

Market Whirling Theory

—A theory discussing free markets, currency circulation and economy trends

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Abstract:

Many theories claim to explain economic crises and periodic fluctuations in the economy, however, most of them are imperfect at explaining many phenomena throughout history. In this paper, I put forward a new theory and model that explains economic crises and periodic fluctuations in the economy as well as policies for avoiding economic crises. This paper analyzes the direction of currency flow in the free market, and explains why the market is constantly whirling. It also discusses the relationship between money flow speed and GDP, explaining why accelerating the speed of money flow in the market can make a country rich.

Keywords: GDP, visible hand, invisible hand, economic crises, periodic economic fluctuations.

1. Background Introduction

In 1776, the famous economist Adams Smith put forward a concept called the invisible hand. In his book *“The Wealth of Nations”*, Smith argued that in a free market, there existed an invisible hand that ensured society would be spontaneously prosperous if people devoted themselves to self-interested market activities.

“He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By... directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it” [1].

But the history of western countries shows that the free market cannot avoid economy crises. In 1929, stock prices fell sharply in the United States, developing into the Great Depression. This phenomenon challenged the status of Smith’s theory. After that, the British economist John Maynard Keynes put forward the visible hand, claiming that the market was not perfect and the market should be under the guidance of the government. [2] Starting from that time, the quarrels between whether the market of a country should be governed by the government or should be under free market policy has continued for nearly 100 years, most famously in the “Fight of the century” between Keynes and Friedrich Hayek.

2. Discussion of the Paradox of thrift

In order to explore the essence of the free market, we must ignore some modern market innovations, such as the stock market, monetary policy, fiscal policy, money supply and bank, as only in this way we can exclude some disturbance variables and thus explore the reason for the economic crisis in the primitive free market of 19th century Europe. The early free market also experienced economic fluctuations, bringing in new inventions such as stock market that just make our problem more complex. We need to ignore these and explore the reason for the free market in the 19th century.

The British economist Keynes put forward the Paradox of thrift. In this theory, Keynes argued that if individuals tried to save more, then the economy of a country would fail; but, if individuals tried to spend as much money as possible, then a country would become prosperous. [2]

Figure 1 extends the concept of the Paradox of thrift.

Figure 1: Money flow in a market

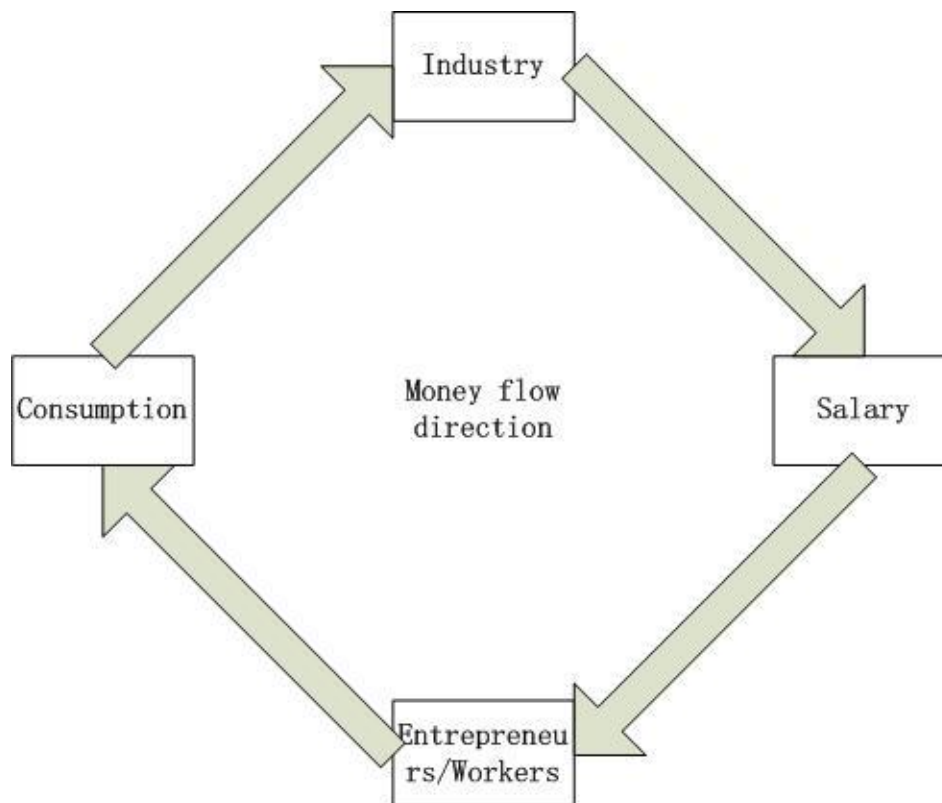


Figure 1 shows the circulation of money in the market. From this picture we see that when individuals spend their money, these monies are transformed into the profit of the industry. The industry then pays salary to the workers, individuals get these salary and use them in consumption. So together the whole process becomes a circulation. The money flows inside the circulation.

Some confusing situations must be clarified before proceeding. By analyzing the revenue of the industry, we know that all revenue earned by the industry can be divided into three parts: costs to produce goods and services, salary to pay workers inside, and money earned by the entrepreneurs.

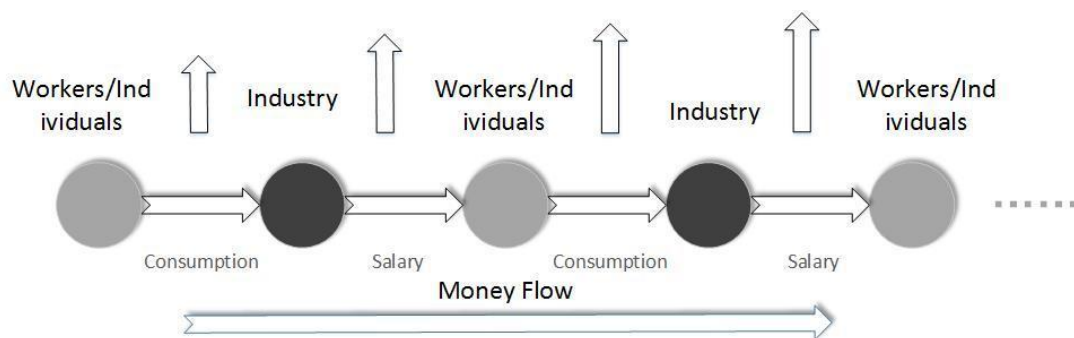
Considering the fact that entrepreneurs will spend money on consumption just like

workers do, we can regard entrepreneurs as general individuals. They are a special kind of worker, but because here we mainly concentrate on their consumption as it relates to the flow of money, we regard entrepreneurs as general workers.

In general money flows from one industry to another industry. For example, when a furniture factory buys wood from a sawmill, money flows from the furniture factory to the sawmill similar to how money flows from workers to industry. Besides, after the sawmill gets this income, it will give this money to the workers and entrepreneurs inside the sawmill, and these workers and entrepreneurs will then buy furniture from the furniture factory. The money flows back and the whole process becomes a circulation, too. To simplify, we can treat the furniture factory just as general individual consumers and the sawmill here as an industry. The market is then a combination of innumerable money flow circles.

We can track the flow process of money in the market and draw the following picture.

Figure 2: The horizontal view of money flow



Firstly, I define richness as a unit time in which people could earn a lot of money and poorness as a unit time in which people could hardly earn any money. Assume that in general in a society, people (industries) who are rich prefer to spend money while people (industries) who are not rich prefer not to spend money. We know that if individuals' consumption increases, the profit of the industry will increase, then the salary paid to its workers (including entrepreneurs) will increase (or the industry could hire more workers), then individuals will be richer and their consumption will further increase. Likewise, if individuals' consumption decreases, the profit of the industry will decrease, then the salary paid to staff inside the industry will decrease (or industry could eliminate jobs), and individuals will then be poorer and their consumption will further decrease.

When individuals spend money, the more money they spend, the more profit goes to industry. Even if individuals are at the risk of having no cash, society and the industry get the maximum benefits. When the company pays salary to individuals, the more the company gives, the more money the individuals could spend, even if the industry is at the risk of having no cash, it maximizes the benefit to the individuals and society.

From Figure 1 and Figure 2 we can prove the Paradox of thrift. We know that if one society wants to become rich, everyone should spend more money to maximize the benefits of the industry, meanwhile the industry should pay as much money as it can to enable this process to continue.

3. Building the basic theoretical model

Here I will build my models.

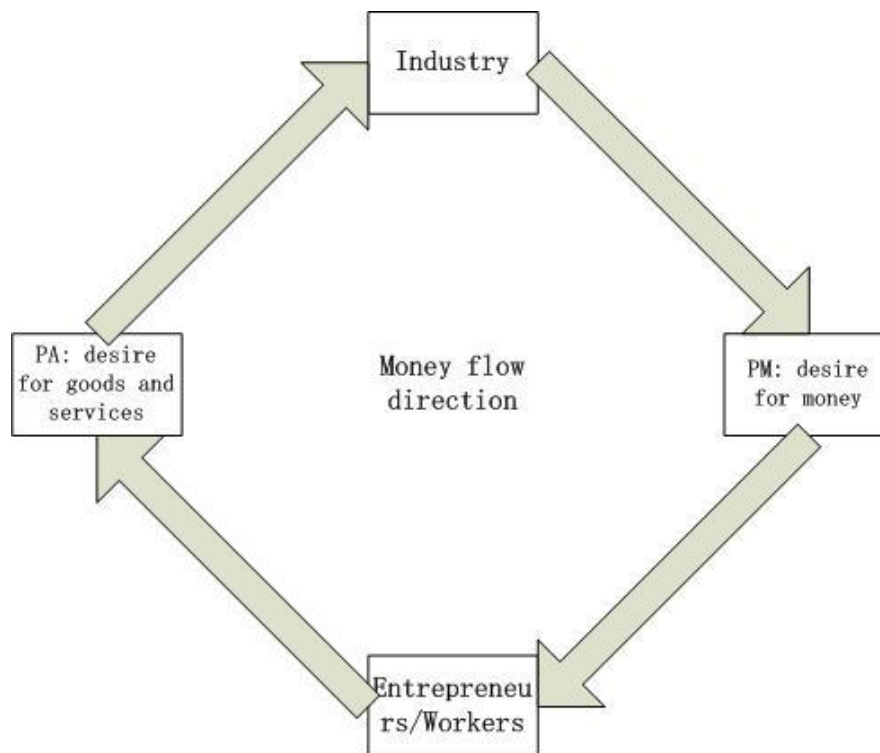
I define:

The invisible hand as the demand or desire of individuals, named symbol P.

Invisible hand at supply is the need or desire of individuals toward money, named symbol PM.

Invisible hand at demand is the demand or desire of individuals toward goods and services, named symbol PA

Figure 3: Money flow under the effect of the invisible hand



According to Figure 3, we could know that, under the effect of the invisible hand at supply, individuals' demand for money, or PM, individuals devote themselves into industry producing activities and jobs, then they form the force of supply. Under the effect of the invisible hand at demand, individuals demand for goods and services, or PA, individuals pay money to industry and get goods and services, they form the force of demand.

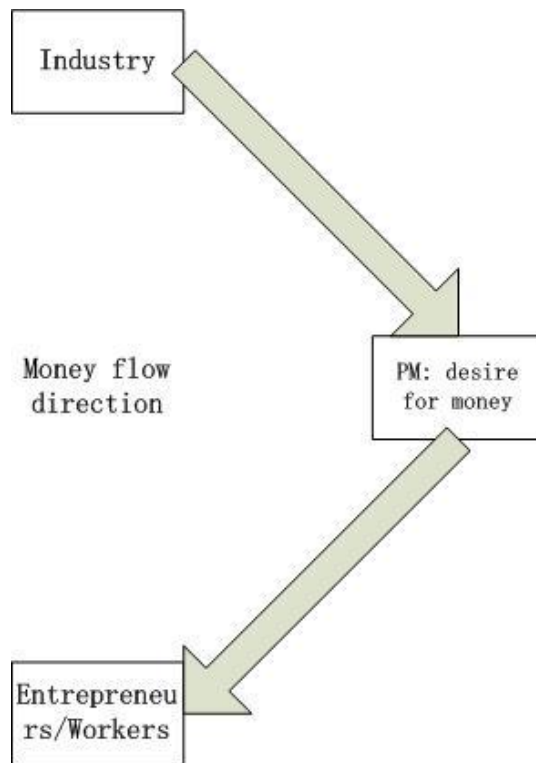
Under the effect of PM, money flows from industry to individuals, and this process maintains the existence of employment.

Under the effect of PA, money flows from individuals to industry, so industry gets revenue while goods and services flow to individuals.

4. The money flow under the invisible hand

The following series of pictures show how money flows under the force of the invisible hand.

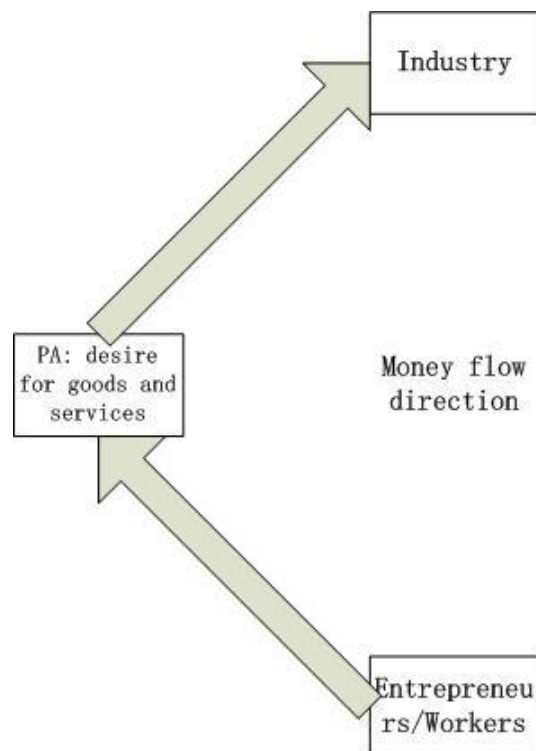
Figure 4: Money flow under invisible hand PM



State 1.

Money is within industry, which hires people to produce goods and services. Under the effect of people's desire to earn money, money flows from industry to individuals..

Figure 5: Money flows under invisible hand PA



State 2.

The individuals have money, and since individuals have desires that they want to satisfy, they use the money to buy goods and services. Under the effect of people's desire to spend money, money flows from individuals to industry.

Money is whirling in the circle.

When the economy is viewed as a big wheel, this explains why the economy sometimes accelerates, sometimes stays the same, sometimes slows down and sometimes even stops.

Next, we discuss the volume of money flow.

5. Defining basic processes of the model

From previous analysis, we conclude that there are three basic money flow processes during the economy circulation. All others are the combinations of them.

We define the Total Salary as the total salary (including workers' salaries and entrepreneurs' salaries) given to individuals from the industry in the market in one moment and Total Consumption as the total consumption made by all individuals (including workers' consumption, entrepreneurs' consumption and industry costs) to buy goods and services from industry in the market in one moment.

We assume that there is an Uniform Total Salary (UTS) and Uniform Total Consumption (UTC) which are the critical points for determining whether all the individuals and industries are rich or not. At the UTS and UTC, people are neither poor or rich, so they will keep their consuming habit. Considering the prerequisite "people (industries) who are rich prefer to spend money while people (industries) who are not rich prefer not to spend money", we have 3 states:

1) Assuming that the Real Total Salary is UTS and the Real Total Consumption is UTC, we call this the Uniform State (US). Under this state, the industry total profit will not change, the Real Total Salary will not change, the Real Total Consumption will not change, and the circulation continues without changing. The money flows inside the circulation without any speed and volume change.

2) Positive Feedback

Assuming Real Total Consumption is above UTC and Real Total Salary is above UTS, we find that the industry profit will increase, then the industry can offer more positions or pay more salary, so the Real Total Salary will increase. The

increase of Real Total Salary (RTS) will lead to the increase of the money held by individuals, which means the Real Total Consumption further increases and the circulation continues while RTC and RTS keep increasing to reach the maximum limit of the productive forces. Money flow speed keeps increasing inside the circulation.

3) Negative Feedback

Assuming that Real Total Consumption is below UTC and Real Total Salary is below UTS, we have that the industry revenue will decrease, after that, the industry will cut off jobs or give less salary. Then the total salary decreases, individuals get less money and Real Total Consumption further decreases, the circulation continues while RTC and RTS keep decreasing to a very low volume which just meets basic needs of people in the market. The money flow speed is getting slower and slower, and then remains at a very slow speed. Because people have basic needs such as food, the flow of money will not stop.

I will discuss situation 1. $RTS > UTS$ while $RTC < UTC$ (Real total salary is large while real total consumption is small) 2. $RTS < UTS$ while $RTC > UTC$ later (Real total salary is small while real total consumption is large).

From previous analysis, we see that the movement of money inside market is a circulation, so it is possible that this circulation can be interrupted. If the flow of money in the market is interrupted, we can speculate that it is possible for an economic crisis to occur.

Here I set two thresholds which are the critical point to interrupt the circulation of the money inside the market.

1. The critical total salary p_0 .

When RTS is below the critical salary p_0 , the salary paid to individuals is unable to make RTC large enough to let individuals to have enough consumption ability. Then the industry will not profit, so it will cut off jobs or even go bankrupt. The circulation will be interrupted. Under this salary value p_0 the money cannot move along the path in Figure 2 and an economic crisis occurs.

2. The critical total consumption c_0 .

If the RTC is below c_0 , there is nearly no money flow from individuals to industry, so the industry will cut off jobs or even go bankrupt, meaning there is then no money flow from industry to its workers. Therefore under this

consumption value c_0 . the society will develop into an economic crisis.

To summarize, p_0 and c_0 are the values that cannot make the circulation of money continue, since they are values that lead to an economic crisis.

6. Factors that cause economic crises

From previous conclusion, we know that if the RTS is below p_0 or RTC is below c_0 , then the money flow in the market will slow down and even stop, and an economic crisis may occur. Based on this, we can get following:

All factors that could result in the discontinuation or interruption of the money flow circulation in the free market are the factors that lead to an economic crisis. Then we know that factors could be:

- 1) Most people stop working, for example by going on strike. When this happens, nearly no salary flows from industry to individuals, the Real Total Salary is below p_0 and PM (individuals' desire for money) is no longer there. The invisible hand is destroyed. The economy stagnates.
- 2) Most people stop consuming. When this happens, the Real Total Consumption is below c_0 and the PA (people's desire for products) is no longer there. The invisible hand is destroyed.
- 3) A natural disaster which could destroy both PA and PM means people are dead so there is no PA and PM.
- 4) The economic crisis caused by free market through its own drawback (discussed later on)

And so on.

From these conclusions we could know that economic crises are unpredictable because there are many factors which could cause money circulation to stop. These factors are unpredictable. What we could know is that some factors have a high possibility to cause an economic crisis, like a huge tsunami. And we also know that it is the action of people in the market that causes the economy wheel to stop.

7. Drawback of the free market and the factors that lead to the economic cyclical changes

Here I will mainly discuss how the free market develops from normal into the economic crisis due to its own drawback and the reasons for economic fluctuations.

From the previous model we know that once the Real Total Consumption is below the threshold c_0 , then the money circulation in the free market will be broken up. An economic crisis will occur.

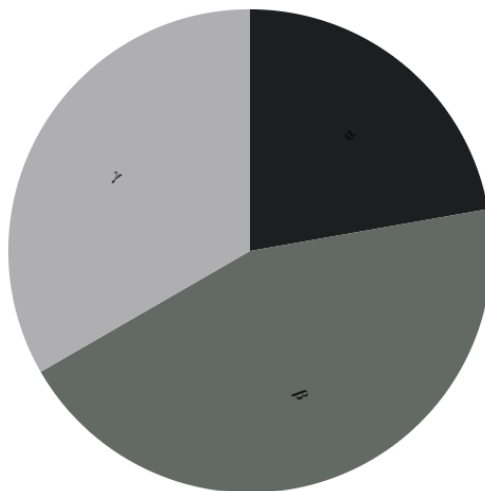
It is obvious that the drop of Real Total Consumption could be caused by both slow consumption speed or by small consumption volume. In the following I will mainly discuss small consumption volume, because this kind of economic crisis happens more frequently. So we assume that consumption speed is a constant value.

In a free market, we know that individuals take part in different kinds of activities, like starting a business, investing, gambling, or stock trading. During these activities, some people may earn money and some people may lose money. So the money is flowing among different kinds of people.

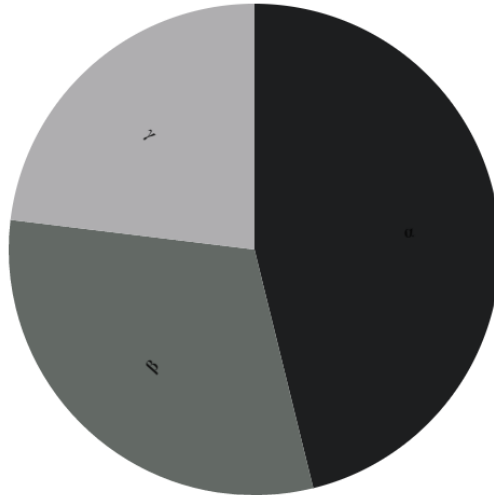
Assume that there are many groups of people, α , β and γ ... (alternatively α , β and γ could be industries which spend money as their production costs). All of them form the market, sometimes α owns more money, sometimes β owns more money, sometimes γ owns more money, and so on ...

Figure 6: Money distribution

Money distribution: β owns more money



Money distribution: α owns more money



Besides, we know that people who earn more money may not spend the money. People who lose money may spend the money. Some people may even borrow money to spend.

Here we define the variable TC (Total Consumption), that is at one moment the total money spent by all people in the free market (from all groups). In a short time, the TC is a stable variable because the money distribution is not changing too much. But for a long time, TC will change because of the flow of the money. When TC is decreasing, the total consumption volume goes into a trough; when TC is increasing, the total consumption volume goes into a crest; and if the TC is below c_0 , there is nearly no money flow from individuals to industry, so the market goes into an economy crisis.

We assume that α will spend $r*100\%$ of all their money, β will spend $s*100\%$ all their money and γ will spend $t*100\%$ all their money, we have

$$TC=\alpha*r+\beta*s+\gamma*t.....$$

From the formula we could know that the TC is always changing because the money distribution is always changing. Besides, r , s and t (money saving habits) may change, too. But to simplify our analysis, we assume that compared to money distribution, r , s and t are not changing too much. So if α increases, the $\alpha*r$ also increases, and vice versa, which meets our basic assumption: “people (industries) who are rich prefer to spend money while people (industries) who are not rich prefer not to spend money”

Here I will use an example to illustrate my theory.

We assume there are just three groups of people: α , β , γ . All of them have the same consuming speed. And their saving habits stay the same during the time.

α will always spend all money they have, that means $r=1$;

β will always spend half money they own, that means $s=0.5$;

γ will never spend money, that means $t=0$;

We assume that total money volume is 3 units in the market,

1) Situation 1.

From the starting point every group has money volume 1

We have the Total Consumption:

$$TC=1*1+1*1/2+1*0=1.5$$

And if this distribution lasts for a period time t (t is a short period of time), we will have a medium level of money flow from individuals to industry.

2) Situation 2.

Because of the commercial trade and competition, β earns all money α has, so β has money volume 2. We have the Total Consumption:

$$TC=0*1+2*0.5+1*0=1$$

And if this distribution lasts for a period time t , we will have a low level of money flow from individuals to industry. This represents an economic trough.

3) Situation 3.

Because of the commercial trade and competition, α owns all money β has, so α has money volume of 2. We have the Total Consumption:

$$TC=2+0*0.5+0*0=2$$

And if this distribution lasts for a period time t , we will have a high level of money flow from individuals to industry.

This represents an economic crest.

4) Situation 4.

Because of commercial trade and competition, β owns all money α has, so we have the Total Consumption:

$$TC=0*1+2*0.5+1*0=1$$

And if this distribution lasts for a period time t , we will have a low level of money flow from individuals to industry.

This represents an economic trough.

5) Situation 5.

Because of commercial trade and competition, α owns all money β has, so α has money volume of 2. We have the Total Consumption:

$$TC=2+0*0.5+0*0=2$$

And if this money distribution lasts for a period time t , we will have a high level of

money flow from individuals to industry.

This represents an economic crest.

6) Situation 6.

Because of the commercial trade and competition, γ owns all money α and β have, we have the Total Consumption:

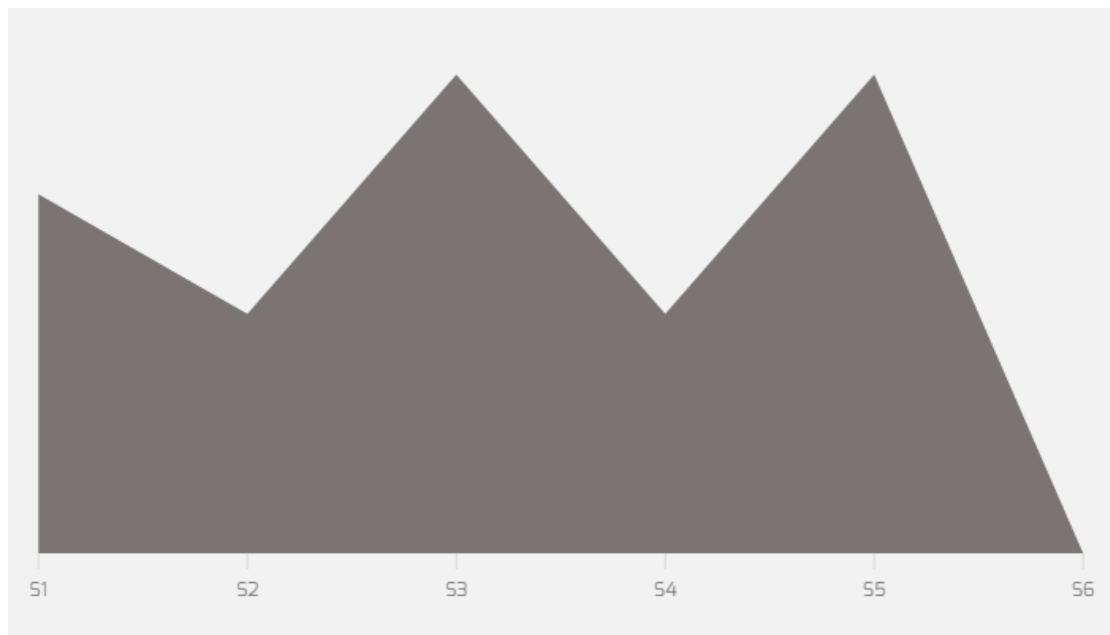
$$TC=0*1+0*0.5+0=0$$

0 is below the c_0 .

And if this money distribution lasts for a period time t , during the time we will have no money flow from individuals to industry. The money flow volume is below c_0 , so the industry has no profit and will go bankrupt, and the economy wheel will slow down and even stop. This is the economic crisis.

We have a picture like following:

Figure 7. Total variation



From our analysis, we could know that the TC is a transient variable. In the real world, the GDP is the integration of TC with respect to time. So we know that toward GDP, we should also consider the variable consumption speed.

So we have:

$$dGDP=\alpha*r*u+\beta*s*v+\gamma*t*w.....$$

u, v and w are the consumption speed of α, β and γ

$r*u$ is the consumption habits of α , $s*v$ is the consumption habit of β and $t*w$ is the consumption habit of γ .

So we have:

$$\begin{aligned} \text{GDP} &= \int \alpha * r * u dt + \int \beta * s * v dt + \int \gamma * t * w dt \dots \\ &= \sum_i \int \alpha_i * r_i * u_i dt, \end{aligned}$$

α_i is the money volume of i , r_i is the consuming habit of i and u_i is the consuming speed of i , i is one customer in the market, i ranges from 1 to ∞ , t is the time.

Then we could draw the conclusion that:

The reason for economic cyclical changes is that due to cyclical variation of money distribution and people's consumption habits, Total Consumption cyclically changes. Or in fact we can say that there are no cyclical changes in the free market, the free market is a chaotic system, and cyclical change is just because sometimes the economic wheel accelerates, sometimes the economic wheel stays uniform speed and sometimes the economic wheel slows down.

The mechanism how a free market develops into an economic crisis is that because of the flow of money, the total consuming ability is changing. When it comes to a situation that people who have money don't spend money, people who want to spend money don't have money, the PA (people's desire for goods and services) are impaired, so there is nearly no money flow from individuals to industry and then the Real Total Consumption is below c . so the market goes into economic crisis.

8. Re-define the multiplier effect

First, assume that inflation is ignored (similar as Keynes did when explaining the multiplier concept [2]). I extend the multiplier concept by introducing the effect of time, total consumption speed and total consumption volume to the multiplier concept.

There are many deficiencies in the definition of the multiplier in modern economics. Modern economics introduces this concept to describe the relationship between spending money and total national income. Keynes believed that any injection of spending created a proportional increase in overall income for the population, since the extra spending would carry throughout the economy. [2] But Keynes did not explain how this would happen. According to my theory, any injection of spending creates a proportional increase in overall income because any money spent in the

market will go into the circulation in Figure 1. The increase of total GDP is not because of the money's own effect but the outcome of the money whirling in the free market. Besides, GDP is a time related variable but Keynes did not take this variable into his formula. For a country, its GDP for 1 year is different from its GDP for 1 month. So we must introduce this variable for better comparison.

In Keynes' book *The General Theory of Employment, Interest, and Money*, Keynes put forward a new equation $Y=I/(1-b)$, where Y is income, I is investment and b is MPC (the marginal propensity to consume).

In his theory, he has equation $dY=k*dI$, $k=1/(1-b)$. This equation means any change in income will be k times the changes in the new investment. Therefore k is the multiplier. [2]

Here we assume that if the money in the new investment flows in the circulation for an unlimited time without any reduction, the change in the income will be unlimited. Any money injection will cause an unlimited increase in the GDP.

So ignoring the time variable is the deficiency of Keynes' theory. It also ignores another variable, the money flow speed in the market. (The money flow speed is not the physical moving speed as in physics, but the turnover speed of money in the market).

Considering the fact that the k or multiplier shows the relationship between total income and spending, I define the new multiplier as the following:

Changes in income dY is determined by the money flow speed (money whirling speed), time duration and changes in Total Consumption dTC.

A thorny issue here is that since people usually do not spend money at the same time, we can transform asynchronous spending made by all individuals in the market to an approximate synchronous spending made by all individuals in the market. Or in other words, if most individuals get money and spend only some part of it instead of all of it, we can transform this situation to a situation where all individuals spend all money at a very slow average speed. If most individuals get money then spend all of it at once, we can regard this situation as a situation that all individuals spend money at a very high average speed. Or we can say, we will group different kinds of people together and get their average consumption speed, so each independent part of $\alpha*r*u+\beta*s*v+\gamma*t*w\dots$ will be processed together. In this way, we will analyze the issue from a macro view.

Assume that the change of total money consumption is + \$5000, time duration is 2 months and the money flow speed is that all money in the market will whirl in the circulation once every half month ($1r/0.5\text{month}$).

We have that the total change in the income dY

$$dY = \$5000 * 2\text{month} * (1/0.5)(r/\text{month}) = \$20000$$

We have that the total income increase is \$20000.

Then

$$k = dY/dTC = 20000/5000 = 4$$

We can infer if the time goes into unlimited, we could have that the k is unlimited.

$$\lim_{t \rightarrow \infty} k = \infty$$

Here money is whirling in the circulation for infinite time.

So we have that k is determined by the time duration t (Unit: month) and money flow speed w (Unit: r/month)

So the formula is therefore:

$$k = t * w$$

$$dY = k * dTC \quad [dTC \text{ is the change in total consumption}]$$

$$dY = t * w * dTC$$

From this equation we see that:

Given a fixed time t , we know that the income increase is mainly dependent on w , the speed of money whirling in the market, or consumption speed. Therefore we can conclude that:

If money is turned over faster in a society in commodities and services industry (Not financial industry), that society will be richer. And vice versa. Or we can say that if people spend money faster, the society will be richer. And vice versa.

So I extend the concept of the Paradox of thrift, that not only the total consumption volume, but also that the whole consumption speed could influence the GDP of a country.

As dTC is the amount of money, w is the speed of money flow. So we can conclude that:

1. Negative Feedback is the process where the amount and speed of money flowing are gradually going down.

2. Positive Feedback is the process where the amount and speed of money flowing are gradually going up.
3. the Uniform State is the process where the amount and speed of money flowing are staying the same.

Of course, the Uniform State is usually an ideal situation (It happens some times, such as in Japan, where GDP has remained nearly the same for 10 years. So Japan now is in the Uniform State.). In the real world, the economy often vibrates between Negative Feedback and Positive Feedback, since it depends on the Real Total Consumption and the Real Total Salary. I introduce the concept of the Uniform State in order to distinguish between Negative Feedback and Positive Feedback.

The reason for Negative Feedback and Positive Feedback is that people who are rich prefer to spend money while people who are not rich prefer not to spend money. If the consumption speed and volume are very high in a country, people there are more rich, so they can spend more money. When they spend more money, they are maintaining or enlarging the consumption speed and volume, and this is the essence of Positive Feedback. If the consumption speed and volume are very low in a country, people there are poorer, so they can spend less money. When they spend less money, they are decreasing the consumption speed and volume, which is the essence of Negative Feedback.

The equation for GDP is:

$$GDP=t*w*TC$$

Where t is the time duration, w is the whirling speed of the money in the market, (which is determined by both the speed of peoples' consuming and the speed of salary from the company), and TC is the transient amount of total consumption in a market.

Let's assume the money flow speed from individuals to industry is W_a and the money flow speed from industry to individuals is W_m .

We have that:

$$w=\min(W_a, W_m)$$

This resolves the puzzle in the previous discussion, where the 2 situations $RTS>UTS$ while $RTC<UTC$ and $RTS<UTS$ while $RTC>UTC$. From this equation

$GDP=t*w*TC=t*\min(W_a, W_m)*TC$, we see that the money flow speed will be determined by the volume that is smaller, so these two situations will both develop

into a Negative Feedback process.

This leads to the final Equation for GDP for a period of time t:

$$GDP=t*\min(Wa, Wm)*TC$$

Considering the fact that w and TC are not a constant value in the real world, we use calculus to show the equation for:

$$GDP=\iint\int f(t, w, TC)dtwdTC.$$

Besides, we can also reference that in Keynesian theory, the reason that inadequate effective demand is possible is because the money flow from individuals to industry (Real Total Consumption) is small, which could be caused by slow consumption speed, inadequate consumption volume and inadequate Real Total Salary.

9. How does a society become rich?

In order to become rich, a society should make the most use of the invisible hand. Toward the invisible hand of supply, industry needs to give salary to individuals as fast as possible, besides also increasing productivity. We can increase productivity by using machines or new technology. Everyone should spend money as fast as he or she can for the invisible hand at the demand. The faster the money flows, the richer the society will be.

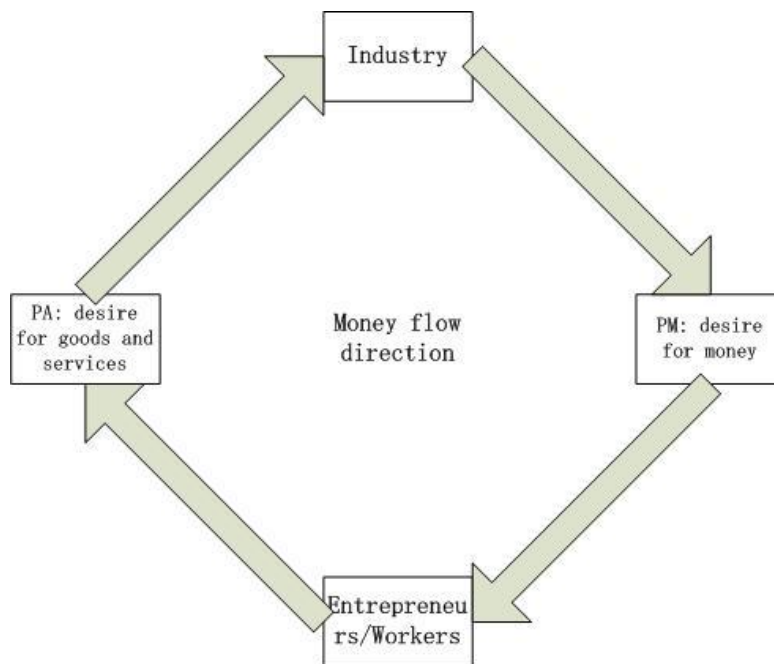
GDP is related to the money whirling speed w through the previous GDP equation

$$GDP=t*w*TC.$$

I will use the following example to discuss this conclusion. Here I will assume that there is no inflation or deflation. Although this is an ideal situation, the assumption is helpful for describing approximately the relationship between the money flow speed and total income.

Assume that we have a monopoly market of only one industry and one employee (entrepreneur, a person that could hire himself or herself). The employee (entrepreneur) is also the only individual consumer in the society. There are no costs in this business activity.

Figure 8



1) We assume that industry pays all its money as monthly salary to the employee and the employee spends all this money once he or she gets the money.

Assume there are \$1000 in the market, so we have that in one year,
the employee total salary is $12 \text{ months} * \$1000/\text{month} = \12000 ;
the industry's total revenue is $12 \text{ month} * \$1000/\text{month} = \12000 ;

2) We assume that industry each time only pays 50% of its all money as monthly salary to the employee and the employee spends all money once he or she gets the money, so we have that in one year,

the employee first month salary is $\$1000 * 50\% = \500

the industry first month revenue is \$500, and it has \$500 in hand, total is \$1000, it pays 50%, so the second month salary of the employee is \$500

Then we have that the total salary of the employee in one year is $\$500/\text{month} * 12 \text{ month} = \6000

The total revenue of the industry is $\$500/\text{month} * 12 \text{ month} = \6000

3) We assume that industry each time pays all of its money as salary to the employee, the employee only spends 50% of his or her own money, so we have that in one year

The employee first month salary is \$1000

The industry first month revenue is \$500, the employee second month salary is \$500,

then the employee has \$1000 total, he or she spends half of the whole money, and then the industry second month revenue is \$500

We have the total salary is $\$1000 + 11\text{month} * \$500/\text{month} = \$6500$

We have that the total revenue for the industry is $\$500/\text{month} * 12\text{month} = \6000

4) What if the industry pays \$1000 every half month, and employee spends all money as soon as he or she gets the money? (Assume the productive forces can reach this consuming speed or the price of goods in the market does not change). We will have that the total salary of the employee is $\$1000/\text{month} * 12\text{month} * 2 = \24000

And the total revenue of the company is the same \$24000

So we have that if money flows faster in a society, that society will be richer. Industry will have more revenue and individuals will have more salary.

So for a country to become rich, the most important thing is to not save what you have produced but to work to produce as much as you can, and make what you have produced to flow to demand as fast as it can.

We also can see that what can really adjust the economy is not government policies, but the money flowing speed and volume in commodities and services industry, which is determined by the invisible hand PA and PM, or Real Total Salary and Real Total Consumption, or in other words all people's behaviors in the market.

Why Keynesian policies work is that when economic crises happen, people who have money do not spend money, people who want to spend money do not have money. By printing money and giving money to people who lack money to spend, the government recovers the total consuming ability. It enlarges the amount of money flow from individuals to industry, then the Keynesian policy leads to an economic recovery.

10. Types of Economic Crises

There are different kinds of economic crises:

Spontaneous Economic Crises

The reason for the spontaneous economic crisis is that due to business activities and the flow of money, there is a chance that the Real Total Consumption falls below the

threshold c . This means that the invisible hand at the demand or PA is eliminated, people cannot buy goods and services because they do not have money, and the circulation of economy cannot continue.

All kinds of Economic Crises

The reason for all kinds of economic crises is due to various kinds of factors, the invisible hand (PA and PM) and the money circulation in the free market are eliminated or interrupted.

11. Policies to rescue economic crises

Firstly I will claim that the duty of the government (visible hand) during the economic crisis is to recover or enlarge the effect of the invisible hand.

The policy toward economic crises is:

1) Toward all kinds of economic crisis, what we should do is to recover the PA and PM, that is recover the invisible hand, so we should recover the supply and demand forces on both sides. Like recovering the productive forces, this encourages people to spend money.

2) Toward the spontaneous economic crisis in the free market, there are two situations:

a) Spontaneous economic crisis without inflation, where we can print money and give the money to those who lack it. Like in the example, by printing money then transfer consumption ability from γ to α and β , we recover the consuming ability then the Real Total Consumption is a certain value above c_0 . , we make the economic circulation work again.

b) Inflation itself can cause the RTC below c_0 . , so when inflation happens, the price of commodities is high and the money owned by general people is not too much. Since people don't want to spend money, then an economic crisis may happen. Toward this kind of economic crisis, we can make use of the invisible hand to recover the economy. That is, the industry or the government try to find a way to make a lot of money flow from industry into individuals, like encouraging industry to try to give more salary, while encouraging people to try to spend as much money as they can.

When the economy goes into the regular circulation state or even the Positive Feedback, the society will recover to become prosperous.

12. Application

I will use my theory to explain some phenomenon here.

1) How Keynesian policies lead to economic recovery?

In Keynesian policies, the government invests and builds public infrastructure by printing money. During these processes, the employment rate increases, so Real Total Salary increases, and because the government creates consumption, Real Total Consumption enlarges. So both RTS and RTC have been enlarged, and therefore the circulation is pushed back to regular movement. Keynesian policy works because it uses the visible hand to recover the invisible hand PA and PM, the RTC and RTS.

2) How Japanese lost their ten years?

The lost decade happened in Japan after the real estate bubble burst in 1990s and the country suffered from the economic slump. This slump lasted for 10 years. From my theory, we could know that because of the free market drawback, the economic crisis happened in Japan, from then on that country went into the stage of Negative Feedback.

The Japanese government built large constructions which increased the RTC and RTS, but because there was more money in the market, there was an inflation. So the consuming ability of the general people was inhibited because of the high price (another factor was that East Asian countries usually have a culture that claims frugality). When the government constructions were finished, there were no job positions, RTS would decrease. And RTC would decrease because there was inflation and the fake need created by the government was no longer there. The economy went back to Negative Feedback and the unemployment rate increased again.

3) How Egypt went into the economy plight?

After 2008, due to the economic crisis in the United States, inflation happened in Egypt. Peoples' savings lost their value while the price of goods was extremely high. People preferred not to spend the money. So the RTC was decreasing, then the profit of industry decreased, in order to survive, the industry cut off jobs, so Real Total

Salary decreased, and the economy went into the Negative Feedback.

4) Stagflation, how inflation and unemployment increase at the same time?

When the government uses Keynesian policy, there is too much money in the market, so inflation occurs. After the policy, because of the inflation, the price of commodities are extremely high, which impairs people's consuming ability, so the Real Total Consumption will decrease. The profit of the company will decrease, the economy goes into Negative Feedback, and there will be more unemployment. Finally, inflation and increase of unemployment happen at the same time.

5) Why China and Japan have continual economic growth for 20 years or even 30 years?

It is just because their economies go into the stage of a continual Positive Feedback.

6) Why Venezuela's economy goes into economy crisis?

Because the Venezuela's industry is mainly dependent on oil. When the oil industry was replaced by other forms of energy, the invisible hand PM of Venezuela was destroyed. So there was no way for money to flow from industry to the individuals, the Real Total Salary was below p_0 , then circulation was interrupted and the country went into economic crisis. In order to avoid this kind of economic crisis, one country should have many forms of industries, even if some industries were destroyed, there are other ways for money to flow from industry to individuals.

13. Inference

Why does equalitarianism not work?

Equalitarianism will let people lose interest in making money so the PM and productive forces will be impaired. Because PM is impaired, supply will be impaired, which is harmful for the economy.

Why should there be welfare?

Because in modern society, the productive force is too high, so productive force is not working all the time, by giving welfare, we enlarge the Real Total Consumption

(Welfare will make more people spend money). Then RTC is enlarged, which is good for the economy.

Why we should fight against monopoly?

In a non-monopoly industry, because there is competition, different companies try to modify the products and services to win the market. So there will be products and services innovation. The society will always be in progress.

Why we should fight against fake products?

If a society has a lot of fake products, people are not willing to spend money because they don't want to buy fake products. So the RTC will decrease, the money circulation speed will be slow down and impaired.

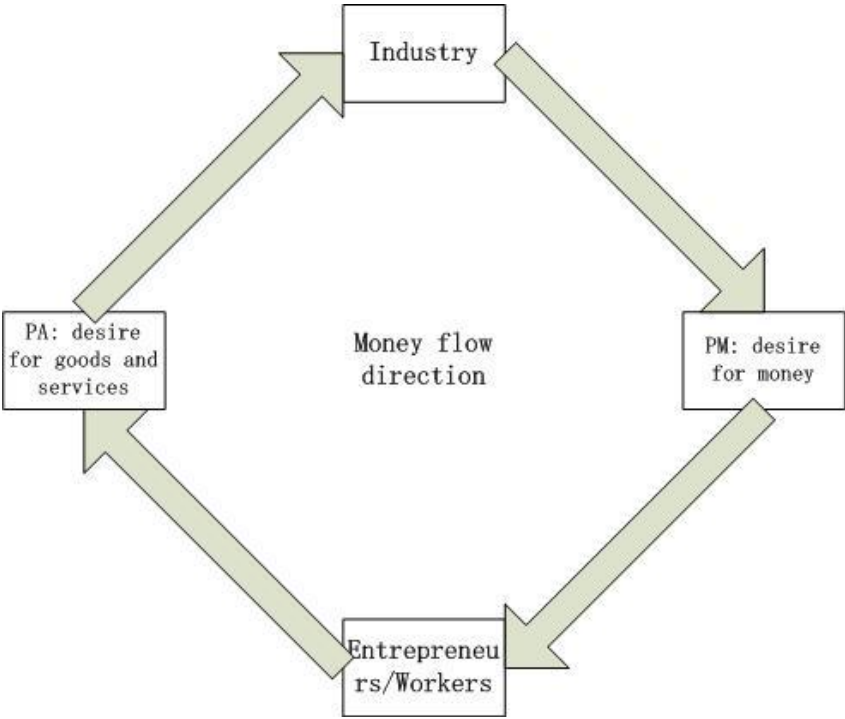
Why should we tax rich people more?

Middle class and poor people usually spend nearly all money they earn. Rich people usually do not spend all money they earn and they do not spend money fast. So we should tax rich people more and make this part of money flow into the market.

14. Summary

PA (Invisible hand at demand, the demand or desire of individuals toward goods and services) and PM (Invisible hand at supply, the need or desire of individuals toward money) are just like two engines for the economy, and all other factors influence the economy by influencing these two factors. PA determines the volume and speed of money flow from customers to industry while PM determines the volume and speed of money flow from industry to customers. Together they determine the money flow speed in a society or how rich a society will be. Under these two engines, the economic wheel whirls, and the faster the wheel whirls, the richer the society will be. If it does not whirl, there will be an economic crisis.

Figure 9



Reference

[1] **Adam Smith**, The Wealth of Nations

[2] **John Maynard Keynes**, The General Theory of Employment, Interest and Money