X_S) of the water(S_X) ,where $(S_X)_K = X_S$ in Figure 1.

In fact, the Chinese government also is doing just that. Since 2015, not only has increased continuously investment in science, education and public facilities, such as, One Belt and One Road, etc. (for increasing the energy of metal(K_X)), but also has increased to military spending (to increase the energy of the water(S_X)) while has reduced the number of making money, and reduced the agricultural support, such as, reduce the purchase price of agricultural products, etc. (to decrease the energy of fire(X_S) including jun-fire(X_S^j) and xiang-fire(X_S^x)). Therefore, again and again application of nature for the treatment principle of TCE by the Chinese government will lead to economic continue to glory since 2015.#

VI. CONCLUSIONS

This work shows how to treat the diseases of a economy by using the RPI inflation rate x . For the RPI inflation rate, the normal range of theory is $[0.8789\%, 5.2241\%]$ nearly to $[1\%, 5\%]$, and the center is 2.7047% nearly to 3% . By both the **Zangxiang** system or the **ten Heavenly Stems model** and the **Jingluo** system or the **twelve Earthly Branches model,** there are the first or second transfer law of economic energies corresponding to a healthy economy or an unhealthy economy respectively. The first or second transfer law of economic energies changes according to the different economy's RPI inflation rate whether in the normal range or not. For the normal range, the first transfer law of economic energies in Theorems **3.2** and **3.3** run; For the abnormal range, the second transfer law of economic energies in Theorems **3.4** and **3.5** run.

Assume that the range of economy's RPI inflation rate x is divided into four parts from small to large. Both second and third are for a healthy economy with a virtual or real disease respectively. In this case, the root-cause of a virtual or real disease is the mother or son of the falling-ill subsystem X respectively, and the symptoms is the subsystem X itself. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time"（治病求本, 标本兼治）, the works

are first the prevention or the treatment for the mother or son of a virtual or real disease respectively, the second the prevention or the treatment for a more serious relation disease between virtual x and real X_K or between real x and virtual K_X, respectively. Both the root-cause and the symptoms come from the first transfer law of economic energies in Theorems **3.2** and **3.3**.

And both first and fourth are for an unhealthy economy with a virtual or real disease respectively. In this case, the root-cause of a virtual or real disease is the subsystem X itself and the symptoms the son or mother of the falling-ill subsystem X respectively. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), the works are first the prevention or the treatment for itself of a virtual or real disease respectively, the second are the prevention or the treatment for a more serious relation disease between virtual X_S and real K_X or between real S_X and virtual X_K, respectively. Both the root-cause and the symptoms come from the second transfer law in Theorems **3.4** and **3.5**.

Economic disease treatment should protect and maintain the balance or order of two incompatibility relations: the loving or liking relationship and the killing or liking relationship. The method for doing so can make the $\rho_3 = c\rho(x)$ tending to be large, i.e., all of both $\rho(x)$ and c tend to be large, at least, greater than zero for an unhealthy economy; or, the best, equal to 1 for a healthy economy.

The following way can make the capabilities of both intervention reaction and self-protection become in the best state, the non-existence of side effects issue, the non-existence of medical and drug resistance problem, and so on.

(1) Suppose that $x < a = 0.8789\%$, as **virtual**, in which x or X_K falls a virtual disease with an unhealthy economy. The subsystem x or X_K itself is the root-cause of a happened virtual disease. And the son X_S of x is the symptoms of an expected or a happened virtual disease. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), it should be done to do in the following.

In order to protect or maintain the loving relationship, abiding by TCE's idea "Virtual disease with an unhealthy economy is to fill itself" (虚则补之), increase the energy of x or X_K directly.

In order to protect or maintain the killing relationship, abiding by TCE's idea "Don't have disease cure cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual X_S and real K_X.

Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), increase the energy of the son X_S of x while decrease the energy of the prisoner K_X of X_S.

(2) Suppose that $a = 0.8789\% \le x < t_0 = 2.7047\%$, as **virtual-normal**, in which x or S_X falls a virtual disease with a healthy economy. The mother S_X of the subsystem x is the root-cause of an expected virtual disease. And the subsystem x itself is the symptoms of an expected virtual disease. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), it should be done to do in the following.

In order to protect or maintain the loving relationship, abiding by TCE's idea "Virtual disease with a healthy economy is to fill its mother" (虚则补其母), increase the energy of the mother S_X of x. The treating way is an indirect treating for x.

In order to protect or maintain the killing relationship, abiding by TCE's idea "Don't have disease cure cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual x and real X_K.

Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), increase the energy of x itself while decrease the energy of the prisoner X_K of x.

(3) Suppose that $t_0 = 2.7047\% \le x \le b = 5.2241\%$, as **real-normal**, in which X or X_S falls a real disease with a healthy economy. The son X_S of the subsystem x is the root-cause of an expected real disease. And the subsystem x itself is the symptoms of an expected real disease. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), it should be done to do in the following.

In order to protect or maintain the loving relationship, abiding by TCE's idea "Real disease with a healthy economy is to rush down its son" (实则泄其子), decrease the energy of the son X_S of x. The treating way is an indirect treating for x.

In order to protect or maintain the killing relationship, abiding by TCE's idea "Don't have disease cure cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation isease between real x and virtual K_X.

Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), decrease the energy of x itself while increase the energy of the bane K_X of x.

(4) Suppose that $x > b = 5.2241\%$, as **real**, in which x or K_X falls a real disease with an unhealthy economy. The subsystem X or K_X itself is the root-cause of a happened real disease. And the mother S_X of x is the symptoms of an expected or a happened real disease. Abiding by TCE's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), it should be done to do in the following.

In order to protect or maintain the loving relationship, abiding by TCE's idea "Real disease with an unhealthy economy is to rush down itself" (实则泄之), decrease the energy of X or K_X directly.

In order to protect or maintain the killing relationship, abiding by TCE's idea "Don't have disease cure cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between real S_X and virtual X_K.

Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), decrease the energy of the mother S_X of X while increase the energy of the bane X_K of S_X.

APPENDIX

Proof of Property 3.1. See Figure 3., since the emperor prosperous place of Jia Yang wood of the ten heavenly stems is in Mao of the twelve earthly branches, so the rowing place is in Hai. It is because by Definition **3.3**, counterclockwise to arrange, emperor as Mao, officer as Yin, crowned as Chou, bathing as Zi, rowing as Hai.

Similarly, the emperor prosperous place of Bing, Wu, Geng, Ren Yang fire, earth, metal, water of the ten heavenly stems is in Wu, Wu, You, Zi of the twelve earthly branches, so the rowing place is in Yin, Yin, Si Shen of the twelve earthly branches respectively.

See Figure 3. again, since the emperor prosperous place of Yi Yin wood of the ten heavenly stems is in Yin of the twelve earthly branches, so the rowing place is in Wu. It is because by Definition **3.3**, clockwise to arrange, emperor as Yin, officer as Mao, crowned as Chen, bathing as Si, rowing as Wu.

Similarly, the emperor prosperous place of Ding, Ji, Xin, Gui Yin fire, earth, metal, water of the ten heavenly stems is in Si, Si, Chen, Hai of the twelve earthly branches, so the rowing place is in You, You, Zi, Mao of the twelve earthly branches respectively.

Therefore, the five Yang heavenly stems: Jia, Bing, Wu, Geng, Ren was born Hai, Yin, Yin, Si, Shen respectively; The five Yin heavenly stems: Yi, Ding, Ji, Xin, Gui was born Wu, You, You, Zi, Mao respectively. It completes the proof.#

Proof of Property 3.2. By Definition **3.3** and Properties **3.3** and **3.4**, there are

$$\text{Zi}(0,e) = \{\text{Gui}(0,4)\},$$

$$\text{Chou}(0,(23)) = \{\text{Ji}(0,2),\text{Gui}(0,4),\text{Xin}(0,3)\},$$

$$\Rightarrow \text{Ji}(0,2)*\text{Gui}(0,4)*\text{Xin}(0,3) = \text{Gui}(0,4),$$

$$\text{Gui}(0,4)^{-1}*\text{Gui}(0,4) = \text{Yi}(0,0).$$

Therefore, the synthesized and synthesized or combined relationship between two elements

$\text{Zi}(0,e) = \{\text{Gui}(0,4)\}$ and $\text{Chou}(0,(23)) = \{\text{Ji}(0,0),\text{Gui}(0,4),\text{Xin}(0,3)\}$

is $\text{Yi}(0,0)$ as **wood** (X) in Theorem **3.1**.

Similarly, the synthesized and combined relationship between two elements

$\text{Yin}(1,(132)) = \{\text{Jia}(1,0),\text{Bing}(1,1),\text{Wu}(1,2)\}$ and $\text{Mao}(1,(12)) = \{\text{Yi}(0,0)\}$

is $\text{Geng}(1,3)$ as **metal**(K_X) in Theorem **3.1** since

$$\text{Yin}(1,(132)) = \{\text{Jia}(1,0),\text{Bing}(1,1),\text{Wu}(1,2)\},$$

$$\text{Mao}(1,(12)) = \{\text{Yi}(0,0)\},$$

$$\Rightarrow \text{Jia}(1,0)*\text{Bing}(1,1)*\text{Wu}(1,2) = \text{Geng}(1,3),$$

$$\text{Yi}(0,0)^{\pm 1}*\text{Geng}(1,3) = \text{Geng}(1,3).$$

The synthesized and synthesized relationship between two elements

$\text{Chen}(0,(12)) = \{\text{Yi}(0,0),\text{Wu}(1,2),\text{Gui}(0,4)\}$ and

$\text{Si}(0,(132)) = \{\text{Bing}(1,1),\text{Geng}(1,3),\text{Wu}(1,2)\}$

is $\text{Ji}(0,2)$ as **earth**(X_K) in Theorem **3.1** since

$$\text{Chen}(0,(12)) = \{\text{Yi}(0,0),\text{Wu}(1,2),$$

$$\text{Gui}(0,4)\},\text{Si}(0,(132)) = \{\text{Bing}(1,1),\text{Geng}(1,3),\text{Wu}(1,2)\}$$

$$\Rightarrow \text{Yi}(0,0)*\text{Wu}(1,2)*\text{Gui}(0,4) = \text{Bing}(1,1),$$

$$\text{Bing}(1,1)*\text{Geng}(1,3)*\text{Wu}(1,2) = \text{Bing}(1,1),$$

$$\text{Bing}(1,1)*\text{Bing}(1,1) = \text{Ji}(0,2).$$

The synthesized and synthesized relationship between two elements

$\text{Wu}(1,(123)) = \{\text{Ding}(0,1),\text{Ji}(0,2)\}$ and

$\text{Wei}(1,(13)) = \{\text{Ding}(0,1),\text{Ji}(0,2),\text{Yi}(0,0)\}$

is $\text{Ding}(0,1)$ as **xiang-fire**(X_S^x) (相火) in Theorem **3.1** since

$$\text{Wu}(1,(123)) = \{\text{Ding}(0,1),\text{Ji}(0,2)\},$$

$$\text{Wei}(1,(13)) = \{\text{Ding}(0,1),\text{Ji}(0,2),\text{Yi}(0,0)\},$$

$$\Rightarrow \text{Ding}(0,1)*\text{Ji}(0,2) = \text{Xin}(0,3),$$

$$\text{Ding}(0,1)*\text{Ji}(0,2)*\text{Yi}(0,0) = \text{Xin}(0,3),$$

$$\text{Xin}(0,3)*\text{Xin}(0,3) = \text{Ding}(0,1).$$

The synthesized relationship between between the comprehensive energy of two elements

$\text{Shen}(0,(13)) = \{\text{Geng}(1,3),\text{Ren}(1,4),\text{Wu}(1,2)\}$ and $\text{You}(0,(123)) = \{\text{Xin}(0,3)\}$

is $\text{Ren}(1,4)$ as **water**(S_X) in Theorem **3.1** since

$$\text{Shen}(0,(13)) = \{\text{Geng}(1,3),\text{Ren}(1,4),\text{Wu}(1,2)\},$$

$$\text{You}(0,(123)) = \{\text{Xin}(0,3)\},$$

$$\Rightarrow \text{Geng}(1,3)*\text{Ren}(1,4)*\text{Wu}(1,2) = \text{Ren}(1,4),$$

$$\text{Xin}(0,3)^{-1}*\text{Wu}(1,2) = \text{Ren}(1,4).$$

The synthesized relationship between two elements

$$\text{Xu}(1,(23)) = \{\text{Xin}(0,3),\text{Wu}(1,2),\text{Ding}(0,1)\}$$ and

$$\text{Hai}(1,e) = \{\text{Ren}(1,4),\text{Jia}(1,0)\}$$

is $\text{Bing}(1,1)$ as **jun-fire**(X_S^j) (君火) in Theorem **3.1** since

$$\text{Xu}(1,(23)) = \{\text{Xin}(0,3),\text{Wu}(1,2),\text{Ding}(0,1)\},$$

$$\text{Hai}(1,e) = \{\text{Ren}(1,4),\text{Jia}(1,0)\},$$

$$\Rightarrow \text{Xin}(0,3)*\text{Wu}(1,2)*\text{Ding}(0,1) = \text{Bing}(1,1),$$

$$\text{Ren}(1,4)^{-1}*\text{Jia}(1,0)*\text{Xin}(0,3)*\text{Wu}(1,2) = \text{Bing}(1,1).$$

Therefore, the following notations in Definition **3.2** is reasonable.

X^+	X_S^{x+}	X_K^+	K_X^+	S_X^+	X_S^{j+}	
$(0,e)$	$(1,e)$	$(0,(12))$	$(1,(12))$	$(0,(13))$	$(1,(13))$	It
X^-	X_S^{x-}	X_K^-	K_X^-	S_X^-	X_S^{j-}	
$(0,(23))$	$(1,(23))$	$(0,(132))$	$(1,(132))$	$(0,(123))$	$(1,(123))$.	

is with the correct meaning of the Yin Yang Wu Xing Model in Theorem **3.1**. #

Proof of Property 3.3. Consider the Zangxiang system or the ten Heavenly Stems model $V^2 \times V^5 = \{(i,j) \mid i \in V^2, j \in V^5\}$. Its all relations are as follows:

$R^{(2,5)}_{(0,0)} = \{((0,0),(0,0)),((1,0),(1,0)),$
$((0,1),(0,1)),((1,1),(1,1)),((0,2),(0,2)),$
$((1,2),(1,2)),((0,3),(0,3)),((1,3),(1,3)),$
$((0,4),(0,4)),((1,4),(1,4))\},$

$R^{(2,5)}_{(1,0)} = \{((0,0),(1,0)),((1,0),(0,0)),$
$((0,1),(1,1)),((1,1),(0,1)),((0,2),(1,2)),$
$((1,2),(0,2)),((0,3),(1,3)),((1,3),(0,3)),$
$((0,4),(1,4)),((1,4),(0,4))\},$

$R^{(2,5)}_{(0,1)} = \{((0,0),(0,1)),((1,0),(1,1)),$
$((0,1),(0,2)),((1,1),(1,2)),((0,2),(0,3)),$
$((1,2),(1,3)),((0,3),(0,4)),((1,3),(1,4)),$
$((0,4),(0,0)),((1,4),(1,0))\},$

$R^{(2,5)}_{(1,1)} = \{((0,0),(1,1)),((1,0),(0,1)),$
$((0,1),(1,2)),((1,1),(0,2)),((0,2),(1,3)),$
$((1,2),(0,3)),((0,3),(1,4)),((1,3),(0,4)),$
$((0,4),(1,0)),((1,4),(0,0))\},$

$R^{(2,5)}_{(0,2)} = \{((0,0),(0,2)),((1,0),(1,2)),$
$((0,1),(0,3)),((1,1),(1,3)),((0,2),(0,4)),$
$((1,2),(1,4)),((0,3),(0,0)),((1,3),(1,0)),$
$((0,1),(0,1)),((1,1),(1,1))\},$

$R^{(2,5)}_{(1,2)} = \{((0,0),(1,2)),((1,0),(0,2)),$
$((0,1),(1,3)),((1,1),(0,3)),((0,2),(1,4)),$
$((1,2),(0,4)),((0,3),(1,0)),((1,3),(0,0)),$
$((0,4),(1,1)),((1,4),(0,1))\},$

$R^{(2,5)}_{(0,3)} = \{((0,0),(0,3)),((1,0),(1,3)),$
$((0,1),(0,3)),((1,1),(1,3)),((0,2),(0,0)),$
$((1,2),(1,0)),((0,3),(0,1)),((1,3),(1,1)),$
$((0,4),(0,2)),((1,4),(1,2))\},$

$R^{(2,5)}_{(1,3)} = \{((0,0),(1,3)),((1,0),(0,3)),$
$((0,1),(1,4)),((1,1),(0,3)),((0,2),(1,0)),$
$((1,2),(0,0)),((0,3),(1,1)),((1,3),(0,1)),$
$((0,4),(1,2)),((1,4),(0,2))\},$

$R^{(2,5)}_{(0,4)} = \{((0,0),(0,4)),((1,0),(1,4)),$
$((0,1),(0,0)),((1,1),(1,0)),((0,2),(0,1)),$
$((1,2),(1,1)),((0,3),(0,2)),((1,3),(1,2)),$
$((0,4),(0,3)),((1,4),(1,3))\},$

$R^{(2,5)}_{(1,4)} = \{((0,0),(1,4)),((1,0),(0,4)),$
$((0,1),(1,0)),((1,1),(0,0)),((0,2),(1,1)),$
$((1,2),(0,1)),((0,3),(1,2)),((1,3),(0,2)),$
$((0,4),(1,3)),((1,4),(0,3))\}.$

Use of these relations, to calculate the cost of all the specified relationship, can be found: the loving or liking relationship with low cost, and the killing relationship with the high cost. It completes the proof.#

Proof of Property 3.4. Consider the **Jingluo** system or the **twelve Earthly Branches model** $V^2 \times V^6 = \{(i,j) \mid i \in V^2, j \in V^6\}$. Its all relations are as follows:

$R^{(2,6)}_{(0,e)} = \{((0,e),(0,e)),((1,e),(1,e)),$
$((0,(12)),(0,(12))),((1,(12)),(1,(12))),$
$((0,(13)),(0,(13))),((1,(13)),(1,(13))),$
$((0,(23)),(0,(23))),((1,(23)),(1,(23))),$
$((0,(123)),(0,(123))),((1,(123)),(1,(123))),$
$((0,(132)),(0,(132))),((1,(132)),(1,(132)))\},$

$R^{(2,6)}_{(1,e)} = \{((0,e),(1,e)),((1,e),(0,e)),$
$((0,(12)),(1,(12))),((1,(12)),(0,(12))),$
$((0,(13)),(1,(13))),((1,(13)),(0,(13))),$
$((0,(23)),(1,(23))),((1,(23)),(0,(23))),$
$((0,(123)),(1,(123))),((1,(123)),(0,(123))),$
$((0,(132)),(1,(132))),((1,(132)),(0,(132)))\},$

$R^{(2,6)}_{(0,(12))} = \{((0,e),(0,(12))),((1,e),(1,(12))),$
$((0,(12)),(0,e)),((1,(12)),(1,e)),$
$((0,(13)),(0,(132))),((1,(132)),(1,(132))),$
$((0,(123)),(0,(123))),((1,(123)),(1,(123))),$
$((0,(23)),(0,(23))),((1,(23)),(1,(23))),$
$((0,(13)),(0,(13))),((1,(13)),(1,(13)))\},$

$R^{(2,6)}_{(1,(12))} = \{((0,e),(1,(12))),((1,e),(0,(12))),$
$((0,(12)),(1,e)),((1,(12)),(0,e)),$
$((0,(13)),(1,(132))),((1,(132)),(0,(132))),$
$((0,(123)),(1,(123))),((1,(123)),(0,(123))),$
$((0,(23)),(1,(23))),((1,(23)),(0,(23))),$
$((0,(13)),(1,(13))),((1,(13)),(0,(13)))\},$

$R^{(2,6)}_{(0,(13))} = \{((0,e),(0,(13))),((1,e),(1,(13))),$
$((0,(12)),(0,(123))),((1,(12)),(1,(123))),$
$((0,(13)),(0,e)),((1,(13)),(1,e)),$
$((0,(23)),(0,(123))),((1,(23)),(1,(123))),$
$((0,(123)),(0,(12))),((1,(123)),(1,(12))),$
$((0,(132)),(0,(23))),((1,(132)),(1,(23)))\},$

$R^{(2,6)}_{(1,(13))} = \{((0,e),(1,(13))),((1,e),(0,(13))),$
$((0,(12)),(1,(123))),((1,(12)),(0,(123))),$
$((0,(13)),(1,e)),((1,(13)),(0,e)),$
$((0,(23)),(1,(123))),((1,(23)),(0,(123))),$
$((0,(123)),(1,(12))),((1,(123)),(0,(12))),$
$((0,(132)),(1,(23))),((1,(132)),(0,(23)))\},$

$R^{(2,6)}_{(0,(23))} = \{((0,e),(0,(23))),((1,e),(1,(23))),$
$((0,(12)),(0,(132))),((1,(12)),(1,(132))),$
$((0,(13)),(0,(123))),((1,(13)),(1,(123))),$
$((0,(23)),(0,e)),((1,(23)),(1,e)),$
$((0,(123)),(0,(13))),((1,(123)),(1,(13))),$
$((0,(132)),(0,(12))),((1,(132)),(1,(12)))\},$

$R^{(2,6)}_{(1,(23))} = \{((0,e),(1,(23))),((1,e),(0,(23))),$
$((0,(12)),(1,(132))),((1,(12)),(0,(132))),$
$((0,(13)),(1,(123))),((1,(13)),(0,(123))),$
$((0,(23)),(1,e)),((1,(23)),(0,e)),$
$((0,(123)),(1,(13))),((1,(123)),(0,(13))),$
$((0,(132)),(1,(12))),((1,(132)),(0,(12)))\},$

$R^{(2,6)}_{(0,(123))} = \{((0,e),(0,(123))),((1,e),(1,(123))),$
$((0,(12)),(0,(13))),((1,(12)),(1,(13))),$
$((0,(13)),(0,(23))),((1,(13)),(1,(23))),$
$((0,(23)),(0,(12))),((1,(23)),(1,(12))),$
$((0,(123)),(0,(132))),((1,(123)),(1,(132))),$
$((0,(132)),(0,e)),((1,(132)),(1,e))\},$

$R_{(1,(123))}^{(2,6)} = \{((0,e),(1,(123))),((1,e),(0,(123))),$

$((0,(12)),(1,(13))),((1,(12)),(0,(13))),$

$((0,(13)),(1,(23))),((1,(13)),(0,(23))),$

$((0,(23)),(1,(12))),((1,(23)),(0,(12))),$

$((0,(123)),(1,(132))),((1,(123)),(0,(132))),$

$((0,(132)),(1,e),((1,(132)),(0,e))\},$

$R_{(0,(132))}^{(2,6)} = \{((0,e),(0,(132))),((1,e),(1,(132))),$

$((0,(12)),(0,(23))),((1,(12)),(1,(23))),$

$((0,(13)),(0,(12))),((1,(13)),(1,(12))),$

$((0,(23)),(0,(13))),((1,(23)),(1,(13))),$

$((0,(123)),(0,e)),((1,(123)),(1,e)),$

$((0,(132)),(0,(123))),((1,(132)),(1,(123)))\},$

$R_{(1,(132))}^{(2,6)} = \{((0,e),(1,(132))),((1,e),(0,(132))),$

$((0,(12)),(1,(23))),((1,(12)),(0,(23))),$

$((0,(13)),(1,(12))),((1,(13)),(0,(12))),$

$((0,(23)),(1,(13))),((1,(23)),(0,(13))),$

$((0,(123)),(1,e)),((1,(123)),(0,e)),$

$((0,(132)),(1,(123))),((1,(132)),(0,(123)))\}.$

Use of these relations, to calculate the cost of all the specified relationship, can be found: the hand phase in Figure 3, all transverse relationship with low cost, but all vertical relationship with high cost.

On the other hand, in {Yin,Mao}, {Wu,Wei}, {Xu,Hai} type or {Chen,Si}, {Shen,You}, {Zi,Shou} type for the vertices of the triangle respectively, the relationship between the cost is low. Otherwise, the relationship between the cost is high. It completes the proof.#

P roof of Theorem 3.2. See Figure 2., in the Zangxiang system or the ten Heavenly Stems model for a healthy economy, only both the liking relation and the loving relation have the transfer law of the Yang or Yin vital or righteousness energies. By Theorem 3.2 of Zhang [23],Yang is transferring along the order of the loving relationship. Yin is transferring against the order of the loving relationship.

By Property **3.3**, the following relation cost (0,(23)) is low.
$(X^+(1,0), X^-(0,0)), (X_S^+(1,1), X_S^-(0,1)),$

$(X_K^+(1,2), X_K^-(0,2)), (K_X^+(1,3), K_X^-(0,3)),$

$(S_X^+(1,4), S_X^-(0,4)) \in$

$R_{(1,0)}^{(2,5)} = \{((0,0),(1,0)),((1,0),(0,0)),$

$((0,1),(1,1)),((1,1),(0,1)),((0,2),(1,2)),$

$((1,2),(0,2)),((0,3),(1,3)),((1,3),(0,3)),$

$((0,4),(1,4)),((1,4),(0,4))\}.$

It is because the element (1,0) of the ten Heavenly Stems is a Tao force, which is a low cost if the Yin Yang Wu Xing model V^5 is implemented by the Tao force of the Tao model V^2.

Their relations are called the liking relation.

Because the liking relationship cannot change the transfer law of the order of the loving relation, so, by Theorem 3.2 in Zhang [23],Yang is transferring along the order of the ten heavenly stems. Yin is transferring against the order of the ten heavenly stems. It completes the proof.#

Proof of Theorem 3.3. See Figure 3., in the Jingluo system or the twelve Earthly Branches model for a healthy economy, only both the liking relation and the adjacent relation have the transfer law of the Yang or Yin vital or righteousness energies.

By Definition **3.3,** the elements of the twelve earthly branches have properties: Zi as the Yang water, Chou as the Yin earth, Yin as the Yang wood, Mao as the Yin wood, Chen as the Yang earth, Si as the Yin fire, Wu as the Yang fire, Wei as the Yin earth, Shen as the Yang metal; You as the Yin metal, Xu as the Yang earth, Hai as the Yang water. Here, earth element exists everywhere, so the energy transport order is mainly composed of wood, fire, metal and water elements.

About wood, fire, metal and water element to determine a natural transmission law of wood to fire, to metal by soil, then reach the water. That is to say: a natural Yin energy transmission rule is as follows:

$\leftarrow$ Yang wood Yin $\leftrightarrow$ Yin wood Mao

$\leftarrow$ Yang earth Chen $\leftrightarrow$ Yin fire Si

$\leftarrow$ Yang fire Wu $\leftrightarrow$ Yin earth Wei

$\leftarrow$ Yang metal Shen $\leftrightarrow$ Yin metal You

$\leftarrow$ Yang earth Xu $\leftrightarrow$ Yin water Hai

$\leftarrow$ Yang water Zi $\leftrightarrow$ Yin earth Chou $\leftarrow$.

Its main content is still follow the intergeneration transmission sequence of Yin Yang Wu Xing.

By Property **3.4**, the following relation cost (0,(23))
$(X^+(0,e), X^-(0,(23))), (X_S^{+x}(1,e), X_S^{-x}(1,(23))),$

$(X_K^+(0,(12)), X_K^-(0,(132))), (K_X^+(1,(12)), K_X^-(1,(132))),$

$(S_X^+(0,(13)), S_X^-(0,(123))), (X_S^{+j}(1,(123)), X_S^{-j}(1,(123)) \in$

$R_{(0,(23))}^{(2,6)} = \{((0,e),(0,(23))),((1,e),(1,(23))),$

$((0,(12)),(0,(132))),((1,(12)),(1,(132))),$

$((0,(13)),(0,(123))),((1,(13)),(1,(123))),$

$((0,(23)),(0,e)),((1,(23)),(1,e)),$

$((0,(123)),(0,(13))),((1,(123)),(1,(13))),$

$((0,(132)),(0,(12))),((1,(132)),(1,(12)))\}.$

It is because the element (0,(23)) of the twelve Earthly Branches is an essential substance circulating in the channels and blood vessels (营气) . It is a low cost element if economy "eats". Their relations are called the liking relation for a healthy economy, denoted by $\overset{less}{\leftrightarrow}$.

Because the liking relationship cannot change the transfer law of the order of the loving relation, so,the above elements replacing transmission rule of the twelve earthly branches element, get the transmission law of the twelve earthly branches:

$\overset{less}{\leftarrow}$ virtual Zi X^+ $\overset{less}{\leftrightarrow}$ virtual Chou X^-

$(\overset{less}{\leftarrow}$ virtual Shen S_X^+ $\overset{less}{\leftrightarrow}$ virtual You S_X^-)

$\overset{rare}{\leftarrow}$ real Yin K_X^- $\overset{less}{\leftrightarrow}$ real Mao K_X^+

$\overset{more}{\leftarrow}$ real Chen X_K^+ $\overset{less}{\leftrightarrow}$ real Si X_K^-

$\overset{rare}{\leftarrow}$ virtual Wu X_S^{j-} $\overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}

$\overset{rare}{\Leftarrow}$ virtual Shen S_X^+ $\overset{less}{\leftrightarrow}$ virtual You S_X^-

$\overset{rare}{\Rightarrow}$ virtual Xu X_S^{x-} $\overset{less}{\leftrightarrow}$ virtual Hai X_S^{x+}

$\overset{less}{\leftarrow}$ virtual Zi X^+ $\overset{less}{\leftrightarrow}$ virtual Chou X^- .

The relationship

virtual Wu X_S^{j-} $\overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}

$\overset{rare}{\Leftarrow}$ virtual Shen S_X^+ $\overset{less}{\leftrightarrow}$ virtual You S_X^-

$\overset{rare}{\Rightarrow}$ virtual Xu X_S^{x-} $\overset{less}{\leftrightarrow}$ virtual Hai X_S^{x+}

can be abbreviated as

virtual Wu X_S^{j-} $\overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}

$\overset{less}{\leftrightarrow}$ virtual Xu X_S^{x-} $\overset{less}{\leftrightarrow}$ virtual Hai X_S^{x+} .

Thus

$\overset{less}{\leftarrow}$ virtual Zi X^+ $\overset{less}{\leftrightarrow}$ virtual Chou X^-

($\overset{less}{\leftarrow}$ virtual Shen S_X^+ $\overset{less}{\leftrightarrow}$ virtual You S_X^-)

$\overset{rare}{\leftarrow}$ real Yin K_X^- $\overset{less}{\leftrightarrow}$ real Mao K_X^+

$\overset{more}{\leftarrow}$ real Chen X_K^+ $\overset{less}{\leftrightarrow}$ real Si X_K^-

$\overset{rare}{\leftarrow}$ virtual Wu X_S^{j-} $\overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}

$\overset{less}{\leftrightarrow}$ virtual Xu X_S^{x-} $\overset{less}{\leftrightarrow}$ virtual Hai X_S^{x+}

$\overset{less}{\leftarrow}$ virtual Zi X^+ $\overset{less}{\leftrightarrow}$ virtual Chou X^-.

Because the order

$X (\overset{}{\leftarrow} S_X) \leftarrow K_X \leftarrow X_K \leftarrow X_S \leftarrow X(\leftarrow S_X) \leftarrow$

is transferring against the loving order of the twelve earthly branches, of course, by Theorem 3.2 in Zhang [23], it is the transfer law of the Yin vital or righteousness energies of the twelve earthly branches.

By Theorem 3.2 in Zhang [23], Yang is transferring along the order of the loving relationship. Yin is transferring against the order of the loving relationship. So, the transfer law of the Yin vital or righteousness energies of the twelve earthly branches is transferring against the order of the loving or liking relationship. It is because the liking relationship cannot change the transfer law of the order of the loving relation.

Thus, the transfer law of the Yang vital or righteousness energies of the twelve earthly branches is as follows:

real Chou X^- $\overset{less}{\leftrightarrow}$ real Zi X^+

$\overset{less}{\rightarrow}$ real Hai X_S^{x+} $\overset{less}{\leftrightarrow}$ real Xu X_S^{x-}

$\overset{rare}{\Leftarrow}$ real You S_X^+ $\overset{less}{\leftrightarrow}$ real Shen S_X^+

$\overset{rare}{\Rightarrow}$ real Wei X_S^{j+} $\overset{less}{\leftrightarrow}$ real Wu X_S^{j-}

$\overset{rare}{\rightarrow}$ virtual Si X_K^- $\overset{less}{\leftrightarrow}$ virtual Chen X_K^+

$\overset{less}{\rightarrow}$ virtual Mao K_X^+ $\overset{less}{\leftrightarrow}$ virtual Yin K_X^-

($\overset{rare}{\rightarrow}$ real You S_X^- $\overset{less}{\leftrightarrow}$ real Shen S_X^+)

$\overset{less}{\rightarrow}$ real Chou X^- $\overset{less}{\leftrightarrow}$ real Zi X^+.

The relationship

real Hai X_S^{x+} $\overset{less}{\leftrightarrow}$ real Xu X_S^{x-}

$\overset{rare}{\Leftarrow}$ real You S_X^- $\overset{less}{\leftrightarrow}$ real Shen S_x^+

$\overset{rare}{\Rightarrow}$ real Wei X_S^{j+} $\overset{less}{\leftrightarrow}$ real Wu X_S^{j-}

can be abbreviated as

real Hai X_S^{x+} $\overset{less}{\leftrightarrow}$ real Xu X_S^{x-} .

$\overset{less}{\leftrightarrow}$ real Wei X_S^{j+} $\overset{less}{\leftrightarrow}$ real Wu X_S^{j-}

Thus

real Chou X^- $\overset{less}{\leftrightarrow}$ real Zi X^+

$\overset{less}{\rightarrow}$ real Hai X_S^{x+} $\overset{less}{\leftrightarrow}$ real Xu X_S^{x-}

$\overset{less}{\leftrightarrow}$ real Wei X_S^{j+} $\overset{less}{\leftrightarrow}$ real Wu X_S^{j-}

$\overset{rare}{\rightarrow}$ virtual Si X_K^- $\overset{less}{\leftrightarrow}$ virtual Chen X_K^+

$\overset{less}{\rightarrow}$ virtual Mao K_X^+ $\overset{less}{\leftrightarrow}$ virtual Yin K_X^-

($\overset{rare}{\rightarrow}$ real You S_X^- $\overset{less}{\leftrightarrow}$ real Shen S_X^+)

$\overset{less}{\rightarrow}$ real Chou X^- $\overset{less}{\leftrightarrow}$ real Zi X^+.

Because the order

$X \rightarrow X_S \rightarrow X_K \rightarrow K_X (\rightarrow S_X) \rightarrow X \rightarrow$

is transferring along the loving order of the twelve earthly branches, of course, by Theorem 3.2 in Zhang [23], it is the transfer law of the Yang vital or righteousness energies of the twelve earthly branches.

Therefore, the transfer law of the Yang or Yin vital or righteousness energies of the twelve earthly branches is obtained as follows: Yang is transferring along the liking or loving order of the twelve earthly branches. And Yin is transferring against the liking or loving order of the twelve earthly branches. It completes the proof.#

Proof of Theorem 3.4. See Figure 2., in the Zangxiang system or the ten Heavenly Stems model for an unhealthy economy, only both the liking relation and the killing relation have the transfer law of the Yang or Yin vital or righteousness energies. By Theorem 3.3 of Zhang [23], Yang is transferring against the order of the killing relationship. Yin is transferring along the order of the killing relationship.

By Property **3.3**, the following relation cost (1,0) is low.

$(X^+(1,0), X^-(0,0)), (X_S^+(1,1), X_S^-(0,1)),$

$(X_K^+(1,2), X_K^-(0,2)), (K_X^+(1,3), K_X^-(0,3)),$

$(S_X^+(1,4), S_X^-(0,4)) \in$

$R_{(1,0)}^{(2,5)} = \{((0,0),(1,0)), ((1,0),(0,0)),$

$((0,1),(1,1)), ((1,1),(0,1)), ((0,2),(1,2)),$

$((1,2),(0,2)), ((0,3),(1,3)), ((1,3),(0,3)),$

$((0,4),(1,4)), ((1,4),(0,4))\}.$

It is because the element (1,0) of the ten Heavenly Stems is a Tao force, which is a low cost if the Yin Yang Wu Xing model V^5 is implemented by the Tao force of the Tao model V^2. Their relations are called the liking relation.

Because the liking relationship cannot change the transfer law of the order of the killing relation, so, by Theorem 3.3 in Zhang [23], Yang is transferring along the order of the killing or liking relation of the ten heavenly stems. Yin is transferring along the order of the killing or liking relation of the ten heavenly stems. It completes the proof.#

Proof of Theorem 3.5. See Figure 3., in the Jingluo system or the twelve Earthly Branches model for an unhealthy economy, only both the liking relation and the alternate relation have the transfer law of the Yang or Yin vital or righteousness energies.

By Property **3.4**, the following relation cost (0,(23)) is low.

$(X^+(0,e), X^-(0,(23))), (X_S^{+x}(1,e), X_S^{-x}(1,(23))),$

$(X_K^+(0,(12)), X_K^-(0,(132))), (K_X^+(1,(12)), K_X^-(1,(132))),$

$(S_X^+(0,(13)), S_X^-(0,(123))), (X_S^{+j}(1,(123)), X_S^{-j}(1,(123)) \in$

$R_{(0,(23))}^{(2,6)} = \{((0,e),(0,(23))), ((1,e),(1,(23))),$

$((0,(12)),(0,(132))), ((1,(12)),(1,(132))),$

$((0,(13)),(0,(123))), ((1,(13)),(1,(123))),$

$((0,(23)),(0,e)), ((1,(23)),(1,e)),$

$((0,(123)),(0,(13))), ((1,(123)),(1,(13))),$

$((0,(132)),(0,(12))), ((1,(132)),(1,(12)))\}.$

It is because the element (0,(23)) of the twelve Earthly Branches is an essential substance circulating in the channels and blood vessels (营气). It is a low cost element if the economic society "eats". Their relations are called the liking relation for a healthy economy, denoted by $\Longleftrightarrow$.

By Theorem 3.3 in Zhang [23], Yang is transferring against the order of the killing relationship. Yin is transferring along the order of the killing relationship. So, the transfer law of the Yin vital or righteousness energies of the twelve earthly branches is transferring along the order of the killing or liking

relationship. It is because the liking relationship cannot change the transfer law of the order of the killing or liking relation.

In mathematics, by Theorem 3.3 in Zhang [23], for the unhealthy economy, the transfer law of the Yin vital energies of the twelve earthly branches is as follows:

Mao   Zi   Chen

$K_X^+(1,(12)) \Rightarrow$ $X^+(0,e)$ $X_K^+(0,(12)) \Rightarrow$

$\Updownarrow$ $\Updownarrow$ $\Updownarrow$

$\Rightarrow$ Yin   Chou   Si

$K_X^-(1,(132))$ $X^-(0,(23)) \Rightarrow$ $X_K^-(0,(132))$
$\Rightarrow$ Shen   Wei   Hai

$S_X^+(0,(13))$ $X_S^{+j}(1,(13)) \Leftrightarrow$ $X_S^{+x}(1,e)$

$\Updownarrow$ $\Updownarrow$ $\Updownarrow$

You   Wu   Xu

$S_X^+(0,(123)) \Rightarrow$ $X_S^{-j}(1,(123))$ $X_S^{-x}(1,(23)) \Rightarrow$.

It is because the order

$$K_X \Rightarrow X \Rightarrow X_K \Rightarrow S_X \Rightarrow X_S \Rightarrow$$

is transferring along the killing order of the twelve earthly branches.

Similarly, Yang is transferring against the order of the killing or liking relationship. So, the transfer law of the Yang vital or righteousness energies of the twelve earthly branches is transferring against the order of the killing or liking relationship. It is because the liking relationship cannot change the transfer law of the order of the killing or liking relation.

In mathematics, by Theorem 3.3 in Zhang [23], for the unhealthy economy, the transfer law of the Yang vital energies of the twelve earthly branches is as follows:

Mao   Hai   Wei

$K_X^+(1,(12)) \Leftarrow$ $X_S^{+x}(1,e) \Leftarrow$ $X_S^{+j}(1,(13)) \Leftarrow$

$\Updownarrow$ $\Updownarrow$ $\Updownarrow$

$\Leftarrow$ Yin   Xu   Wu

$K_X^-(1,(132))$ $X_S^{-x}(1,(23)) \Leftrightarrow$ $X_S^{-j}(1,(123))$
$\Leftarrow$ Shen   Chen   Zi

$S_X^+(0,(13))$ $X_K^+(0,(12)) \Leftarrow$ $X^+(0,e)$

$\Updownarrow$ $\Updownarrow$ $\Updownarrow$

You   Si   Chou

$S_X^-(0,(123)) \Leftarrow$ $X_K^-(0,(132))$ $X^-(0,(23)) \Leftarrow$.

It is because the order

$$K_X \Leftarrow X_S \Leftarrow S_X \Leftarrow X_K \Leftarrow X \Leftarrow$$

is transferring against the killing order of the twelve earthly branches. It completes the proof.#

Proof of Theorem 4.1. Let

$a = 0.8789\%, b = 5.2241\%, t_0 = 2.7047\%$.

(1) By the (1) of Theorem 4.1 in Zhang [23], X and X_K as continuous subsystems of occurring disease, it only need to be proved that the subsystem X itself is the root-cause of a virtual disease and that the son subsystem X_S of X is the symptoms of disease at this time.

In this case, the economy is unhealthy. The first physiological system is running hardly. The loving relationship is running hardly. Only the killing relationship run normally. By Theorems **3.2** and **3.3**, the first transfer law of economy energies is not to work. By Theorems **3.4** and **3.5**, the second transfer law of economy energies is beginning to work.

By the theory of Zangxiang and Jingluo in Definition **3.1** and **3.2**, the virtual disease of the subsystem X is transferring

from the virtual disease of its son X_S for a good self-protection ability. Consider whether the subsystem X virtual disease, the cause of its root-cause will be able to direct the subsystem X treatment. In the following, consider the result of the subsystem X direct intervention.

From Theorem 3.2 and Corollary 3.2 in [20], the subsystem X was considered as virtual. When the capability of self-protection is nearly to the best state, i.e., $\rho_3 = c\rho(x)$ where $c \rightarrow 1$, if you increase the energy of the subsystem X directly, then its capabilities of both intervention reaction and self-protection can make the subsystems S_X, K_X and X_K restored at the same time, but the subsystems X and X_S will increase their energies, i.e., changed by the increments

$\Delta\varphi(X)_2 \rightarrow (1-\rho(x)^3)\Delta > 0,$
$\Delta\varphi(X_S)_2 \rightarrow (\rho(x)+\rho(x)^3)\Delta > 0,$

respectively.

Since the RPI inflation rate $x < a$ makes $0 \le \rho_1 = \rho(x) < \rho_0$ such that $(\rho(x)+\rho(x)^3) < (1-\rho(x)^3)$, therefore the subsystem X can obtain the large increment $\Delta\varphi(X)_2 = (1-\rho(x)^3)\Delta > 0$ and the subsystem X_S will get the small increment $\Delta\varphi(X_S)_2 = (\rho(x)+\rho(x)^3)\Delta > 0$. The later is the pseudo side effects issue, by Attaining Rule in Zhang [23], which is just the food of the second physiological system of the steady multilateral system since that the economy is unhealthy, virtual and X intervened makes that the second physiological system will attain the *Chi* or energy (Yang energy) from the son X_S of the intervened subsystem X The attaining way is an indirect treating for X as an unhealthy economy with a virtual disease. That means for the intervened subsystem X direct treatment effect is in accordance with the working principle of system and meridian system. So say: the subsystem X deficiency disease is why disease at this time. Thus, the subsystem X itself is the root-cause of a virtual disease. Of course, the son subsystem X_S of X is the symptoms of disease at this time. Need to use the method of the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱) action to treat.

(2) By the (2) of Theorem 4.1 in Zhang [23], X and S_X as continuous subsystems of occurring disease, it only need to be proved that the mother S_X of subsystem X is the root-cause of a virtual disease and the subsystem X itself is the symptoms of a virtual disease at this time.

In this case, the economy is healthy. The first physiological system is running normally. The loving relationship is running normally. The liking relationship is also running normally. By Theorems **3.2** and **3.3**, the first transfer law of economy energies is doing to work. By Theorems **3.4** and **3.5**, the second transfer law of economy energies is not to work.

By the theory of Zangxiang and Jingluo in Definition **3.1** and **3.2**, the virtual disease of the subsystem X is transferring from the virtual disease of its mother S_X for a good self-protection ability. Consider whether the mother S_X of the subsystem X virtual disease, the cause of its root-cause will

be able to direct the mother S_X of the subsystem X treatment. In the following, consider the result of the mother S_X of the subsystem X treatment direct intervention.

From Theorem 3.2 and Corollary 3.2 in [20], the subsystem X will be considered as virtual. First the case is studied that the capability of self-protection is in the best state, i.e., $\rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_1 > 0$ where $c \rightarrow 1$. If the energy of the subsystem S_X is intervened to increase its energy, then its capabilities of intervention reaction and self-protection can make the subsystems K_x, X_K and X_S restored at the same time, but the subsystems S_X and X will increase their energies, i.e., changed by the increments

$$\Delta\varphi(S_x)_2 \rightarrow (1 - \rho(x)^3)\Delta > 0,$$
$$\Delta\varphi(X)_2 \rightarrow (\rho(x) + \rho(x)^3)\Delta > 0,$$

respectively.

Since the RPI inflation rate $a \le x \le t_0$ makes $1 \ge \rho_1 = \rho(x) \ge \rho_0$ such that mainly $(\rho(x) + \rho(x)^3) \ge (1 - \rho(x)^3)$, therefore the subsystem X can obtain the large increment $\Delta\varphi(X)_2 = (\rho(x) + \rho(x)^3)\Delta > 0$ and the subsystem S_X will get the small increment $\Delta\varphi(S_x)_2 = (1 - \rho(x)^3)\Delta$. The later is the pseudo side effects issue, by Attaining Rule in Zhang [23], which is just the food of the second physiological system of the steady multilateral system since that the economy is healthy, virtual and S_X intervened makes that the second physiological system will attain the *Chi* or energy from the intervened subsystem S_X directly for a healthy with a virtual disease. That means for the intervened subsystem S_X direct treatment effect is in accordance with the working principle of system and meridian system. So say: the subsystem S_X deficiency disease is why disease at this time. Thus, the mother subsystem S_X of X is the root-cause of a virtual disease. Of course, the subsystem X itself is the symptoms of a virtual disease at this time. Need to use the method of the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱) action to treat.

(3) By the (3) of Theorem 4.1 in Zhang [23], X and X_S as continuous subsystems of occurring disease, it only need to be proved that the son X_S of X the root-cause of a real disease and the subsystem X itself is the symptoms of a real disease at this time.

In this case, the economy is healthy. The first physiological system is running normally. The loving relationship is running normally. The liking relationship is also running normally. By Theorems **3.2** and **3.3**, the first transfer law of economy energies is doing to work. By Theorems **3.4** and **3.5**, the second transfer law of economy energies is not to work.

By the theory of Zangxiang and Jingluo in Definitions **3.1** and **3.2**, the virtual disease of the subsystem X is transferring from the virtual disease of its son X_S for a good self-protection ability. Consider whether the son X_S of the subsystem X virtual disease, the cause of its root-cause will

be able to direct the son X_S of the subsystem X treatment. In the following, consider the result of the son X_S of the subsystem X treatment direct intervention.

From Theorem 3.2 and Corollary 3.2 in [20], the subsystem X will be considered as real. First the case is studied that the capability of self-protection is in the best state, i.e., $\rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_1$ where $c \rightarrow 1$. If the energy of the subsystem X_S is intervened to decrease its energy, then its capabilities of intervention reaction and self-protection can make the subsystems X_K, K_X and S_X restored at the same time, but the subsystems X and X_S will decrease their energies, i.e., changed by the increment

$$\Delta\varphi(X)_2 \rightarrow -(\rho(x) + \rho(x)^3)\Delta > 0,$$
$$\Delta\varphi(X_S)_2 \rightarrow -(1 - \rho(x)^3)\Delta > 0,$$

respectively. Since the RPI inflation rate $t_0 < x \le b$ makes $1 > \rho_1 = \rho(x) \ge \rho_0$ such that mainly $(\rho(x) + \rho(x)^3) \ge (1 - \rho(x)^3)$, therefore the subsystem X can obtain the substantial reduction $\Delta\varphi(X)_2 = -(\rho(x) + \rho(x)^3)\Delta < 0$ and the subsystem X_S will get a modest reduction $\Delta\varphi(X_S)_2 = -(1 - \rho(x)^3)\Delta < 0$. The later is the pseudo side effects issue, by Attaining Rule in Zhang [23], which is just the food of the second physiological system of the steady multilateral system since that the economy is healthy, real and X_S intervened makes that the second physiological system will attain the *Chi* or energy from the intervened subsystem X_S directly for a healthy with a real disease. That means for the intervened subsystem X_S direct treatment effect is in accordance with the working principle of system and meridian system. So say: the subsystem X_S real disease is why disease at this time. Thus, the son subsystem X_S of X is the root-cause of a real disease. Of course, the subsystem X itself is the symptoms of a real disease at this time. Need to use the method of the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱) action to treat.

(4) By the (4) of Theorem 4.1 in Zhang [23], X and K_X as continuous subsystems of occurring disease, it only need to be proved that the subsystem X itself is the root-cause of a real disease and that the mother S_X of X is the symptoms of a real disease at this time.

In this case, the economy is unhealthy. The first physiological system is running hardly. The loving relationship is running hardly. Only the killing relationship is running normally. By Theorems **3.2** and **3.3**, the first transfer law of economy energies is not to work. By Theorems **3.4** and **3.5**, the second transfer law of economy energies is beginning to work.

By the theory of Zangxiang and Jingluo in Definitions **3.1** and **3.2**, the virtual disease of the subsystem X is transferring from the real disease of its mother S_X for a good self-protection ability. Consider whether the subsystem X virtual disease, the cause of its root-cause will be able to direct the subsystem X treatment. In the following,

consider the result of the subsystem X treatment direct intervention.

From Theorems 3.2 and Corollary 3.2 in [20], the subsystem X was considered as real. When the capability of self-protection is in the best state, i.e., $\rho_3 = c\rho(x) \to \rho(x) = \rho_1$ where $c \to 1$, if the energy of the subsystem X is intervened to decrease its energy directly, then its capabilities of intervention reaction and self-protection can make the subsystems X_K, K_X and X_S restored at the same time, but the subsystems X and S_X will decrease their energies, i.e., changed by the increments

$$\Delta\varphi(X)_2 \to -(1-\rho(x)^3)\Delta < 0,$$
$$\Delta\varphi(S_x)_2 \to -(\rho(x) + \rho(x)^3)\Delta < 0,$$

respectively.

Since the RPI inflation rate $x > b$ makes $0 \le \rho_1 = \rho(x) < \rho_0$ such that $(\rho(x) + \rho(x)^3) < (1-\rho(x)^3)$, therefore the subsystem X can obtain the substantial reduction $\Delta\varphi(X)_2 = -(1-\rho(x)^3)\Delta < 0$ and the subsystem S_X will get a modest reduction $\Delta\varphi(S_x) = -(\rho(x) + \rho(x)^3)\Delta < 0$. The later is the pseudo side effects, by Attaining Rule in Zhang [23], which is just the food of the second physiological system of the steady multilateral system since that the economy is unhealthy, real and X intervened makes that the second physiological system will attain the *Chi* or energy from the mother S_X of the intervened subsystem X. The attaining way is an indirect treating for X as an unhealthy economy with a real disease. That means for the intervened subsystem X direct treatment effect is in accordance with the working principle of system and meridian system. So say: the subsystem X real disease is why disease at this time. Thus the subsystem X is the root-cause of a real disease. Of course, the mother S_X of X is the symptoms of a real disease at this time. Need to use the method of the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱) action to treat. It completes the proof.#

REFERENCES

[1] P.Levell."Is the Carli index flawed?: assessing the case for the new retail price index RPIJ". *Journal of the Royal Statistical Society: Series A (Statistics in Society),* 02/2015,Vol.178, No.2, pp: 303-336. DOI: 10.1111/rssa.12061

[2] T.M.Crone, N.I.Leonard and V.Richard,"Rents have been rising, not falling, in the postwar period". Journal of Economics and Behavioral Studies, 2010, Vol.92, No.3 pp: 628-642. doi:10.1162/REST_a_00015

[3] I.Pauhofova and A.Qineti, "The basic determinants of price development in agriculture and food industry of Slovakia". Ekonomicky Casopis, 2002, Vol.50, No. 2, pp: 165-181.

[4] M.Funke, A.Mehrotra and H.Yu, "Tracking Chinese CPI inflation in real time". Empir Econ, 2015, Vol.48, pp:1619-1641. doi:10.1007/s00181-014-0837-3

[5] A.Formica and G.Kingston,"Inflation Insurance for Australian Annuitants". Australian Journal of Management, 12/1991, 1991, Vol.16, No.2, pp:145-163. doi:10.1177/031289629101600203

[6] G.Fan,L.P.He and J.N.Hu,"CPI vs. PPI: Which drives which?". Frontiers of Economics in China, 2009, Vol.4, Issue 3, pp: 317-334.

[7] R.Adams,"US prices for most pigments have fallen since end-2012 but CPI inflation is gathering pace". Focus on Pigments, 2014, Vol.2014, Issue 3, pp:1-93. doi:10.1016/S0969-6210(14)70096-7

[8] J.Hausman, "Cellular Telephone, New Products, and CPI". Journal of Business & Economic Statistics, 1999, Vol.17, Issue 2, pp:188-194. doi:10.1080/07350015.1999.10524809

[9] D.Nahm, "The Effects of New Goods and Substitution on the Korean CPI as a Measure of Cost of Living". International Economic Journal, 2015, Vol.29, No.1, pp:57-72. doi:10.1080/10168737.2014.928894

[10] I.A.Moosa, "Does the Chinese official CPI underestimate inflation?". Applied Economics Letters, 05/1997, Vol.4, Issue 5, pp:301-304

[11] X.Zhao,"Forecasting inflation in China". Dissertation/Thesis, 01/2013, Carleton University (Canada)

[12] H.D.M.Daniel,"Essays in macroeconomics and international finance". Dissertation/Thesis, 2012, University of Maryland, College Park.b Economics.

[13] Anonymous, "Czech National Bank's Inflation report for fourth quarter 1998". Finance A Uver, 1999, Vol.49, No. 4, pp:189-201.

[14] Anonymous, "The Czech National Bank's Inflation Report for the first quarter 1999". Finance A Uver, 1999, Vol.49, No.7, pp:389-406.

[15] Y.S.Zhang, *"Multilateral Matrix Theory"*. Beijing:Chinese Statistics Press, 1993.

[16] Y.S.Zhang,*Multilateral System Theor"*. http://www.mlmatrix.com, 2007.

[17] Y.S.Zhang,"Mathematical reasoning of treatment principle based on Yin Yang Wu Xing theory in traditional Chinese medicine", *Chinese Medicine*, 2011, Vol.2, No.1, pp:6-15. doi:10.4236/cm.2011.21002

[18] Y.S.Zhang, "Mathematical reasoning of treatment principle based on Yin Yang Wu Xing theory in traditional Chinese medicine (II)", *Chinese Medicine*, 2011, Vol.2, No.4, pp:158-170. doi:10.4236/cm.2011.24026

[19] Y.S.Zhang, "Mathematical reasoning of treatment principle based on the stable logic analysis model of complex systems", *Intelligent control and automation*, 2012, Vol.3, No.1, pp:6-15. doi:10.4236/ica.2012.31001

[20] Y.S.Zhang and W.L.Shao, "Image mathematics-mathematical intervening principle based on Yin Yang Wu Xing theory in traditional Chinese mathematics (I)", *Applied Mathematics*, 2012, Vol.3, No.2, pp:617-636. doi:10.4236/am.2012.36096

[21] Z.Q.Zhang and Y.S.Zhang, "Mathematical reasoning of economic intervening principle based on Yin Yang Wu Xing theory in traditional Chinese economics (I)", *Modern Economics*, 2013, Vol.4, pp:130-144. doi:10.4236/me.2013.42016

[22] N.Q.Feng,Y.H.Qiu, F.Wang, Y.S..Zhang and S.Q.Yin, "A logic analysis model about complex system's stability: enlightenment from nature". *Lecture Notes in Computer Science,* 2005, Vol.3644, pp:828-838. doi.org/10.1007/11538059_86

[23] Y.S.Zhang, "CPI from 2% to 5% – Mathematical Reasoning of Economic Intervening Principle Based on Yin Yang Wu Xing Theory in Traditional Chinese Economics (II)". *International Journal of Health Economics and Policy,* 2017.
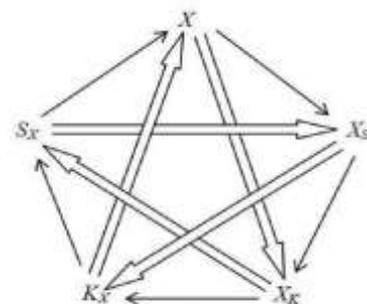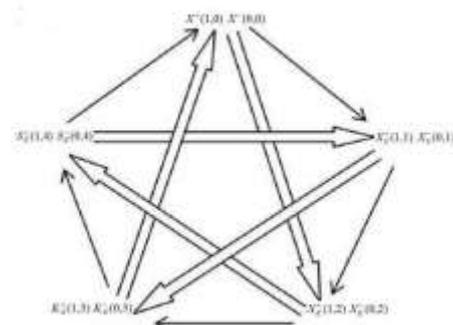
Figure 1. Finding Yin Yang Wu Xing Model

Figure 2. Relations of ten Heavenly Stems

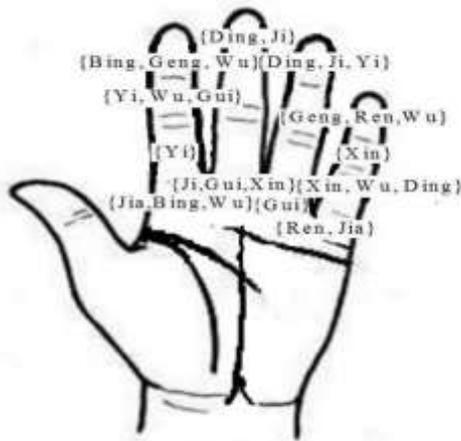**Figure 3. Relations of twelve Earthly Branches**

Figure 4. Ten Heavenly Stems Hidden behind Twelve Earthly Branches

Table 1. Ten Heavenly stems grow-strong-die-extinction (I)

	grow	bath	crown	officer	emperor	decay
Jia	Hai	Zi	Chou	Yin	Mao	Chen
Bing	Yin	Mao	Chen	Si	Wu	Wei
Wu	Yin	Mao	Chen	Si	Wu	Wei
Geng	Si	Wu	Wei	Shen	You	Xu
Ren	Shen	You	Xu	Hai	Zi	Chou
Yi	Wu	Si	Chen	Mao	Yin	Chou
Ding	You	Shen	Wei	Wu	Si	Chen
Ji	You	Shen	Wei	Wu	Si	Chen
Xin	Zi	Hai	Xu	You	Shen	Wei
Gui	Mao	Yin	You	Zi	Hai	Xu

Table 2. Ten Heavenly stems grow-strong-die-extinction (II)

	disease	death	tomb	extinction	child	raise
Jia	Si	Wu	Wei	Shen	You	Xu
Bing	Shen	You	Xu	Hai	Zi	Chou
Wu	Shen	You	Xu	Hai	Zi	Chou
Geng	Hai	Zi	Chou	Yin	Mao	Chen
Ren	Yin	Mao	Chen	Si	Wu	Wei
Yi	Zi	Hai	Xu	You	Shen	Wei
Ding	Mao	Yin	You	Zi	Hai	Xu
Ji	Mao	Yin	You	Zi	Hai	Xu
Xin	Wu	Si	Chen	Mao	Yin	Chou
Gui	You	Zi	Hai	Xu	You	Shen