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CPI from 2% to 5%– Mathematical Reasoning of Economic Intervening Principle Based on Yin Yang Wu Xing Theory in Traditional Chinese Economics (II)

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Abstract: CPI (Consumer Price Index) 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 that for the CPI inflation rate of economic society, the normal range of theory is [1.8828%, 5.2216%] nearly to [2%, 5%] and the center is 3.2741% nearly to 3%. The first or second transfer law of economic diseases changes according to the different CPI inflation rate whether in the normal range or not. The treatment principle: "Don't have economic disease cure cure non-ill" (不治已病治未病) is abiding by the first or second transfer law of economic diseases. Assume that the range of a CPI inflation rate is divided into four parts from small to large. Both second and third for are for a healthy economy. The treating works are the prevention or treatment for a more serious relation economic disease which comes from the first transfer law; And both first and fourth are for an unhealthy economy. The treating works are the prevention or treatment for a more serious relation economic disease which comes from the second transfer law. 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 CPI inflation rate is used for the earth subsystem how to do works based on studying the sick subsystem of steady multilateral systems.

Keywords: Traditional Chinese Economics (TCE), Yin Yang Wu Xing Theory, Steady Multilateral Systems, Incompatibility Relations, Side Effects, Economic Intervention Resistance Problem

1. Introduction

CPI (Consumer Price Index) is useful in understanding economic disease. It is a measure of a fixed basket of Consumer goods prices, mainly to reflect the price change of the consumers pay for goods and services, is also a kind of measuring the level of inflation tools, in the form of percentage change of expression. In practice, generally does not directly, it is impossible to calculate the real level of inflation, but by the growth rate of price index to indirect said. Because consumer prices reflect the flow of goods through the formation of the final price of each link, it reflects the most comprehensive circulation of commodities of monetary demand. As a result, the CPI is the most fully and comprehensively reflecting the rate of inflation of price index. Basically all around the world, the CPI mainly reflects the degree of inflation.

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. Often use is the first one, its formula is as follows:

$$CPI = a_1(P_{1t} / P_{10}) + a_2(P_{2t} / P_{20}) + \ldots + a_n(P_{nt} / P_{n0}), \quad (1)$$

where the type of digital and t, n is the number in the subscript, P_* as the representative of consumer goods prices, a_n is the weight. Both the rate of inflation and the CPI are two different concepts. Calculation method of the rate of inflation through the calculation of the CPI changes:

$$\text{The rate of CPI inflation (price rises)} = \frac{\text{current price level - base price level}}{\text{base price level}} \times 100\%, \quad (2)$$

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 the other periods of price level can be put with a comparison between base level to measure the current level of inflation. Note on the type, the rate of the CPI inflation is not a price index, which is not a price rise, but the price index to rise.

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

CPI 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. The CPI is as useful in understanding economic disease as the average is in statistics, or as the expected value is in probability calculation.

Economic social system identifies an important indicator for an economic social system health: the value of the CPI inflation rate, which, under normal conditions, ranges from 2% to 5% and the center is 3%. Outside this range (low: Yin condition; high: Yang condition), economic disease appears. Almost always, when there is an economic disease, the condition of the CPI inflation rate is a Yin condition, little is a Yang condition. There are a lot of evidences (e.g., experimental identification for probability and real applications) to support this viewpoint, such as, Theodore et al. [1], Pauhofova et al. [2], Funke et al. [3], Formica et al. [4], Fan et al. [5], Adams [6], Hausman [7], Nahm [8], Moosa [9], Zhao [10], Daniel [11], Anonymous [12-14], and so on.

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 CPI levels, the economic disease may become chronic and lead to dire consequences.

Zhang et al. [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 and Zhang [21] have expertly explained from a mathematical standpoint.

The work Zhang and Zhang [21] have 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. Even so, Zhang and Zhang [21] also bring 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 CPI inflation rate 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 and Zhang [21] have 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 CPI inflation rate, while the first or second transfer law of economic diseases is demonstrated in Section 3, proved through the concept of both relation diseases and a relationship analysis of steady multilateral systems. Furthermore, if the range of the CPI inflation rate is divided into four parts, for the economy in every part, the prevention or treatment method of economic diseases as treatment principle of TCE is given in Section 4. As an application, the Chinese CPI inflation rate is used for the earth subsystem how to do works based on studying the sick subsystem of steady multilateral systems in Section 5 and conclusions are drawn in Section 6.

2. Parameter Model and Basic Theorems

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

Let $\varphi = (\sqrt{5}-1)/2 = 0.61803399$ be the gold number. Denoted $\rho_0 = 0.5897545123$, namely healthy number. It is because the healthy number ρ_0 can make the healthy balance conditions $\rho_1 = \rho_3$, $\rho_2 = \rho_1\rho_3$ and $1-\rho_2\rho_3 = \rho_1 + \rho_2\rho_3$ hold if $\rho_1 = \rho_0, \rho_2 = \rho_0^2$ and $\rho_3 = \rho_0$.

Assuming $\rho_0' = 0.68232780$, namely unhealthy number. It is because under a poor self-protection ability $\rho_3 = \rho_1/2$, the unhealthy number can make the following unhealthy 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 CPI 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 a CPI inflation rate x described as follows.

Let $x \in (-0.05, 0.6)$ be a CPI inflation rate, where the values -0.05 and 0.6 are the minimum and maximum acceptable the CPI inflation rate. Denoted the value 0.032741 is the target as the expectation of the CPI inflation rate. Define a function $\lambda(x)$ of the CPI inflation rate x in below:

$$\lambda(x) = \frac{|x - 0.032741|}{(0.6-x)(x+0.05)}, \forall x \in (-0.05, 0.6)$$
$$= \begin{cases} \dfrac{x-0.032741}{(0.6-x)(x+0.05)}, & 0.6 > x \ge 0.032741; \\ \dfrac{0.032741-x}{(0.6-x)(x+0.05)}, & -0.05 < x < 0.032741. \end{cases} \quad (3)$$

A parameter model is considered as

$$\rho(x) = \frac{1/2}{\lambda(x)+1/2}, \forall x \in (-0.05, 0.6). \quad (4)$$

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

(1) The one that $0 < \rho(x) = \dfrac{1/2}{\lambda(x)+1/2} \le 1$ *is equivalent to the other that* $0 \le \lambda(x) = \dfrac{1-\rho(x)}{2\rho(x)} < +\infty$, *where* $\lambda(x)$ *is a monotone decreasing function of* x *if* $x \in (-0.05, 0.032741]$ *or a monotone increasing function of* x *if* $x \in [0.032741, 0.6)$ *; 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 $1 \ge \rho(x) \ge \rho_0$, *then*

$$\lambda(x) = \frac{1-\rho(x)}{2\rho(x)} \le \frac{1-\rho_0}{2\rho_0} = \rho_0^2 \le \rho(x)^2 \le 1;$$
$$\frac{\lambda(x)}{\rho(x)} = \frac{1-\rho(x)}{2\rho(x)^2} \le \frac{1-\rho_0}{2\rho_0^2} = \rho_0 \le \rho(x) \le 1; \text{ and}$$
$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1-\rho(x)}{2\rho(x)^3} \le \frac{1-\rho_0}{2\rho_0^3} = 1.$$

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

$$\lambda(x) = \frac{1-\rho(x)}{2\rho(x)} > \frac{1-\rho_0}{2\rho_0} = \rho_0^2 > \rho(x)^2 > 0;$$
$$\frac{\lambda(x)}{\rho(x)} = \frac{1-\rho(x)}{2\rho(x)^2} > \frac{1-\rho_0}{2\rho_0^2} = \rho_0 > \rho(x) > 0; \text{ and}$$
$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1-\rho(x)}{2\rho(x)^3} > \frac{1-\rho_0}{2\rho_0^3} = 1.$$

(4) Taking $0 < \rho_1 = \rho(x) < \rho_0, \rho_2 = \rho(x)^2$ *and* $\rho_3 = c\rho(x)$ *where* $0 \le c \le 1$, *there are* $\rho_1 - \rho_3 = \rho(x)(1-c) \ge 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \ge 0$, *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 $1 \ge \rho_1 = \rho(x) \ge \rho_0, \rho_2 = \rho(x)^2$ *and* $\rho_3 = c\rho(x)$ *where* $0 \le c \le 1$ *, there are firstly,* $\rho_1 - \rho_3 = \rho(x)(1-c) \ge 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \ge 0$ *and* $(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 \ge 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *if* $1 \ge c \ge \dfrac{1-\rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \ge 0$*;*

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* $|(\rho_1+\rho_2\rho_3) - (1-\rho_2\rho_3)| \le (\rho_0')^3 = 0.31767$ *if* $0 \le c < \dfrac{1-\rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \le \dfrac{1}{2}$ *in which* $1 > \rho(x) \ge \rho_0'$*;*

thirdly,

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

and $(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *where* $|(\rho_1+\rho_2\rho_3) - (1-\rho_2\rho_3)| \le 2\rho_0^3 = 0.41024$ *if* $0 \le c \le \dfrac{1}{2} < \dfrac{1-\rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \le 1$ *in which* $\rho_0 \le \rho(x) < \rho_0'$*;*

finally,

$$\rho_1 - \rho_3 = \rho(x)(1-c) < \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) < \rho(x)^2/2 \text{ and}$$
$$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$$

where $|(\rho_1+\rho_2\rho_3) - (1-\rho_2\rho_3)| < (\rho_0')^3 = 0.31767$ *if* $\dfrac{1}{2} < c < \dfrac{1-\rho(x)}{2\rho(x)^3} = \dfrac{\lambda(x)}{\rho(x)^2} \le 1$ *in which* $\rho_0 \le \rho(x) < \rho_0'$.

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

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

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

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

(1) For any $0<d<1$ *, there is an unique solution* $u\in(-0.05, 0.032741)$ *and there is also an unique solution* $v\in(0.032741, 0.6)$ *, such that*

$$\lambda(0.032741)=0\le\lambda(x)=\frac{1-\rho(x)}{2\rho(x)}\le\lambda(u)=\lambda(v)=(1-d)/(2d),$$

$$\rho(u)=\rho(v)=d\le\rho(x)=\frac{1/2}{\lambda(x)+1/2}\le 1=\rho(0.032741).$$

(2) The condition $x\in[0.02, 0.05]$ *is equivalent to each of the following conditions:*

$$\lambda(0.032741)=0\le\lambda(x)=\frac{1-\rho(x)}{2\rho(x)}\le\lambda(0.02)=\lambda(0.05)=0.31380,$$

$$\rho(0.02)=\rho(0.05)=0.61440\le\rho(x)=\frac{1/2}{\lambda(x)+1/2}\le 1=\rho(0.032741).$$

(3) The condition $x\in[0.020168, 0.049694]$ *is equivalent to each of the following conditions:*

$$\lambda(0.032741)=0\le\lambda(x)=\frac{1-\rho(x)}{2\rho(x)}\le\lambda(0.020168)=\lambda(0.049694)=0.30902,$$

$$\rho(0.020168)=\rho(0.049694)=\varphi\le\rho(x)=\frac{1/2}{\lambda(x)+1/2}\le 1=\rho(0.032741).$$

(4) The condition $x\in[0.018828, 0.052216]$ *is equivalent to each of the following conditions:*

$$\lambda(0.032741)=0\le\lambda(x)=\frac{1-\rho(x)}{2\rho(x)}\le\lambda(0.018828)=\lambda(0.052216)=\rho_0^2=0.34781,$$

$$\rho(0.018828)=\rho(0.052216)=\rho_0\le\rho(x)=\frac{1/2}{\lambda(x)+1/2}\le 1=\rho(0.032741).$$

(5) The *condition* $x\in[0.022943, 0.045016]$ *is equivalent to each of the following conditions:*

$$\lambda(0.032741)=0\le\lambda(x)\le\lambda(0.022943)=\lambda(0.045016)=(\rho_0')^2/2=0.23279,$$

$$\rho(0.022943)=\rho(0.045016)=\rho_0'\le\rho(x)=\frac{1/2}{\lambda(x)+1/2}\le 1=\rho(0.032741).\#$$

Remark 1. In west, through experiment or through practice observation, many researchers [1-14] have obtained the normal range of the CPI inflation rate as $x\in[0.02, 0.05]$. But in TCE, from Yin Yang Wu Xing Theory, Zhang and Zhang [21] have already determined: $\rho_0\le\rho_1\le 1$ for the normal range of a healthy economy. Assume that $\rho_1=\rho(x), \rho_2=\rho(x)^2$ and $\rho_3=c\rho(x)$ where $0\le c\le 1$ for an economic society which has the capabilities of both intervention reaction and self-protection. From Corollary 2.1, the condition $\rho_0\le\rho_1\le 1$ is equivalent to that $x\in[1.8828\%, 5.2216\%]$. In other words, in theory of TCE, the normal range of the CPI inflation rate is considered as $x\in[0.018828, 0.052216]$, nearly to $x\in[0.02, 0.05]$, and the center is 3.2741% nearly to 3%. Of course, little difference of the two intervals which makes the diagnosis of disease as a result, there may be no much difference. In fact, TCE uses the rule $\rho_0\le\rho_1\le 1$ from Yin Yang Wu Xing Theory instead of the normal range of a CPI inflation rate. The equivalence of Corollary 2.1 shows that TCE is The scientific which is from TCM (Traditional Chinese Medicine).

Zhang and Zhang [21] have already determined that an economy is said a healthy economy when the intervention reaction coefficient ρ_1 satisfies $1\ge\rho_1\ge\rho_0$. 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 an intervening economic complex subsystem can transmit to other economic complex subsystems which have neighboring relations or alternate relations with the intervening economic complex subsystem. The condition $\rho_1\ge\rho_0$ can be satisfied that $(1-\rho_2\rho_3)\le(\rho_1+\rho_2\rho_3)$, $\rho_2=\rho_1\rho_3$ and $\rho_3=\rho_1$ for an economic complex system since $\rho_1+\rho_2=1$ implies $\rho_1=\varphi\approx 0.61803\ge\rho_0$. In this case, $\rho_2=\varphi^2\approx 0.38197\ge\rho_0^2$. If this assumptions is set up, then the intervening principle: "Real disease with a healthy economy is to rush down its son and virtual disease with a healthy economy is to fill its mother " based on "Yin Yang Wu Xing" theory according to the image mathematics in Zhang and Shao [20], is quite reasonable.

But, in general, the ability of self-protection often is insufficient for an usual economic complex system, i.e., ρ_3 is small. A common standard is $\rho_3=(1-\rho_1)/(2\rho_2)\approx 1/2$ which comes from the healthy 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 an economic complex system. Thus the general parameter condition is often $\rho_1\approx 0.61803\ge\rho_3\approx 0.5\ge\rho_2\approx 0.38197$. Interestingly, they are all near to the golden numbers. It is the idea to consider the unhealthy number $\rho_0'=0.68232780$ since the poor condition of self-protection ability $\rho_3=\rho_0'/2=0.34116390$ can make the following unhealthy 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 $\rho_3=\rho_0'/2=0.34116390$.

By Theorem **2.1** and Corollary **2.1**, the interval $x\in[0.02, 0.05]$ implies the following condition:

$$1\ge\rho_1=\rho(x)\ge 0.61440=\rho(0.02)=\rho(0.05).$$

And the interval $x\in[0.020168, 0.049694]$ implies

$1 \geq \rho_1 = \rho(x) \geq \varphi = \rho(0.020168) = \rho(0.049694)$.

And the interval $x \in [0.018828, 0.052216]$ implies $1 \geq \rho_1 = \rho(x) \geq \rho_0 = \rho(0.018828) = \rho(0.052216)$, where $\lambda(0.018828) = \lambda(0.052216) = (1-\rho_0)/(2\rho_0) = \rho_0^2$ since $(1-\rho_0^3) = (\rho_0 + \rho_0^3)$.

And the interval $x \in [0.022943, 0.045016]$ implies $1 \geq \rho_1 = \rho(x) \geq \rho_0' = \rho(0.022943) = \rho(0.045016)$, where

$$\lambda(0.022943) = \lambda(0.045016) = (1-\rho_0')/(2\rho_0') = (\rho_0')^2/2$$

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 are considered as a normal economic society health. If keep two decimal places, then first three intervals are the same as $x \in [0.02, 0.05]$. This shows that the range $x \in [0.02, 0.05]$ is stable. The interval as the normal range of a CPI inflation rate may be also appropriate. To conservative estimates, the length of the largest of the first three interval ranges, i.e., $x \in [0.018828, 0.052216]$, are used as the theoretical analysis of the normal range. In fact, the range $x \in [0.018828, 0.052216]$ is better than the range $x \in [0.02, 0.05]$ because $\rho_0 = \rho(0.018828) = \rho(0.052216)$ and $\lambda(0.018828) = \lambda(0.052216) = (1-\rho_0)/(2\rho_0) = \rho_0^2$ which satisfy the healthy balance conditions $\rho_1 = \rho_3, \rho_2 = \rho_1\rho_3$, and $(1-\rho_2\rho_3) = (\rho_1 + \rho_2\rho_3)$ 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 $1 \geq \rho_1 = \rho(x) \geq \rho_0$ or the range $x \in [0.018828, 0.052216]$ is the healthy condition of both the killing relationship and the loving relation at the same time. But neither are the others. The CPI inflation rate must be precise calculation to keep at least 6 decimal places can ensure correct because of its sensitivity to the diagnosis of disease.

Remark 2. Western Economics is different from TCE because TCE has a concept of *Chi or Qi* as a form of energy. As the energy concept, to say that one subsystem of the economic society is not running properly (or disease, abnormal), it is equivalent to say that the energy deviation from the average of the subsystem is too large, the high (real disease) or the low (virtual disease).

For the normal range of a CPI inflation rate of some economic society as $x \in [1.8828\%, 5.2216\%]$, in TCE, if $x > 5.2216\%$, the economy is considered as a real disease since the CPI inflation rate is too high; if $x < 1.8828\%$, the economy is considered as a virtual disease since the CPI inflation rate is too low.

Thus TCE identifies an important indicator for an economic society's health. The value of the CPI inflation rate, which, under normal conditions, ranges from 1.8828% to 5.2216%. 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 a CPI inflation rate is a Yin condition; when there is a real disease, the condition of a CPI inflation rate is a Yang condition.

But there do not exist these concepts of both real economic diseases and virtual economic diseases in Western Economics.

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, such that it is able to yield a general Yin or Yang condition. And it is in relation to the average behavior of the studied phenomenon, and it 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 $-0.05, 0.6, 0.032741$ 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:

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

$$\lambda(t_0) = 0 \leq \lambda(x) = (1-\rho(x))/(2\rho(x)) \leq \rho_0^2 = \lambda(u)$$
$$= \lambda(v) = \rho(u)^2 = \rho(v)^2 \leq \rho_2 = \rho(x)^2 \leq \rho_1 = \rho(x) \leq 1.\#$$

3. Relationship of Steady Multilateral Systems

3.1. Energy Changes of a Steady Multilateral System

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

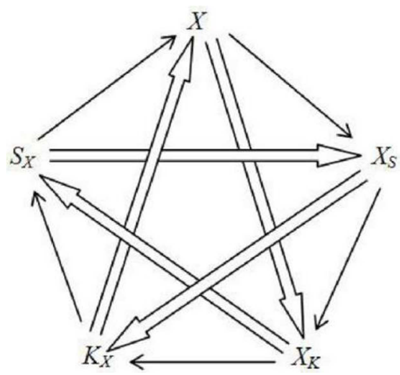

Figure 1. *Finding Yin Yang Wu Xing Model.*

Theorem 3.1 (Zhang and Shao [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.

It can be proved by Theorem 3.2 below 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

$$\varphi(X_K)\ge\varphi(X_S)\ge\varphi(X)\ge\varphi(K_X)\ge\varphi(S_X).$$

It is called Yin Yang Wu Xing model, denoted by V^5.

The Yin Yang Wu Xing model can be written as follows: Define $V_0=X, V_1=X_S, V_2=X_K, V_3=K_X, V_4=S_X$, corresponding to wood, fire, earth, metal, water, respectively, and assume that $V=V_0+V_1+V_2+V_3+V_4$ where $V_i\cap V_j=\varnothing, \forall i\ne j$.

And take $\Re=\{R_0,R_1,\cdots,R_4\}$ satisfying

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

where $V_i\times V_j=\{(x,y): x\in V_i, y\in V_j\}$ is the Descartes product in set theory and the multiplication relation operation is

$R_i*R_j=\{(x,y): \exists u\in V \text{ such that } (x,u)\in R_i, (u,y)\in R_j\}$.

The relation multiplication of * is isomorphic to the addition of module 5. Then V^5 is a steady multilateral system with one equivalent relation R_0 and two incompatibility relations $R_1=R_4^{-1}$ and $R_2=R_3^{-1}$ where $R_i^{-1}=\{(x,y):(y,x)\in R_i\}$ is the inverse operation. The Yin and Yang means the two incompatibility relations and the Wu Xing means the collection of five disjoint classification of $V=V_0+V_1+V_2+V_3+V_4$.

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 society economic 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 by Zhang and Shao [20], in order to ensure the reproducibility such that the analysis conclusion can be applicable to any a complex system, a logical analysis model which has nothing to do with the object of study should be chosen. 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.

Western Economics is different from TCE because 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 (*Jing-Luo* (经络) *or Zang Xiang* (藏象)) 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, a society economy as the first physiological system of the steady multilateral system following the Yin Yang Wu Xing theory was classified into five equivalence classes in Zhang and Zhang [21] as follows:

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

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

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

metal (K_X)={science or education as lung; public facilities as large intestine; GBR (the General Budget Revenue); boldness, fur, spicy, west, autumn, accept};

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

jun-fire (X_S^j)={President or Governor as heart; government as small intestine; Finance (right of making money), brain, making blood or whole body, seriousness bitter taste, whole direction, 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 Theorem 3.3 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 Theorem 3.3 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 second physiological system of the steady multilateral system controls the first physiological system of the steady multilateral system, abiding by the following rules.

Attaining Rule: *The second physiological system of the steady multilateral system will work by using Attaining Rule, if the first physiological system of the steady multilateral system runs normally. The work is in order to attain the Chi or energy from the first physiological system of the steady multilateral system by mainly utilizing the balance of the loving relationship of the first physiological system*.

In mathematics, suppose that the economy of X is healthy. If X is intervened, then the second physiological system will attain the *Chi* or energy from X directly. Suppose that the economy of X is unhealthy. If X is intervened, then the second physiological system will attain the *Chi* or energy from X indirectly. If virtual X is intervened, it will attain the *Chi* or energy (Yang energy) from the son X_S of X. If real X is intervened, it will attain the *Chi* or energy (Yin energy) from the mother S_X of X.#

Affording Rule: *The second physiological system of the steady multilateral system will work by using Affording Rule, if the first physiological system of the steady multilateral system runs hardly. The work is in order to afford the Chi or energy for the first physiological system of the steady multilateral system, by mainly protecting or maintaining the balance of the killing relationship of the steady multilateral system, to drive the first physiological systems will begin to run normally.*

In mathematics, suppose that the economy of X is healthy. The second physiological system doesn't afford any *Chi* or energy for the first physiological system. Suppose that the economy of X is unhealthy and the capability of self-protection is lack, i.e., $\rho_3 = c\rho(x) \to 0$ and $0 < \rho_1 = \rho(x) < \rho_0$. The second physiological system will afford the *Chi* or energy for X directly, at the same time, affording the *Chi* or energy for other subsystem, in order to protect or maintain the balance of the killing relationship, abiding by the intervening principle of "Strong inhibition of the same time, support the weak", such that the capability of self-protection is restored, i.e, $\rho_3 = c\rho(x) > 0$ and $1 \geq \rho_1 = \rho(x) \geq \rho_0$, to drive the first physiological system beginning to work.

The *Chi* or energy is also called the food hereafter for simply. In order to get the food, by Attaining Rule, 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.

Energy concept is an important concept in Physics. Zhang and Zhang [21] introduces this concept to the multilateral systems. And image mathematics by Zhang and Shao [20] uses these concepts to deal with the multilateral system diseases (economic index too high or too low). In mathematics, a multilateral system is said to have Energy (or Dynamic) if there is a non-negative function $\varphi(*)$ which makes every subsystem meaningful of the multilateral system. Similarly to Zhang and Zhang [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 multilateral system during a normal operation, its energy function for any subsystem of the 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 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 also often considered a kind of relation diseases. The relation disease is defined as the relation of two sick subsystems. In general, a relation disease is less serious if the relation satisfies one of both the loving relationship and the killing relationship of the steady multilateral system. In this case, in general, the CPI inflation rate $x \in [0.018828, 0.052216]$ which means $\rho_0 \leq \rho_1 = \rho(x) \leq 1$. This relation disease is less serious because this relation disease can not undermine the loving order or the killing order of the steady multilateral system. The less serious relation disease 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 the relation disease is **more serious** if the relation not only doesn't satisfy the killing relationship of the steady multilateral system, but also can destroy the killing order, i.e., there is an incest order. In this case, in general, the CPI inflation rate $x \in [0.018828, 0.052216]$ which means $0 < \rho_1 = \rho(x) < \rho_0$. This relation disease is **more serious** because the relation disease can destroy the killing order of the steady multilateral system if the disease continues to develop. The **more serious** relation disease can make both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 decreasing response to intervention.

There are also many relation diseases which cannot destroy the loving order or the killing order of the steady multilateral system although the relation doesn't satisfy strictly the loving relationship or the killing relationship of the steady multilateral system, i.e., there is not an incest order. These relation diseases are called **rare** since they are hardly occurrence for a healthy economy.

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? West economics emphasizes directly economic treatments on a disease subsystem after the disease of subsystem has occurred, but the indirect intervening of oriental economics 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 less serious which does not need to be intervened? what relation disease will be more serious which needs to be intervened?

3.2. Kinds of Relation Disease of Steady Multilateral Systems

For a steady multilateral system V imitating an economy 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 3.1 (involving (相及) and infringing (相犯)) *Suppose that both X and X_S having the loving relationship fall ill. Consider a relation disease occurred between X and X_S.*

The relation disease between X and X_S is called less serious if X is a virtual disease and so is X_S at the same time. The less serious relation disease between virtual X and virtual X_S is also called a mother's disease involving in her son. The mother is the cause of disease.

The relation disease between X and X_S is also called less serious if X is a real disease and so is X_S at the same time. The less serious relation disease between real X and real X_S is also called a son's disease infringing upon its mother. The son is the cause of disease.

The relation disease between X and X_S is called rare if X is a real disease but X_S is a virtual disease at the same time, or if X is a virtual disease but X_S is a real disease at the same time. The rare relation disease implies that they cannot destroy the loving order although real X cannot love virtual X_S or virtual X cannot love real X_S.

Definition 3.2 (multiplying (相乘) and insulting (相侮)) *Suppose that both X and X_K having the killing relationship fall ill. Consider a relation disease occurred between X and X_K.*

The relation disease between X and X_K is called less serious if X is a real disease and X_K is a virtual disease at the same time. The less serious relation disease between X and X_K is also called a multiplying relation.

The relation disease between X and X_K is called more serious if X is a virtual disease but X_K is a real disease at the same time. The more serious relation disease between X and X_K is also called an insulting relation. It means that X has been harmed by X_K through the method of incest.

The relation disease between X and X_K is called rare if X is a real disease and so is X_K at the same time, or if X is a virtual disease and so is X_K at the same time. The rare relation disease implies that they cannot destroy the killing order from X to X_K although real X cannot kill real X_K or virtual X cannot kill virtual X_K.

The relation disease between X, X_K and K_X is called more serious if X is a real disease, and X_K is a virtual disease but K_X is also a virtual disease at same time, i.e., not only real X multiplies in virtual X_K, but also insults virtual K_X by using the method of incest. It is because the energy of real X is too high. The more serious relation disease between X, X_K, and K_X is also called a multiplying-insulting (乘侮) relation.

The relation disease between X, X_K, and S_X is called more serious if X is a real disease, and X_K is a virtual disease but S_X is also real disease at same time, i.e., not only real X multiplies in virtual X_K, but also real S_X insults virtual X_K by using the method of incest. It is because the energy of virtual X_K is too low. The more serious relation disease *between* X, X_K, *and* S_X *is also called a multiplying-insulting (乘侮) relation.*

Only the more serious relation disease can destroy the killing relationship order of the Yin Yang Wu Xing system. All the therapeutic principles need to prevent the more serious relation disease occurrence in the first place.

The disease of multiplying-insulting relation will result in more than three subsystems falling-ill. Generally, three or more subsystems falling-ill, it will be difficult to treat. Therefore, the multiplying-insulting relation disease should be avoided as much as possible. In Chinese words, it is that"Again and again, not only to the repeated to four" (只有再一再二，没有再三再四)-Allow one or two subsystems fall ill, but Don't allow three or four subsystems fall ill.

3.3. First Transfer Law of Diseases with a Healthy Economy

Suppose that a steady multilateral system V imitating an economy having energy function $\varphi(*)$ is normal or healthy. Let x be the CPI inflation rate of V. Assume that $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$, 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, which is equivalent to the normal range $x \in [0.018828, 0.052216]$ or the healthy condition $\rho_1 + \rho_2\rho_3 \ge 1 - \rho_2\rho_3$. That $c \to 0$ implies that the body is without the ability of self-protection, i.e., $\rho_3 = c\rho(x) \to 0$. Of course, the body cannot be healthy. It is because for any $x \ne 0.032741$ when $c \to 0$, there are

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

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 Theorem 3.2 can be obtained as the transfer law of occurrence and change of diseases with a healthy economy.

Theorem 3.2. *Suppose that an economy is healthy. Let the CPI inflation rate be* $x \in [1.8828\%, 5.2216\%]$ *which is equivalent to the conditions:* $\rho_0 \le \rho_1 = \rho(x) \le 1 = \rho(3.2741\%)$ *and* $0 < c \le 1$.

In this case, almost always, the less serious relation disease will occur and change. If the disease continues to develop, the change can make a more serious relation disease occur.

The occurrence and change of diseases with a healthy economy has its transfer law: The first occurrence and change of the loving relationship and the killing relationship after the loving relationship disease. In other words, the following statements are true.

(1). If a subsystem X *of a healthy economy* V *falls a virtual disease, the transfer law is the first occurrence of the virtual disease of the mother* S_X *of* X *with a less serious relation disease between virtual* S_X *and virtual* X, *and secondly the real disease of the bane* K_X *of* X *after the virtual disease of* S_X *with a less serious relation disease between real* K_X *and virtual* X, *and thirdly the real disease of the prisoner* X_K *of* X *with a* ***more serious*** *relation disease between virtual* X *and real* X_K, *and fourthly the virtual disease of the son* X_S *of* X *with a less serious relation disease between virtual* X *and virtual* X_S, *and finally the new remission virtual disease of the subsystem* X *itself, and for the next round of disease transmission, until disease rehabilitation.*

(2). If a subsystem X *of a healthy economy* V *encounters a real disease, the transfer law is the first occurrence of the real disease of the son* X_S *of* X *with a less serious relation disease between real* X *and real* X_S, *and secondly the virtual disease of the prisoner* X_K *of* X *after the real disease of* X_S *with a less serious relation disease between real* X *and virtual* X_K, *and thirdly the virtual disease of the bane* K_X *of* X *with a* ***more serious*** *relation disease between virtual* K_X *and real* X, *and fourthly the real disease of the mother* S_X *of* X *with a less serious relation disease between real* S_X *and real* X, *and finally the new abated real disease of the subsystem* X *itself, and for the next round of disease transmission, until disease rehabilitation.*

All first transfer laws of diseases with a healthy complex system are summed up as Figures 2 and 3.

The proof of Theorem 3.2 is very similar to Zhang [23].

Remark 4. Theorem 3.2 is called the transfer law of occurrence and change of diseases with a healthy economy, simply, the first transfer law. For a real disease, the first transfer law is along the loving relationship order transmission as follows:

$$\text{real } X \xrightarrow{less} \text{real } X_S \xrightarrow{rare} \text{virtual } X_K$$
$$\xrightarrow{more} \text{virtual } K_X \xrightarrow{rare} \text{real } S_X \xrightarrow{less} \text{real } X.$$

For a virtual disease, the first transfer law is against the loving relationship order transmission as follows:

$$\text{virtual } X \xleftarrow{less} \text{virtual } S_X \xleftarrow{rare} \text{real } K_X$$
$$\xleftarrow{more} \text{real } X_K \xleftarrow{rare} \text{virtual } X_S \xleftarrow{less} \text{virtual } X.$$

The transfer relation of the first transfer law running is the loving relationship, denoted by $\to$.

The running condition of the first transfer law is both $(\rho_1 + \rho_2\rho_3) \ge (1 - \rho_2\rho_3)$ and $\rho_3 = c\rho(x) > 0$. By Theorem 2.1 and Corollary 2.1, the running condition is nearly equivalent to both $\rho_0 \le \rho_1 = \rho(x) \le 1$ and $0 < c \le 1$. The best-state condition of the first transfer law is $\rho_3 = c\rho(x)$

where $c \to 1$ 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 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 treating problems were the question: in the treating process, destroyed the balance of the normal subsystems which are not sick or intervened systems. 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 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, $\rho_3 = c\rho(x) \to \rho(x) = \rho_1$, 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 the healthy economy.

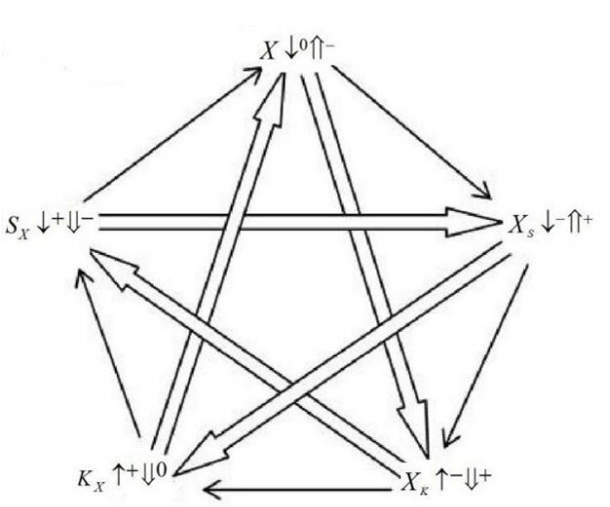

Figure 2. *Transfer law of virtual diseases for a healthy economy.*

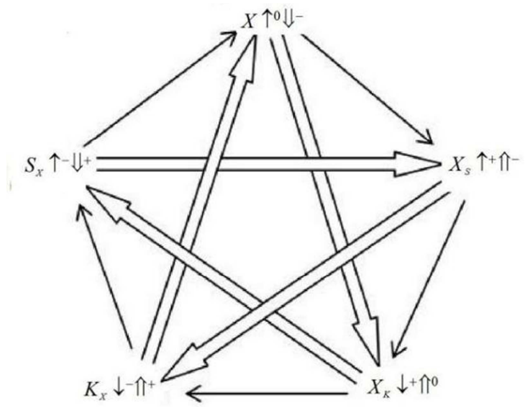

Figure 3. *Transfer law of real diseases for a healthy economy.*

3.4. Second Transfer Law of Diseases with an Unhealthy Economy

Suppose that a steady multilateral system V imitating an economy having energy function $\varphi(*)$ is abnormal or unhealthy. Let x be the CPI inflation rate of V. Assume that $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ 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 $x \notin [0.018828, 0.052216]$.

From Zhang and Shao [20], by using Corollary 2.1 and Theorems 2.1 and 3.1, the following Theorem 3.3 can be obtained as the transfer law of occurrence and change of diseases with an unhealthy economy.

Theorem 3.3. *Suppose that an economy is unhealthy. Let the CPI inflation rate be* $x \notin [0.018828, 0.052216]$ *which is equivalent to the conditions* $1 \geq \rho_0 > \rho_1 = \rho(x) > 0$ *and* $0 \leq c \leq 1$.

In this case, almost always, the rare relation disease will occur and change. If the disease continues to develop, the change can make a more serious relation disease occur.

The transfer of disease with an unhealthy economy has its transfer law: Only there is the transfer of the killing relationship. In other words, the following statements are true.

(1). If a subsystem X *of an unhealthy economy* V *falls a virtual disease, then the disease comes from the son* X_S *of* X. *The transfer law is the first occurrence of the virtual disease of the prisoner* X_K *of* X *with a rare relation disease between virtual* X *and virtual* X_K, *and secondly the virtual disease of the mother* S_X *of* X *after the virtual disease of* X_K *with a rare relation disease between virtual* X_K *and virtual* S_X, *and thirdly the virtual disease of the son* X_S *of* X *with a rare relation disease between virtual* S_X *and virtual* X_S, *and fourthly the real disease of the bane* K_X *of* X *with a more serious relation disease between virtual* X_S *and real* K_X, *and finally the new remission virtual disease of the*

subsystem X itself with a less serious relation disease between real K_X and virtual X, and for the next round of disease transmission, until disease rehabilitation.

(2). If a subsystem X of an unhealthy economy V falls a real disease, then the disease comes from the mother S_X of X. The transfer law is the first occurrence of the real disease of the bane K_X of X with a rare relation disease between real K_X and real X, and secondly the real disease of the son X_S of X after the real disease of the bane K_X of X with a rare relation disease between real X_S and real K_X, and thirdly the real disease of the mother S_X of X with a rare relation disease between real S_X and real X_S, and fourthly the virtual disease of the prisoner X_K of X with a ***more serious*** *relation disease between virtual X_K and real S_X, and finally the new abated real disease of the subsystem X itself with a less serious relation disease between real X and virtual X_K, and for the next round of disease transmission, until disease rehabilitation.*

All second transfer laws of diseases with an unhealthy economy are summed up as Figures 4 and 5.

The proof of Theorem 3.3 is very similar to Zhang [23].

Remark 5. Transfer law of Theorem 3.3 is called transfer law of occurrence and change of diseases with an unhealthy economy, simply, the second transfer law. For a virtual disease, the second transfer law is along the killing relationship order transmission as follows:

$$\text{virtual } X \overset{rare}{\Rightarrow} \text{virtual } X_K \overset{rare}{\Rightarrow} \text{virtual } S_X \overset{rare}{\Rightarrow} \text{virtual } X_S$$
$$\overset{more}{\Rightarrow} \text{real } K_X \overset{less}{\Rightarrow} \text{virtual } X.$$

For a real disease, the second transfer law is against the killing relationship order transmission as follows:

$$\text{real } X \overset{rare}{\Leftarrow} \text{real } K_X \overset{rare}{\Leftarrow} \text{real } X_S \overset{rare}{\Leftarrow} \text{real } S_X$$
$$\overset{more}{\Leftarrow} \text{virtual } X_K \overset{less}{\Leftarrow} \text{real } X.$$

The transfer relationship of the second transfer law running is the killing relationship, denoted by $\Rightarrow$.

The running condition of the second transfer law is both

$$(\rho_1 + \rho_2\rho_3) < (1 - \rho_2\rho_3) \text{ and } \rho_3 = c\rho(x) \geq 0.$$

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 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 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 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 $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$.

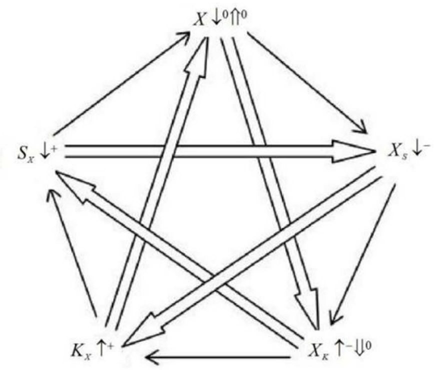

Figure 4. *Transfer law of virtual diseases for an unhealthy economy.*

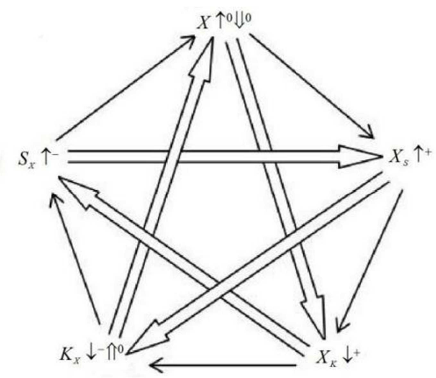

Figure 5. *Transfer law of real diseases for an unhealthy economy.*

Economic intervention resistance problem is that such a question: beginning more appropriate economic intervention treatment, but is no longer valid after a period. In the state

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

by Theorem 3.2, any economic intervention resistance problem is non-existence if the treatment principle of TCE is used. But in the state

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

by Theorem 3.3, the economic intervention resistance problem is always existence, even if the treatment principle of TCE has been used. In other words, the lack of capability of self-protection, i.e., $\rho_3=c\rho(x)\to 0$, implies the possible existence of an economic intervention 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. It is in order to prevent and avoid the economic intervention resistance problem occurrence for the unhealthy economy.

4. Treatment Principle of TCE

In order to explain treatment principle of TCE, the changes in the CPI inflation rate range can be divided into four parts from small to large. From Zhang and Shao [20], Corollary 2.1 and Theorems 2.1, 3.2 and 3.3, 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 CPI inflation rate of the steady multilateral system. Denoted the parameters of the normal range as follows*

$$a=0.020168, b=0.049694, t_0=0.032741.$$

Then the following statements are true.

(1) Suppose that $x<a$ as virtual, in which x falls a virtual disease with an unhealthy economy. The primary treatment is to increase the energy of the subsystem X directly. And the secondary treatment is to increase the energy of the son X_S 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 will fall an expected virtual disease with a healthy economy. 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 will encounter an expected real disease with a healthy economy. 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 encounters a real disease with an unhealthy economy. The primary treatment is to decrease the energy of the subsystem 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.

The proof of Theorem 4.1 is very similar to Zhang [23].

Remark 6. Treatment principle of Theorem 4.1 based on ranges of the CPI 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 relationship and the killing 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 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 to cure 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 relationship to develop since the loving relationship mainly comes from the first physiological system. The loving relationship to develop can strengthen both that $\rho_1+\rho_2\rho_3=\rho(x)+c\rho(x)^3$ 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 $\rho_0\le\rho(x)\le 1$, 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 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 Theorem 3.3, the more serious relation disease is the relation disease between virtual X_S and real K_X, or between virtual X_K and real S_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 X_S or X_K while decrease the energy of K_X or S_X 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 virtual X_K and real S_X occurrence respectively.

The method for doing so can improve the killing relationship to develop since real x_S or real X_K can kill virtual K_X or virtual S_X respectively. The killing 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 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 to cure 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 relationship developing since the loving relationship mainly comes from the first physiological system. The loving relationship developing can strengthen both that $\rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^3$ 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, 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 economic intervention resistance problem.

The secondary treatment is in order to protect or maintain the killing 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 virtual K_X and real 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 virtual K_X and real 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 relationship developing since real K_X or real X can kill virtual X or virtual X_K respectively. The killing 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 economic intervention resistance issue.

5. Chinese CPI for the Earth Subsystem of Steady Multilateral Systems

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 CPI and the annual CPI inflation rates can be measured in Table 1.

Watching Table 1, the state of the CPI inflation rate is: real-normal, real, real, real, real, real, for 1991-1996, respectively. During this period of time, large-scale goods have been made.

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

Also watching Table 1, the state of the GBR inflation rate is: virtual, virtual-normal, real, real-normal, real-normal, real-normal, for 1991-1996, respectively. For the GBR inflation rate of economic society, the normal range of theory is [8.956%, 20.07%] nearly to [9%, 20%], and the center is 13.705% nearly to 14%.

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, public facilities " of metal (K_X).

But also watching Table 1, the state of the PPI inflation rate is: virtual-normal, real-normal, real, real, real, real-normal, for 1991-1996, respectively. For the PPI inflation rate of economic society, the normal range of theory is [0.7362%, 6.4920%] nearly to [1%, 6%], and the center is 3.1359% nearly to 3%.

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

There are three subsystems wood (X), earth (X_K) and metal (K_X) in which both wood (X) and water (S_X) are real but metal (K_X) is real-normal. Both metal (K_X) and wood (X) have the killing relationship from metal (K_X) to wood (X). Both wood (X) and earth (X_K) have the killing relationship from wood (x) to earth (x_K). And both earth (x_K) and metal (κ_X) have the loving relationships from earth (x_K) to metal (κ_X). For an unhealthy economy, the key relation disease is killing. By Definition **3.2**, all killing relation economic diseases are rare because real-normal metal (κ_X) cannot kill real wood (x), and real wood (x) cannot kill real earth (x_K), which cannot destroy the balance of the killing relation from metal (κ_X) to wood (x) and from wood (x) to earth (x_K), respectively. If the subsystem metal (κ_X) is intervened such that it is from real-normal to virtual, then a more serious disease is to occur since virtual metal (κ_X) cannot kill real wood (x) which can destroy the balance of the killing relation from metal (κ_X) to 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 again, the primary treatment is to decrease the energy of the subsystem wood (X) directly. And the secondary treatment is 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 1, the state of the CPI inflation rate is: virtual-normal, virtual, virtual, virtual, virtual, virtual, virtual, 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 earth (x_K) is with an unhealthy sub-economy and falling an expected virtual disease. It is because the CPI inflation rate belongs to the "commerce or business" of earth (x_K).

Also watching Table 1, the state of the PPI inflation rate is virtual-normal, virtual, virtual, virtual, virtual, virtual, for 1997-2003, respectively.

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

There are two subsystems wood (x) and earth (x_K) which have the killing relationship and fall a virtual disease. By Definition 3.2, 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 balance of 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) since 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 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 (κ_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 (κ_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 1 again, the state of the CPI inflation rate is: real-normal, virtual, virtual, real-normal, real, virtual, virtual-normal, real-normal, 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 earth (x_K) is mainly with an unhealthy sub-economy and falls an expected virtual disease. It is because the CPI inflation rate belongs to the "commerce" of earth (x_K).

Also watching Table 1 again, the state of the PPI inflation rate is virtual-normal, virtual-normal, virtual-normal, real-normal, real-normal, virtual, virtual-normal, real-normal, for 2004-2011, respectively.

It means the subsystem wood (x) is mainly with a healthy sub-economy and falls an expected real disease. It is because the manufacture of large-scale goods or the normal PPI inflation rate belongs to"industry" of the subsystem wood (x).

Also watching Table 1 again, the state of the GDP inflation rate is: real-normal, real-normal, real-normal, real-normal, real, real-normal, virtual-normal, real-normal, real-normal, for 2004-2011, respectively. For the GDP inflation rate of economic society, the normal range of theory is [5.8114%, 16.359%] nearly to [6%, 16%], and the center is 0.1028 nearly to 10%.

It means the subsystem water (s_X) is mainly with a healthy sub-economy and falls an expected real disease. It is because the GDP inflation rate belongs to the "army-economics" of water (s_X).

There are three subsystems wood (x), water (s_X) and earth (x_K) in which both water (s_X) and wood (X) are real-normal but earth (x_K) is virtual. By Definition 3.2, the relation disease between virtual earth (x_K) and real water (s_X) is more serious since virtual earth (x_K) cannot kill real water (s_X) which can destroy the killing order from earth (x_K) to water (s_X). Now the subsystem earth (x_K) must 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 economy. It is the case in (1) of Theorem 4.1 for earth (x_K).

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 (κ_X) of earth (x_K), where $(x_K)_S = \kappa_X$ in Figure 1, and at the same time, to decrease the energy of the bane wood (x) of earth (x_K), where $\kappa_{(x_K)} = x$ 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 (κ_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 1 again and again, the state of the CPI inflation rate is: virtual-normal, virtual-normal, virtual-normal, for 2012-2014, respectively.

It means the subsystem earth (x_K) is mainly with a healthy economy and will fall an expected virtual disease. It is because the CPI inflation rate belongs to the "commerce" of earth (x_K).

Also watching Table 1 again and again, the state of the GDP inflation rate is: virtual-normal, virtual-normal, virtual-normal, for 2012-2014, respectively.

It means the subsystem water (s_X) is mainly with a healthy economy and will fall an expected virtual disease. It is because the GDP inflation rate belongs to the "army-economics" of water (s_X).

Also watching Table 1 again and again, the state of the PPI inflation rate is: virtual-normal, virtual-normal, virtual-normal, for 2012-2014, respectively.

Table 1. *Inflation rates of Finance, GDP, CPI, PPI, RPI, GBR and AAF.*

No.	M_2	rate	GDP	rate	Finance inflation rate	CPI (1984=100)	rate
1990	15293.4	.	18774.3	.	.	216.4	.
1991	19349.9	0.26525	21895.5	0.14255	0.10739	223.8	0.03307
1992	25402.2	0.31278	27068.3	0.19110	0.10216	238.1	0.06006
1993	34579.8	0.36129	35524.3	0.23803	0.09956	273.1	0.12816
1994	46923.5	0.35696	48459.6	0.26693	0.07106	339.0	0.19440
1995	60750.5	0.29467	61129.8	0.20727	0.07240	396.9	0.14588
1996	76094.9	0.25258	71572.3	0.14590	0.09310	429.9	0.07676
1997	90995.3	0.19581	79429.5	0.09892	0.08817	441.9	0.02716
1998	104498.5	0.14839	84883.7	0.06425	0.07906	438.4	-0.00798
1999	119897.9	0.14736	90187.7	0.05881	0.08364	432.2	-0.01435
2000	134610.3	0.12271	99776.3	0.09610	0.02427	434.0	0.00415
2001	158301.9	0.17600	110270.4	0.09517	0.07381	437.0	0.00686
2002	185007.0	0.16870	121002.0	0.08869	0.07349	433.5	-0.00807
2003	221222.8	0.19575	136564.6	0.11396	0.07343	438.7	0.01185
2004	254107.0	0.14865	160714.4	0.15027	-0.00141	455.8	0.03752
2005	298755.7	0.17571	185895.8	0.13546	0.03545	464.0	0.01767
2006	345577.9	0.15672	217656.6	0.14592	0.00943	471.0	0.01486
2007	403442.2	0.16744	268019.4	0.18791	-0.01723	493.6	0.04579
2008	475166.6	0.17778	316751.7	0.15385	0.02074	522.7	0.05567
2009	610224.5	0.28423	345629.2	0.08355	0.18521	519.0	-0.00713
2010	725851.8	0.18948	408903.0	0.15474	0.03009	536.1	0.03190
2011	851590.9	0.17323	484123.5	0.15537	0.01545	565.0	0.05115
2012	974148.8	0.14392	534123.0	0.09361	0.04600	579.7	0.02536
2013	1106525.0	0.13589	588018.8	0.09166	0.04052	594.8	0.02539
2014	1228374.8	0.11012	635910.0	0.07531	0.03237	606.7	0.01961

No.	PPI (1984=100)	rate	RPI (1984=100)	rate	GBR	rate	AAF	rate
1990	207.7	.	159.0	.	2937.10	.	7662.1	.
1991	213.7	0.02808	168.9	0.05861	3149.48	0.07231	8157.0	0.06459
1992	225.2	0.05107	180.4	0.06375	3483.37	0.10601	9084.7	0.11373
1993	254.9	0.11652	223.7	0.19356	4348.95	0.24849	10995.5	0.21033
1994	310.2	0.17827	267.3	0.16311	5218.10	0.19985	15750.5	0.43245
1995	356.1	0.12890	307.1	0.12960	6242.20	0.19626	20340.9	0.29144
1996	377.8	0.05744	316.0	0.02816	7407.99	0.18676	22353.7	0.09895
1997	380.8	0.00788	315.0	-.00317	8651.14	0.16781	23788.4	0.06418
1998	370.9	-.02669	302.1	-.04270	9875.95	0.14158	24541.9	0.03168
1999	359.8	-.03085	294.8	-.02476	11444.08	0.15878	24519.1	0.00093
2000	354.4	-.01524	303.1	0.02738	13395.23	0.17049	24915.8	0.01618
2001	351.6	-.00796	299.2	-.01303	16386.04	0.22327	26179.6	0.05072
2002	347.0	-.01326	292.6	-.02256	18903.64	0.15364	27390.8	0.04627
2003	346.7	-.00087	299.3	0.02239	21715.25	0.14873	29691.8	0.08401
2004	356.4	0.02722	317.6	0.05762	26396.47	0.21557	36239.0	0.22051
2005	359.3	0.00807	333.2	0.04682	31649.29	0.19900	39450.9	0.08863
2006	362.9	0.00992	343.2	0.02914	38760.20	0.22468	40810.8	0.03447
2007	376.7	0.03663	353.8	0.02996	51321.78	0.32408	48893.0	0.19804
2008	398.9	0.05565	378.2	0.06452	61330.35	0.19502	58002.2	0.18631
2009	394.1	-.01218	357.8	-.05702	68518.30	0.11720	60361.0	0.04067
2010	406.3	0.03003	377.5	0.05219	83101.51	0.21284	69319.8	0.14842
2011	426.2	0.04669	400.2	0.05672	103874.43	0.24997	81303.9	0.17288
2012	434.7	0.01955	393.4	-.01729	117253.52	0.12880	89453.0	0.10023
2013	440.8	0.01384	385.9	-.01944	129209.64	0.10197	96995.3	0.08432
2014	445.2	0.00988	378.6	-.01928	140370.03	0.08637	102226.1	0.05393

Assume that M_2 or M_2' as issued in the circulation of generalized money, the Gross Domestic Product (GDP) as G or G', the Consumer Price Index (CPI) as C or C', the Producer Price Index (PPI) as P or P', the Retail Price Index (RPI) as R or R', the General Budget Revenue (GBR) as G_b or G_b', and the total output value of Agriculture forestry Animal husbandry and Fishery (AAF) as A or A' for today and last year respectively, the actual need of money in real terms in the circulation $P_0 = M_2' \times (G/G')$ for last year's price level. Then the inflation rate of M_2 is $(M_2 - M_2')/M_2'$, the inflation rate of GDP is $(G-G')/G'$, the inflation rate of CPI is $(C-C')/C'$, the inflation rate of PPI is $(P-P')/P'$, the inflation rate of RPI is $(R-R')/R'$, the inflation rate of GBR is $(G_b - G_b')/G_b'$, the inflation rate of AAF is $(A-A')/A'$, and the annual Finance inflation rate can be measured by $(M_2 - P_0)/P_0$.

It means that the subsystem wood (X) is also with a healthy sub-economy and will be falling an expected virtual disease. It is because the manufacture of large-scale goods or the PPI inflation rate belongs to the“industry” of the subsystem wood (X).

The virtual-normal 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.

There are three subsystems wood (X), water (s_X) and earth (x_K) in which all are virtual-normal. Both earth (x_K) and water (s_X) have the killing relationship. Both wood (X) and earth (x_K) have the killing relationship from wood (X) to earth (x_K). Both water (s_X) and wood (X) have the loving relationship. For a healthy economy, the key relationship is loving. But if this virtual-normal disease of wood (X) is continuously to develop such that it is from virtual-normal to virtual, by Theorem 3.2, 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 sub-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 water (s_X). It is the case in (2) of Theorem 4.1 for water (s_X).

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 (κ_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 xiang-fire (x_S^x) 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 (κ_X)), but also has increased to military spending (to increase the energy of the water (s_X)) while has reduced the agricultural support, such as, reduce the purchase price of agricultural products, etc. (to decrease the energy of 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.

6. Conclusions

This work shows how to treat the diseases of an economic society by using the CPI inflation rate x. For the CPI inflation rate, the normal range of theory is [1.8828%, 5.2216%] nearly to [2%, 5%] and the center is 3.2741% nearly to 3%. The first or second transfer law of economic diseases changes according to the different economic society's CPI inflation rate whether in the normal range or not. For the normal range, the first transfer law in Theorem 3.2 runs; For the abnormal range, the second transfer law in Theorem 3.3 runs.

Assume that the range of economic society's CPI inflation rate x is divided into four parts from small to large. Both second and third are for a healthy economy with an expected virtual or real disease respectively. The treating works are the prevention or treatment for a more serious relation disease between virtual X and real X_K or between virtual K_X and real X respectively. Each of both more serious relation diseases comes from the first transfer law in Theorem 3.2. And both first and fourth are for an unhealthy economy with a virtual or real disease respectively. The treating works are the prevention or treatment for a more serious relation disease between virtual X_S and real K_X or between virtual X_K and real S_X respectively. Each of both more serious relation diseases comes from the second transfer law in Theorem 3.3.

Economic disease treatment should protect and maintain the balance or order of two incompatibility relations: the loving relationship and the killing relationship. The method for doing so can make the $\rho_3 = c\rho(x)$ tending to be large. In other words, using the method can make 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 economic intervention resistance problem, and so on.

(1) Suppose that $x < a = 0.018828$ as virtual, in which X falls a virtual disease with an unhealthy economy. 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 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 $a = 0.018828 \le x < t_0 = 0.032741$ as virtual-normal, in which X will fall an expected virtual disease with a healthy economy. In order to protect and maintain the loving relationship, abide 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 and 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 $t_0 = 0.032741 \le x \le b = 0.052216$ as real-normal, in which X will encounter an expected real disease with a healthy economy. 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 disease 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 $x > b = 0.052216$ as real, in which X encounters a real disease with an unhealthy economy. 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 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.

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