RPI inflation rate from 1% 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
RPI (Retail 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 the treatment principle: “Don't have economic disease cure cure non-ill” (不治已病治未病). It means that for the RPI inflation rate of industry economic society, the normal range of theory is [0.8789%, 5.2241%] nearly to [1%, 5%], and the center is 2.7047% nearly to 3%. The first or second transfer law of economic diseases changes according to the different RPI inflation rate whether in the normal range or not. Assume that the range of the 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 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 RPI inflation rate is used for the wood 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, medical and drug resistance problem

INTRODUCTION
RPI (Retail Price Index) is useful in understanding economic disease. 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 CPI and RPI 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:

\[
RPI = a_1 \left( \frac{P_1}{P_0} \right) + a_2 \left( \frac{P_2}{P_0} \right) + \ldots + a_n \left( \frac{P_n}{P_0} \right),
\]

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

\[
\text{The rate of RPI inflation (price rises)} = \frac{\text{current price level - base price level}}{\text{base price level}} \times 100%,
\]

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 rises 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 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 [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 $\rho_1, \rho_2$ and the self-protection coefficient $\rho_3$ 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 $\rho_1, \rho_2$ and the self-protection coefficient $\rho_3$. 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 $\rho_1, \rho_2$ and the self-protection coefficient $\rho_3$ 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 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 RPI 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 RPI inflation rate is used for the wood($X$) 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.

**PARAMETER MODEL AND BASIC THEOREMS**

The concepts and notations in 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 $\rho_0$ 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 $\rho' = 0.68232780$, namely unhealthy number. It is because under a poor self-protection ability, the unhealthy number $\rho'$ can make the poor healthy balance conditions hold:

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

and

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

if $\rho_1 = \rho', \rho_2 = (\rho')^2 = 0.46557123$ and $\rho_3 = \frac{1}{2} \rho'$. Thus $\rho_0 < \varphi < \rho'$. A parameter model of a PPI 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 PPI inflation rate $x$ described as follows.

Let $x \in (-0.1, 0.65)$ be a PPI inflation rate, where the values $-0.1$ and $0.65$ are the minimum and maximum acceptable the PPI inflation rate. Denoted the value $0.031359$ is the target as the expectation of the PPI inflation rate. Define a function $\lambda(x)$ of the PPI inflation rate $x$ in below:

$$
\lambda(x) = \frac{|x - 0.031359|}{(0.65 - x)(x + 0.1)}, \quad \forall x \in (-0.1, 0.65) = \begin{cases} 
\frac{x - 0.031359}{0.65 - x}(x + 0.1), & 0.6 > x \geq 0.031359; \\
\frac{0.031359 - x}{0.65 - x}(x + 0.1), & -0.1 < x < 0.031359.
\end{cases}
$$

A parameter model is considered as

$$
\rho(x) = \frac{1/2}{\lambda(x) + 1/2}, \quad \forall x \in (-0.1, 0.65). 
$$

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

1. The one that $0 < \rho(x) = \frac{1/2}{\lambda(x) + 1/2} < 1$ is equivalent to the other that $0 < \lambda(x) = \frac{1 - \rho(x)}{2 \rho(x)} < +\infty$,

where $\lambda(x)$ is a monotone decreasing function of $x$ if $x \in (-0.1, 0.031359]$ or a monotone increasing function of $x$ if $x \in (0.031359, 0.65]$; 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

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

and

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

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

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

and

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

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

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

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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, \(\rho_1 - \rho_3 = \rho(x)(1 - c) \geq 0, \rho_2 - \rho_2 \rho_3 = \rho(x)^2(1 - c) \geq 0\) 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 \(1 \geq c \geq \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \geq 0\);

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

\((\rho_1 + \rho_2 \rho_3) = \rho(x) + c \rho(x)^3 < 1 - \rho_2 \rho_3 = 1 - c \rho(x)^3\) where this inequality range to meet

\(|(\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3)| \leq (\rho_0)^3 = 0.31767 \] if \(0 \leq c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(1 > \rho(x) \geq \rho_0^\prime\);

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

\((\rho_1 + \rho_2 \rho_3) = \rho(x) + c \rho(x)^3 < 1 - \rho_2 \rho_3 = 1 - c \rho(x)^3\) where this inequality range to meet

\(|(\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3)| \leq (\rho_0)^3 = 0.41024 \] if \(0 \leq c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(\rho_0 \leq \rho(x) < \rho_0^\prime\);

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

\((\rho_1 + \rho_2 \rho_3) = \rho(x) + c \rho(x)^3 < 1 - \rho_2 \rho_3 = 1 - c \rho(x)^3\) where this inequality range to meet

\(|(\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3)| \leq (\rho_0)^3 = 0.31767 \] if \(1 < c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(\rho_0 \leq \rho(x) < \rho_0^\prime\).

In particular, when \(c\) is nearly to \(1/2\), there are \(\rho_1 - \rho_3 = \rho(x)(1 - c) \to \rho(x)/2, \rho_2 - \rho_2 \rho_3 = \rho(x)^2(1 - c) \to \rho(x)^2/2\) 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 \(0 < c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(1 > \rho(x) \geq \rho_0^\prime\).

(b. The value \(|(\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3)|\) is included in the interval \([-\rho_0^3 = -0.20512, 0)\) respectively if \(0 < c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(\rho_0 \leq \rho(x) < \rho_0^\prime\).

(c. The value \(|(\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3)|\) is included in the interval \([-\rho_0^3 = -0.20512, 0)\) respectively if \(1 < c < \frac{1 - \rho(x)}{2 \rho(x)^3} = \frac{\lambda(x)}{\rho(x)^3} \leq \frac{1}{2}\) in which \(\rho_0 \leq \rho(x) < \rho_0^\prime\).

\[ \text{Corollary 2.1 Under model (4), the following statements hold.} \]

(1) For any \(0 < d < 1\), there is an unique solution \(u \in (-0.1, 0.031359)\) and there is also an unique solution \(v \in (0.031359, 0.65)\), such that

\[ \lambda(0.031359) = 0 \leq \lambda(u) = \frac{1 - \rho(x)}{2 \rho(x)} \leq \lambda(v) = \lambda(0) = (1 - d)/2d, \]

\[ \rho(u) = \rho(v) = d \leq \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \leq 1 = \rho(0.031359). \]

(2) The condition \(x \in [0.01, 0.06]\) is equivalent to each of the following conditions:

\[ \lambda(0.031359) = 0 \leq \lambda(x) = \frac{1 - \rho(x)}{2 \rho(x)} \leq \lambda(0.06) = \lambda(0.01) = \lambda(0.01) = 0.30340, \]
(3) The condition \( x \in [0.009660, 0.060612] \) is equivalent to each of the following conditions:

\[
\lambda \left( \frac{0.031359}{2} \right) = 0 \leq \lambda(x) = \frac{1}{2} \frac{1}{\lambda(x) + 1/2} \leq 1 = \rho(0.031359).
\]

(4) The condition \( x \in [0.007362, 0.064920] \) is equivalent to each of the following conditions:

\[
\lambda \left( \frac{0.031359}{2} \right) = 0 \leq \lambda(x) = \frac{1}{2} \frac{1}{\lambda(x) + 1/2} \leq 1 = \rho(0.031359).
\]

(5) The condition \( x \in [0.014429, 0.052578] \) is equivalent to each of the following conditions:

\[
\lambda \left( \frac{0.031359}{2} \right) = 0 \leq \lambda(x) = \frac{1}{2} \frac{1}{\lambda(x) + 1/2} \leq 1 = \rho(0.031359).
\]

Remark 1. In west, through experiment or through practice observation, by using the Granger causality between the PPI and the CPI, many researchers [1-14] can obtain the normal range of the PPI inflation rate as \( x \in [0.01, 0.06] \) 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 \( \rho_0 = \rho(x), \rho_1 = \rho(x)^2 \) 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 \( \rho_1 \leq \rho \leq 1 \) is equivalent to that \( x \in [0.007362, 0.064920] \). In other words, in Theory of TCE, the normal range of the PPI inflation rate is considered as \( x \in [0.007362, 0.064920] \), nearly to \( x \in [0.01, 0.06] \). 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 \( \rho_0 \leq \rho \leq 1 \) from Yin Yang Wu Xing Theory instead of the normal range of a PPI inflation rate. The equivalence of Corollary 2.1 shows that TCE is The scientific which is from TCM (Traditional Chinese Medicine).
\((1 - \rho_2 \rho_3) = (\rho_1 + \rho_2 \rho_3)\) 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 \(\rho_1 \approx 0.61803 \geq \rho_3 \approx 0.5 \geq \rho_1 \approx 0.38197\). Interestingly, they are all near to the golden numbers. It is the idea to consider the unhealthy number \(\rho'_0 = 0.68237280\) since the poor condition of self-protection ability \(\rho'_3 = \rho'_1 / 2 = \rho'_0 / 2 = 0.34116390\) can make the following unhealthy balance conditions holding

\[
\rho_1 - \rho_3 = \rho_3 = \rho'_0 / 2 = 0.34116390,
\rho_2 - \rho_3 = \rho_1 \rho_3 = (\rho'_0)^2 / 2 = 0.23278561
\]

\[1 - \rho_2 \rho_3 = \rho_1 + \rho_2 \rho_3\]

if \(\rho_1 = \rho'_0\) and \(\rho_2 = (\rho'_0)^2 = 0.46557123\).

By Theorem 2.1 and Corollary 2.1, the interval \(x \in [0.01, 0.06]\) implies the following condition

\[1 \geq \rho_1 = \rho(x) \geq 0.62236 = \rho(0.01) = \rho(0.06)\]

and the interval \(x \in [0.009660, 0.060612]\) implies the following condition

\[1 \geq \rho_1 = \rho(x) \geq \varphi = \rho(0.009660) = \rho(0.060612)\]

and the interval \(x \in [0.007362, 0.064920]\) implies the following condition

\[1 \geq \rho_1 = \rho(x) \geq \rho_0 = \rho(0.007362) = \rho(0.064920)\]

where \(\lambda(0.007362) = \lambda(0.007362) = \frac{1 - \rho_0}{2 \rho_0} = \rho'_0\) since \((1 - \rho_0) = (\rho_0 + \rho'_0)\);

and the interval \(x \in [0.014429, 0.052578]\) implies the following condition

\[1 \geq \rho_1 = \rho(x) \geq \rho'_0 = \rho(0.014429) = \rho(0.052578)\]

where \(\lambda(0.014429) = \lambda(0.052578) = \frac{1 - \rho'_0}{2 \rho'_0} = (\rho'_0)^2\) since \((\rho'_0)^2 = (1 - \rho'_0)\).

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 \(x \in [0.01, 0.06]\). This shows that range \(x \in [0.01, 0.06]\) is stable. The interval as the normal range of a PPI inflation rate may be also appropriate. To conservative estimates, one of the first three interval ranges with the largest length can be used, i.e., \(x \in [0.007362, 0.064920]\), as the theoretical analysis of the normal range in this paper. In fact, the range \(x \in [0.007362, 0.064920]\) is better than the range \(x \in [0.007362, 0.064920]\) because \(\rho_1 = \rho(0.007362) = \rho(0.064920)\) and \(\lambda(0.007362) = \lambda(0.064920) = \frac{1 - \rho_0}{2 \rho_0} = \rho'_0\), which satisfy the healthy balance conditions \(\rho_1 = \rho_3, \rho_2 = \rho_1 \rho_3, (1 - \rho_2 \rho_3) \leq (\rho_1 + \rho_2 \rho_3)\) at the same time if \(\rho_1 = \rho_0, \rho_2 = \rho_0^2\) and \(\rho_3 = c \rho_0\) where \(c \rightarrow 1\). In other words, the parameter \(\rho_1 = \rho(x) \geq \rho_0\) or the range \(x \in [0.007362, 0.064920]\) is the healthy condition of both the killing relationship and the loving relation at the same time. But neither are the others. The PPI 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 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 PPI inflation rate of some economic society as \( x \in [0.007362, 0.064920] \), in TCE, if \( x > 0.064920 \), the economy is considered as a real disease since the PPI inflation rate is too high; if \( x < 0.007362 \), the economy is considered as a virtual disease since the PPI inflation rate is too low. Thus TCE identifies an important indicator for an economic society’s health: the value of the PPI inflation rate, which, under normal conditions, ranges from 0.007362 to 0.064920. 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 PPI inflation rate is a Yin condition; when there is a real disease, the condition of the PPI 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 \( x \in (\text{min}, \text{max}) \) where the values \( \text{min} \) and \( \text{max} \) 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 \(-0.1, 0.65, 0.031359 \) by \( \text{min}, \text{max}, t_0 \), respectively. The equivalent condition of a healthy economy \( \rho_0 \leq \rho_1 = \rho(x) \leq 1 \) can be obtained as \( x \in [u, v], \text{min} < u < t_0 < v < \text{max} \), where

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

and

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

RELATIONSHIP ANALYSIS OF THE STEADY MULTILATERAL SYSTEMS

Energy Changes of a Steady Multilateral System

In order to apply the reasoning to other fields rather than society economy’s health, Zhang etc [21] has started a steady multilateral system imitating society economy. 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:

\[
\mathcal{X} = \{ y \in v \mid y \sim x \}, \mathcal{X}_x = \{ y \in v \mid x \rightarrow y \}, \mathcal{X}_y = \{ y \in v \mid x \leftarrow y \},
\]

\[
K_x = \{ y \in v \mid y \Rightarrow x \}, S_x = \{ y \in v \mid y \rightarrow x \},
\]

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 \( \phi(\ast) \) satisfying

\[
\phi(\mathcal{X}_x) \geq \phi(\mathcal{X}_y) \geq \phi(\mathcal{X}) \geq \phi(K_x) \geq \phi(S_x).
\]

It is called Yin Yang Wu Xing model, denoted by \( V^5 \).
The Yin Yang Wu Xing model can be written as follows: Define

\[ V_0 = \mathcal{X}, V_1 = \mathcal{X}_s, V_2 = \mathcal{X}_k, V_3 = \mathcal{K}_x, V_4 = \mathcal{S}_x, \]

where

\[ V_i \cap V_j = \emptyset, \forall i \neq j. \]

And take \( \mathcal{X} = \{ R_0, R_1, \ldots, R_4 \} \) satisfying

\[ R_i = \sum_{j=0}^{4} V_j \times V_{mod(i,5)}, \quad \forall r \in \{0, 1, \ldots, 4\}, R_i \times R_j \subseteq R_{mod(i,j)}, \]

where \( V_j \times V_j = \{ (x, y) : x \in V_j, y \in V_j \} \) is the Descartes product in set theory and \( R_i \times R_j = \{ (x, y) : \exists u \in V \text{ such that } (x, u) \in R_i \land (u, y) \in R_j \} \) is the multiplication relation operation. The relation multiplication of \( \times \) 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 \( R_2 = R_4 \) 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. Finding Yin Yang Wu Xing Model](image)

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 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 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 Economy is different from TCE because the TCE has a concept of Chi or Qi (氣) 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 \textbf{anatomy system} or \textbf{the first physiological system}. And the first physiological system also affords Chi or energy for the steady multilateral system’s meridian system (\textit{Jing-Luo} (经络) or \textit{Zang Xiang} (藏象)) which forms a parasitic system of the steady multilateral system, called \textbf{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 
\[ p_1 = \rho(x) \to 0, \quad p_2 = \rho(x)^2 \to 0 \quad \text{and} \quad p_3 = c\rho(x) \to 0. \]

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 as follows:

- \textit{xian}-\textit{fire}($x_1$)\{industry, PPI (the Producer Price Index) or RPI (Retail Price Index), liver, bravery, soul, ribs, sour, east, spring, birth\};
- \textit{xian}-\textit{fire}($x_2$)\{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\};
- \textit{earth}($x_3$)\{commerce, CPI (the Consumer Price Index), spleen, stomach, willing, meat, sweetness, center, long summer, combined\};
- \textit{metal}($x_4$)\{science-education, GBR (the General Budget Revenue), lung, large intestine, boldness, fur, spicy, west, autumn, accept\};
- \textit{water}($x_5$)\{army-economic, GDP (the Gross Domestic Product), kidney, bladder, ambition, bone, salty, the north, winter, hiding\};
- \textit{jun}-\textit{fire}($x_6$)\{President or Governor, Finance (right of making money), heart, small intestine, bitter taste, whole economy, throughout the year, overall growth\}.

\[ \text{fire}(x_j) = \text{xian}-\text{fire}(x_j) \cup \text{jun}-\text{fire}(x_j). \]

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

\[ \text{URL}: \text{http://dx.doi.org/10.14738/assrj.4.12.3146}. \]
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 \( x_5 \) of \( x \). If real \( x \) is intervened, it will attain the Chi or energy (Yin energy) from the mother \( x_5 \) 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., \( \rho_3 = c\rho(x) \rightarrow 0 \) 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 is able to get food.
Energy concept is an important concept in Physics. Zhang [17] introduces 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 $\varphi(\ast)$ which makes every subsystem meaningful of the steady multilateral system. Similarly to Zhang [18], 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 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 RPI inflation rate $x \in [0.008789, 0.052241]$ which means $\rho_0 \leq \rho = \rho(x) \leq 1$. 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 $\rho_1, \rho_2$ and the self-protection coefficient $\rho_3$.

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 RPI inflation rate $x \notin [0.008789, 0.052241]$ which means $0 < \rho = \rho(x) < \rho_0$. 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 $\rho_1, \rho_2$ and the self-protection coefficient $\rho_3$ 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? Western mathematics emphasizes directly mathematical treatments on disease subsystem after the disease of subsystem has occurred, but the indirect intervening of oriental mathematics of TCE 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?

**Kinds of Relation Disease of Steady Multilateral Systems**

For a steady multilateral system $V$ with two incompatibility relations, suppose that the subsystems $X, X, X, X, X, X, S, S$ 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 virtual $X, S$ 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 (相生) and insulting (相侮))** Suppose that both $x$ and $X, S$ having the killing 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 real disease and $X, S$ is a virtual disease at the same time. The less serious relation disease between $x$ and $X, S$ is also called a **multiplying** relation.

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

The relation disease between $x$ and $X, S$ is called **rare** if $x$ is a real disease and so is $X, S$ at the same time, or if $x$ is a virtual disease and so is $X, S$ at the same time. The rare relation disease implies that they cannot destroy the killing order from $x$ to $X, S$ although real $x$ cannot kill real $X, S$ or virtual $x$ cannot kill virtual $X, S$.
The relation disease between $x$, $X$, and $K$, is called **more serious** if $x$ is a real disease, and $X$ is a virtual disease but $K$ is also a virtual disease at same time, i.e., not only real $x$ multiplies in virtual $X$, but also insults virtual $K$ by using the method of incest. It is because the energy of real $x$ is too high. The more serious relation disease between $x$, $X$, and $K$ is also called a **multiplying-insulting** relation.

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

**Transfer Law of Diseases 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 $0 \leq c \leq 1$ and $\rho(x)$ is defined in Eqs.(3) and (4). The healthy economy means that the conditions $0 \leq \rho(x) \leq 1$ and $0 < c \leq 1$ hold, which is equivalent to the normal range $x \in \{0.008789, 0.052241\}$ or the healthy condition $\rho_1 + \rho_2 \rho_3 \geq 1 - \rho_2 \rho_3$. 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 $x \neq 0.027047$, when $c \to 0$, there are

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

such that the healthy condition $\rho_1 + \rho_2 \rho_3 \geq 1 - \rho_2 \rho_3$ 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** Let the RPI inflation rate $x \in \{0.008789, 0.052241\}$ which is equivalent to the conditions $\rho_0 \leq \rho_1 = \rho(x) \leq 1$ and $0 < c \leq 1$.

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.

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1) If a subsystem \( x \) of a steady multilateral system \( r \) 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 \( X_x \) of \( x \) with a more serious relation disease between real \( X_x \) and virtual \( x \), and fourthly the virtual disease of the son \( X_x \) of \( x \) with a less serious relation disease between virtual \( X_x \) and virtual \( x \), 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 steady multilateral system \( r \) encounters a real disease, the transfer law is the first occurrence of the real disease of the son \( X_x \) of \( x \) with a less serious relation disease between real \( X_x \) and real \( x \), and secondly the virtual disease of the prisoner \( X_x \) of \( x \) after the real disease of \( X_x \) with a less serious relation disease between virtual \( X_x \) and real \( x \), 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 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.

**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:

\[
\text{real } X \rightarrow \text{real } X_x \rightarrow \text{virtual } X_x \rightarrow \text{virtual } K_x \rightarrow \text{real } S_x \rightarrow \text{real } X.
\]

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

\[
\text{virtual } X \leftarrow \text{virtual } S_x \leftarrow \text{real } K_x \leftarrow \text{real } X_x \leftarrow \text{virtual } X_x \leftarrow \text{virtual } X.
\]

The transfer relation of the first transfer law running is the loving relationship, denoted by \( \rightarrow \). The running condition of the first transfer law is both \((\rho_x + \rho_x \rho_x) \geq (1 - \rho_x \rho_x)\) and \(\rho_x = cp(x) > 0\). By Theorem 2.1 and Corollary 2.1, the running condition is nearly equivalent to both \(\rho_x \leq \rho = \rho(x) \leq 1\) and \(0 < c \leq 1\). The best-state condition of the first transfer law is \(\rho_x = c \rho(x)\) where \(c \rightarrow 1\) which is the best state of \(\rho_x\) for a healthy economy.
To follow or utilize the running of the first transfer law is equivalent to the following method. For doing 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 \(\rho_1 = \rho(x), \rho_2 = \rho(x)^3\) 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., \(\rho(x) \rightarrow 1\) and \(0 < c \rightarrow 1\). #

**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, \(\rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_\nu\), where \(c \rightarrow 1\), 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., \(\rho_3 = c\rho(x) < \rho(x) = \rho_\nu\). To follow or utilize the running of the first transfer law can make both \(\rho(x) \rightarrow 1\) and \(0 < c \rightarrow 1\). 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. #
Transfer Law of Diseases of Steady Multilateral Systems with an unhealthy Economy

Suppose that a steady multilateral system $r$ having energy function $\varphi(\ast)$ is abnormal or unhealthy. Let $x$ be the RPI inflation rate of $r$. 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 $x \not\in [0.008789, 0.052241]$.

From [20] and 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** Let the RPI inflation rate $x \not\in [0.008789, 0.052241]$ which is equivalent to the conditions $\rho_0 > \rho_1 = \rho(x) > 0$ 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 a steady multilateral system $V$ 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 $X_p$ of $x$ with a rare relation disease between virtual $x$ and virtual $X_p$, and secondly the virtual disease of the mother $X_m$ of $x$ after the virtual disease of $X_p$ with a rare relation disease between virtual $x$ and virtual $X_m$, and thirdly the virtual disease of the son $X_s$ of $x$ with a rare relation disease between virtual $s_r$ and virtual $X_m$, and fourthly the real disease of the bane $X_b$ of $x$ with a more serious relation disease between virtual $X_b$ and real $K_s$, and finally the new remission virtual disease of the subsystem $x$ itself with a less serious relation disease between real $K_s$ and virtual $x$, and for the next round of disease transmission, until disease rehabilitation.

2) If a subsystem $x$ of a steady multilateral system $r$ falls a real disease, then the disease comes from the mother $s_r$ of $x$. The transfer law is the first occurrence of the real disease of the bane $K_b$ of $x$ with a rare relation disease between real $x$ and real $K_b$, and secondly the real disease of the son $X_s$ of $x$ after the real disease of the bane $K_b$ of $x$ with a rare relation disease between real $x$ and real $X_s$, and thirdly the real disease of the mother $s_r$ of $x$ with a rare relation disease between real $X_s$ and real $s_r$, and fourthly the virtual disease of the prisoner $X_p$ of $x$ with a more serious relation disease between real $X_p$ and virtual $X_p$, and finally the new abated real disease of the subsystem $X$ itself with a less serious relation disease between virtual $X_p$ and real $X$, 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.#

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

\[ \text{real } X \iff \text{real } S_x \iff \text{real } X_s \iff \text{virtual } X_s \iff \text{real } X. \]

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 \( (\rho_1 + \rho_2\rho_3) < (1 - \rho_2\rho_3) \) 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 \( 1 - c \geq 0 \). 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 \( \rho_3 - \rho_2\rho_3 = \rho(x)^2(1 - c) \) 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 \( 1 \geq c \geq \frac{1 - \rho(x)}{2\rho(x)} \geq 0 \), 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 \( (\rho_0 + \rho_2 \rho_3) \geq (1 - \rho_2 \rho_3) \).#

**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 \( \rho_1 - \rho_2 - \rho_3 = \rho(x)(1-c) \to 0, \rho_2 - \rho_2 \rho_3 = \rho(x)^2(1-c) \to 0 \), by Theorem 3.2, any medical and drug resistance problem is non-existence if the treatment principle of TCE is used. But in the state

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

by Theorem 3.3, the medical and drug 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 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. It is in order to prevent and avoid the medical and drug resistance problem occurrence for the unhealthy economy.#

**TREATMENT PRINCIPLE OF TCE**

In order to explain treatment principle of TCE, the changes in the RPI inflation rate range can be divided into four parts. From [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 RPI inflation rate of the steady multilateral system. Denoted the parameters of the normal range as follows

\[
a = 0.008789, b = 0.052241, t_o = 0.027047.
\]

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 \( x_3 \) of \( x \), and at the same time, to decrease the energy of the prisoner \( x^c \).

2) Suppose that \( x \in [a, t_o) \) as **virtual-normal**, in which \( x \) will fall a virtual disease with a healthy economy. The primary treatment is to increase the energy of the mother subsystem \( x_3 \) of \( x \) which is an indirect treating for \( x \). And the secondary treatment is to increase the energy of \( x^c \), and at the same time, to decrease the energy of the prisoner \( x^c \).

3) Suppose that \( x \in [t_o, b] \) as **real-normal**, in which \( x \) will encounter a real disease with a healthy economy. The primary treatment is to decrease the energy of the son subsystem \( x_3 \) of \( x \) which is an indirect treating for \( x \). And the secondary treatment is to decrease the energy of \( x^c \), and at the same time, to increase the energy of the bane \( x^c \).\( x \).

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 $x$, and at the same time, to increase the energy of the bane $y$. #

**Remark 6.** Treatment principle of Theorem 4.1 based on ranges of the 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 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 $x$ while to decrease the energy of $y$, 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 doing 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 relationship to develop since the loving relationship mainly comes from the first physiological system. The loving relationship to develop can strengthen both that $\rho_1 + \rho_2 \rho_3 = \rho(x) + c\rho(x)^2$ 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, the way can make all of both $\rho(x)$ and $c$ trend 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 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 $x$ and real $y$, or between real $x$ and 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 $x$ or $y$, while decrease the energy of $y$ or $x$, 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 $x$ and real $y$, or between real $x$ and virtual $x$, occurrence respectively.

The method for doing so can improve the killing relationship to develop since real $x$ or $y$ can kill virtual $y$ or $x$, respectively. The killing relationship to develop means that both $\rho_1 - \rho_2 = \rho(x) - c$ and $\rho_2 - \rho_1 \rho_3 = \rho(x)^2 - c$ 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 \(x\) 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 \(x\) or \(x\) while to decrease the energy of \(x\) or \(x_s\) 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 doing 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 relationship developing since the loving relationship mainly comes from the first physiological system. The loving relationship developing can strengthen both that \(\rho_1 + \rho_2 + \rho_3 = \rho(x) + c\rho(x)^2\) 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 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 \(x\) or between virtual \(x\) and real \(x\) 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 \(x\) or between virtual \(x\) and real \(x\) 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 \(x\) or \(x\) while decrease the energy of \(x\) or \(x\) respectively.

The method for doing so can improve the killing relationship developing since real \(x\) or real \(x\) can kill virtual \(x\) or virtual \(x\) 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 medical and drug resistance issue. #

**CHINESE RPI FOR THE WOOD SUBSYSTEM**

Suppose that \(\mu_i\) 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 rate can be measured in Table 1.
Also watching Table 1, 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 1, 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, 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 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($X_x$) 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($X_x$)).

Also watching Table 1, the state of the RPI inflation rate is: virtual, virtual, virtual, real-normal, 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 1, the state of the CPI inflation rate is virtual-normal, virtual, virtual, virtual, virtual, virtual, for 1997-2003, respectively.
It means that the subsystem $\text{earth}(x_k)$ of the economic social system with an unhealthy economy encounters a virtual economic disease since the CPI inflation rate belongs to “commerce” of $\text{earth}(X_k)$.

There are two subsystems $\text{wood}(x)$ and $\text{earth}(x_k)$ which have the killing relation and fall virtual diseases. 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 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 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($x_j$) of wood($x$), and at the same time, to decrease the energy of the prisoner metal($x_j$) of fire($x_j$).

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($x_j$) including jun-fire($x_j$) and xiang-fire($x_j$)) 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($x_j$)).

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 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 $\alpha^* = 2.9515\%$ (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, 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($x_k$). 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($e_z$) of earth($x_k$), where $(X_e)_k = K_x$ in Figure 1, and at the same time, to decrease the energy of the bane wood($x$) of earth($x_k$), where $K_{(x_e)} = x$ 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($e_z$)) 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 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($s_i$) falling a virtual economic disease when it encounters an economic disease. In fact, the economic indicators of GDP which belongs to the subsystem water($s_i$) 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($s_i$) for a healthy economy.
So, at present the most serious problem is to treat the subsystem water($s_j$) falling a virtual disease with a healthy sub-economy of the subsystem of the subsystem water($s_J$). It is the case in (2) of Theorem 4.1 for water($s_J$).

The $s_j$ as $x$ in (2) of Theorem 4.1, the primary treatment is gotten to increase the energy of the mother subsystem metal($e_{K_x}$) of the water($s_j$), where $s_{s_j} = K_x$ in Figure 1. And the secondary treatment is gotten to increase the energy of the water($s_J$) itself while decrease the energy of the prisoner fire($x^3_j$) of the water($s_j$), where $s_{s_x} = K_x$ 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($e_{K_x}$)), but also has increased to military spending (to increase the energy of the water($s_j$)) 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($x^3_j$) including jun-fire($x^3_j$)) and xiang-fire($x^3_j$). 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.

CONCLUSIONS

This work shows how to treat the diseases of a economic society by using the RPI inflation rate $x$. For the RPI inflation rate, the normal range of theory is $[0.8789$, $5.2241$] nearly to $x \in [1\%, 5\%]$. The first or second transfer law of economic diseases changes according to the different economic society's RPI 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 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. Our 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. Our works are the prevention or treatment for a more serious relation disease between virtual $X$, 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 $\rho = c \rho(x)$ 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 medical and drug resistance problem, and so on.
1) Suppose that \( x < 0.8789\% \), 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 \( 0.8789\% \leq x < 2.7047\% \), as virtual-normal, in which \( X \) will fall a 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 his 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 \( 2.7047\% \leq x \leq 5.2241\% \), as real-normal, in which \( X \) will encounter a 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 his 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 \( x > 5.2241\% \), 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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APPENDIX

Proof of Theorem 2.1. Let \( \min = -0.08, \max = 0.6, t_0 = 0.027047. \)

1. Firstly, from Eqs.(3) and (4), by equal ratio theorem,
   \[
   \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \iff \frac{\rho(x)}{1 - \rho(x)} = \frac{1/2}{\lambda(x)} \iff \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)}.
   \]

   If \( x \to \min \) or \( x \to \max \), then \( \lambda(x) \to +\infty \), and \( \rho(x) \to 0 \). If \( x = t_0 \), then \( \lambda(x) = 0 \), and \( \rho(x) = 1 \). Thus \( 0 < \rho(x) \leq 1 \) and \( 0 \leq \lambda(x) < +\infty \) will be equivalent to each other. It is because \( \lambda(x) \) is a monotone decreasing function of \( x \) if \( x \in [\min, t_0) \) or a monotone increasing function of \( x \) if \( x \in [t_0, \max) \); 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 \( \rho(x) \in (0, 1] \).

   In fact, \( \lambda(x) \) is a monotone decreasing function of \( x \) if \( x \in (\min, t_0] \) since
   \[
   \frac{d\lambda(x)}{dx} = -(x - \min)(\max - x) - (t_0 - x)[(\max - x) - (x - \min)]
   \]
   \[
   = \frac{(x - \min)(\max - x) + (t_0 - x)[(\max - x) - (x - \min)]}{[(x - \min)(\max - x)]^2}
   \]
   \[
   = -\frac{[(x - \min)(\max - t_0) + (t_0 - x)(\max - x)]}{[(x - \min)(\max - x)]^2} < 0.
   \]

   And \( \lambda(x) \) is a monotone increasing function of \( x \) if \( x \in [t_0, \max) \) since
   \[
   \frac{d\lambda(x)}{dx} = \frac{(x - \min)(\max - x) - (t_0 - x)[(\max - x) - (x - \min)]}{[(x - \min)(\max - x)]^2}
   \]
   \[
   = \frac{[(\max - x)(t_0 - \min) + (t_0 - x)(\max - x)]}{[(x - \min)(\max - x)]^2} > 0.
   \]

   And \( \rho(x) \) is a monotone decreasing function of \( \lambda(x) \) if \( \lambda(x) \in [0, +\infty) \) since
   \[
   \frac{d\rho(x)}{d\lambda(x)} = -\frac{(1/2)[1]}{[(\lambda(x) + 1/2]^2} = -\frac{1}{2[\lambda(x) + 1/2]^2} < 0.
   \]

   And \( \lambda(x) \) is a monotone decreasing function of \( \rho(x) \) if \( \rho(x) \in (0, 1] \) since
   \[
   \frac{d\rho(x)}{d\rho(x)} = \frac{1}{2}\left(\frac{(\lambda(x) - (1 - \rho(x))[1]}{\rho(x)^2}\right) = -\frac{1}{2\rho(x)^2} < 0.
   \]

2. Let the function \( f(u) = (u + u^3) - (1 - u^3), u \in (0, 1] \). Then \( f(u) \) is a monotone increasing function of \( u \) since \( f(u)' = 1 + 6u^2 > 0 \).
On the other hand, from [20], we have $f(\rho_0) = (\rho_0 + \rho_0^3) - (1 - \rho_0^3) = 0$. Hence, if $\rho(x) \geq \rho_0$, then $f(\rho(x)) = (\rho(x) + \rho(x)^3) - (1 - \rho(x)^3) \geq f(\rho_0) = 0$ because of monotonicity of $f$. Thus $\frac{1 - \rho(x)}{2\rho(x)} \leq \rho(x)^2$.

By the result of (1), we get $\lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \leq \frac{1 - \rho_0}{2\rho_0} = \rho_0^2 \leq \rho(x)^2$ since $\lambda(x)$ is a monotone decreasing function of $\rho(x)$ where $0 < \rho_0 \leq \rho(x)$.

Similarly, we get $\frac{\lambda(x)}{\rho(x)} = \frac{1 - \rho(x)}{2\rho(x)^3} \leq \frac{1 - \rho_0}{2\rho_0^3} = \rho_0 = \rho(x)$ since $h(\rho(x)) = \frac{\lambda(x)}{\rho(x)}$ is a monotone decreasing function of $\rho(x)$ where $0 < \rho_0 \leq \rho(x)$. The proof of the monotone decreasing function $h(\rho(x)) = \frac{\lambda(x)}{\rho(x)}$ is from

$$\frac{dh(\rho(x))}{d\rho(x)} = \frac{1}{2} \left( \frac{(-1)\rho(x)^2 - (1 - \rho(x))[2\rho(x)]}{\rho(x)^4} \right) = \frac{\rho(x)^2 - 2}{2\rho(x)^3} < 0.$$ 

Furthermore, we get $\frac{\lambda(x)}{\rho(x)^2} = \frac{1 - \rho(x)}{2\rho(x)^3} \leq \frac{1 - \rho_0}{2\rho_0^3} = 1$ since $h(\rho(x)) = \frac{\lambda(x)}{\rho(x)^2}$ is a monotone decreasing function of $\rho(x)$ where $0 < \rho_0 \leq \rho(x)$. The proof of the monotone decreasing function $h(\rho(x)) = \frac{\lambda(x)}{\rho(x)^2}$ is from

$$\frac{dh(\rho(x))}{d\rho(x)} = \frac{1}{2} \left( \frac{(-1)\rho(x)^3 - (1 - \rho(x))[3\rho(x)^2]}{\rho(x)^6} \right) = \frac{2\rho(x) - 3}{2\rho(x)^4} < 0.$$ 

3. It is similar to the proof of (2).

4. Let the function $g(u) = (u + cu^3) - (1 - cu^3), u, c \in (0,1]$. Then $g(u)$ is a monotone increasing function of $u$ since $g(u)' = 1 + 6cu^2 > 0$ where $0 < c \leq 1$. On the other hand, $g(u) = 2(c - 1)u^3 + f(u)$, where $f(u) = (u + u^3) - (1 - u^3), u \in (0,1]$ is the same as that in (2). Therefore, if $\rho(x) < \rho_0$, then $g(\rho(x)) < 0$, $g(\rho(x)) > 2(1 - c)\rho_0^3$, since $g(\rho(x)) < g(\rho_0) = 2(c - 1)\rho_0^3 + f(\rho_0) = 2(c - 1)\rho_0^3 \leq 0$.

The condition $g(\rho(x)) < 0$ implies that

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

5. Consider the function $g(u) = 2cu^3 - (1 - u)$ is the same as in (4). Easy to know that $g(u) = 0$ if and only if $c = \frac{1 - u}{2u^3}$. Denoted the function $\frac{1 - u}{2u^3}$ by $c(u)$. The

$c(u) = \frac{1 - u}{2u^3}$ is a monotone decreasing function of $u \in (0,1]$ since

$c(u)' = \frac{1}{2}(-3u^{-4} + 2u^{-3}) = \frac{1}{2u^4}(-3 + 2u) < 0, \forall, u \in (0,1]$. 

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If \( c \geq c(u) \), i.e., \( c \geq \frac{1-u}{2u^3} \), then \( g(u) = 2u^3 \left(c - \frac{1-u}{2u^3}\right) \geq 0 \) which implies 
\((u + cu^3) \geq (1 - cu^3)\).

If \( 0 \leq c < c(u) \), i.e., \( 0 \leq c < \frac{1-u}{2u^3} \), then \( g(u) = 2u^3 \left(c - \frac{1-u}{2u^3}\right) < 0 \) which implies 
\((u + cu^3) < (1 - cu^3)\).

Because the balance solution of \( \frac{1-u}{2u^3} = \frac{1}{2} \) is \( u = \rho_0' \) and \( c(u) = \frac{1-u}{2u^3} \) is a monotone decreasing function of \( u \in (\rho_0, 1] \), we have,
\[
u \in [\rho_0, \rho_0') \iff 1 \geq \frac{1-u}{2u^3} > \frac{1}{2}, \quad \text{and} \quad u \in [\rho_0', 1) \iff 0 < \frac{1-u}{2u^3} \leq \frac{1}{2}.
\]

Thus one is that \( |g(u)| = 2cu^3 + u - 1 |\leq (\rho_0')^3 = 0.31767, \forall u \in [\rho_0', 1) \) if
\[
0 \leq c < \frac{1-u}{2u^3} \leq \frac{1}{2}
\]
\[
|g(u)| = 2u^3 \left(\frac{1-u}{2u^3} - c\right) < 2u^3 \left(\frac{1-u}{2u^3}\right) = 1-u \leq 1-\rho_0' = (\rho_0')^3 = 0.31767.
\]

And two is that \( |g(u)| = 2cu^3 + u - 1 |\leq 2\rho_0^3 = 0.41024, \forall u \in [\rho_0, \rho_0') \) if
\[
0 \leq c \leq \frac{1}{2} < \frac{1-u}{2u^3} \leq 1
\]
\[
|g(u)| = 2u^3 \left(\frac{1-u}{2u^3} - c\right) < 2u^3 \left(\frac{1-u}{2u^3}\right) = 1-u \leq 1-\rho_0 = 2\rho_0^3 = 0.41024.
\]

And three is that \( |g(u)| = 2cu^3 + u - 1 |\leq 0.31767, \forall u \in [\rho_0, \rho_0') \) if \( \frac{1}{2} < c < \frac{1-u}{2u^3} \leq 1 \) since
\[
|g(u)| = 2u^3 \left(\frac{1-u}{2u^3}\right) \leq 2u^3 \cdot \frac{1}{2} = u^3 \leq (\rho_0')^3 = 0.31767.
\]

In particular, from the proof of (3), we have that \( g(u) = 2u^3 \left(c - \frac{1-u}{2u^3}\right) \) is a monotone increasing function of \( u \in (0,1] \). When \( c \) is nearly to \( 1/2 \), we not only obtain directly 
\( \rho_1 - \rho_3 = \rho(x)(1-c) \rightarrow \rho(x)/2, \rho_2 - \rho_3 = \rho(x)^2(1-c) \rightarrow \rho(x)^2/2\), but also get the following statements.

a. \( g(\rho_0') = -(1-2c)(\rho_0')^3 \) and \( g(u) = 2u^3 \left(c - \frac{1-u}{2u^3}\right) \) are nearly to \( 0 \) if \( 0 < c < \frac{1-u}{2u^3} \leq \frac{1}{2} \) in which \( u \in [\rho_0', 1) \).

b. \( g(\rho_0) = -2(1-c)\rho_0^3 \) and \( g(\rho_0') = -(1-2c)(\rho_0')^3 \) are nearly to \( -\rho_0^3 = -0.20512, 0 \) respectively, if \( 0 < c \leq \frac{1}{2} < \frac{1-u}{2u^3} \leq 1 \) in which \( u \in [\rho_0, \rho_0') \).

c. \( g(\rho_0) = -2(1-c)\rho_0^3 \) and \( g(\rho_0') = -(1-2c)(\rho_0')^3 \) are nearly to \( -\rho_0^3 = -0.20512, 0 \) respectively, if \( \frac{1}{2} < c < \frac{1-u}{2u^3} \leq 1 \) in which \( u \in [\rho_0, \rho_0') \).
Taking \( u = \rho(x) \), we get the desired. #

**Proof of Corollary 2.1.** (1). From the proof of (1) in Theorem 2.1, for any \( 0 < d < 1 \), there is an unique solution \( x \in (-0.08, 0.027047] \) and there is also an unique solution \( v \in (0.027047, 0.6) \), such that

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

since \( \hat{\lambda}(x) \) is a monotone decreasing function of \( x \in (-0.08, 0.027047] \) or a monotone increasing function of \( x \in [0.027047, 0.6) \) if \( 0 \leq (1 - d) / (2d) < +\infty \).

By the result of (1) in Theorem 2.1, \( \hat{\lambda}(u) = \hat{\lambda}(v) = (1 - d) / (2d) \) is equivalent to

\[
\rho(u) = \frac{1/2}{\hat{\lambda}(u) + 1/2} = d = \frac{1/2}{\hat{\lambda}(v) + 1/2} = \rho(v).
\]

For \( d = \rho_0, \hat{\lambda}(u) = \hat{\lambda}(v) = (1 - \rho_0) / (2\rho_0) = \rho_0^2 \) since \( (\rho_0 + \rho_0^3) = (1 - \rho_0^3) \).

For \( d = \rho_0', \hat{\lambda}(u) = \hat{\lambda}(v) = (1 - \rho_0') / (2\rho_0') = (\rho_0')^2 / 2 \), since \( (\rho_0')^3 = 1 - \rho_0' \).

The others can be obtained through the calculated directly from the result of (1) by SAS. #

**Proof of Theorem 3.2** Let \( a = 0.8789\% < b = 5.2241\% = t_0 = 2.7047\% \).

1. If a subsystem \( X \) of a steady multilateral system \( V \) falls in a virtual disease, denoted by \( \downarrow^0 \), which means that there is a force such that its energy \( \varphi(X) \) decreases, i.e., changed by the increment \( \Delta \varphi(X) = -\Delta < 0 \). By the Intervention Rule in [20], its capability of intervention reaction can make the mother \( S_X \) of \( X \) to fall a virtual disease by a negative increment \( \Delta \varphi(S_X) = -\rho_1 \Delta < 0 \), in which its absolute is large, denoted by \( \downarrow^- \), and also can make the son \( X_S \) of \( X \) to fall a virtual disease by a negative increment \( \Delta \varphi(X_S) = -\rho_2 \Delta < 0 \), in which its absolute is small, denoted by \( \downarrow^- \). Diseases of the loving subsystems have the same direction of \( X \).

At the same time, its capability of intervention reaction can make the bane \( K_X \) of \( X \) to fall a real disease by a large increment \( \Delta \varphi(K_X) = \rho_1 \Delta > 0 \), denoted by \( \uparrow^+ \), and also can make the prisoner \( X_K \) of \( X \) to fall a real disease by a little increment \( \Delta \varphi(X_K) = \rho_2 \Delta > 0 \), denoted by \( \uparrow^- \). Diseases of the killing subsystems are the opposite direction of \( X \).

The bane \( K_X \) of \( X \) is the biggest victim since its increment \( \Delta \varphi(K_X) = \rho_1 \Delta > 0 \) is large.

On the other hand, if the RPI inflation rate \( x \in [a, b] \), by Corollary 2.1, we have \( 1 \geq \rho_1 = \rho(x) \geq \rho_0 \) such that

\[
\rho_1 + \rho_2 \rho_3 = \rho(x) + c \rho(x)^3 \geq 1 - \rho_2 \rho_3 = 1 - c \rho(x)^3.
\]

Thus, \( c \geq [1 - \rho(x)] / (2 \rho(x)^3) > 0, \forall x \neq t_0 \). It means that the economy is healthy such that there is the capability of self-protection of the steady multilateral system. By the Self-protection Rule in [20], its capability of self-protection can make the biggest victim as the bane \( K_X \) of \( X \) restored by a fixed increment \( \Delta \varphi(K_X)_1 = -\rho_2 \Delta < 0 \), denoted by \( \downarrow^0 \).

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By the Intervention Rule in [20] again and from Theorem 3.1, its capability of self-protection can make the mother $X_K$ of $K_X$ to fall a virtual disease by a negative increment $\Delta \varphi(X_K)_1 = -\rho_2 \rho_3 \Delta < 0$, in which its absolute is large, denoted by $\downarrow^+$, and also can make the son $S_X$ of $K_X$ to fall a virtual disease by a negative increment $\Delta \varphi(S_X)_1 = -\rho_2 \rho_3 \Delta < 0$, in which its absolute is small, denoted by $\downarrow^-$. Diseases of the loving subsystems have the same direction of $K_X$.

At the same time, its capability of self-protection can make the bane $X_S$ of $K_X$ to fall a real disease by a large increment $\Delta \varphi(X_S)_1 = \rho_1 \rho_3 \Delta > 0$, denoted by $\uparrow^+$, and also can make the prisoner $X$ of $K_X$ to fall a real disease by a little increment $\Delta \varphi(X)_1 = \rho_2 \rho_3 \Delta > 0$, denoted by $\uparrow^-$. Diseases of the killing subsystems are the opposite direction of $K_X$. All these changes consist of the following Figure 2.

![Figure 2. Transfer Law of Virtual Disease with a healthy Economy](image)

From Figure 2 or from Theorem 3.2 in [20], if $\rho_3 = \rho_1 = \rho(x)$, i.e., $c = 1$, its capabilities of intervention reaction and self-protection can make the subsystems $X_S$, $X_K$ and $K_X$ be restored at the same time, but the subsystems $X$ and $S_X$ will decrease their energies. In mathematics, from Theorems 3.1 and 3.2 in [20], we can obtain the final increments as follows:

$$\Delta \varphi(X)_2 = \Delta \varphi(X)_1 + \Delta \varphi(X) = -(1 - \rho_2 \rho_3) \Delta = -(1 - c \rho(x)^3) \rightarrow -(1 - \rho(x)^3) < 0,$$

$$\Delta \varphi(S_X)_2 = \Delta \varphi(S_X)_1 + \Delta \varphi(S_X) = -(\rho_1 + \rho_2 \rho_3) \Delta = -(\rho(x) + c \rho(x)^3) \Delta \rightarrow -(\rho(x) + \rho(x)^2) \Delta < 0,$$

$$\Delta \varphi(K_X)_2 = \Delta \varphi(K_X)_1 + \Delta \varphi(K_X) = (\rho_2 - \rho_3) \Delta = \rho(x)(1-c) \Delta \rightarrow 0^+,$$

$$\Delta \varphi(X_K)_2 = \Delta \varphi(X_K)_1 + \Delta \varphi(X_K) = (\rho_2 - \rho_3 \rho_1) \Delta = \rho(x)^2(1-c) \Delta \rightarrow 0^-,$$

$$\Delta \varphi(X_S)_2 = \Delta \varphi(X_S)_1 + \Delta \varphi(X_S) = -(\rho_2 - \rho_1 \rho_3) \Delta = -\rho(x)^2(1-c) \Delta \rightarrow 0^-.$$

It means that the first physiological system of the steady multilateral system runs normally. From the idea of TCE, by the Affording Rule, the second physiological system of the steady
multilateral system will not work to afford for. It is because there is a full Yin food
\( \Delta \varphi(X)_2 = -(1 - \rho_2 \rho_3) \Delta = (1 - c \rho(x)^3) \Delta < 0 \) for the second physiological system if the subsystem \( X \) falls a virtual disease or is intervened for a healthy economy by the Attaining Rule.

By Theorem 2.1 and Corollary 2.1, the RPI inflation rate \( x \in [a, b] \) makes \( 1 \geq \rho(x) \geq \rho_0 \) such that
\[ -(\rho(x) + \rho(x)^3) \leq -(1 - \rho(x)^3), \]
therefore the first transfer law is the first occurrence of the virtual disease of the mother \( S^X_X \) of \( X \) if a subsystem \( X \) of a steady multilateral system \( V \) falls a virtual disease.

From Figure 2 and by Definition 3.1, the relation disease between virtual \( S^X_X \) and virtual \( X \) is less serious since virtual \( S^X_X \) can love virtual \( X \).

If the disease continues to develop, it will lead to undermine firstly the best state of the capability of self-protection of the steady multilateral system, i.e., \( c \neq 1 \), since any disease that causes side effects in the first place dues to the non-best state of self-protection ability, i.e.,
\[ \rho_1 = c \rho(x) < \rho(x) = \rho_0, \]
where \( 0 \leq c < 1 \), even if the treatment principle of TCE is used. Thus the self-protection coefficient \( \rho_3 \) will near to small such that firstly
\[ (\rho_1 - \rho_3) = \rho(x)(1 - c) > 0, \]
secondly \( (\rho_2 - \rho_1 \rho_3) = \rho(x)^2 (1 - c) > 0, \)
and finally
\[ -(\rho_2 - \rho_1 \rho_3) = -\rho(x)^2 (1 - c) < 0. \]

By Theorem 3.1 in [20], the victim \( K_X \) or \( X_K \) of \( X \) will encounter a sick which is different from the disease direction of \( X \), i.e., changed by the increments
\[ \Delta \varphi(K^X_X)_2 = \Delta \varphi(K^X_X)_1 + \Delta \varphi(K^X_X)_1 = (\rho_1 - \rho_3) \Delta = \rho(x)(1 - c) \Delta > 0, \]
\[ \Delta \varphi(X^X_K)_2 = \Delta \varphi(X^X_K)_1 + \Delta \varphi(X^X_K)_1 = (\rho_2 - \rho_1 \rho_3) \Delta = \rho(x)^2 (1 - c) \Delta > 0, \]
respectively. At the same time, the son \( X^S_X \) of \( X \) also falls a virtual ill which is the same disease direction of \( X \), i.e., changed by the increment
\[ \Delta \varphi(X^S_X)_2 = \Delta \varphi(X^S_X)_1 + \Delta \varphi(X^S_X)_1 = -(\rho_2 - \rho_1 \rho_3) \Delta = -\rho(x)^2 (1 - c) \Delta < 0, \]
since \( 1 > c \geq 0 \). Therefore the transfer law is secondly the real disease of the bane \( K^X_X \) of \( X \) after the virtual disease of the mother \( S^X_X \) of \( X \), and thirdly the real disease of the prisoner \( X^K_K \) of \( X \), and fourthly the virtual disease of the son \( X^S_X \) of \( X \), against the loving relationship order transmission.

In fact, watching Figure 2, \( K^X_X \) is real, \( X^K_K \) is real, \( X^S_X \) is virtual, \( X \) is virtual, and \( S^X_X \) is virtual. The order of the transfer law of diseases must be against the loving relationship order transmission. It is because
\[ (\rho_1 - \rho_3) \geq (\rho_2 - \rho_1 \rho_3) \geq -(\rho_2 - \rho_1 \rho_3) \geq -(\rho_1 - \rho_2 \rho_3) \geq -(\rho_1 + \rho_2 \rho_3). \]
The result is obtained from \( (1 - \rho_2 \rho_3) \leq (\rho_1 + \rho_2 \rho_3) \) since
\[(\rho_1 + \rho_2 \rho_3) \leq (\rho_1 - \rho_2 \rho_3) \leq (\rho_1 - \rho_3) = \rho(x)(1-c) \geq \rho(x) \geq (\rho_2 - \rho_1 \rho_3).
\]

In other words, the diseases are transferred from real \( K_X \) to virtual \( S_X \) against the loving relationship order if \( X \) is the cause of diseases or \( X \) is intervened. It implies that the mother \( S_X \) of \( X \) will obtain the best Yin (negative) energy if the energy of \( X \) decreases.

Watching Figure 2 and by Definitions 3.1 and 3.2, the relation disease between real \( K_X \) and virtual \( X \) is less serious since real \( K_X \) can kill virtual \( X \), but the relation disease between virtual \( X \) and real \( X_K \) is more serious since virtual \( X \) cannot kill real \( X_K \) which will destroy the killing order from \( X \) to \( X_K \) of the Yin Yang Wu Xing system if the disease continues to develop.

Finally the relation disease between virtual \( X_S \) and virtual \( X \) is also less serious since virtual \( X \) can love virtual \( X_S \). The less serious relation disease between virtual \( X_S \) and virtual \( X \) makes that the loving order from \( X \) to \( X_S \) will be restored easily. The transferring way of strengthening the loving relationship can make the new virtual disease of \( X \) remission since \( \Delta \varphi(X)_2 = -(1-c \rho(x)^3) \Delta \geq -\Delta = \Delta \varphi(X) \). Despite of the positive way, the system will be still for the next round of disease transmission, until disease rehabilitation.

2. If a subsystem \( X \) of a steady multilateral system \( V \) falls a real disease, denoted by \( \uparrow^0 \), which means that there is a force such that its energy \( \varphi(X) \) increases, i.e., changed by the increment \( \Delta \varphi(X) = \Delta > 0 \). By the Intervention Rule in [20], its capability of intervention reaction can make the son \( X_S \) of \( X \) to fall a real disease by a large increment \( \Delta \varphi(X_S) = \rho_1 \Delta > 0 \), denoted by \( \uparrow^+ \), and also can make the mother \( S_X \) of \( X \) to fall a real disease by a little increment \( \Delta \varphi(S_X) = \rho_2 \Delta > 0 \), denoted by \( \uparrow^- \). Diseases of the loving subsystems have the same direction of \( X \).

At the same time, its capability of intervention reaction can make the prisoner \( X_K \) of \( X \) to fall a virtual disease by a negative increment \( \Delta \varphi(X_K) = -\rho_1 \Delta < 0 \), in which its absolute is large, denoted by \( \downarrow^+ \), and also can make the bane \( K_X \) of \( X \) to fall a virtual disease by a negative increment \( \Delta \varphi(K_X) = -\rho_2 \Delta < 0 \), in which its absolute is small, denoted by \( \downarrow^- \). Diseases of the killing subsystems are the opposite direction of \( X \).

The prisoner \( X_K \) of \( X \) is the biggest victim since its increment \( \Delta \varphi(X_K) = -\rho_1 \Delta < 0 \) is the scope of big changes.

On the other hand, if the RPI inflation rate \( x \in [a, b] \), by Theorem 2.1 and Corollary 2.1, we have \( 1 \geq \rho_1 = \rho(x) \geq \rho_0 \) such that

\[\rho_1 + \rho_2 \rho_3 = \rho(x) + c \rho(x)^3 \geq 1 - \rho_2 \rho_1 = 1 - c \rho(x)^3.\]

Thus, \( c \geq [1 - \rho(x)] / (2 \rho(x)^3) > 0, \forall x \neq t_0 \). It means that the economy is healthy such that there is a good capability of self-protection of the steady multilateral system.
By the Self-protection Rule in [20], its capability of self-protection can make the biggest victim as the prisoner \( X_\kappa \) of \( X \) restored by a fixed increment \( \Delta \varphi(X_\kappa)_1 = \rho_3 \Delta > 0 \), denoted by \( \uparrow^0 \).

By the Intervention Rule in [20] again and from Theorem 3.1, its capability of self-protection can make the son \( K \) of \( X_\kappa \) to fall a real disease by a large increment \( \Delta \varphi(K)_1 = \rho_1 \rho_3 \Delta > 0 \), denoted by \( \uparrow^+ \), and also can make the mother \( X_s \) of \( X_\kappa \) to fall a real disease by a little increment \( \Delta \varphi(X_s)_1 = \rho_2 \rho_3 \Delta > 0 \), denoted by \( \uparrow^- \). Diseases of the loving subsystems have the same direction of \( X_\kappa \).

At the same time, its capability of self-protection can make the prisoner \( S \) of \( X_\kappa \) to fall a virtual disease by a negative increment \( \Delta \varphi(S)_1 = -\rho_1 \rho_3 \Delta < 0 \), in which its absolute is large, denoted by \( \downarrow^+ \), and also can make the bane \( X \) of \( X_\kappa \) to fall a virtual disease by a negative increment \( \Delta \varphi(X)_1 = -\rho_2 \rho_3 \Delta < 0 \), in which its absolute is small, denoted by \( \downarrow^- \). Diseases of the killing subsystems are the opposite direction of \( X_\kappa \). All these changes consist of the following Figure 3.

![Figure 3. Transfer Law of Real Disease with a healthy Economy](URL: http://dx.doi.org/10.14738/assrj.412.3146)

From Figure 3 or by Theorem 3.2 in [20], if \( \rho_3 = \rho_1 = \rho(x) \), i.e., \( c \rightarrow 1 \), its capabilities of intervention reaction and self-protection can make the subsystems \( S \), \( K \) and \( X \) restored at the same time, but the subsystems \( X \) and \( X_s \) will increase their energies. In mathematics, from Theorems 3.1 and 3.2 in [20], we can obtain the final increments as follows:

\[
\Delta \varphi(X)_1 = \Delta \varphi(X)_1 + \Delta \varphi(X) = (1 - \rho_2 \rho_3) \Delta = (1 - c \rho(x)^3) \Delta \rightarrow (1 - \rho(x)^3) \Delta > 0,
\]

\[
\Delta \varphi(X)_2 = \Delta \varphi(X)_1 + \Delta \varphi(X) = (\rho_1 + \rho_2 \rho_3) \Delta = (\rho(x) + c \rho(x)^2) \Delta \rightarrow (\rho(x) + \rho(x)^2) \Delta > 0,
\]

\[
\Delta \varphi(X_\kappa)_1 = \Delta \varphi(X_\kappa)_1 + \Delta \varphi(X_\kappa) = -\rho_1 \rho_3 \Delta = -\rho(x)(1-c) \Delta \rightarrow 0-,
\]

\[
\Delta \varphi(K_\kappa)_1 = \Delta \varphi(K_\kappa)_1 + \Delta \varphi(K_\kappa) = -\rho_2 \rho_3 \Delta = -\rho(x)^2(1-c) \Delta \rightarrow 0-,
\]

\[
\Delta \varphi(S_\kappa)_1 = \Delta \varphi(S_\kappa)_1 + \Delta \varphi(S_\kappa) = (\rho_2 - \rho_1 \rho_3) \Delta = \rho(x)^2(1-c) \Delta \rightarrow 0+.
\]
It means that the first physiological system of the steady multilateral system runs normally. From the idea of TCE, by the Affording Rule, the second physiological system of the steady multilateral system will not work to afford for. It is because there is a full Yang food $$\Delta \varphi(X)_2 = (1 - \rho_2, \rho_3) \Delta = (1 - c \rho(x)^3) \Delta > 0$$ for the second physiological system if the subsystem $$X$$ falls a real disease or is intervened for a healthy economy by the Attaining Rule.

By Theorem 2.1 and Corollary 2.1, the RPI inflation rate $$x \in [a, b]$$ makes $$1 \geq \rho_1 = \rho(x) \geq \rho_0$$ such that $$(\rho(x) + \rho(x)^3) \geq (1 - \rho(x)^3)$$. Therefore the transfer law is the first occurrence of the real disease of the son $$X_s$$ of $$X$$ if a subsystem $$X$$ of a steady multilateral system $$V$$ falls a real disease.

From Figure 3 and by Definition 3.1, the relation disease between real $$X$$ and real $$X_s$$ is less serious since real $$X$$ can love real $$X_s$$.

If the disease continues to develop, it will lead to undermine firstly the capability of self-protection of the steady multilateral system, i.e., $$c \neq 1$$ since any disease that causes side effects in the first place due to the non-best state of self-protection ability, i.e., $$\rho_2 = c \rho(x) < \rho(x) = \rho_1$$ where $$0 \leq c < 1$$, even if the treatment principle of TCE is used. Thus the self-protection coefficient $$\rho_3$$ will near to small such that firstly $$(\rho_1 - \rho_3) = \rho(x)(1 - c) > 0$$, and secondly $$(\rho_2 - \rho_1 \rho_3) = \rho(x)^2 (1 - c) > 0$$, and finally $$-(\rho_2 - \rho_1 \rho_3) = -\rho(x)^2 (1 - c) < 0$$. By Theorem 3.1 in [20], the victim $$X_k$$ or $$K_X$$ of $$X$$ will encounter a sick respectively which is different from the disease direction of $$X$$, i.e., changed by the increments

$$\Delta \varphi(X_k)_2 = \Delta \varphi(X_k)_1 + \Delta \varphi(X_k)_1 = -(\rho_1 - \rho_3) \Delta = -\rho(x)(1 - c) < 0,$$

$$\Delta \varphi(K_X)_2 = \Delta \varphi(K_X)_1 + \Delta \varphi(K_X)_1 = -(\rho_2 - \rho_1 \rho_3) \Delta = -\rho(x)^2 (1 - c) < 0,$$

Respectively since $$1 > c \geq 0$$. At the same time, the mother $$S_x$$ of $$X$$ also falls a real ill which is the same disease direction of $$X$$, i.e., changed by the increment

$$\Delta \varphi(S_x)_2 = \Delta \varphi(S_x)_1 + \Delta \varphi(S_x)_1 = (\rho_2 - \rho_1 \rho_3) \Delta = \rho(x)^2 (1 - c) \Delta > 0$$

since $$1 > c \geq 0$$. Therefore the first transfer law is secondly the virtual disease of the prisoner $$X_k$$ of $$X$$ after the real disease of the son $$X_s$$ of $$X$$, and thirdly the virtual disease of the bane $$K_X$$ of $$X$$, and fourthly the real disease of the mother $$S_x$$ of $$X$$, along the loving relationship order transmission.

In fact, watching Figure 3, $$X_k$$ is virtual, $$K_X$$ is virtual, $$S_x$$ is real, $$X$$ is real, and $$X_s$$ is real. The order of the transfer law of diseases must be along the loving relationship order transmission. It is because

$$-(\rho_1 - \rho_3) \leq -(\rho_2 - \rho_1 \rho_3) \leq (\rho_2 - \rho_1 \rho_3) \leq (\rho_1 - \rho_2 \rho_3) \leq (\rho_1 + \rho_2 \rho_3).$$

The result is obtained from $$(1 - \rho_2 \rho_3) \leq (\rho_1 + \rho_2 \rho_3)$$ since
\[(\rho_1 + \rho_2 \rho_3) \geq (\rho_1 - \rho_2 \rho_3) \geq (\rho_1 - \rho_3) = \rho(x)(1-c) \]
\[\geq \rho(x)^2 (1-c) = (\rho_2 - \rho_1 \rho_3).\]

In other words, the diseases are transferred from virtual \(X_K\) to real \(X_s\) along the loving relationship order if \(X\) is the cause of diseases or \(X\) is intervened. It implies that the son \(X_s\) of \(X\) will obtain the best Yang (positive) energy if the energy of \(X\) increases.

Watching Figure 3 and by Definitions 3.1 and 3.2, the relation disease between real \(X\) and virtual \(X_K\) is less serious since real \(X\) can kill virtual \(X_K\), but the relation disease between virtual \(K_X\) and real \(X\) is more serious since virtual \(K_X\) cannot kill real \(X\) which will destroy the killing order of the Yin Yang Wu Xing system from \(K_X\) to \(X\).

Finally the relation disease between \(S_X\) and \(X\) is also less serious since real \(S_X\) can love real \(X\). The less serious relation disease between real \(S_X\) and real \(X\) makes that the loving order from \(S_X\) to \(X\) will be restored easily. The transferring way of strengthening the loving relationship can make the real disease of \(X\) remission since 
\[\Delta \phi(X)_2 = (1 - c \rho(x)^3 \Delta < \Delta = \Delta \phi(X).\]
Despite of the positive way, the system will be still for the next round of disease transmission, until disease rehabilitation. This completes the proof.

**Proof of Theorem 3.3.** Let \(a = 0.8789\%, b = 5.2241\%, t_0 = 2.7047\%\).

1. If a subsystem \(X\) of a steady multilateral system \(V\) falls a virtual disease, denoted by \(\downarrow^\circ\), which means that there is a force such that its energy \(\phi(X)\) decreases, i.e., changed by the increment \(\Delta \phi(X) = -\Delta < 0\). By the Intervention Rule in [20], its capability of intervention reaction can make the mother \(S_X\) of \(X\) to fall a virtual disease by a negative increment \(\Delta \phi(S_X) = -\rho \Delta < 0\), in which its absolute is large, denoted by \(\downarrow^\ominus\), and also can make the son \(X_s\) of \(X\) to fall a virtual disease by a negative increment \(\Delta \phi(X_s) = -\rho_3 \Delta < 0\), in which its absolute is small, denoted by \(\downarrow^\ominus\). Diseases of the loving subsystems have the same direction of \(X\).

At the same time, its capability of intervention reaction can make the bane \(K_X\) of \(X\) to fall a real disease by a large increment \(\Delta \phi(K_X) = \rho_1 \Delta > 0\), denoted by \(\uparrow\), and also can make the prisoner \(X_k\) of \(X\) to fall a real disease by a little increment \(\Delta \phi(X_k) = \rho_2 \Delta > 0\), denoted by \(\uparrow\). Diseases of the killing subsystems are the opposite direction of \(X\).

The bane \(K_X\) of \(X\) is the biggest victim since its increment \(\Delta \phi(K_X) = \rho_1 \Delta > 0\) is large.

By Corollary 2.1 and Theorem 2.1, the RPI inflation rate \(x \in [a, b]\) makes that \(\rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0\) such that \((\rho_1 + \rho_2 \rho_3) < (1 - \rho_2, \rho_3).\) In this case, the steady multilateral system \(V\) is abnormal or unhealthy. The unhealthy means the lack of self-protection ability. Thus the self-protection coefficient \(\rho_3 = c \rho(x)\) will near to small such that firstly \(0 < (\rho_1 - \rho_2) = \rho(x)(1-c) \rightarrow \rho(x) = \rho_1\) and secondly \(0 < (\rho_2 - \rho_1 \rho_3) = \rho(x)^2 (1-c) \rightarrow \rho(x)^2 = \rho_2, \) i.e., \(c \rightarrow 0,\) if the disease continues to develop.

**URL:** [http://dx.doi.org/10.14738/assrj.412.3146](http://dx.doi.org/10.14738/assrj.412.3146).
Consider in the worst state: \( \rho_3 = c \rho(x) \to 0 \), i.e., \( c \to 0 \), where \( \rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0 \). Its capability of self-protection cannot make the biggest victim as the bane \( K_x \) of \( X \) restored. In mathematics, from Theorems 3.1 and 3.2 in [20], we can obtain the final increments as follows:

\[
\Delta \varphi(X)_2 = \Delta \varphi(X)_1 + \Delta \varphi(X) = -(1 - \rho_2 \rho_3)\Delta = -(1 - c \rho(x)^3)\Delta \to -\Delta < 0,
\]

\[
\Delta \varphi(S_x)_2 = \Delta \varphi(S_x)_1 + \Delta \varphi(S_x) = -(\rho_1 + \rho_2 \rho_3)\Delta = -(\rho(x) + c \rho(x)^2)\Delta \to -\rho_1 \Delta < 0,
\]

\[
\Delta \varphi(K_x)_2 = \Delta \varphi(K_x)_1 + \Delta \varphi(K_x) = (\rho_1 - \rho_2)\Delta = \rho(x)(1 - c)\Delta \to \rho(x)\Delta = \rho_1 \Delta > 0,
\]

\[
\Delta \varphi(X_x)_2 = \Delta \varphi(X_x)_1 + \Delta \varphi(X_x) = (\rho_2 - \rho_1 \rho_3)\Delta = \rho(x)^2(1 - c)\Delta \to \rho(x)^2 \Delta = \rho_2 \Delta > 0,
\]

\[
\Delta \varphi(X_s)_2 = \Delta \varphi(X_s)_1 + \Delta \varphi(X_s) = -(\rho_2 - \rho_1 \rho_3)\Delta = -\rho(x)^2(1 - c)\Delta \to -\rho_2 \Delta < 0.
\]

It means that the first physiological system of the steady multilateral system runs hardly, such that the final increments of self-protection are similar to the increments of intervention reaction. The hard running is not only because the killing order has been destroyed, but also the loving order cannot be running.

From the idea of TCE, by the Affording Rule, the second physiological system of the steady multilateral system will work. It is because a steady multilateral system would become ill or dies if its Chi or energy in the steady multilateral system is imbalanced or exhausted. The purpose of the second physiological system working is to increase the energy of the system, and restores the order of the killing relationship of the Yin Yang Wu Xing system.

By Theorems 3.3 and 3.4 and Corollary 3.2 in [20], the method of “Strong inhibition of the same time, support the weak”, i.e., to increase energy of virtual \( X \) while to reduce energy of real \( X_x \), should be used in this case: \( x \in [a, b] \) which is equivalent to that \( \rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0 \), such that \( (\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3) \). It is because the inequality \( (\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3) \) makes the absolute value of their increments \( \pm(1 - \rho_2 \rho_3)\Delta_i \) becoming large.

By Definitions 3.1 and 3.2, consider the lack of self-protection ability, from Figure 4, for a virtual \( X \) , its capability of intervention reaction can make many relation diseases occurrence. Only the relation between virtual \( X \) and real \( X_X \) can be considered as more serious, since virtual \( X \) cannot kill real \( X_X \), which will destroy the killing order from \( X \) to \( X_X \) of the Yin Yang Wu Xing system if the disease continues to develop.

By Affording Rule again, abiding by the treatment principle of “Strong inhibition of the same time, support the weak”, the intervention of the second physiological system is to increase the energy of virtual \( X \) while to reduce the energy of real \( X_X \). If an intervention force on the subsystem \( X \) of steady multilateral system \( V \) is implemented such that its energy \( \varphi(X) \) has been changed by an increment \( \Delta \varphi(X) = \Delta_i > 0 \), denoted by \( \uparrow^0 \), and at the same time, another intervention force on the subsystem \( X_X \) of steady multilateral system \( V \) also implemented such that its energy \( \varphi(X_X) \) has been changed by an increment \( \Delta \varphi(X_X) = -\Delta_i < 0 \), denoted by \( \downarrow^0 \), then from Theorem 3.4 in [20], all other subsystems: \( S_X, K_X \) and \( X_X \) can be restored at the same time, and the subsystems \( X \) and \( X_X \) will increase and decrease their energies by the same size but the direction opposite.
In mathematics, from Theorems 3.1, 3.3 and 3.4 in [20], we can obtain the final increments as follows:

\[ \Delta \phi(X)_1^i = [(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = [(1 - c \rho(x)^3 + \rho(x)(1-c))] \Delta_1 > 0, \]
\[ \Delta \phi(X)_S^i = [(\rho_2 + \rho_3) - (\rho_1 + \rho_2, \rho_3)] \Delta_1 = 0, \]
\[ \Delta \phi(K)_X^i = -[(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = -(1 - c \rho(x)^3 + \rho(x)(1-c))] \Delta_1 < 0, \]
\[ \Delta \phi(S)_X^i = [\rho_2 - \rho_1, \rho_3] - (\rho_2 - \rho_3, \rho_3)] \Delta_1 = 0. \]

All these changes consist of the following Figure 4. Of course, the virtual disease of \( X \) comes from the son \( X_S \) of \( X \) since any virtual disease always comes from its son by Theorem 3.2 in [20].

In order to cure the virtual \( X \), by Affording Rule, the increment \( \Delta \phi(X)_1^i = [(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = (1 - c \rho(x)^3 + \rho(x)(1-c)) \Delta_1 > 0 \) must be very big. For example \( \Delta_1 \geq \Delta \), which means righteousness to defeat evil, this treatment can make the increment \( \Delta \phi(X)_S^i = -[(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = -(1 - c \rho(x)^3 + \rho(x)(1-c)) \Delta_1 < 0 \) be very small.

In fact, by Affording Rule and from Theorems 3.1-3.4 of [20], we can obtain the all final increments are follows as

\[ \Delta \phi(X)_1^i = \Delta \phi(X)_3^i + \phi(X)_2^i = -[(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 + (\rho_2 - \rho_3, \rho_3) \Delta \]
\[ \leq -[(1 - \rho_2, \rho_3) - (\rho_1 - \rho_3)] \Delta = -[(1 - \rho_2) + \rho_1 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta < 0, \]
\[ \Delta \phi(S)_X^i = \Delta \phi(S)_3^i + \phi(S)_2^i = -[(\rho_1 + \rho_2, \rho_3) -\rho_1 \rho_3 \Delta = -(\rho(x) + c \rho(x)^3) \Delta \rightarrow -\rho_1 \Delta < 0, \]
\[ \Delta \phi(X)_S^i = \Delta \phi(X)_3^i + \phi(X)_2^i = -[(\rho_2 - \rho_3, \rho_3) - \rho_2 \rho_3 \Delta = -\rho(x)^3 (1-c) \Delta \rightarrow -\rho(x)^2 \Delta = -\rho_2 \Delta < 0, \]
\[ \Delta \phi(K)_X^i = \Delta \phi(K)_3^i + \phi(K)_2^i = (\rho_2 - \rho_3, \rho_3) \Delta = \rho(x)^3 (1-c) \Delta \rightarrow \rho(x)^2 \Delta = \rho_2 \Delta > 0, \]
\[ \Delta \phi(X)_1^i = \Delta \phi(X)_3^i + \phi(X)_2^i = [(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 - (\rho_2 - \rho_3, \rho_3) \Delta \]
\[ \geq [(1 - \rho_2, \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = [(1 - \rho_2) + \rho_1 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta > 0. \]
Therefore, the transfer law is the first occurrence of the virtual disease of the prisoner $X_k$ of $X$; secondly the virtual disease of the mother $S_x$ of $X$, thirdly the virtual disease of the son $X_s$ of $X$, and finally the real disease of the bane $K_X$ of $X$.

In fact, watching Figure 4, $X_k$ is virtual, $S_x$ is virtual, $X_s$ is virtual, and $K_X$ is real. The order of the transfer law of diseases must be along the killing relationship order transmission. It is because

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

The result is obtained from $(1 - \rho_2\rho_3) > (\rho_1 + \rho_2\rho_3)$ since

$$[(1 - \rho_2) + \rho_3(\rho_1 - \rho_2) + (\rho_1 - \rho_3)] -(\rho_1 + \rho_2\rho_3) = 1 - \rho_2 - \rho_3\rho_1 - \rho_2\rho_3 - \rho_2 > \rho_1 + \rho_2\rho_3 + \rho_3\rho_1 + \rho_2\rho_3 - \rho_2 = (\rho_1 - \rho_2) + \rho_3\rho_1 > 0,$$

and $(\rho_1 + \rho_2\rho_3) - (\rho_2 - \rho_1\rho_3) = (\rho_1 - \rho_2) - (\rho_1 - \rho_2)\rho_3 = (\rho_1 - \rho_2) - (1 - \rho_2) > 0$. In other words, the diseases are transferred from virtual $X$ to real $K_X$ along the killing relationship order transmission.

By Definition 3.2, the relation disease between virtual $X$ and virtual $X_k$ is rare since the relation cannot destroy the killing order from $X$ and $X_k$ although virtual $X$ cannot kill the virtual $X_k$. The rare relation disease between virtual $X$ and virtual $X_k$ makes that the killing order from $X$ to $X_k$ will be cured difficultly. Although rare refractory disease, but their disease transmission is natural since they are all virtual.

By Definition 3.2, the relation disease between virtual $X_k$ and virtual $S_x$, or between virtual $S_x$ and virtual $X_s$, is also rare. Thus the disease transmission from virtual $X_k$ to virtual $S_x$, or, from virtual $S_x$ to virtual $X_s$, is also natural since they are all virtual.

Only the relation disease between virtual $X_s$ and real $K_X$ is more serious since virtual $X_s$ cannot kill real $K_X$, which will destroy the killing order from $X_s$ to $K_X$ of the Yin Yang Wu Xing system if the disease continues to develop.

Finally the less serious relation disease between real $K_X$ and virtual $X$ makes that the killing order from $K_X$ to $X$ will be restored easily. The transferring way of strengthening the killing relationship by the second physiological system can make the new virtual disease of $X$ remission since virtual $X$ will get the positive increment

$$\Delta \varphi(X)_1 > [(1 - \rho_2) + \rho_3(\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta > 0, \text{ if } \Delta_i \geq \Delta > 0.$$

Despite of the positive way, the system still will be for the next round of disease transmission, until the disease rehabilitation.

2. If a subsystem $X$ of a steady multilateral system $V$ falls a real disease, denoted by $t^0_0$, which means that there is a force such that its energy $\varphi(X)$ increases, i.e., changed by the
increment $Δφ(X) = Δ > 0$. By the Intervention Rule in [20], its capability of intervention reaction can make the son $X_s$ of $X$ to fall a real disease by a large increment $Δφ(X_s) = ρ_1Δ > 0$, denoted by $↑^+$, and also can make the mother $S_X$ of $X$ to fall a real disease by a little increment $Δφ(S_X) = ρ_2Δ > 0$, denoted by $↑^-$. Diseases of the loving subsystems have the same direction of $X$.

At the same time, its capability of intervention reaction can make the prisoner $X_K$ of $X$ to fall a virtual disease by a negative increment $Δφ(X_K) = −ρ_1Δ < 0$, in which its absolute is large, denoted by $↓^-$, and also can make the bane $K_X$ of $X$ to fall a virtual disease by a negative increment $Δφ(K_X) = −ρ_2Δ < 0$, in which its absolute is small, denoted by $↓^-$. Diseases of the killing subsystems are the opposite direction of $X$.

The prisoner $X_K$ of $X$ is the biggest victim since its increment $Δφ(X_K) = −ρ_1Δ < 0$ is the scope of big changes.

By Corollary 2.1 and Theorem 2.1, the RPI inflation rate $x ∈ [a, b]$ makes that $ρ_0 > ρ_1 = ρ(x) > 0$, such that $(ρ_1 + ρ_2ρ_3) < (1 - ρ_2ρ_3)$. In this case, the steady multilateral system $V$ is abnormal or unhealthy. The unhealthy economy implies the lack of self-protection ability. Thus the self-protection coefficient $ρ_3 = cρ(x)$ will near to small such that firstly $0 < (ρ_1 - ρ_3) = ρ(x)(1 - c) → ρ(x) = ρ_1$, and secondly $0 < (ρ_2 - ρ_1ρ_3) = ρ(x)^2(1 - c) → ρ(x)^2 = ρ_2$, i.e., $c → 0$, if the disease continues to develop.

Consider in the worst state: $ρ_3 = cρ(x) → 0$, i.e., $c → 0$, where $ρ_0 > ρ_1 = ρ(x) > ρ_2 = ρ(x)^2 > 0$. Its capability of self-protection cannot make the biggest victim as the prisoner $X_K$ of $X$ be restored.

In mathematics, from Theorems 3.1 and 3.2 in [20], we can obtain the final increments as follows:

\[
Δφ(X)_1 = Δφ(X)_1 + Δφ(X) = (1 - ρ_2ρ_3)Δ = (1 - cρ(x)^3)Δ → Δ > 0, \\
Δφ(X)_2 = Δφ(X)_2 + Δφ(X)_2 = (ρ_1 + ρ_2ρ_3)Δ = ρ(x) + cρ(x)^3Δ → ρ_1Δ > 0, \\
Δφ(X)_3 = Δφ(X)_3 + Δφ(X)_3 = (ρ_2 - ρ_1ρ_3)Δ = -ρ(x)(1 - c)Δ → -ρ(x)Δ = -ρ_2Δ < 0, \\
Δφ(S_X)_1 = Δφ(S_X)_1 + Δφ(K_X)_1 = -ρ(x)(1 - c)Δ → -ρ(x)^2Δ = -ρ_2Δ > 0, \\
Δφ(S_X)_2 = Δφ(S_X)_2 + Δφ(S_X)_2 = (ρ_2 - ρ_1ρ_3)Δ = ρ(x)^2(1 - c)Δ → ρ(x)^2Δ = ρ_2Δ > 0.
\]

It means that the first physiological system of the steady multilateral system runs hardly, such that the final increments of self-protection are similar to the increments of intervention reaction. The hard running is not only because the killing order has been destroyed, but also the loving order cannot be running.

From the idea of TCE, by the Affording Rule, the second physiological system of the steady multilateral system will work. It is because a steady multilateral system would become ill or dies if its *Chi* or energy in the steady multilateral system is imbalanced or exhausted. The purpose of the second physiological system working is to increase the energy of the system, and restores the order of the killing relationship of the Yin Yang Wu Xing system.

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By Theorems 3.3 and 3.4 and Corollary 3.2 in [20], the method of "Strong inhibition of the same time, support the weak", i.e., to decrease energy of real $X$ while to increase energy of virtual $K_x$, should mainly be used in this case: $x \in [a, b]$ which is equivalent to that $\rho_0 > \rho_1 = \rho(x) > 0$, such that $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$. It is because the inequality $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$ makes the increment $(1 - \rho_2 \rho_3) \Delta_1$ becoming large. From Affording Rule, this is just the working method of the second physiological system.

By Definitions 3.1 and 3.2, consider the lack of self-protection ability, from Figure 5, for a real $X$, its capability of intervention reaction will make the many relation diseases occurrence. Only the relation disease between real $X$ and virtual $K_x$ can be considered as more serious, since virtual $K_x$ cannot kill real $X$ which will destroy the killing order from $K_x$ to $X$ of the Yin Yang Wu Xing system if the disease continues to develop.

By Affording Rule again, abiding by the treatment principle of "Strong inhibition of the same time, support the weak", the intervention of the second physiological system is to decrease energy of real $X$ while increase energy of virtual $K_x$. If an intervention force on the subsystem $X$ of the steady multilateral system $V$ is implemented such that its energy $\phi(X)$ has been changed by an increment $\Delta \phi(X) = -\Delta_1 < 0$, denoted by $\downarrow 0$, and at the same time, another intervention force on the subsystem $K_x$ of the steady multilateral system $V$ is also implemented such that its energy $\phi(K_x)$ has been changed by an increment $\Delta \phi(K_x) = \Delta_1 > 0$, denoted by $\uparrow 0$, then from Theorem 3.4 in [20], all other subsystems: $S_x, X_K$ and $X_S$ can be restored at the same time, and the subsystems $X$ and $K_x$ will decrease and increase their energies by the same size but the direction opposite.

In mathematics, from Theorems 3.1, 3.3 and 3.4 in [20], we can obtain the final increments as follows:

$$\Delta \phi(X)^1 = -[(1 - \rho_2 \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = -[(1 - c \rho(x)^3) + \rho(x)(1 - c)] \Delta_1 < 0,$$

$$\Delta \phi(S_x)^1 = -[(\rho_1 + \rho_2 \rho_3) + (\rho_1 + \rho_2 \rho_3)] \Delta_1 = 0,$$

$$\Delta \phi(K_x)^1 = [(1 - \rho_2 \rho_3) + (\rho_1 - \rho_3)] \Delta_1 = [(1 - c \rho(x)^3) + \rho(x)(1 - c)] \Delta_1 > 0,$$

$$\Delta \phi(X_K)^1 = [(\rho_2 - \rho_2 \rho_3) - (\rho_2 - \rho_2 \rho_3)] \Delta_1 = 0,$$

$$\Delta \phi(X_S)^1 = -[(\rho_2 - \rho_2 \rho_3) + (\rho_2 - \rho_2 \rho_3)] \Delta_1 = 0.$$ 

All these changes consist of the following Figure 5.

Of course, the real disease of $X$ comes from the mother $S_x$ of $X$ since any real disease always comes from its mother by Theorem 3.2 in [20].

In order to cure the real $X$, by the Affording Rule, the intervention of the second physiological system must make the increment 

$$\Delta \phi(X)_3 = -(1 - \rho_2 \rho_3) \Delta_1 = -(1 - c \rho(x)^3) \Delta_1.$$
Zhang, Y. (2017). RPI inflation rate from 1% to 5% – Mathematical Reasoning of Economic Intervening Principle Based on Yin Yang Wu Xing Theory in Traditional Chinese Economics (II). *Advances in Social Sciences Research Journal*, 4(12), 376-427.

...tending to be very small, for example $\Delta_1 \geq \Delta$, which means righteousness to defeat evil, this treatment makes the increment $\Delta \varphi(K_X)_3 = (1 - \rho_2 \rho_3) \Delta_1 = (1 - c \rho(x)^3) \Delta_1$ tending to be very big.

![Figure 5. Transfer Law of Real Disease with an unhealthy Economy](image)

In fact, by Affording Rule and from Theorem 3.1 of [20], the all final increments are as follows:

\[
\Delta \varphi(K_X)_1 = \Delta \varphi(K_X)_2 + \varphi(K_X)_3 = [(1 - \rho_2 \rho_3) + (\rho_1 - \rho_3)] \Delta_1 + (\rho_2 - \rho_3) \Delta \\
\geq [(1 - \rho_2 \rho_3) + (\rho_1 - \rho_3) - (\rho_2 - \rho_3) \Delta] = [(1 - \rho_2) + \rho_3 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta > 0, \\
\Delta \varphi(X)_1 = \Delta \varphi(X)_2 + \varphi(X)_3 = (\rho_1 + \rho_2 \rho_3) \Delta = (\rho(x) + c \rho(x)^3) \Delta \to \rho_1 \Delta > 0, \\
\Delta \varphi(S_X)_1 = \Delta \varphi(S_X)_2 + \varphi(S_X)_3 = (\rho_2 - \rho_1 \rho_3) \Delta = \rho(x)^2 (1 - c) \Delta \to \rho(x)^2 \Delta = \rho_2 \Delta > 0, \\
\Delta \varphi(X)_1 = \Delta \varphi(X)_2 + \varphi(X)_3 = -(\rho_2 - \rho_1 \rho_3) \Delta = -\rho(x) (1 - c) \Delta \to -\rho(x) \Delta = -\rho_1 \Delta < 0, \\
\Delta \varphi(X)_1 = \Delta \varphi(X)_2 + \varphi(X)_3 = -(1 - \rho_2 \rho_3) \Delta_1 + (\rho_2 - \rho_3) \Delta \\
\leq -[(1 - \rho_2 \rho_3) (\rho_1 - \rho_2) - (\rho_2 - \rho_1 \rho_3)] \Delta = -[(1 - \rho_2) + \rho_3 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta < 0.
\]

Therefore, the transfer law is the first occurrence of the real disease of the bane $K_x$ of $X$; secondly the real disease of the son $X_s$ of $X$, thirdly the real disease of the mother $S_X$ of $X$, and finally the virtual disease of the prisoner $X_k$ of $X$.

In fact, watching Figure 5, $K_x$ is real, $X_s$ is real, $S_X$ is real, and $X_k$ is virtual. The order of the transfer law of diseases must be against the killing relationship order transmission. It is because

\[
[(1 - \rho_2) + \rho_3 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)] > (\rho_1 + \rho_2 \rho_3) > (\rho_2 - \rho_1 \rho_3) > - (\rho_2 - \rho_1 \rho_3) \\
> -[(1 - \rho_2) + \rho_3 (\rho_1 - \rho_2) + (\rho_1 - \rho_3)].
\]

The result is obtained from $(1 - \rho_2 \rho_3) > (\rho_1 + \rho_2 \rho_3)$ since

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In other words, the diseases are transferred from real $X$ to virtual $X_k$ against the killing relationship order transmission. By Definition 3.2, the relation disease between real $X$ and real $K_X$ is rare since the relation disease cannot destroy the order of the killing relationship from $K_X$ to $X$ although the real $K_X$ cannot kill the real $X$. The rare relation disease between real $X$ and real $X_K$ makes that the killing order from $X$ to $K_X$ will be cured difficultly. Although rare refractory disease, but their disease transmission is natural since they are all virtual.

By Definition 3.2, the relation disease between real $K_X$ and real $X_S$, or between real $X_S$ and real $S_{X'}$, is also rare. Thus the disease transmission from real $K_X$ to real $X_S$, or from real $X_S$ to real $S_{X'}$, is also natural since they are all virtual.

Only the relation disease between real $S_X$ and virtual $X_K$ is more serious since virtual $X_K$ cannot kill real $S_{X'}$, which will destroy the killing order from $X_K$ to $S_X$ of the Yin Yang Wu Xing system if the disease continues to develop.

But the less serious relation disease between virtual $X_K$ and real $X$ makes that the killing order from $X$ to $X_K$ will be restored easily. The transferring way of strengthening the killing relationship by the second physiological system can make the new real disease of $X$ remission since real $X$ will get a negative increment

$$\Delta \phi(X)_2 \leq -[(1 - \rho_2) + \rho_3(\rho_1 - \rho_2) + (\rho_1 - \rho_3)] \Delta < 0 \text{ if } \Delta_i \geq \Delta > 0.$$ 

Despite of the positive way, the system will be still for the next round of disease transmission, until the disease rehabilitation. This completes the proof.

**Proof of Theorem 4.1.** Let $a = 0.8789\%, b = 5.2241\%, t_0 = 2.7047\%$. (1). If $x < a$, then from Theorem 2.1 and Corollary 2.1, we have that $0 < \rho_3 = \rho(x) < \rho_0$ which means that the economy is unhealthy where $0 \leq c \leq 1$ and $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$.

Since $x < a$ means that the RPI inflation rate is too lower than the normal state, thus the subsystem $X$ has encountered the virtual disease.

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 $c \to 1$, 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

$$\Delta \phi(X)_2 \to (1 - \rho(x)^3) \Delta > 0, \Delta \phi(X^{'})_2 \to (\rho(x) + \rho(x)^3) \Delta > 0,$$
respectively. Since the RPI inflation rate $x < a$ makes $0 \leq \rho_1 = \rho(x) < \rho_0$ 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, 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 an unhealthy economic subsystem $X$ with a virtual disease.

Thus the primary treatment should be to increase the energy of the subsystem $X$ directly in order to avoid the side effects issue occurrence for an unhealthy economy. This is just one of the affording working principle of the second physiological system by Affording Rule. The idea means that "Virtual disease with an unhealthy economy is to fill itself".

When the capability of self-protection is nearly to the worst state, i.e., $\rho_3 = c \rho(x) \to 0$ where $c \to 0$, the first physiological system will stop to work, or, the first transfer law will stop to run, while the second physiological system will begin to work, or, the second transfer law will begin to run.

By Affording Rule and the second transfer law in Theorem 3.3, the purpose of the second physiological system working is to improve the physical ability of self-protection of the first physiological system, i.e., to make all of both $\rho_1 - \rho_3 = \rho(x)(1 - c)$ and $\rho_2 - \rho_1, \rho_3 = \rho(x)^3(1 - c)$ tending to be small, i.e., for fixed $\rho(x)$, $c$ tends to be large, at least, greater than zero, to drive the first physiological systems will begin to work.

By the second transfer law in Theorem 3.3, for a virtual $X$, the more serious relation disease is the relation between virtual $X_S$ and real $K_x$ since virtual $X_S$ cannot kill real $K_x$ which can destroy the killing order between $X_S$ and $K_x$ if the disease continues to develop.

Abiding by the TCE’s idea of “Don’t have disease cure cure non-ill”, in order to avoid the more serious relation disease occurrence, we should intervene it when the intervened system was non-ill, but the incidence of second transfer law in Theorem 3.3 by this system will be to occur the more serious relation disease.

According to the intervening principle of “Strong inhibition of the same time, support the weak” from Theorem 3.4 in [20], we get that the secondary treatment is to increase the energy of $X_S$, and at the same time, to decrease the energy of $K_x$.

In general, although the economy is unhealthy and virtual, the capability of self-protection can be any state, i.e., $\rho_3 = c \rho(x) \geq 0$ where $0 \leq c \leq 1$. The primary treatment is mainly for the normal state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c \rho(x) \to \rho(x) = \rho_1, \rho_0 > \rho_1 = \rho(x) > 0$$

where $0 < c \leq 1$ and $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$. The secondary treatment is for the worst state of the capability of self-protection, i.e.,
where \( c \to 0 \) and \( \rho_1 + \rho_2 \rho_3 < (1 - \rho_2 \rho_3) \). Comprehensive use of the two methods for the unhealthy economy with a virtual disease can deal with a general situation, i.e.,

\[
0 \leq \rho_3 = c \rho(x) < \rho(x) = \rho_1, \rho_0 > \rho_1 = \rho(x) > 0
\]

where \( 0 \leq c \leq 1 \) and \( \rho_1 + \rho_2 \rho_3 < (1 - \rho_2 \rho_3) \). #

(2). If \( a \leq x < t_0 \), then from Theorem 2.1 and Corollary 2.1, we have that \( 1 \geq \rho_1 = \rho(x) \geq \rho_0 \) which means that the economy is healthy where in general \( 1 \geq c \geq \frac{1 - \rho(x)}{2 \rho(x)^3} \geq 0 \) such that

\[
(\rho_1 + \rho_2 \rho_3) > (1 - \rho_2 \rho_3);
\]

and \( 1 \geq \frac{1 - \rho(x)}{2 \rho(x)^3} > c \geq 0 \) such that \( (\rho_1 + \rho_2 \rho_3) \approx (1 - \rho_2 \rho_3) \), i.e.,

\[
| (\rho_1 + \rho_2 \rho_3) - (1 - \rho_2 \rho_3) | \leq 2 \rho_0^3 = 0.41024.
\]

Since \( a \leq x < t_0 \) means that the RPI inflation rate is lower than the center \( t_0 \), thus the subsystem \( X \) will encounter a virtual disease if the subsystem \( X \) falls ill.

From Theorem 3.2 and Corollary 3.2 in [20], the subsystem \( X \) will be considered as virtual. First we study the case that the capability of self-protection is in the best state, i.e.,

\[
\rho_3 = c \rho(x) \to \rho(x) = \rho_1 > 0 \text{ where } c \to 1.
\]

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

\[
\Delta \phi(S_X)_2 \to (1 - \rho(x)^3) \Delta > 0, \Delta \phi(X)_2 \to (\rho(x) + \rho(x)^3) \Delta > 0,
\]

respectively. Since the RPI inflation rate \( a \leq x < t_0 \) makes \( 1 \geq \rho_1 = \rho(x) \geq \rho_0 \) such that mainly \( (\rho(x) + \rho(x)^3) \geq (1 - \rho(x)^3) \), therefore the subsystem \( X \) can obtain the large increment \( \Delta \phi(X)_2 = (\rho(x) + \rho(x)^3) \Delta > 0 \) and the subsystem \( S_X \) will get the small increment \( \Delta \phi(S_X)_2 = (1 - \rho(x)^3) \Delta \). The later is the pseudo side effects issue, by Attaining Rule, 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 (Yang energy) from the intervened subsystem \( S_X \) directly for a healthy economy with a virtual disease.

Thus we get the primary treatment should be to increase the energy of the subsystem \( S_X \) in order to avoid the side effects issue occurrence for a healthy economy. The idea means that "Virtual disease with a healthy economy is to fill his mother".

Since the economy is healthy, the worst state of the capability of self-protection will not be possible, i.e., \( \rho_3 = c \rho(x) > 0 \) where \( 0 < c \leq 1 \), the first physiological system will not stop to work, or, the first transfer law will not stop to run, while the second transfer law will not begin to run.
Is the first physiological system working in order to improve its corresponding intervention ability, at the same time, to provide the food for the second physiological system. In other words, it makes $\rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^3$ tending to be large while $1 - \rho_2\rho_3 = (1 - c\rho(x)^3)$ tending to be small, i.e., $\rho(x)$ tends to large while $c$ also tends to be large, the best, equal to 1, such that the non-existence of side effects, or, the non-existence of medical and drug resistance problem. The work mainly improves the loving relationship since the loving relationship is mainly used.

By the first transfer law in Theorem 3.2 for a virtual $X$, the more serious relation disease is the relation between virtual $X$ and real $X_K$ since virtual $X$ cannot kill the real $X_K$ which can destroy the killing order between $X$ and $X_K$ if the disease continues to develop.

Abiding by the TCE’s idea of “Don’t have disease cure cure non-ill”, in order to avoid the more serious relation disease occurrence, we should intervene it when the intervened system was non-disease, but the incidence of the first transfer law in Theorem 3.2 by this system will be to occur the more serious relation disease.

According to the intervening principle of “Strong inhibition of the same time, support the weak” from Theorem 3.4 in [20], we get that the secondary treatment is to increase the energy of $X$, and at the same time, to decrease the energy of $X_K$.

In general, since the economy is healthy and virtual, the capability of self-protection cannot be the worst state and should be normal, i.e., $\rho_3 = c\rho(x) > 0$ where $0 < c \leq 1$. The primary treatment is for the best state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where $c \rightarrow 1$ and $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$. The secondary treatment is for the normal state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c\rho(x) < \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where $0 < c < 1$ and $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$. Comprehensive use of the two methods for the healthy economy with a virtual disease can deal with a general situation, i.e.,

$$0 < \rho_3 = c\rho(x) \leq \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where $0 < c \leq 1$ and $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$.

(3). If $t_0 \leq x \leq b$, then from Theorem 2.1 and Corollary 2.1, we have that $1 \geq \rho_1 = \rho(x) \geq \rho_0$ which means that the economy is healthy where in general $1 \geq c \geq \frac{1 - \rho(x)}{2\rho(x)^3} \geq 0$ such that $(\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)$;

and $1 \geq \frac{1 - \rho(x)}{2\rho(x)^3} > c \geq 0$ such that $(\rho_1 + \rho_2\rho_3) \approx (1 - \rho_2\rho_3)$, i.e.,

$$| (\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3) | < 2\rho_0^3 = 0.41024.$$
Since \( t_0 \leq x \leq b \) means that the RPI inflation rate is higher than or equal to the center \( t_0 \), thus the subsystem \( X \) will encounter a real disease if the subsystem \( X \) falls ill.

From Theorem 3.2 and Corollary 3.2 in [20], the subsystem \( X \) will be considered as real. First we study the case 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 increments

\[
\Delta \varphi(X)_2 \rightarrow -(\rho(x) + \rho(x)^3)\Delta > 0, \Delta \varphi(X_s)_2 \rightarrow -(1 - \rho(x)^3)\Delta > 0,
\]

respectively. Since the RPI inflation rate \( t_0 \leq x \leq b \) makes \( 1 \geq \rho_1 = \rho(x) \geq \rho_0 \) such that mainly \( (\rho(x) + \rho(x)^3) \geq (1 - \rho(x)^3) \), 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, 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 (Yin energy) from the intervened subsystem \( X_s \) directly for a healthy economy with a real disease.

Thus we get the primary treatment should be to decrease the energy of the subsystem \( X_s \) in order to avoid the side effects issue occurrence for a healthy economy. The idea means that “Real disease with a healthy economy is to rush down his son”.

Since the economy is healthy, the state of the capability of self-protection should be normal, i.e., \( \rho_3 = c\rho(x) > 0 \) where \( 0 < c \leq 1 \). In this case, the first physiological system will not stop to work, or, the first transfer law will not stop to run, while the second transfer law will not begin to run.

Is the first physiological system working in order to improve its corresponding intervention ability, at the same time, to provide the food for the second physiological system. In other words, it makes \( \rho_1 + \rho_2\rho_3 = \rho(x) + c\rho(x)^3 \) tending to be large while \( 1 - \rho_2\rho_3 = (1 - c\rho(x)^3) \) tending to be small. Equivalently, the way can make \( \rho(x) \) tending to large and \( c \) also tending to be large, the best, equal to 1, such that the non-existence of side effects issue, or, the non-existence of medical and drug resistance problem. The work mainly improves the loving relationship since the loving relationship is mainly used.

By the first transfer law in Theorem 3.2, the more serious relation disease is the relation between virtual \( K_X \) and real \( X \) since virtual \( K_X \) cannot kill the real \( X \) which can destroy the killing order between \( K_X \) and \( X \) if the disease continues to develop.

Abiding by the TCE’s idea of “Don’t have disease cure cure non-ill”, in order to avoid the more serious relation disease occurrence, we should intervene it when the intervened system was non-disease, but the incidence of first transfer law in Theorem 3.2 by this system will be to occur the more serious relation disease.
According to the intervening principle of “Strong inhibition of the same time, support the weak” from Theorem 3.4 in [20], we get that the secondary treatment is to increase the energy of $K_x$, and at the same time, to decrease the energy of $X$.

In general, since the economy is healthy with an expected real disease, the capability of self-protection should be normal, i.e., $ho_3 = c\rho(x) > 0$ \(0 < c \leq 1\). The primary treatment is for the best state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where \(c \rightarrow 1\) and \((\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)\). The secondary treatment is for the normal state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c\rho(x) < \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where \(0 < c < 1\) and \((\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)\). Comprehensive use of the two methods for the healthy economy with a real disease can deal with a general situation, i.e.,

$$0 < \rho_3 = c\rho(x) \leq \rho(x) = \rho_1, \rho_0 \leq \rho_1 = \rho(x) \leq 1$$

where \(0 < c \leq 1\) and \((\rho_1 + \rho_2\rho_3) \geq (1 - \rho_2\rho_3)\).#

(4). If \(x > b\), then from Corollary 2.1, we have that \(0 < \rho_1 = \rho(x) < \rho_3\) which means that the economy is unhealthy where \(0 \leq c \leq 1\) and \((\rho_1 + \rho_2\rho_3) < (1 - \rho_2\rho_3)\). Since \(x > b\) means that the RPI inflation rate is too higher than the normal state, thus the subsystem \(X\) has encountered the real disease.

From Theorem 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., \(\rho_3 = c\rho(x) \rightarrow \rho(x) = \rho_1\) where \(c \rightarrow 1\), 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

$$\Delta\phi(X)_2 \rightarrow -(1 - \rho(x)^3)\Delta < 0, \Delta\phi(S_X)_2 \rightarrow -(\rho(x) + \rho(x)^3)\Delta < 0,$$

respectively. Since the RPI inflation rate \(x > b\) makes \(0 < \rho_1 = \rho(x) < \rho_0\) such that \((\rho(x) + \rho(x)^3) < (1 - \rho(x)^3)\), therefore the subsystem \(X\) can obtain the substantial reduction \(\Delta\phi(X)_2 = -(1 - \rho(x)^3)\Delta < 0\) and the subsystem \(S_X\) will get a modest reduction \(\Delta\phi(S_X) = -(\rho(x) + \rho(x)^3)\Delta < 0\). The later is the pseudo side effects, by Attaining Rule, 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 (Yin energy) from the mother \(S_X\) of the intervened subsystem \(X\). The attaining way is an indirect treating for an unhealthy economic subsystem \(X\) with a real disease.

Thus we get the primary treatment should be to decrease the energy of the subsystem \(X\) directly, in order to avoid the side effects issue occurrence for an unhealthy economy. This is just one of the affording working principle of the second physiological system by Affording Rule. The idea means that “Real disease with an unhealthy economy is to rush down itself”.

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When the capability of self-protection is at the worst state, i.e., $\rho_3 = c\rho(x) \to 0$ where $c \to 0$, the first physiological system will stop to work, or, the first transfer law will stop to run, while the second physiological system will begin to work, or, the second transfer law will begin to run.

By Affording Rule and the second transfer law in Theorem 3.3, the purpose of the second physiological system working is to improve the physical ability of self-protection of the first physiological system, i.e., to make 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, i.e., for fixed $\rho(x)$, $c$ tends to be large, at least, greater than zero, to drive the first physiological systems will begin to work. The work mainly improves the killing relationship since the killing relationship is mainly used.

By the second transfer law in Theorem 3.3, for a real $X$, the more serious relation disease is the relation between virtual $X_k$ and real $S_x$ since virtual $X_k$ cannot kill the real $S_x$ which can destroy the killing order between $X_k$ and $S_x$ if the disease continues to develop.

Abiding the TCE’s idea of “Don’t have disease cure cure non-ill”, in order to avoid the more serious relation disease occurrence, we should intervene it when the intervened system was non-disease, but the incidence of second transfer law in Theorem 3.3 by this system will be to occur the more serious relation disease.

According to the intervening principle of “Strong inhibition of the same time, support the weak” from Theorem 3.4 in [20], we get that the secondary treatment is to decrease the energy of $S_x$, and at the same time, to increase the energy of $X_K$.

In general, although the economy is unhealthy with a real disease, the capability of self-protection can be any state, i.e., $\rho_3 = c\rho(x) \geq 0$ where $0 \leq c \leq 1$. The primary treatment is mainly for the normal state of the capability of self-protection, i.e.,

$$0 < \rho_3 = c\rho(x) \to \rho(x) = \rho_1 > \rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0$$

where $0 < c \leq 1$ and $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$. The secondary treatment is for the worst state of the capability of self-protection, i.e.,

$$0 \leftrightarrow \rho_3 = c\rho(x) < \rho(x) = \rho_1 > \rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0$$

where $c \to 0$ and $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$. Comprehensive use of the two methods for the unhealthy economy with a virtual disease can deal with a general situation, i.e.,

$$0 \leq \rho_3 = c\rho(x) \leq \rho(x) = \rho_1 > \rho_0 > \rho_1 = \rho(x) > \rho_2 = \rho(x)^2 > 0$$

where $0 \leq c \leq 1$ and $(\rho_1 + \rho_2 \rho_3) < (1 - \rho_2 \rho_3)$. This completes the proof.

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Table 1. RPI Inflation Rate

| No. | $M_2$ | rate | GDP | rate | Finance inflation rate | RPI | rate |
|-----|-------|------|-----|------|------------------------|-----|------|
| 1990 | 15293.4 | . | 18774.3 | . | . | 207.7 | . |
| 1991 | 19349.9 | 0.26525 | 21895.5 | 0.14255 | 0.10739 | 213.7 | 0.02808 |
| 1992 | 25402.2 | 0.31278 | 27068.3 | 0.19110 | 0.10216 | 225.2 | 0.05107 |
| 1993 | 34579.8 | 0.36129 | 35524.3 | 0.23803 | 0.09956 | 213.7 | 0.02808 |
| 1994 | 46923.5 | 0.35696 | 48459.6 | 0.26693 | 0.07106 | 213.7 | 0.02808 |
| 1995 | 60750.5 | 0.29467 | 61129.8 | 0.20727 | 0.07240 | 213.7 | 0.02808 |
| 1996 | 76094.9 | 0.25258 | 71572.3 | 0.14590 | 0.09310 | 213.7 | 0.02808 |
| 1997 | 90995.3 | 0.19581 | 79429.5 | 0.09892 | 0.08817 | 213.7 | 0.02808 |
| 1998 | 104498.5 | 0.14839 | 84883.7 | 0.06425 | 0.07906 | 213.7 | 0.02808 |
| 1999 | 119897.9 | 0.14736 | 90187.7 | 0.05881 | 0.08364 | 213.7 | 0.02808 |
| 2000 | 134610.3 | 0.12271 | 99776.3 | 0.09610 | 0.02427 | 213.7 | 0.02808 |
| 2001 | 158301.9 | 0.17600 | 110270.4 | 0.09517 | 0.07381 | 213.7 | 0.02808 |
| 2002 | 185007.0 | 0.16870 | 121002.0 | 0.08869 | 0.07349 | 213.7 | 0.02808 |
| 2003 | 221222.8 | 0.19575 | 136564.6 | 0.11396 | 0.07343 | 213.7 | 0.02808 |
| 2004 | 254107.0 | 0.14865 | 160714.4 | 0.15027 | 0.00141 | 213.7 | 0.02808 |
| 2005 | 298755.7 | 0.17571 | 185895.8 | 0.13546 | 0.03545 | 213.7 | 0.02808 |
| 2006 | 345577.9 | 0.15672 | 217656.6 | 0.13546 | 0.03545 | 213.7 | 0.02808 |
| 2007 | 403442.2 | 0.16744 | 268019.4 | 0.14592 | 0.00943 | 213.7 | 0.02808 |
| 2008 | 475166.6 | 0.17778 | 316751.7 | 0.15385 | 0.02074 | 213.7 | 0.02808 |
| 2009 | 610224.5 | 0.18424 | 345629.2 | 0.18355 | 0.18521 | 213.7 | 0.02808 |
| 2010 | 725851.8 | 0.18948 | 408903.0 | 0.15474 | 0.03009 | 213.7 | 0.02808 |
| 2011 | 851590.9 | 0.17323 | 484123.0 | 0.15537 | 0.01545 | 213.7 | 0.02808 |
| 2012 | 974148.8 | 0.14392 | 534123.0 | 0.09361 | 0.04600 | 213.7 | 0.02808 |
| 2013 | 1106525.0 | 0.13589 | 580018.8 | 0.09166 | 0.04052 | 213.7 | 0.02808 |
| 2014 | 1228374.8 | 0.11012 | 635910.0 | 0.07531 | 0.03237 | 213.7 | 0.02808 |

Assume that $M_2$ or $M_2'$ as issued in the circulation of generalized money and Gross Domestic Product (GDP) as $G$ or $G'$ for today and last year respectively, the actual need of money in real terms in the circulation $P_0 = M_2' \times \frac{G}{G'}$ for last year’s price level. Then the inflation rate of $M_2$ is $\frac{M_2 - M_2'}{M_2}$, the inflation rate of GDP is $\frac{G - G'}{G'}$, and the annual finance inflation rate can be measured by $\frac{M_2 - P_0}{P_0}$.

Both the RPI and the RPI inflation rate can be measured from Eqs (1.1) and (1.2), respectively.